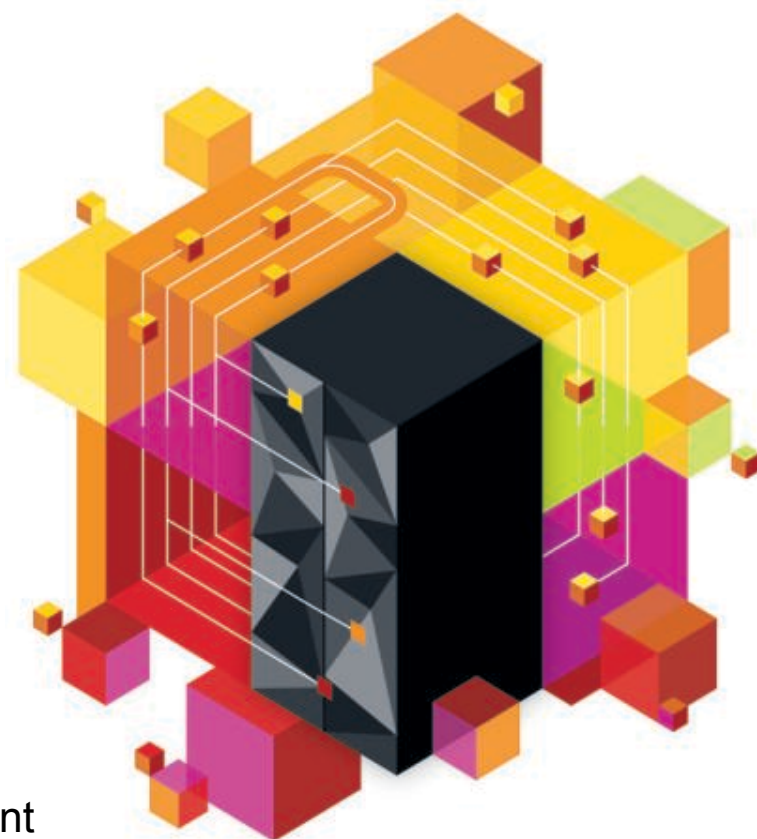


2013 System z Premier Customer Executive Conference



Smarter Infrastructure for Private Clouds on System z



Dr. Matt Ellis

VP Development, Availability & Performance Management
Cloud & Smarter Infrastructure, IBM Software

Cloud implementations that include System z maximize Enterprise flexibility and increase cost savings

Key Takeaways



- Including System z in your Cloud strategy allows you to optimize **critical business workloads** that require high availability and performance
- The IBM SmartCloud cross-platform open architecture includes System z within a **fit-for-purpose** framework
- Enable rapid & agile delivery using **Cloud Ready for Linux on System Z**, and easily move up to full IBM SmartCloud model

Improve confidence in System z ability to support new operating models and business requirements going forward

Technology becoming #1 on CEO's list

- Huge challenges of social, mobile and cloud
- Innovations required to remain competitive

Value vs. Cost Pressures

- Managing risks vs. efficiencies
- IT pushed to be more rapid and dynamic
- System z usage can be modernized



As companies continue to exploit System z as platform for business critical applications

- 90% of Fortune 500 companies rely on mainframes
- 70% of Enterprise Customers indicate z will play part in **cloud initiatives**

Why are customers continuing to use System z?

- Up to 50% savings on applicable IT costs
- Up to 99.999% availability and uptime
- Secure mixed-workload management



Achieving agility, cost savings and high availability requires:



Visibility



Control



Automation

IBM helping organizations embrace bold strategies to **Rethink IT and Reinvent Business**

Smarter Infrastructure



Optimize with Cloud



Speeding service delivery from 45 days to 20 minutes

Extend to Mobile Devices



Increasing sales with new promotions from 15% to 75%

Deploy Smarter Physical Infrastructures



Recognizing & repairing over 50% of issues before operations impact

Protect & Manage Data



Reducing time it takes to backup critical data by 80%

Emergence of next generation architectures in Smarter Infrastructure includes enhancing System z



