



High-Performance Agility for Business Growth

Connecting Business Processes and Optimizing Your Application Infrastructure

Michael Perera

Vice President

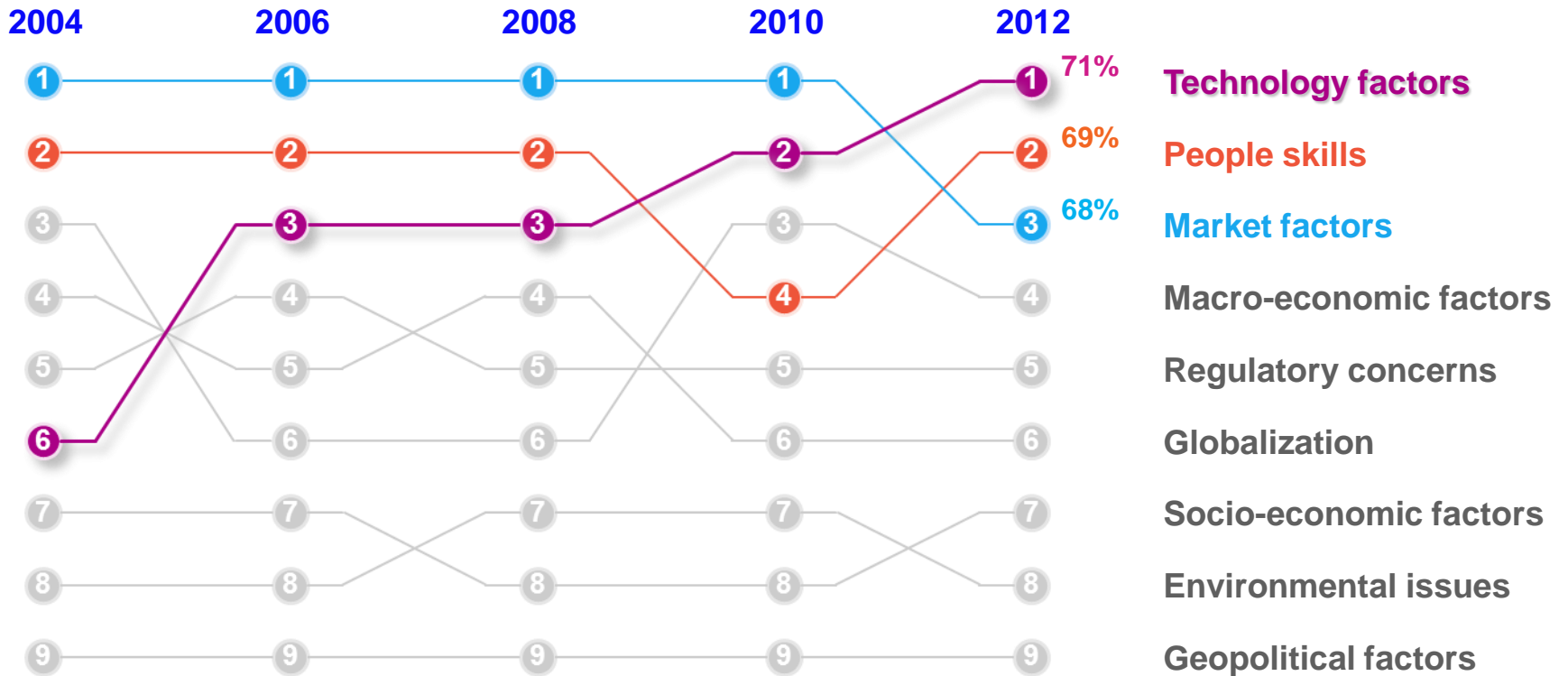
Enterprise Platform Software

IBM Software Group



CEOs Identify Technology as the Most Important External Force Impacting their Organizations and Will be at the Forefront of Driving Change Through 2015...

External forces that will impact the organization



Source: Q1 "What are the most important external forces that will impact your organization over the next 3 to 5 years?"

... While we are Entering a New Era of Computing...



- Continued investment protection
- Increased solution focus
- New business models
- Internet scale operations
- Improved business agility and continuity

... Driving the Need for a Platform that can Address a Variety of Workloads, Business Models and Ever-Changing Market Conditions



Extend.

...applications, processes, decisions and services to engage an ecosystem of innovators and reach new channels, customers and markets.

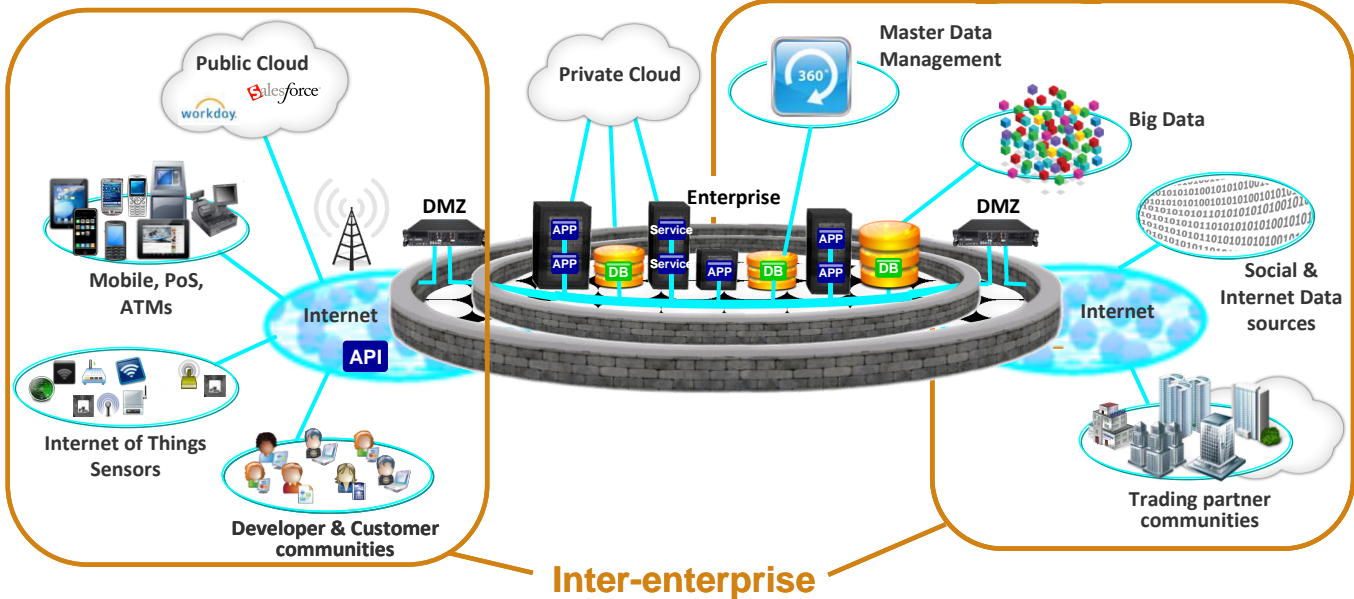
Transact.

with process integrity, scale and speed, regardless of location, device, platform or protocol.

