

A decorative graphic in the top left corner consists of several overlapping circles of various colors (yellow, orange, red, purple, blue) that are divided into segments, resembling a stylized sun or a cluster of data points.

IBM System z Technology Summit

Track 5 Session 5

Moving to cloud?

System z provides key capabilities for
optimizing workloads on Private/Hybrid Cloud

Speaker Name and Title

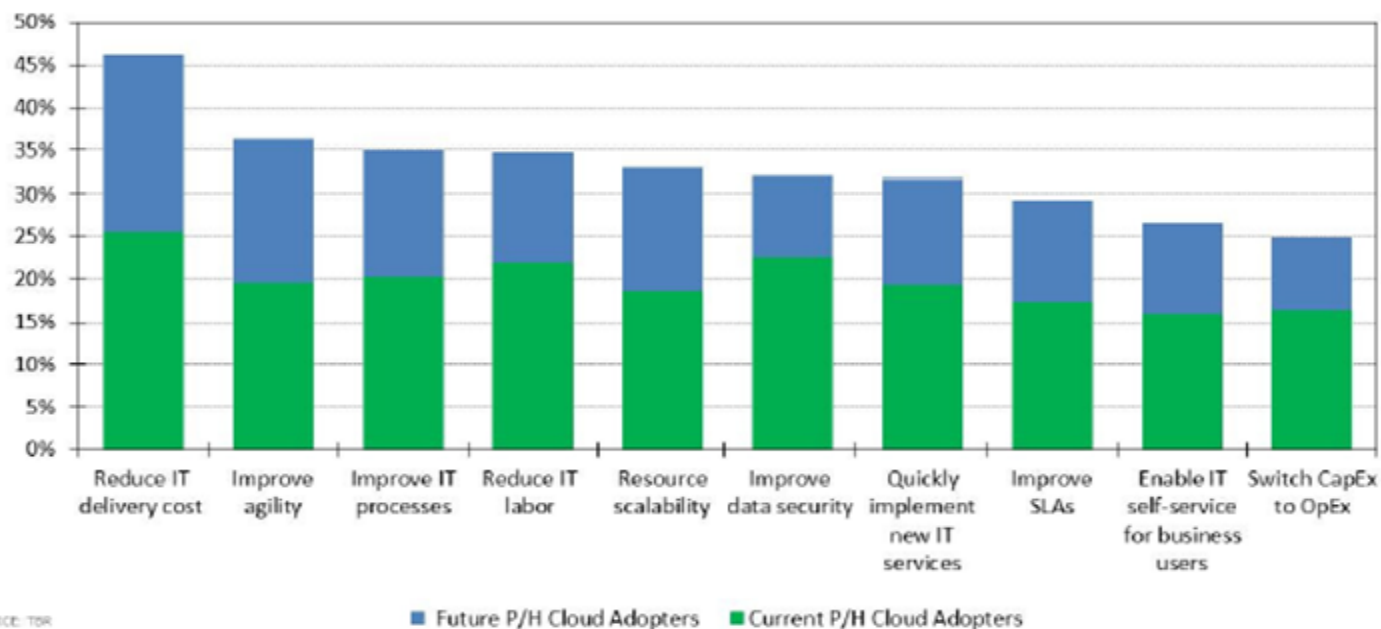


What are we hearing: top cloud adoption drivers

Path to Private/Hybrid Cloud Purchasing