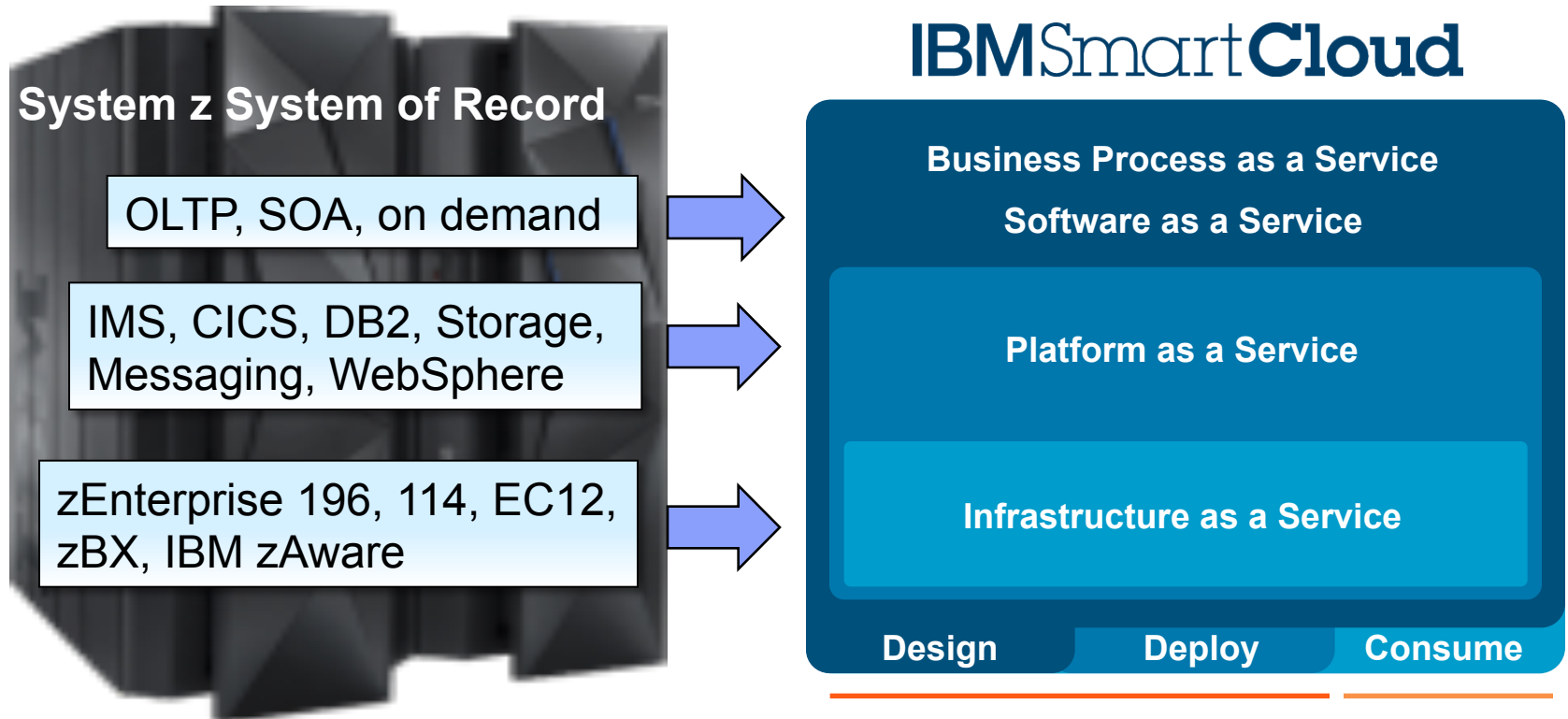
- Transactions
- Command & Control
- Authored content focused on text and graphic docs
- Facts and data mastered in single “source of truth”

- Interactions
- Collaboration
- Community based content primarily with video / audio
- Insight, trends, analytics thru open forums

Cloud management system needs to support ‘Systems of Record’ and ‘Systems of Engagement’

System z Systems of Record provides key resources supporting SmartCloud Systems of Engagement


zEnterprise provides value for Cloud workloads, including virtualization, database, security, high availability and high utilization





IBM SmartCloud Foundation enables private and hybrid cloud support of business services


Integrated capabilities for virtualization, automation and management


Platform as a Service


Lifecycle



Resources



Environments



Applications



Integration


Infrastructure as a Service


Infrastructure



Admin


Performance



Security


Usage

- Resilient to velocity of changing business requirements
- Enterprise-class and workload-aware
- Built-in analytics for improved insight
- Choice & flexibility in hybrid environments



- Speed infrastructure delivery from 45 days to 20 minutes
- Improve server to administrator ratio from 10:1 to 100:1