Optimize.

business operations and lifecycle in a changing world with greater visibility, governance, and collaboration.

Extending the Reach of the Enterprise, Creates Many Challenges

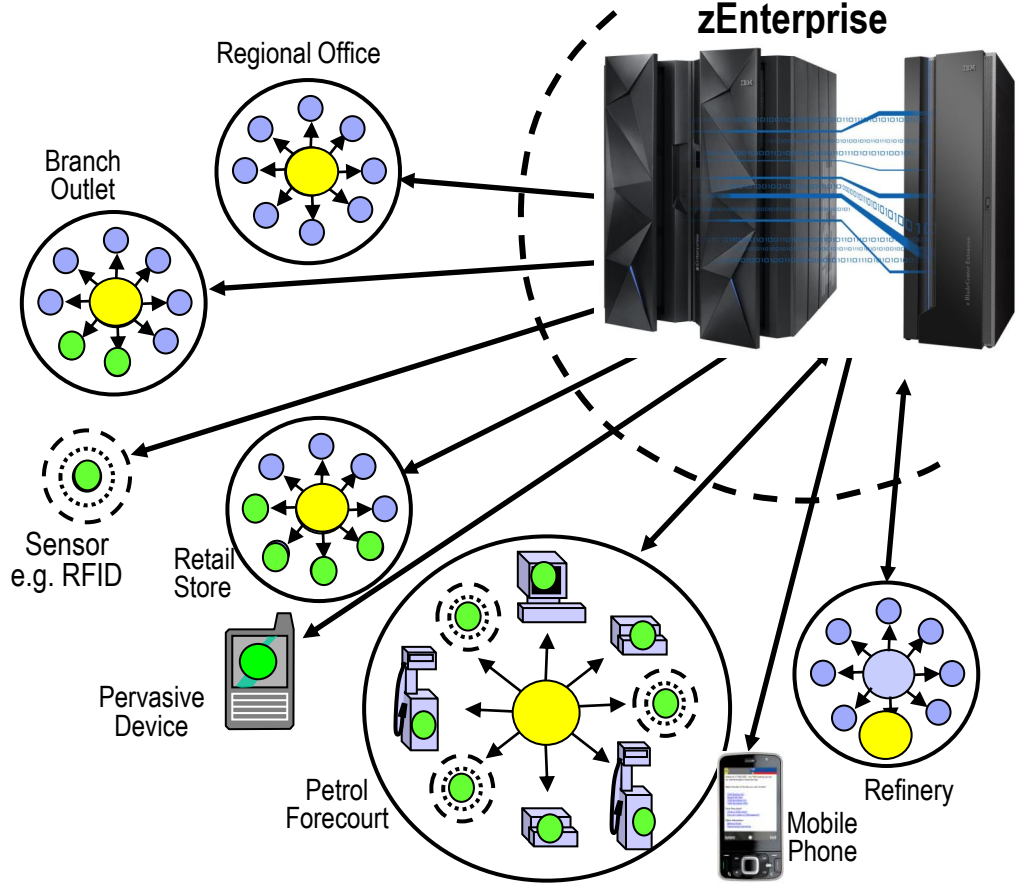


- ### Challenges for Extending the Enterprise
- Ability to connect virtually anything to anywhere
 - Scalability to unprecedented levels
 - Ability to move any type of data through any type of system, device, or environment
 - Need to increase the speed of messaging at lower cost
 - All while maintaining messaging integrity and security

The Value of WebSphere MQ - Connectivity to, from and within zEnterprise

The Best in the Business

- Connects your zEnterprise applications with applications running anywhere else
- Provides a common way to transport data between applications
- Supports a range of reliability, availability and security capabilities
- Transport file data reliably, securely and with full audit and monitoring reporting across your, and other company networks
- Use WebSphere MQ Telemetry V7.1 to reach the wider world of data in a Smarter Planet



Proof Point:

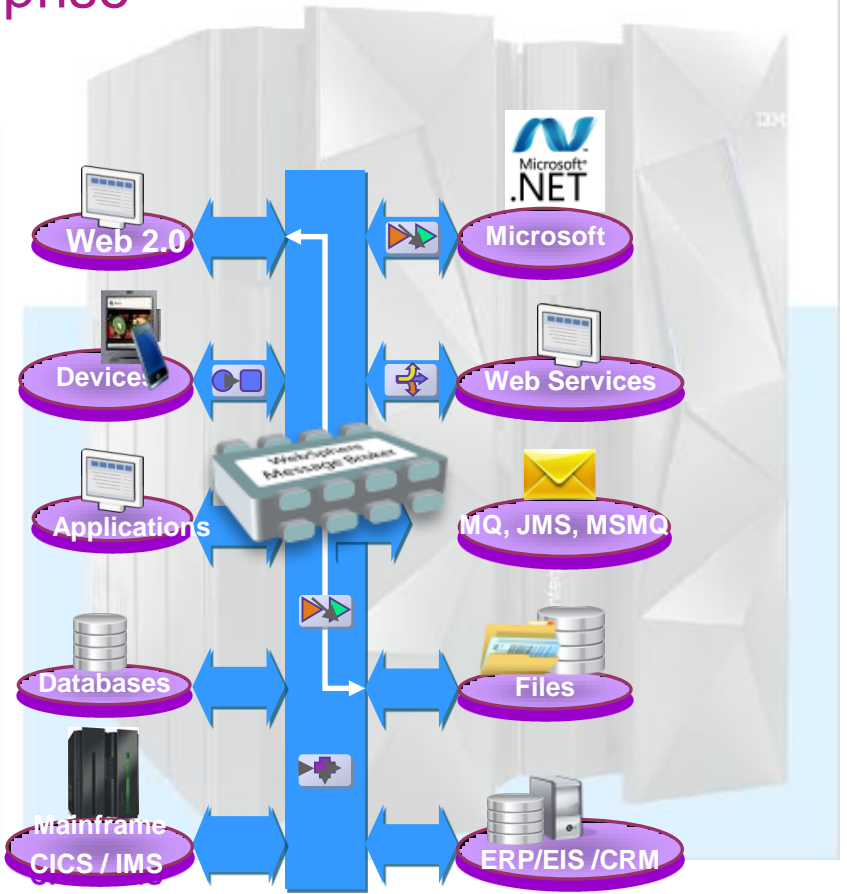


CAIXA, a leading public bank in Brazil, opened a new lottery revenue channel and synergized two of its core businesses: attracting lottery customers to its online banking services and can cross-selling lottery services to its existing online banking customers.

WebSphere Message Broker for zEnterprise

Delivering Universal Connectivity & Integration

- Enhancements for SOA App developers and ESB owners using WebSphere Application Server, Mobile, Data Lineage
- Simple file to message conversions with built-in support for IBM Sterling Connect:Direct
- Record & Replay of data from all sources with ability to view and edit
- Adapter license entitlement inclusive with v8 (SAP, Siebel, PeopleSoft, JDE)
- Comprehensive support for Microsoft .Net applications with integrated development experience with MS Visual Studio



Proof Point:



Developed an IT backbone for large financial institutions (including the **Bank of Japan**) providing an adaptable, reliable and dependable framework for financial institutions

The Best of Both Worlds with WebSphere DataPower XI50 for zEnterprise (XI50z)

Simplifies, Governs and Enhances the security of XML, Web and IT services by providing connectivity, gateway functions, data transformation, protocol bridging and intelligent load distribution.



How is it Different?

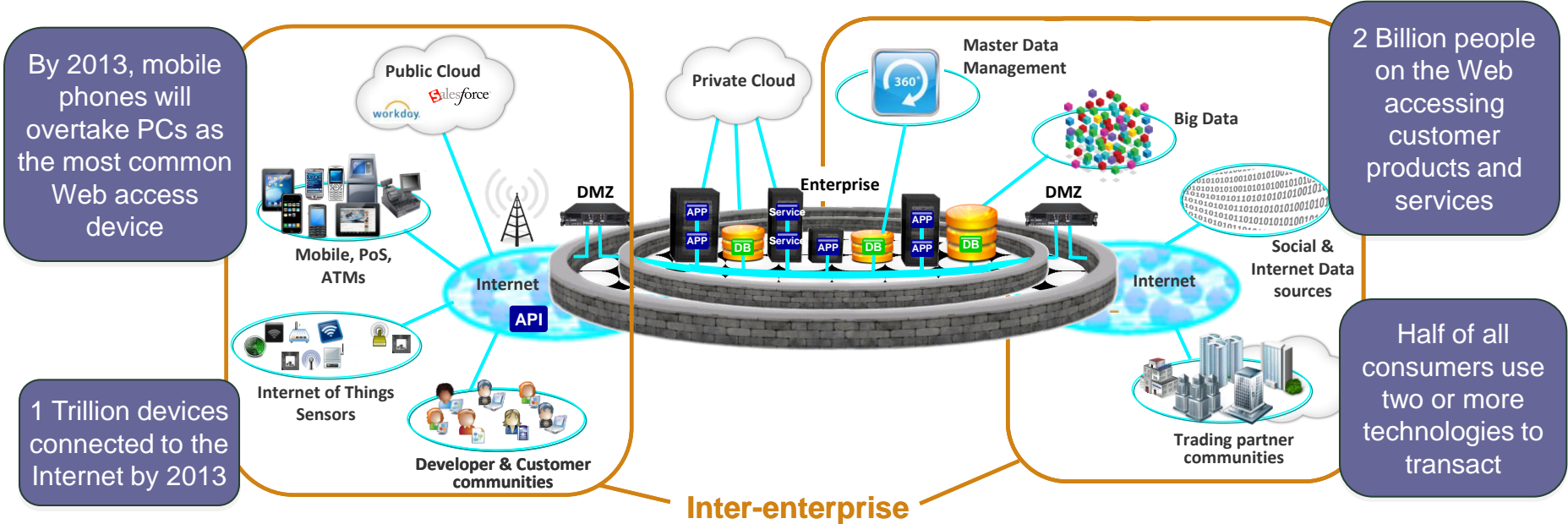
- Security
- Tightly Integrated
- Improved support
- System z packaging
- Operational controls
- Cloud

Proof Point:



Health Insurance Institute of Slovenia, created a highly secure and stable online healthcare insurance application processing **more than 1 million** transactions per day managing confidential patient information

Extending the Reach of the Enterprise, Creates Many Challenges



By 2013, mobile phones will overtake PCs as the most common Web access device

2 Billion people on the Web accessing customer products and services

1 Trillion devices connected to the Internet by 2013

Half of all consumers use two or more technologies to transact

Challenges for Extending the Enterprise

- Ability to connect virtually anything to anywhere
- Scalability to unprecedented levels
- Ability to move any type of data through any type of system, device, or environment
- Need to increase the speed of messaging at lower cost
- All while maintaining messaging integrity and security

The Spectrum of IBM Transaction Processing Capabilities



← **WebSphere Application Server, DB2, MQ** →

Extreme Scale-Out

- Elastic distributed caching, in-memory databases, and XTP/Data Grid applications
- Performance and QOS focused
- Data distributed out, stored in memory

WebSphere eXtreme Scale-
data distributed out, stored in memory

Broad Applicability in the Center

- Extensive standards and language support
- High ISV, application, and skill availability
- Broad platform and database support

WebSphere eXtended Transaction Runtime

TXSeries

WebSphere Transaction Cluster Facility

Extreme Scale-Up

- Optimized for centralized data
- Database options affect scale
- Performance & QOS focused
- Unsurpassed Security