Purchasing Drivers for Adopters and Future Adopters of Private/Hybrid Cloud



SOURCE: TBR
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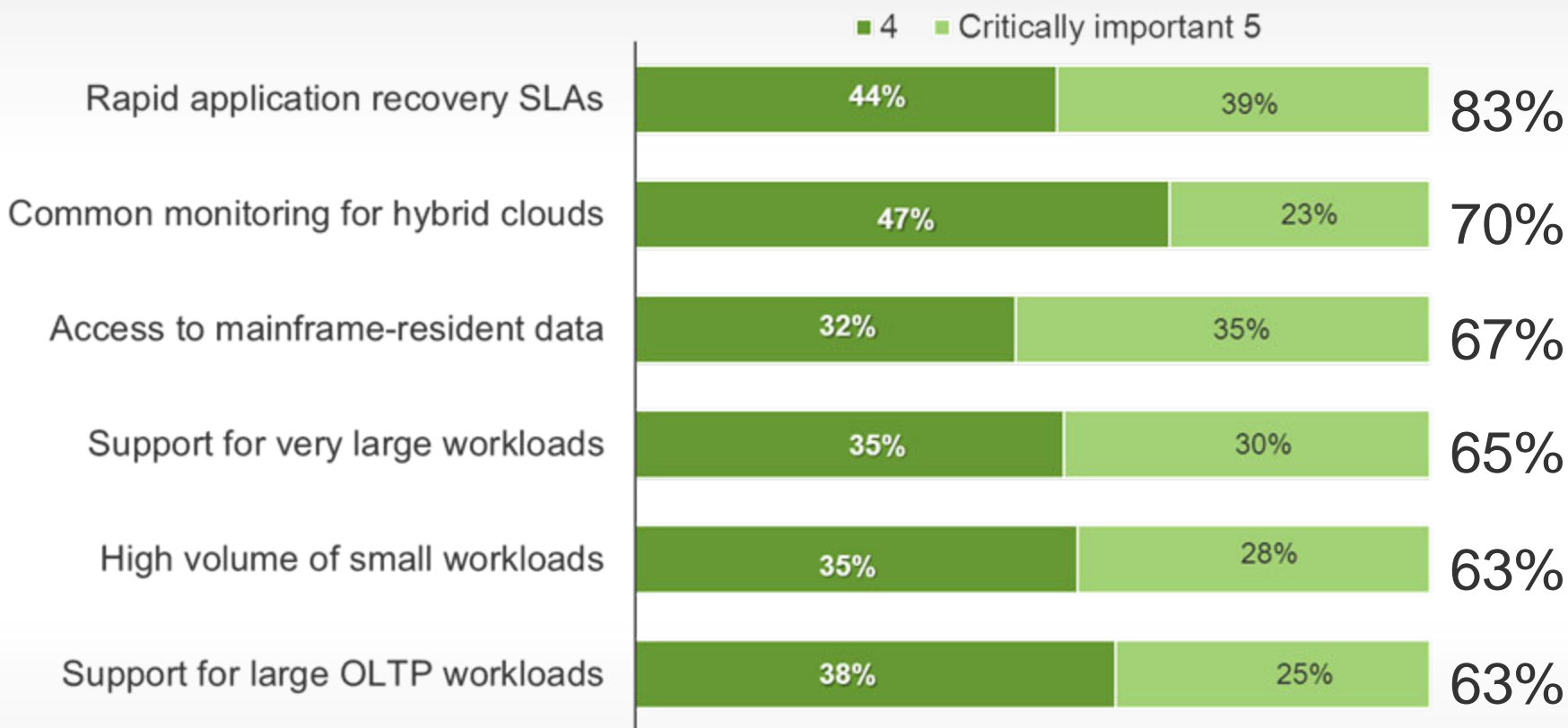
 **Reduce IT Delivery Cost**

- **Improve Agility**
- **Improve IT processes**

Source: TBR Private/Hybrid Workload Adoption Report, 2012

Forrester shows importance of mainframe infrastructure services in support of cloud workloads

How important is it for your cloud platform to have the following *workload* characteristics? (Top 6 factors)