SmartCloud Foundation offers private cloud across platforms with open “fit for purpose” approach

zEnterprise
secure cloud
for big data



zEnterprise BC, EC12

Power Systems
for compute
intensive apps



Power 770, 780, Power 795

System x
reduced cost &
data insight



System x eX5, x3640

Pure Systems for
workload
optimized design



Pure Systems

Flexibility to choose platform that meets business requirements

1. Management tools **consistent** and **interoperable** across platforms
2. **Open standards** approach supports multiple workload types
3. **Common tools** translate to low learning curve

Exploiting Cloud on zEnterprise provides significant business value day one and increased value over time

CIO / IT Executive

Infrastructure Teams

1 Self Service Delivery and Management

"I need to reduce my capital costs, lower utilization, and gain accountability for resource usage"

Virtualization Management

Operations Teams

2 Virtualization Optimization

"I am not gaining benefits of virtualization: image sprawl, compliance, lack of visibility"

Image Management

Cloud Ready for Linux on z

Dev & Operations Teams

3 Workload Optimized Cloud

"I need to standardize and optimize applications to deliver faster"

Workload Optimized Patterns

4 Cloud Enabled Data Center

"I need to optimize & orchestrate services across domains"

Self Service Automation

Usage Metering and Chargeback

SmartCloud

Common Cloud platform built on an open standards reference model



International Organization for Standardization



openstack
CLOUD SOFTWARE



Advancing open standards for the information society





Quick and easy implementation of Private Cloud on zEnterprise with provisioning of images and applications

Cloud Ready for Linux on System z

Cloud Monitoring

Service Lifecycle Management

Cloud Backup/Recovery

Automated Provision/De-Provision

Cloud Automation

Installation/Configuration support



Benefits:

- Bring up Cloud on Linux on System z in less than a week
- Quickly begin to see value of Cloud on System z



Enhanced visibility and management for z/VM and Linux applications and resources saving time and money

SmartCloud Monitoring



Increased Performance & Availability

- zVM Live Guest Relocation & Single System Image

Cloud Health Visibility and Optimization

- Performance and Availability metrics/analytics

Extensible Cloud Environment

- Business Expansion based on capacity planning
 - Grow without adding hardware

Client Success

- Cloud service provider **consolidated 59 development & test labs into 6**
- Increased utilization by **increasing VM density by 58%** using embedded analytics in IBM SmartCloud Monitoring and OMEGAMON XE for z/VM



Holistically govern IT assets and workload lifecycle resources across entire enterprise Cloud

SmartCloud Control Desk



Manage cloud services from single console utilizing Service Catalog

- Asset lifecycle management
- SLA based services and policies
- Simplified control with intelligent provisioning
- Automate service request handling

Benefits:

- Minimize outages related to changes within IT Operations by **up to 70%**
- Increase Process Speed and Efficiency by **up to 40%**
- Increase Service quality and responsiveness by **up to 60%**



Automated Provisioning simplifies end-user access and usage for improved agility and productivity

Provisioning/De-Provisioning



Combines infrastructure and platform capabilities

- Deliver elastic workload aware management
- Virtual and physical server optimization
- Dynamically allocating resources
- Enable new delivery and billing options

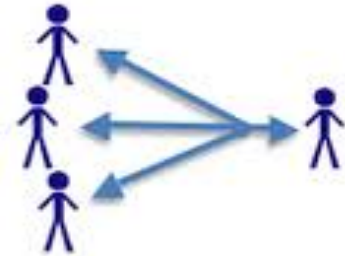
Benefits:

- Reduce IT labor cost **by 50%** in operations, management and monitoring
- Improve capital utilization **by 75%**, significantly reducing license costs
- Reduce provisioning cycle times from **weeks to minutes**
- Can reduce end user IT support costs by **up to 40%**

Customers exploiting different approaches to take advantage of Private Cloud on zEnterprise today

Workload consolidation to Linux on System z

- Reduce administration and capital cost
- Remove inefficiencies due to image sprawl
- Avoid server and workload underutilization across platforms



Enabling System z to be Cloud Ready

- Get up and running quickly with Installation/Configuration Services
- Provide platform to easily interface to Enterprise wide cloud services



Creating Peer to Peer Cloud across Distributed & System z

- Provide workload optimization based on business requirements
- Manage from either distributed or System z platform