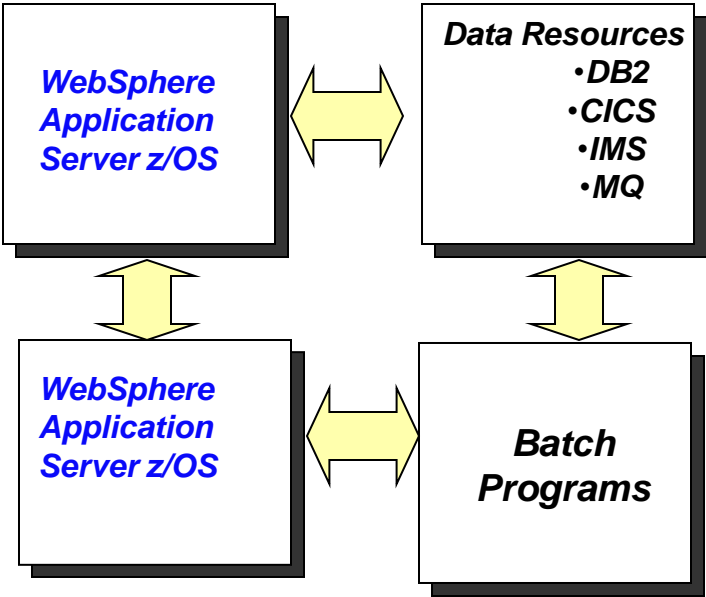
CICS

IMS

z/TPF

Integrate Web/Java Applications to Back End Systems with Collocation

z/OS Operating System Instance



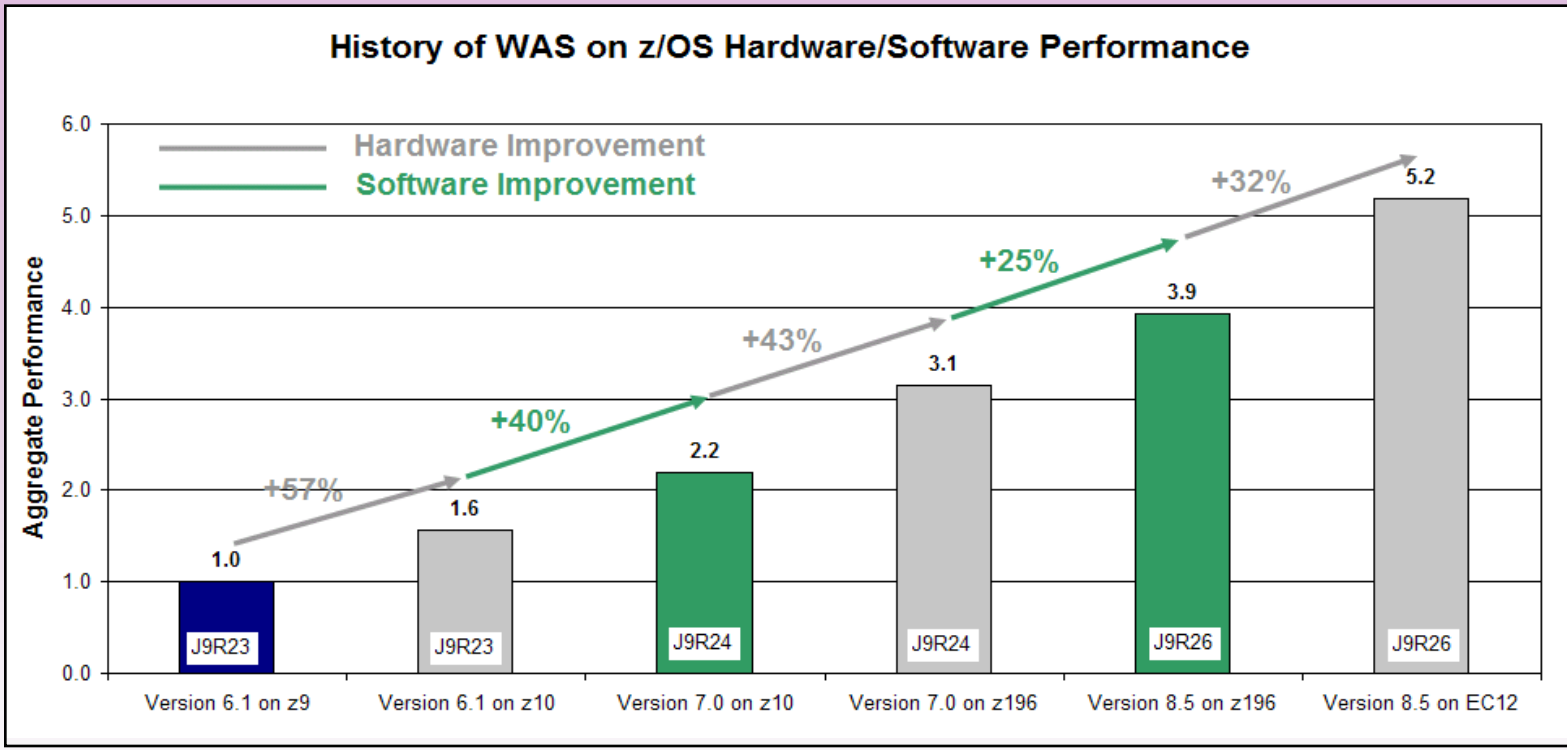
- *Extremely* fast data transfer
- Tightly controlled by z/OS authorization processes
- Eliminate need to serialize and deserialize data and objects
- Eliminate need for encryption overhead
- Propagate several forms of user identity

