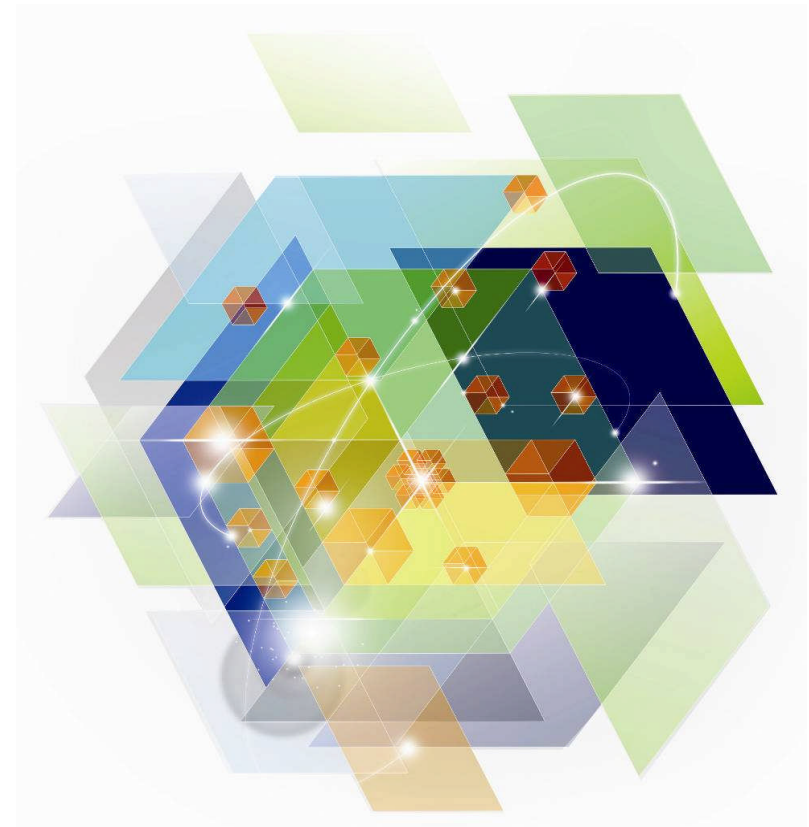# Smarter Computing with System z

Ray Jones, VP System z Software,
IBM Software Group

June 5, 2012

RE-THINK
the Impossible

IBM zEnterprise – Freedom through Design

IBM

Today

Technology is king…

IBM

The CIO role holds even more importance

Business needs and expectations drive the CIO's mandate to use technology

58% — CIOs report their organizations have largely integrated business and technology to innovate
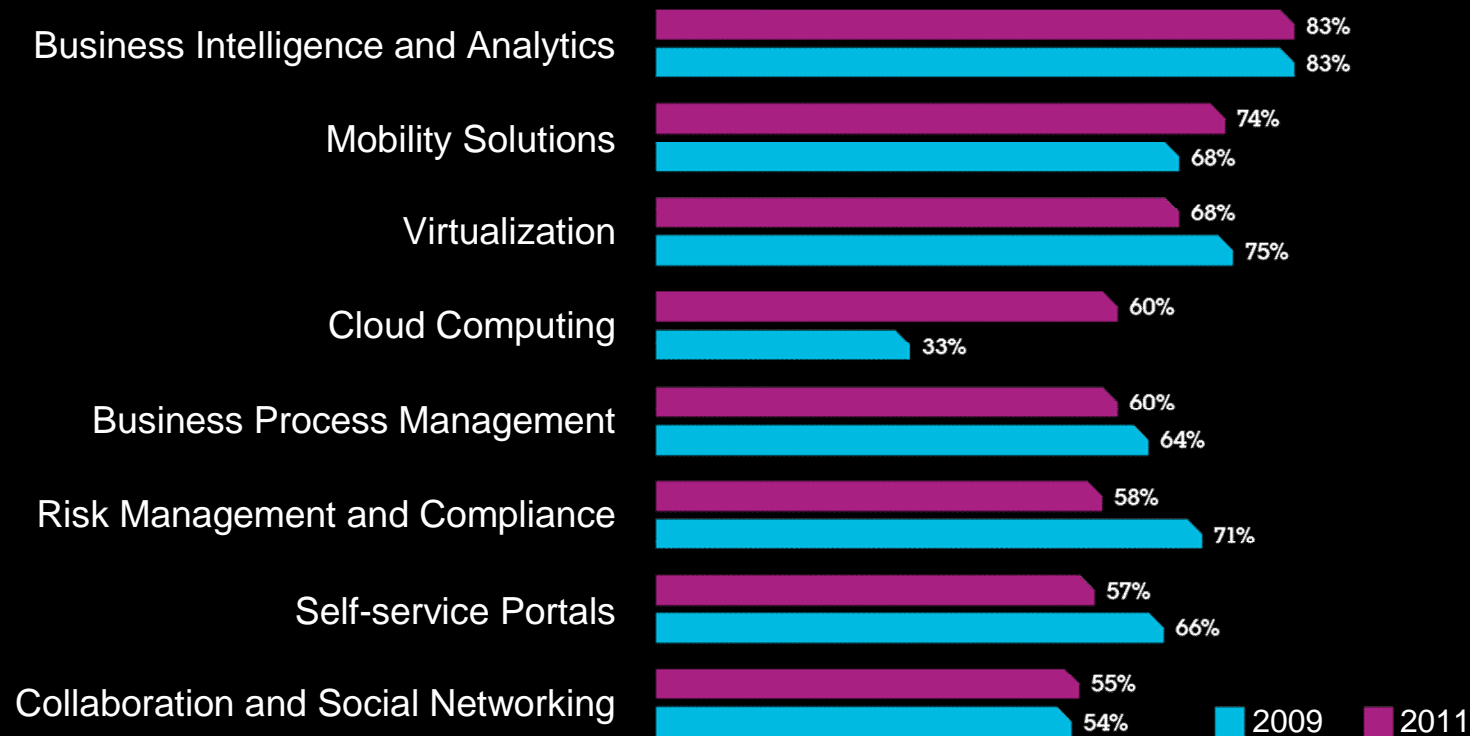
68% — Senior management would rank technology as totally critical to the success of the business

IBM

CIO visionary plans are evolving

Most important visionary plan elements
(Interviewed CIOs could select as many as they wanted)

Element	2009	2011
Business Intelligence and Analytics	83%	83%
Mobility Solutions	68%	74%
Virtualization	75%	68%
Cloud Computing	33%	60%
Business Process Management	64%	60%
Risk Management and Compliance	71%	58%
Self-service Portals	66%	57%
Collaboration and Social Networking	54%	55%

2009 2011

IBM

The inefficiencies of traditional computing get in the way

More than 70%

of budgets on average is spent on ops and maintenance – and this percentage is growing[2]

2/3 of companies

go over schedule on their project/ solution deployments[3]

IT complexity is doubling

every two years at its current pace[1]

"Our IT systems have become complex and difficult to manage, and as a consequence IT is increasingly finding itself in the position of being a barrier to innovation rather than an enabler of it."

– The Bathwick Group, The road to Smarter Computing

1 Enterprise Systems Journal, "5 Best Practices for Reducing IT Complexity")
2 IDC Analyst Matt Eastwood, IDC Directions Presentation, 2011
3 IBM Market Intelligence Time-To-Value Study, National Analysts, November 2011

IBM

Top 10 Things
you did not know System z can do…

Re-Think the Impossible

IBM

Transactional Processing

Before…
Mainframe used for batch and online transaction processing only

Today…

- Transactional processing has included web services , business rules, etc

- Millions transactions per day with less than 1 second response is the norm

10

Less than **1 second** response time

New! CICS Transaction Server for z/OS Trial Version

IBM

Transactional Processing

10

Garanti Technology
Second largest bank in Turkey, used System z with CICS and DB2 for z/OS to deliver over 200 million transaction/day of banking services 24/7