Government agency modernizing to avoid cost and protect investment using a System z based Cloud

Business Challenge:

- US Government agency wanted asset management solution for physical assets (e.g. vehicles, equipment)
- Needed to deploy environment to support 5000 users

IBM Solution:

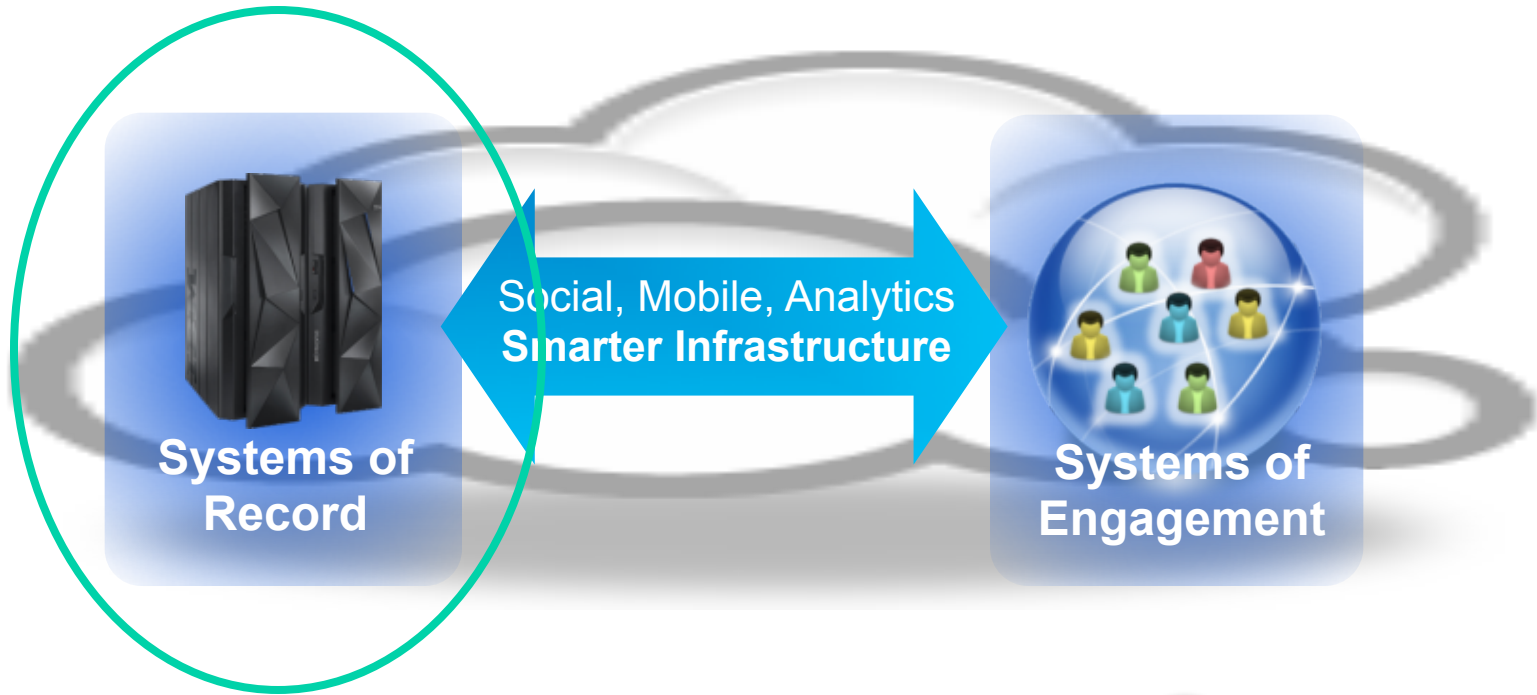
- System z10 Server with 28 IFLs
- Oracle DB for Linux on System z Servers
- IBM Maximo Asset Management for System z



Benefits:

- Leveraging unused processors on System z
- **Deploy in 1/3 time** of x86 servers and no additional energy costs
- Software license charges **saved \$1 million** on System z
- **Included Disaster Recovery** on System z, to avoid doubling x86 costs for HADR

IBM continues to enhance Systems of Record based on increased requirements from Mobile, Analytics and Cloud