Efficient -- very low overhead so scalability can be addressed

Secure -- no network, can't be sniffed or hacked

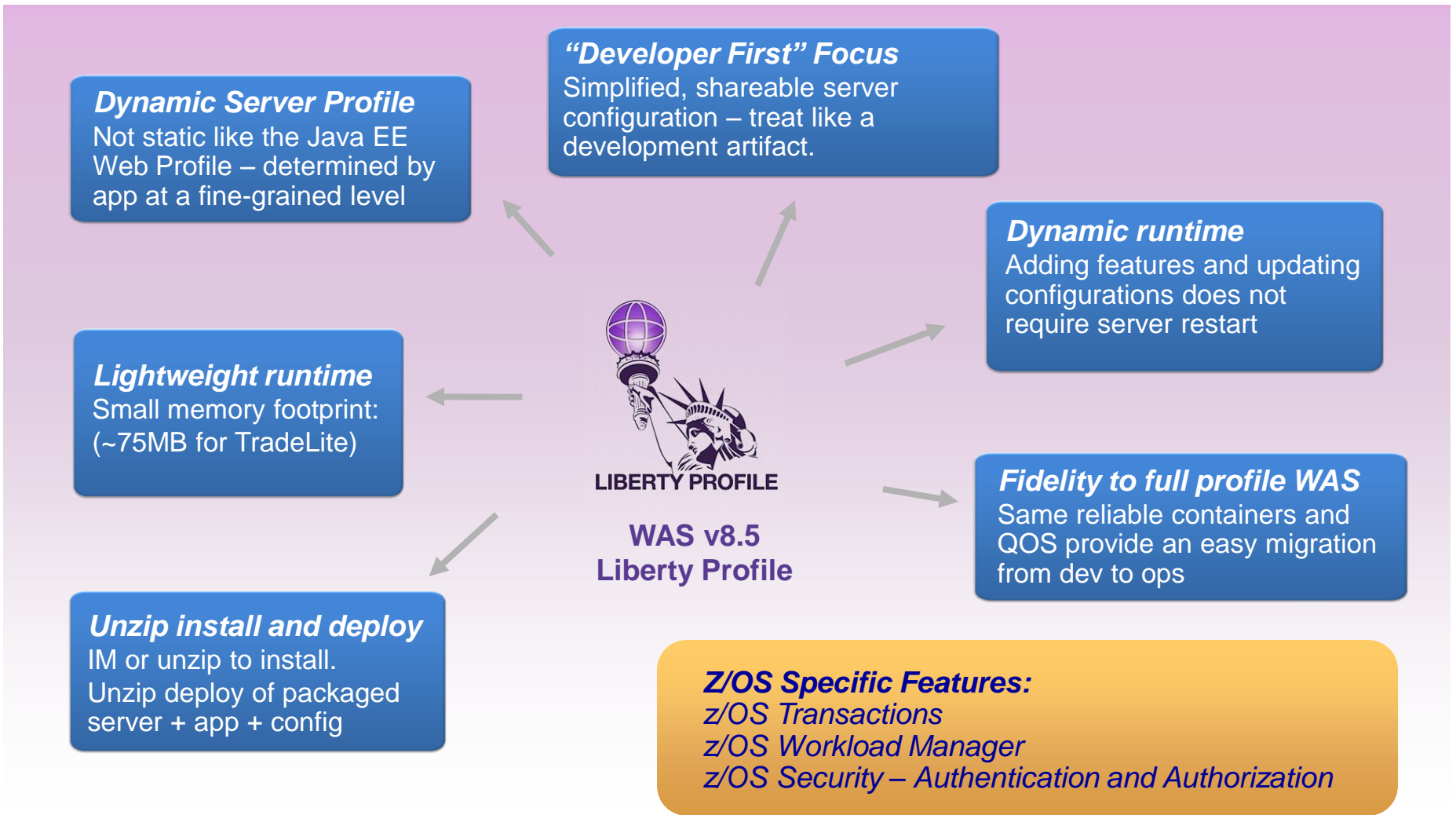
Fast -- for very high volume workloads

WAS on z/OS – 5x Better Performance Compared to 7 Years Ago



Aggregate Hardware, SDK and WAS improvement: WAS 6.1 (Java 5) on z9 to WAS 8.5 (Java 7) on zEC12
(Controlled measurement environment, results may vary)

Accelerate Application Development & Deployment with WebSphere Application Server V8.5 and the Lightweight “Liberty” profile



WebSphere Application Server for z/OS

Consider z/OS if you have...

- Mission critical **Java** applications requiring optimal availability, reliability, and security
- Business services driving high transaction volumes, large numbers of users, **or** unpredictable workloads
- Requirement to modernize **z/OS** applications exposing current applications to the web and exploiting SOA
- Cost reduction requirements including optimizing Total Cost of Ownership
- Need for frequent access to z/OS applications such as CICS, IMS, and batch

Because you will get...

- Exploitation of the most scalable, available, and secure platform in System z and z/OS
- Automated policy based prioritization of workloads to meet business objectives via z/OS Workload Manager
- Seamless integration of legacy batch applications with online Java workloads for incremental modernization
- Reduction in costs via offload of Java workload to zAAP specialty engines and ability to consolidate workload
- Improved performance through WebSphere Optimized Local Adapter (WOLA) in memory high speed access to co-located applications

Proof Point...



Challenge:

- Enhance core applications such as internet home banking to revolutionize the user interface and account management capabilities, while adhering to high availability, scalability and security requirements.

Benefits:

- Leveraged exploitation of zAAP specialty engines for offloading Java workloads to reduce costs and extend general processor capacity.
- The JSF application triples the transaction rate possible when compared to previous rates while consuming less MIPS.

Introducing the New CICS Transaction Server V5.1

Operational Efficiency

- *Greater capacity* - achieve cost savings through consolidation
- *Managed operations* - reduce cost and risk through automation
- *Increased availability* - reduce the need for planned downtime
- *Deeper insight* - Improve decision making and audit readiness

100+
requirements
satisfied!