0.06 second response time | **200 million** transactions

IBM

Security

Before…
Mainframes were reliable and secure

Today…

- System z is 99.999% reliable and to our knowledge has never been hacked

- It is the ONLY server with EAL5+ security

- Cryptographic coprocessors and accelerators that are individually specialized to address various encryption needs

- Supports Elliptic Curve Cryptography (ECC), an emerging public-key algorithm – most advanced security in the marketplace

- Supports key ANSI and ISO standards for the banking and finance industry

99.999% reliable and secure

IBM

Security

Payment Solution Providers

Consolidated its entire IT infrastructure on System z with information management software to support key business operations

Up to 35% savings in IT costs over HP servers with Oracle databases

PCI compliance with highest level security and unmatched scalability

IBM

Integrated Service Management

Before…

- Servers were managed independently

- Management of applications was siloed

Today…

- zEnterprise Unified Resource Manager can now manage both System z and distributed workloads

- Tivoli service management solutions extend the management out to the entire enterprise with a single point of control

- Enhanced Service Management Visibility for decreased Enterprise costs
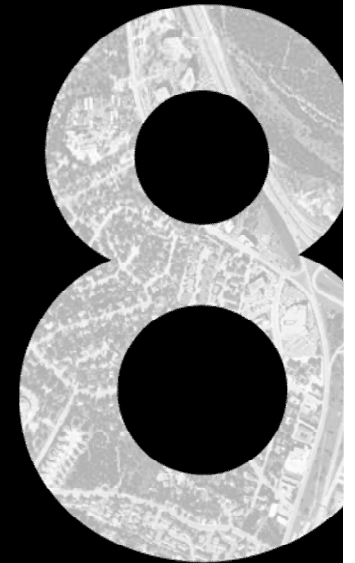
New! OMEGAMON Family

IBM

Integrated Service Management

Electronuclear

automates its backup, archive and recovery
processes from a single point of control

Reduced payroll
processing from
20 to 5 days

90% reduction of
month-end closing time

IBM

Virtualization

Before…

- Mainframe was a virtualized system within itself

Today…

- zEnterprise is a system of systems

- More than 3,000 applications are available for Linux on System z

- Low cost and high efficiency

- zEnterprise supports over 13,000 Virtual Machines per Server and over 100,000 Virtual Machines in a cluster (Ensemble)

New advances with z/VM V6.2

IBM

Virtualization

7

Svenska Handelsbanken

As the oldest company in the Stockholm Stock Exchange, they run hundreds of systems on a single System z, by running Linux, Java, and database workloads on System z

Java workload costs reduced **15% per year**

IBM

Business Rules and Processes

Before…

Rules, Processes, Rules…. only manually, if they existed at all

Today…

- Leverages native z/OS and other data structures to create reusable services

- Monitors processes, other z/OS applications and events, and provides user-customizable dashboards for overall monitoring and KPI-based predictive analytics

- Provides functionality for authoring, testing, analyzing and deploying decision logic used by System z applications

New! Business Rules for z/OS

New! Business Monitor for z/OS

IBM

Business Rules and Processes

Highmark

uses SOA to mesh their systems together to provide unified, real-time access to all of its information

Created a **Center of Excellence** to accelerate the adoption of SOA

IBM

Modern Application Development

Before…

- Development on System z was assembler and procedural languages

- All developers were in one location

Today…

- Many languages are the same for System z and distributed

- Rational tools provide a single unified platform for development - Develop once, distribute to appropriate platforms

- Team collaboration, sharing of code and resources all available through Rational tools

- Compliers optimized for the technology avoiding recoding of applications and optimal **performance**

New! COBOL vNext Beta Compiler

IBM

Integrated Appliances

Before…

Appliances were built manually and often with multiple vendors

Today…

- System z appliances today

    - DataPower XI50 - provides XML hardware acceleration, streamline and secure valuable SOA applications

    - Smart Analytics System - comprehensive data management system consisting of hardware, software and services

    - DB2 Analytics Accelerator - System z and Netezza technologies for complex analytic business needs