Visibility



Control

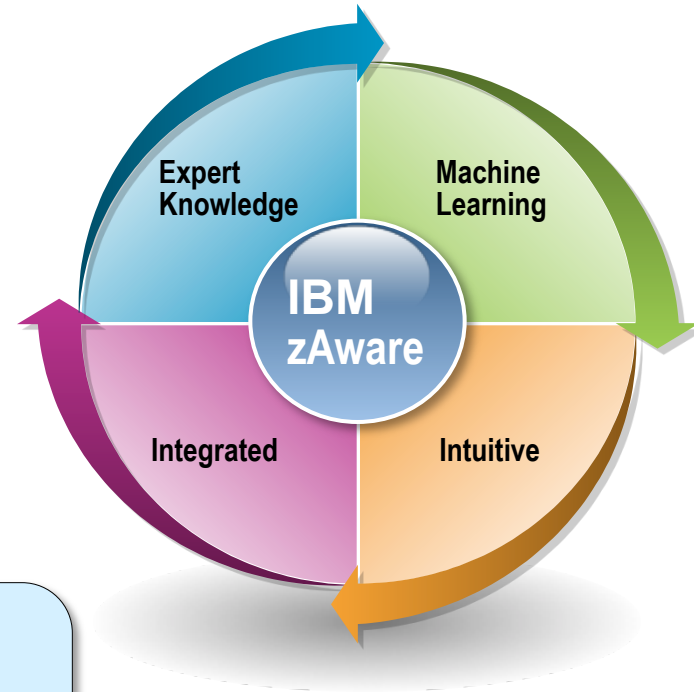


Automation



Improved Application Performance Management with enhanced monitoring and analytics

- Visibility into IBM DB2 Analytics Accelerator (IDAA) delivering Enterprise-wide improvements
 - Maximize organization's ROI from appliances
- Savings with IMS Application Trace Facility replacing near term history.
 - Uses 24% less CPU than OM 4.2 running ATF
- Increased visibility outside z platform for common WebSphere MQ metrics.



Benefits:

- Save up to 75% of time needed to find problems
- Up to 73% of CICS SLA processing off-loaded
- Reduce fix times from 90 minutes to 2 minutes

OMEGAMON V5.1 Monitoring and Management Family



IBM z/OS Storage Management Portfolio provides controls to support cloud and decrease costs

- Improve Availability by finding problems before they become outages
 - Precise alerts and automated actions
- Save time by maximizing operations efficiency
 - Reduce time to audit
 - Maintenance of online subsystems
- Increase productivity through storage software integration
 - Integrated solution
 - Break down operations silos



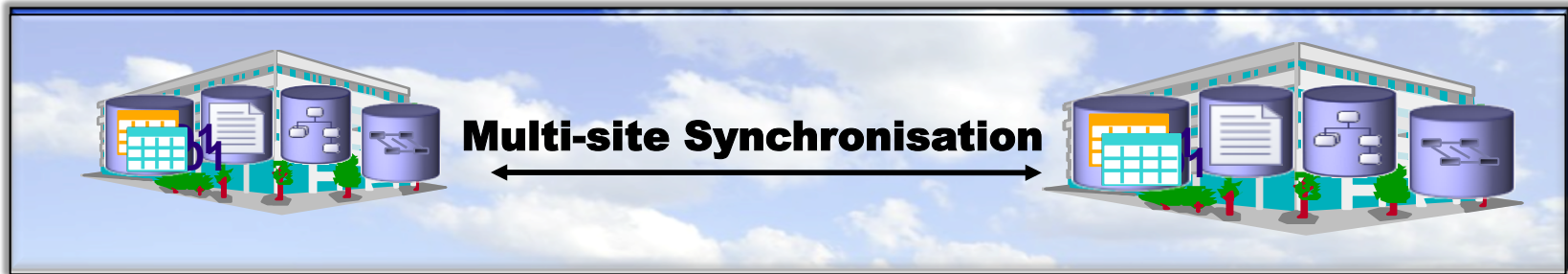
Benefits:

- Maximize efficiency of HSM environment
- Lower CPU operating cost of HSM
- Increase availability of DASD storage, Catalogs, and HSM

Tivoli Advanced Storage Management Suite for z/OS



Smarter Infrastructure automation enables Cloud Availability and Disaster Recover with GDPS Active/Active



GDPS Active/Active Support

Improved disaster recovery and maintenance with software-based active synchronization to external site

Benefits:

Ensure resiliency and availability of critical business operations with recovery time objective of less than one minute