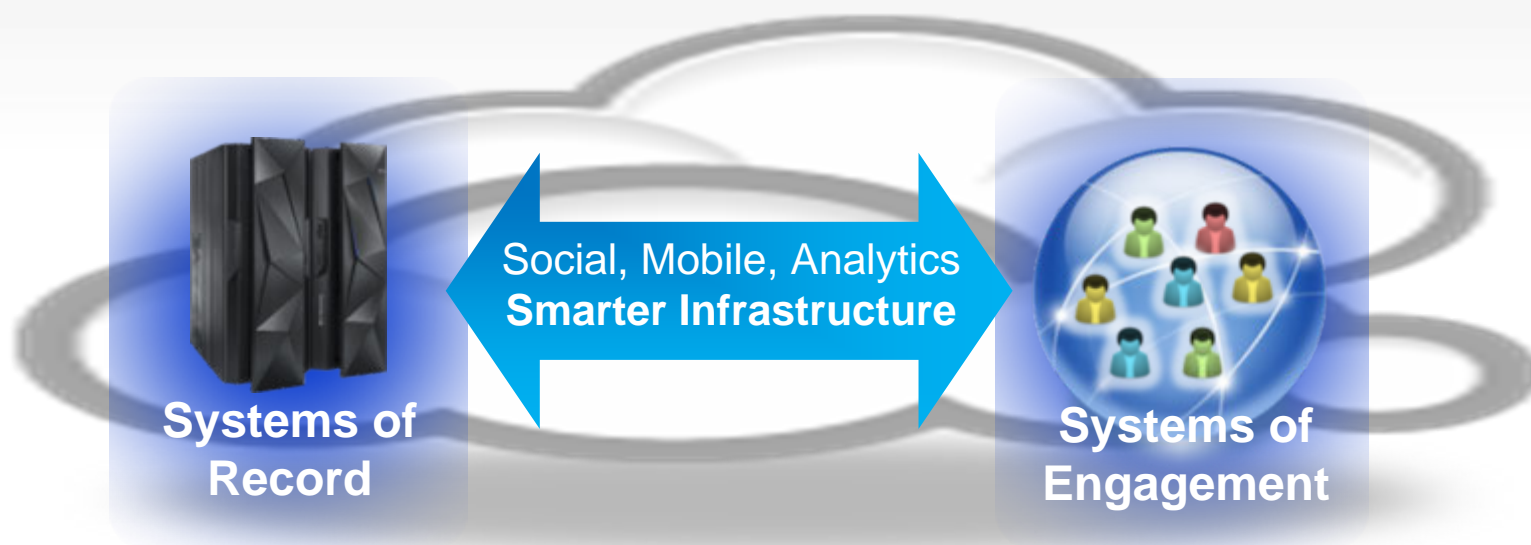


Base: 200 North American and European hardware and infrastructure decision-makers

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, October, 2012

Rapid growth of next generation technologies supported seamlessly on zEnterprise

System z scaling model and security to manage and optimize both



- Business Transactions
- Quality of Service
- Command & Control
- Facts and data “source of truth”
- z/OS

- Mobile and Social
- Dynamic
- Interactions and Collaboration
- Insight, trends, analytics
- Linux on System z



Credit Union Systems for Brazil (Sicoob) avoids \$1.5M in annual costs with IBM mainframe cloud consolidation



Business Challenge:

- Goal of being primary provider of financial services to members
- Needed flexible, secure and scalable IT infrastructure to support reliable 24/7 service and mobile access.

Solution:

- Private System z cloud running 300 production environments
- Replacing distributed, Intel processor-based servers with Linux on z virtual servers

Business Results:

- Avoid \$1.5m per year in energy costs, while growing 600%

“We grew by nearly 600 percent; Internet banking grew by 200 percent; for mobile solutions, growth was 600 percent. It would not have been possible to support this growth without IBM System z.”



Cloud on System z key to supporting new mobile and analytics workloads and applications



Cloud

- Performance, security, high availability and disaster recovery
- Data protection and regulatory compliance
- Ability to quickly and easily provision and orchestrate

Mobile



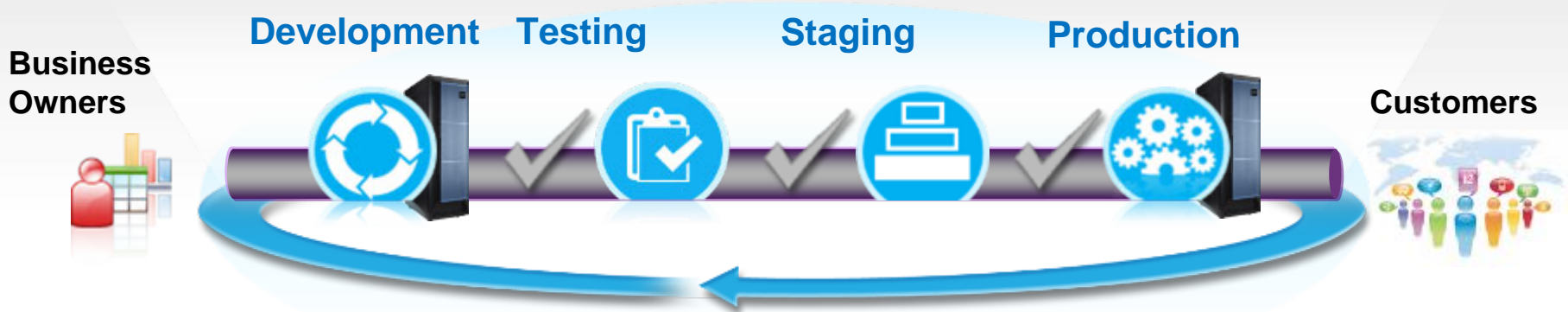
- Mobile workloads require security and high availability
- Increased mobile business data access and complexity
- Drives Scale-up and Scale-out Enterprise challenges

Analytics



- Complex, non-traditional data require enterprise-wide data management
- Requires fast, easy heterogeneous data access

System z supports quickly changing business requirements for integrated development and operations



- Ensure applications production-ready throughout lifecycle
- Applications released at any time while minimizing rollback due to quality