Game changer for new workloads

IBM

Integrated Appliances

Zavod za zdravstveno zavarovanje Slovenije (ZZZS)

Replaced its electronic insurance cards with a secured online system that enabled direct access to health insurance information for citizens, medical staff, and insurers

Grown from **400,000 to 1.7 million transactions per day**, with full availability of services and data around the clock

IBM

Data Warehousing

Before…

Data was designed in a silo, mobility of data was not designed for maximum reuse and productivity

Today…

- DB2 10 for z/OS adds unique temporal capabilities to support business and system time within the database itself, making application development and maintenance significantly simpler and more cost effective

- zBX

    - selected IBM POWER7® blades and IBM System x® blades for deploying applications in a multi-tier architecture

    - High-performance optimizers and appliances to accelerate time to insight and reduce cost

    - Dedicated high-performance private network

Over **100** zBX installations

1500+ New Applications from ISVs

New! Support for Windows on zBX

IBM

Data Warehousing

3

Florida Hospital

Moved from a data mining to a full scale data warehousing on System z allowing doctors to share information quickly

High performance 24/7 system

Patients recovering significantly faster

IBM

Cloud Computing

Before…
Mainframes were built for Time Sharing

Today…
- zEnterprise –scalable, shared-everything design coupled with its unique ability to manage a heterogeneous infrastructure give organizations the ability to deploy a robust cloud solution for 50-70% less than a typical x86 scale-out architecture

- Heterogeneous cloud all managed by the Unified Resource Manager

- zLinux and z/VM environments running in seconds

Deploy a cloud solution for **50-70% less**

IBM

Cloud Computing

Using, IFLs, City and County of Honolulu
migrated from a Windows environment to develop a
Cloud environment to offer Software-as-a-service to
other departments

Planning, deployment and maintenance of hardware
and services could be done in **hours vs. weeks**

IBM

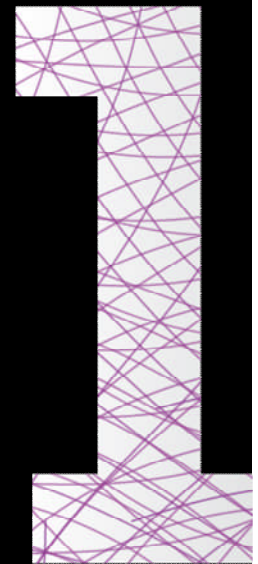# Business Analytics

Before…

Analytics performed through batch data analysis

Today…

- DB2 Analytics Accelerator - Fast, predictable response times for "right-time" analysis in a highly secured environment

- IBM Smart Analytics System – Broad analytics capabilities on a powerful warehouse foundation with IBM server and storage

- COGNOS z/OS - query, reporting, analysis, dashboarding, realtime monitoring

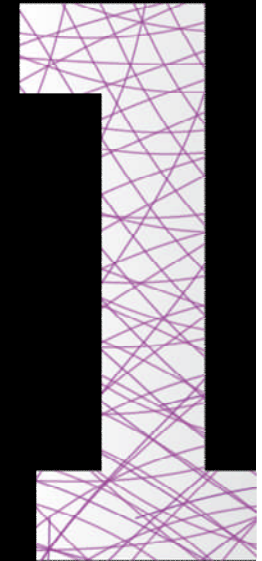queries run up to **80x** faster | **New!** DB2 Analytics Accelerator

Business Analytics

Swiss Re

With 2.5 billion transactions, they use IBM DB2
Analytics Accelerator to develop analytical
reports in minutes which previously took hours

**More capacity allowing to shift workloads to
Netezza technology**

IBM

Re-think the impossible with the value of System z

- Most reliable and fastest system for mission critical workloads

- Most secure system with 99.999% reliability

- Most sophisticated data warehousing and analytics solutions with the fastest query performance in the market

- Unified platform for rapid development of applications

- Only system to enable x86, POWER, and System z applications under a centralized management system

- Ideal platform for a "cloud in a box"

IBM

Thank You