- Enhanced IBM NetView for z/OS
- Tivoli System Automation for z/OS

FIDUCIA banks: Exploiting System automation to increase availability on System z



Business Challenge:

- Improve availability in their mainframe environment by adding a system automation solution
- Reducing the risk that unplanned outages could threaten availability

Software Solution:

- Tivoli System Automation for z/OS provides policy based automation capabilities
- NetView automated operations so that System z can run almost completely unattended

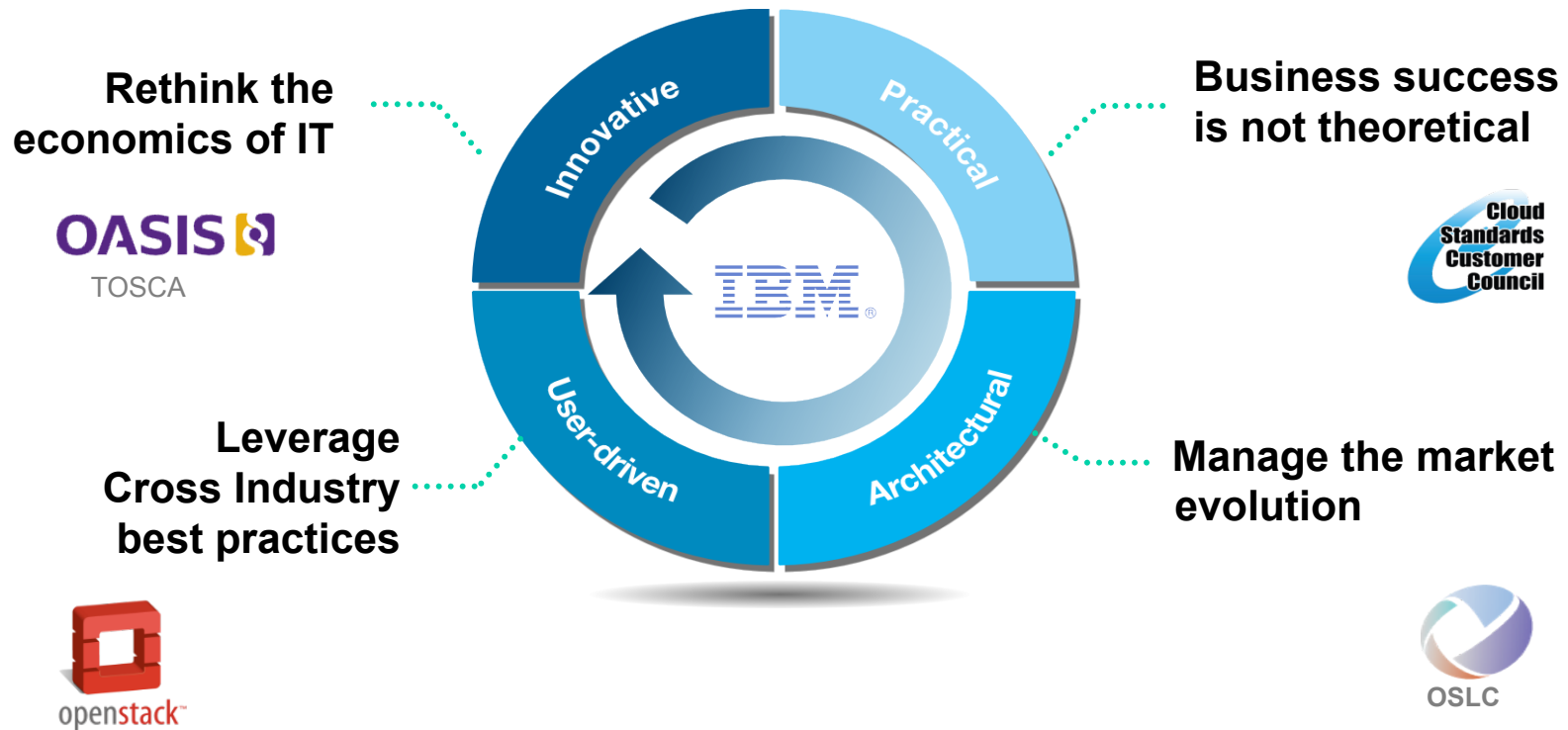
Business Results

- *Helps to ensure high availability in case of faults or outages*
- *Centralizes system administration and message management*
- *Enables smooth integration with other Tivoli products*

"The IBM system automation solution helps us deliver the high-availability services our customers expect." FIDUCIA IT AG

A Smarter Approach to Interoperability in the Cloud

Standards-based. Flexible. Customer driven.