- **Inexpensive, isolated, development and test environments with cloud on z**

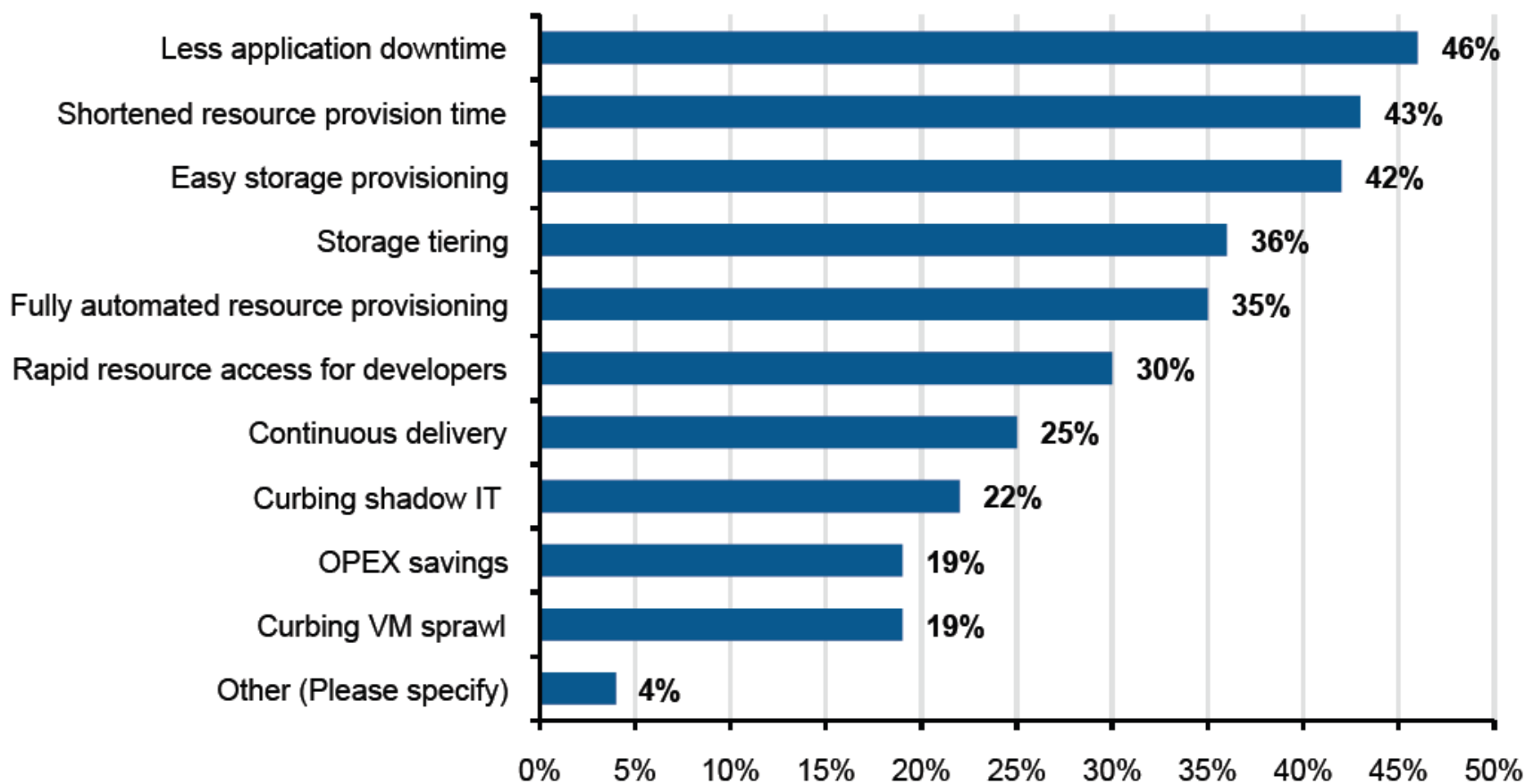
- Rational Dev and Test Environment
- SmartCloud APM

- **Automate consistent build, configure, and deploy processes across all stages**

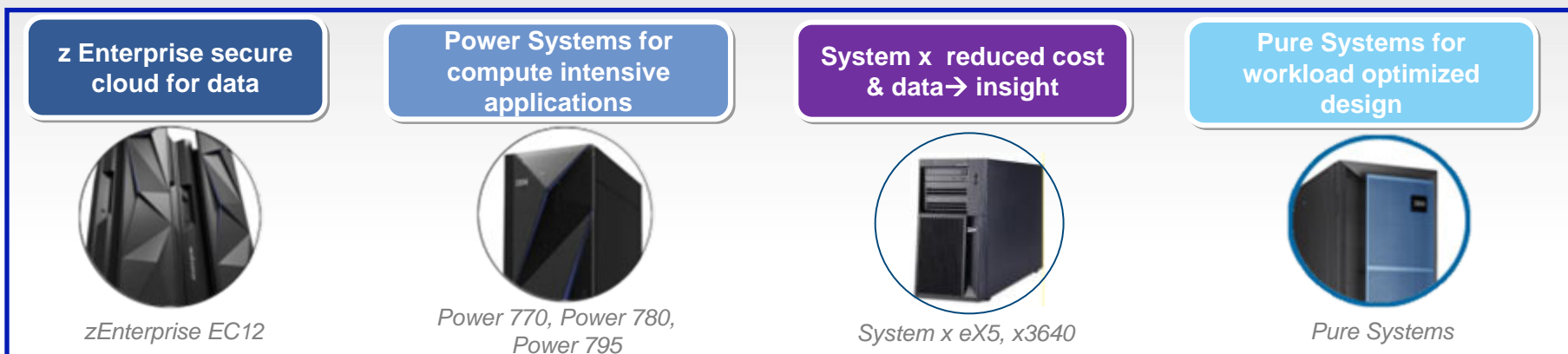
- Rational Team Concert
- System Automation for Multiplatform
- uDeploy

To achieve cloud goals requires improvements in workload monitoring, management and automation

What were the key strategic goals of your private cloud?