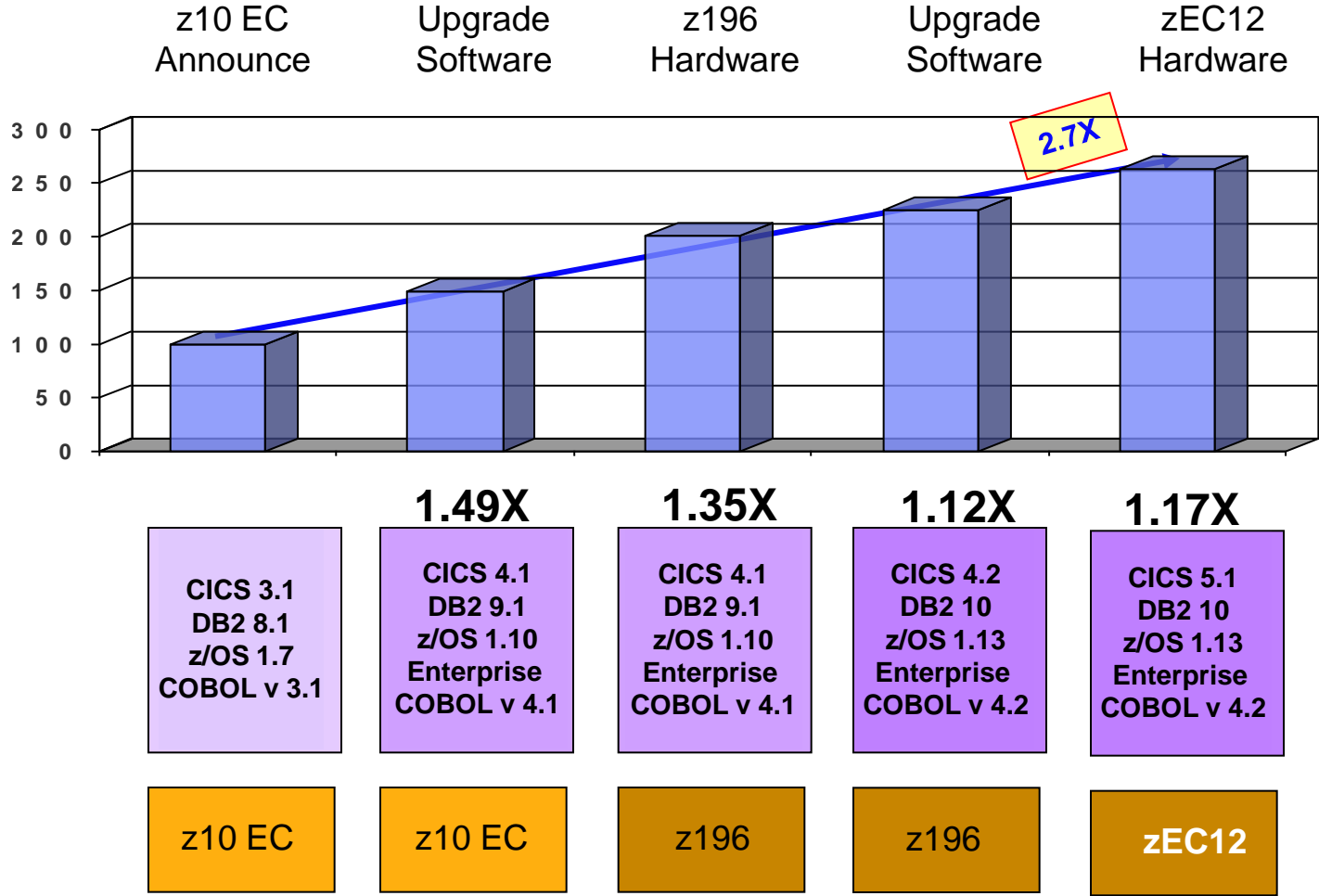
Service Agility

- *First-class applications* - create agile services from existing assets
- *First-class platforms* - create agile service delivery platforms
- *Modern interfaces* - build rich web experiences for critical applications
- *Foundational enhancements* - extend core capabilities

... with Cloud Enablement

consistent with the IBM Cloud Computing strategy
positions customers for the next transformational era in technology
moves towards a cloud oriented service delivery platform

CICS/DB2 - 2.7x Better Performance over the Last 4 Years



Then —————> Now

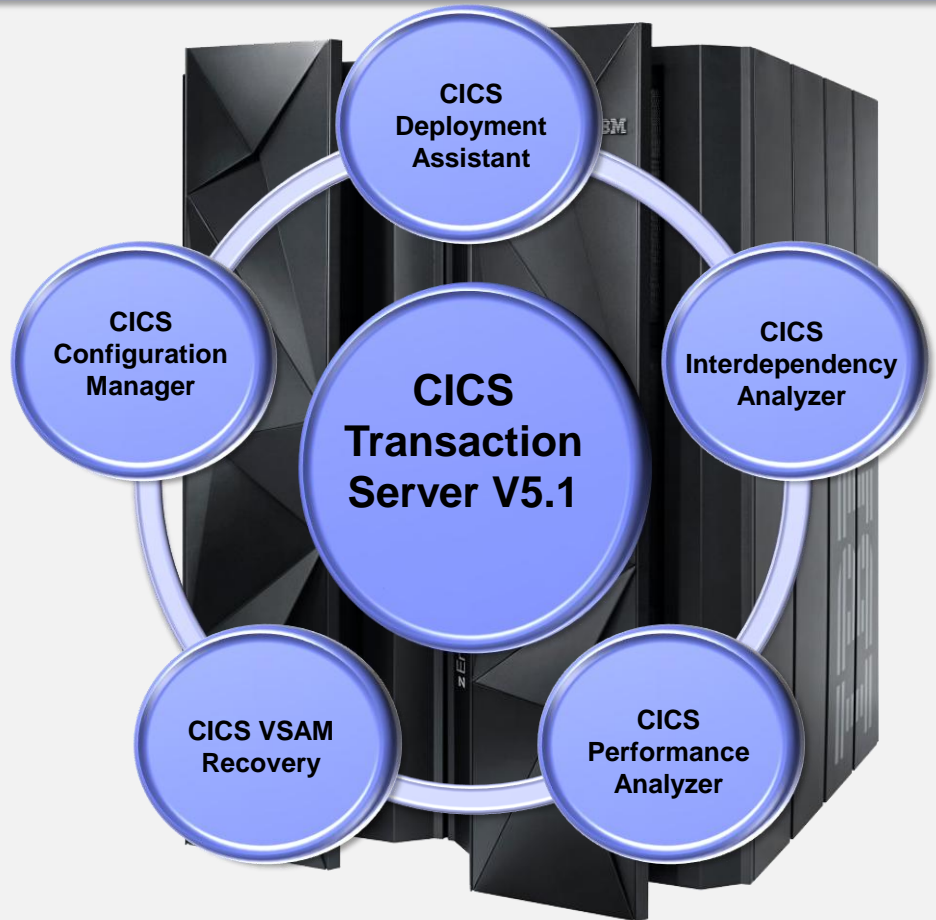
New CICS Tools V5.1 Deliver Complete Solution