Improved Visualization Services & Custom Dashboards

Solution Views



Mobile Views



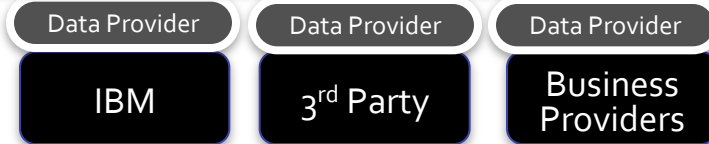
Customized Views



Widgets for Desktop

Widgets for Mobile (New)

Drag & Drop Page Creation



“...can reduce the integration costs of an average project with 4 integrations by 33%, and the average time to develop an integration by 75% ...”



“DASH is incredibly clean and efficient to use. It was very intuitive and I’m excited for the future of dash boarding and visualization.”



“...This can reduce the time required to maintain these connections by 80% and easily save over \$10,000 a year per linked product”



Learn more with Service Management Connect

Online community that connects you to the future of service management

Connect. Learn. Try. Share.

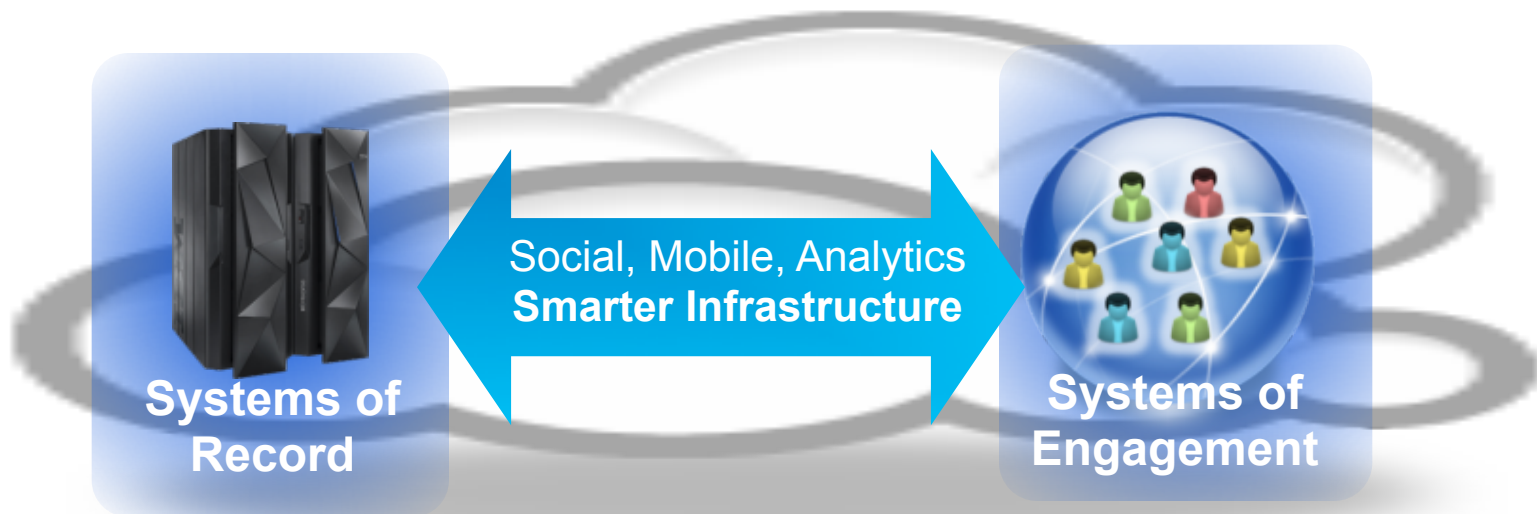
- Transparent development
- Product roadmaps
- Code downloads and demos
- Access to experts
 - Forums
 - Blogs
 - Wikis
- Best practices
- Submit requirements
- Influence design and solutions



<http://www.smconnect.net>

System z provides cost savings and workload flexibility in Enterprise Cloud implementations

- SmartCloud open standards includes System z within **fit-for-purpose** framework
- Cloud **workload optimization** benefits from z high availability and security
- Implement Cloud on System z today w/ **Cloud Ready** and move up to SmartCloud





Thank
You