IBM offers hybrid/private cloud across platforms with open “fit for purpose” approach



Flexibility to choose platform that meets business requirements

- Management tools are **consistent** and **interoperable** across platforms
- Open standards approach avoids vendor lock-in
- Common tools translate to low learning curve

Benefits:

- Reduced administration costs and increased staff productivity
- Lower total cost of ownership including software licensing savings
- Decreased risk with improved automation and workload consolidation



Nationwide Insurance cuts costs with smart workload consolidation of Cloud on System z



Business Challenge:

- 3,000 distributed servers inefficient and costly. 80-90% capacity unused, software licenses on every server
- Need to standardize development in Fit-for-Purpose model
 - Take advantage of best platform that met characteristics
- Monitoring/capacity management spans x, z and p based on SLA

Solution description:

Consolidated distributed servers to Linux virtual servers running WAS, DB2, and z/VM on System z creating a multi-platform private cloud optimized for all its different workloads

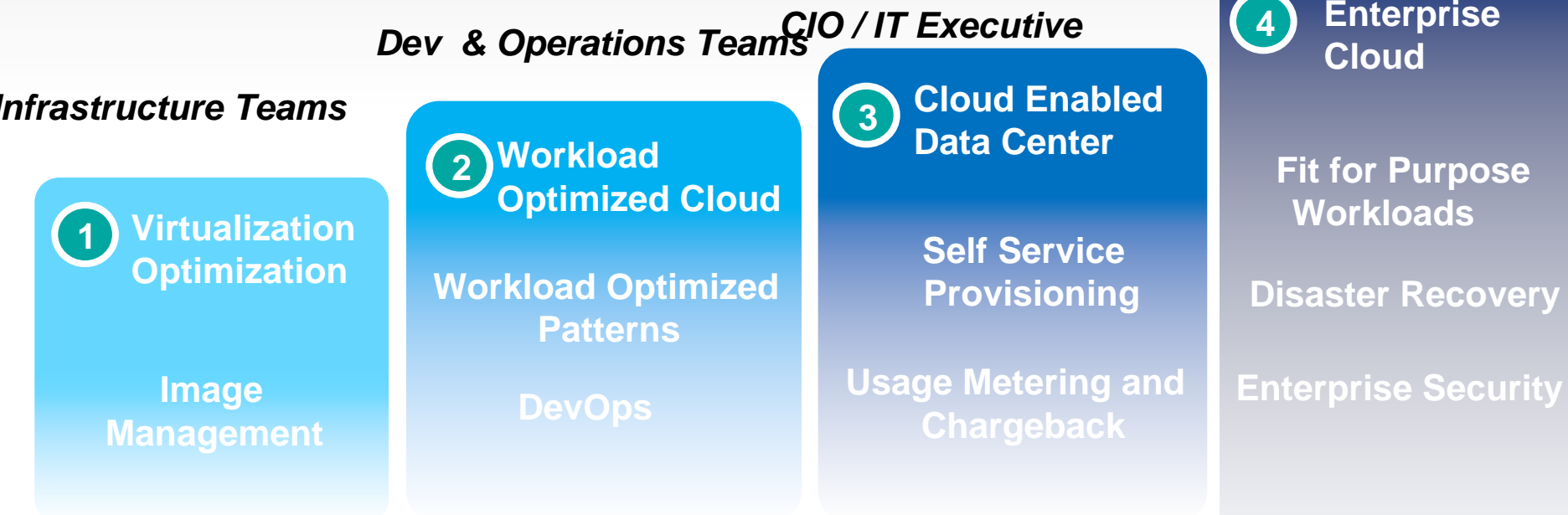
Customer Value:

- Application Development
- 80 percent reduction in power, cooling and floor space requirements

“The creation of a private cloud built around the z196 servers supports our business transformation goals by enabling the rapid, seamless deployment of new computing resources to meet emerging requirements,” Jim Tussing, CTO for Operations, Nationwide

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

Customers can move across roadmap as business requirements grow



Common Cloud platform built on an open standards reference model

This block contains logos for the open standards reference model: Cloud Standards Customer Council, ISO (International Organization for Standardization), W3C, openstack (Cloud Software), OASIS (Advancing open standards for the information society), and IBM Business Partner.