Five core foundational CICS Tools – updated to exploit CICS TS V5.1

Fully integrated with CICS TS & CICS Explorer

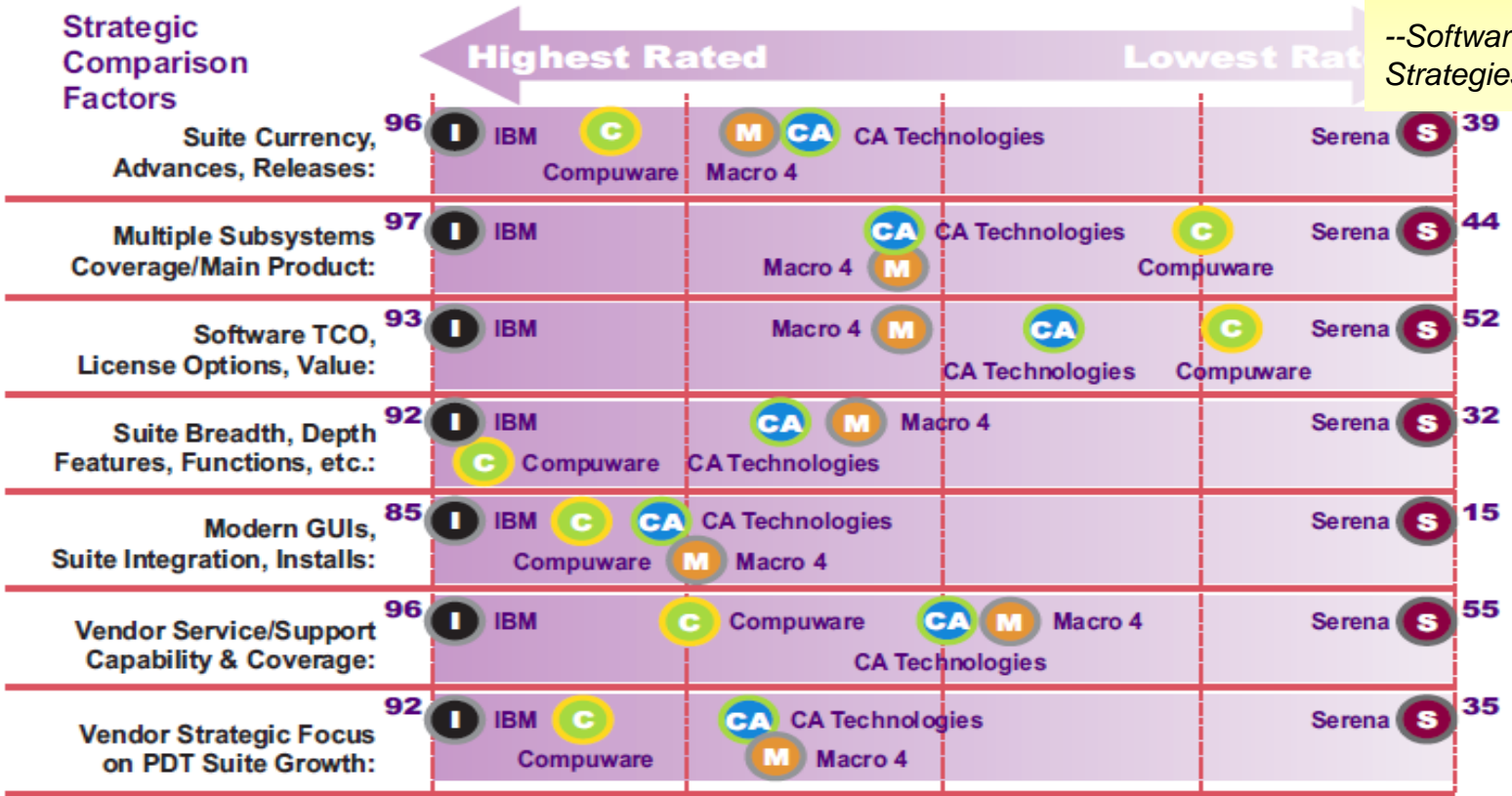
- Discovery and visualization aids insight
- Automation speeds service delivery and ensures standardization and governance
- Modern, integrated user interfaces lower skills barrier
- Day-1 exploitation of CICS TS V5.1 new capabilities reduces time to value
- Five core tools support and extend the CICS runtime



z/OS Tools Suites Vendor Comparison

High Compuware costs motivated many customers to migrate to competing PDT suite vendors
 --Software Strategies

2011 Strategic Comparative Assessment z/OS® PDT Suites



Relative Position Within Group Score Range (H to L)

 = IBM
  = Compuware
  = CA Technologies
  = Macro 4
  = SERENA

CICS Runs the Worlds Transactions



Challenge:

- Support explosive growth of online banking in Turkey while lowering operating cost

Benefits:

- Tripled capacity while maintaining same staffing
- Maintain 24x7 operation while supporting more than 200 million transactions per day



Challenge:

- Improve scalability, fault tolerance & overall performance of applications
- Manage/consolidate 100+ different CSD files and eliminate logon to several regions

Benefits:

- Freed up systems programming time to focus on environmental issues
- Quickly isolates performance opportunities such as threadsafe

Why IBM for Transaction Processing?

IMS

200%

better batch processing

50%

better productivity

(from IMS 11 to IMS 12)

- Proven performance and experience
- Highest level of transaction integrity capabilities
- Portfolio of transaction processing components, each tuned to the task
- Most cost-effective solution
- 100-year heritage of innovation and investment in client success