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 quickly
- Improve productivity with user self-service portal



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

Cloud 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 **consolidates 59 development & test labs into 6.**
- Increased utilization by **increasing VM density by 58%**



Cloud on System z workload backup/recovery with Tivoli Storage Manager Extended Edition

Cloud Backup/Recovery



Performance: High-performance, scalable backups and restores that minimize network traffic .

Disaster recovery: Performs automated, scheduled asynchronous replication of backup data and metadata

Flexibility: Data protection and disaster recovery for more than 500 different disk, tape and virtual tape storage

Scalability and reliability Management of up to four billion data objects on single server architecture built on IBM DB2®

High Availability of workloads key for Cloud on z provided by System Automation for Multiplatform

Cloud Automation



- Initiates, executes and coordinates automated starting, stopping, restarting of Cloud workloads
- Delivers advanced, goal-driven policy-based automation to simplify operational Cloud management
- Provides plug-and-play policy modules allowing out-of-the-box failure detection and recovery
- Cloud Automation includes workflows and monitoring to detect failures and restart workloads on another system as needed



Track, allocate and report resource usage accurately including chargeback

Cloud Cost Management



Assess shared computing resource usage

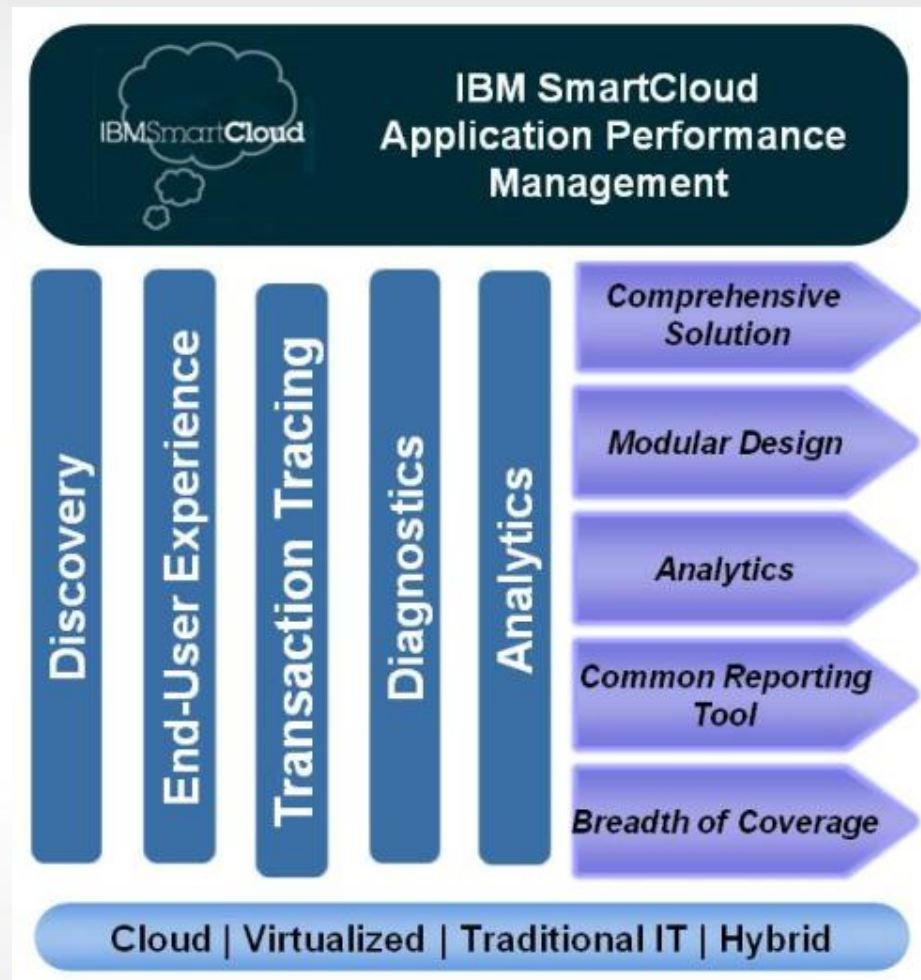
- Insights into relationships between virtualized and physical IT assets
- Usage metering coverage to help determine costs based on allocation and utilization.
- End user visibility into cost implications of services requesting .
- Mechanism for chargeback with accurate metering and cost rating tool
- Integrates secure cloud usage reporting with the cloud provisioning and management so users can manage infrastructure costs



Intelligently manage Cloud infrastructures across heterogeneous platforms

SmartCloud APM

- Comprehensive application/workload solution
- Modular design to get started quickly and add capabilities as needed.
- Analytics to improve capacity utilization and optimize performance
- Common reporting tool, based on Cognos, makes reporting simple and easy to customize
- Single trusted source of information for accurate and fast problem diagnostics



System z Cloud Services provides Open Standards capabilities supporting critical Cloud workloads

"IBM currently provides a Cloud Ready for Linux on System z solution. IBM intends to add additional Linux on System z Cloud support built on z/VM V6.3 and Open Stack, including SmartCloud Orchestration and Monitoring."

Orchestration Services:

- Coordination of complex tasks and workflows
- Leverage existing skills, processes and technology artifacts

Platform Services:

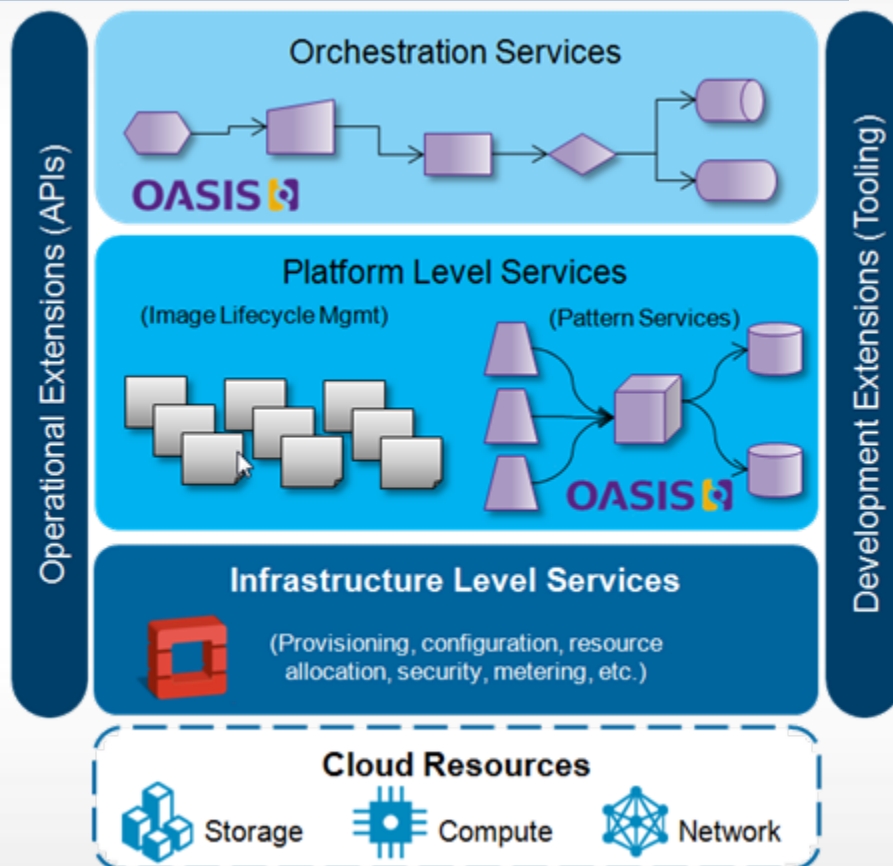
- Simplifies deployment and lifecycle management of middleware and application patterns

Infrastructure Services:

- Highly flexible, scalable infrastructure on heterogeneous resources

Extensibility:

- Pre-built images, patterns, process and configuration automation





Manage all components of Data Center Lifecycle with
Cloud based on open standards fit for purpose approach

Service Orchestration



Resource Management
Onboard, provision, manage
CPU, Storage and Network

Workload Management
Workload aware placement,
optimization and operation

Service Management
Manage the lifecycle of
business applications

City/County of Honolulu creates a customized cloud reducing licensing costs by up to 68 percent



Business Challenge:

- Increase government transparency by providing useful, timely data to citizens.
- Improve citizen involvement and efficiency of city operations

Software Solution:

- System z customized cloud with Linux on IFLs
- Maximo Asset Management, OMEGAMON for z/OS and CICS, Workload Scheduler and Tivoli Storage Manager

Business Results:

- Reduced application deployment time from one week to only hours
- Lowered licensing costs for one database by 68 percent
- Enabled creation of new property tax appraisal system **and increased tax revenue by USD\$1.4 million in just three months**

"Working with IBM enabled us to take an innovative approach. We were able to get things up and running quickly." - Gordon J. Bruce, CIO of IT, City/County of Honolulu

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

Key Takeaways



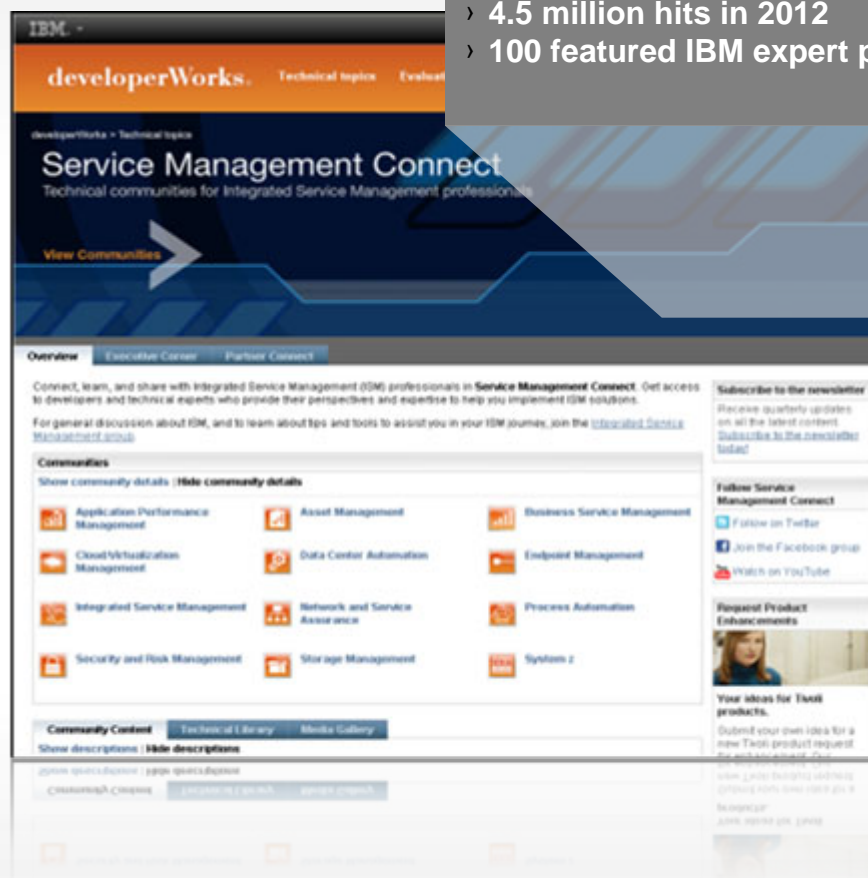
- Cloud on System z based on open standards fits within overall IBM **fit-for-purpose** framework
- Cloud **workload optimization** require System z high availability and security
- Implement Cloud on System z today w/ **Cloud Ready** and move to broader Cloud Orchestration

Service Management Connect

Connecting future of service management

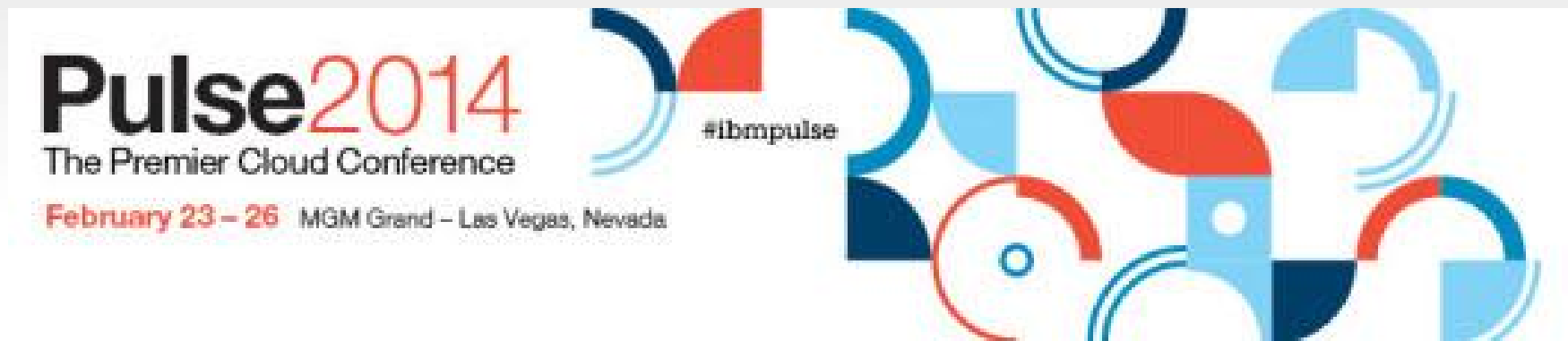
- Transparent development
- Product roadmaps
- Code downloads and demos
- Access to the System z experts
 - Forums
 - Blogs
 - Wikis
- Best practices
- Submit requirements

- › 250+ System z blog entries from the IBM experts
- › 4.5 million hits in 2012
- › 100 featured IBM expert profiles





Learn more about cloud on System z at Pulse 2014



- System z track: Over 40 sessions
 - Customer, Analyst and Business Partner Sessions
- Meet the Experts
- Demos and Hands on Labs

<http://www-01.ibm.com/software/os/systemz/pulse/index.html>



Thank You

**Executive presentation are available
for downloading at**

<http://www-01.ibm.com/software/os/systemz/itsm/>