CICS

Many customers running more than a **billion** transactions per day

WAS

2X

Cost performance vs. competitors with proven transaction integrity

WXTR

Over **40%** faster than Oracle Tuxedo for distributed transactional workloads

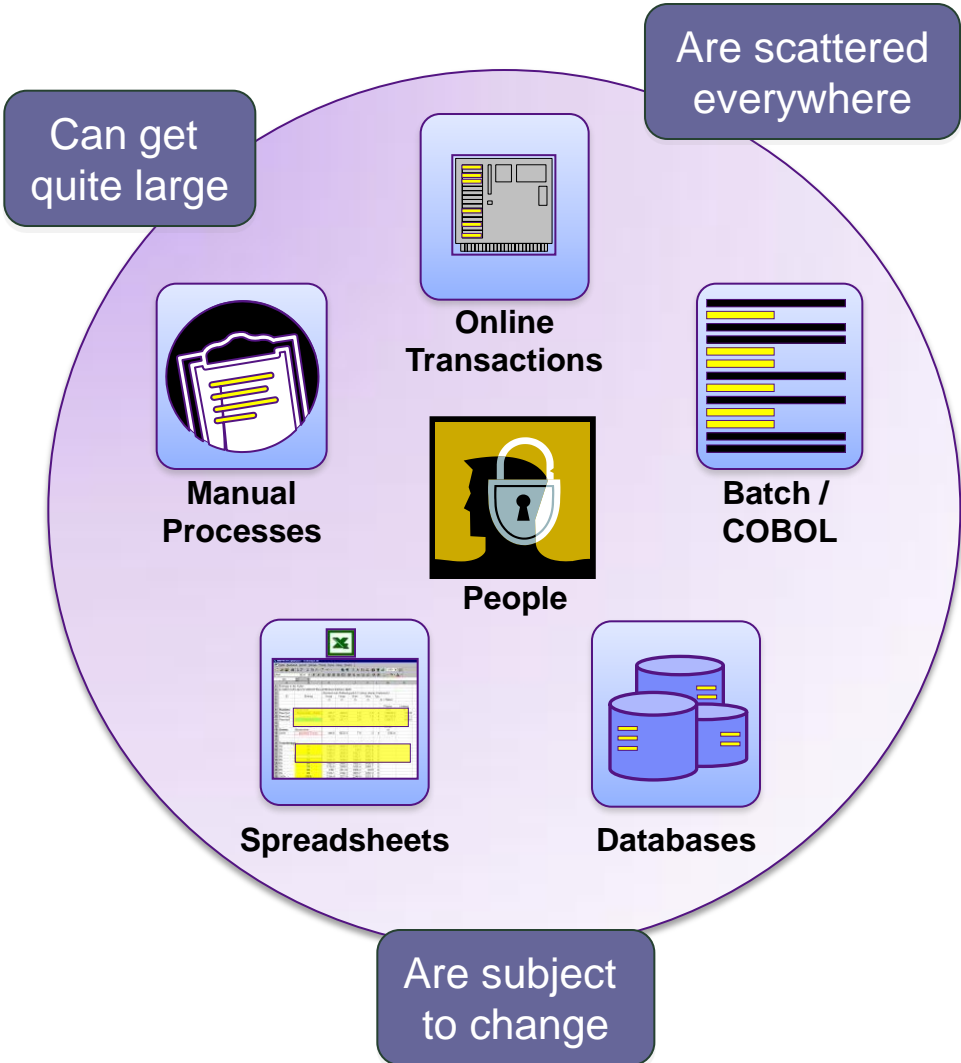
TPF

Processes hundreds of **billions** of transactions daily

WTCF

Up to **4 million** transactions per second

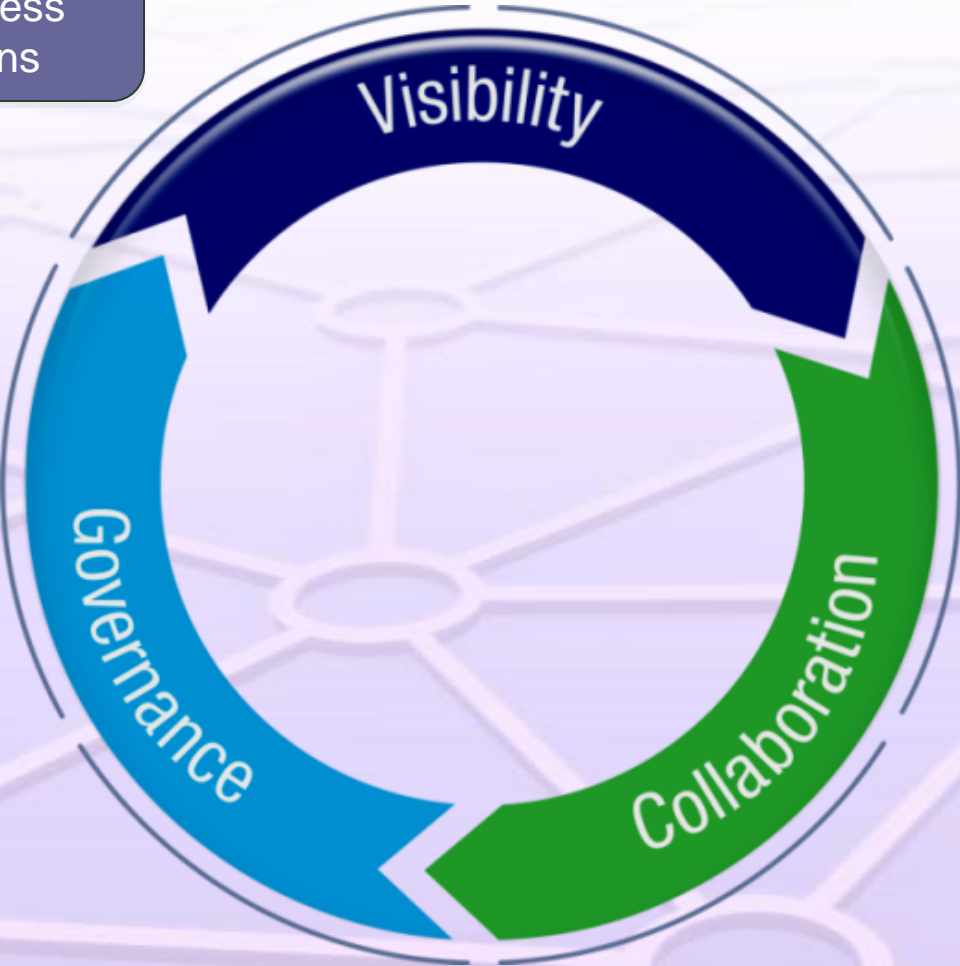
The Challenge of Optimizing Across so Many Moving Parts



- ### Challenges for a Change Request
- Changes are costly, resource & time-intensive
 - Rules are hidden in COBOL code
 - Most changes have to be programmed – costly
 - Lack of consistency
 - No central management
 - No reuse of decision logic
 - Gap between business analysts & IT administrators
 - Knowledge fades over time
 - Lack of audit ability
 - No easy way to test/simulate changes

Manage Change Effectively through Intelligent Business Operations

Complete visibility into business operations



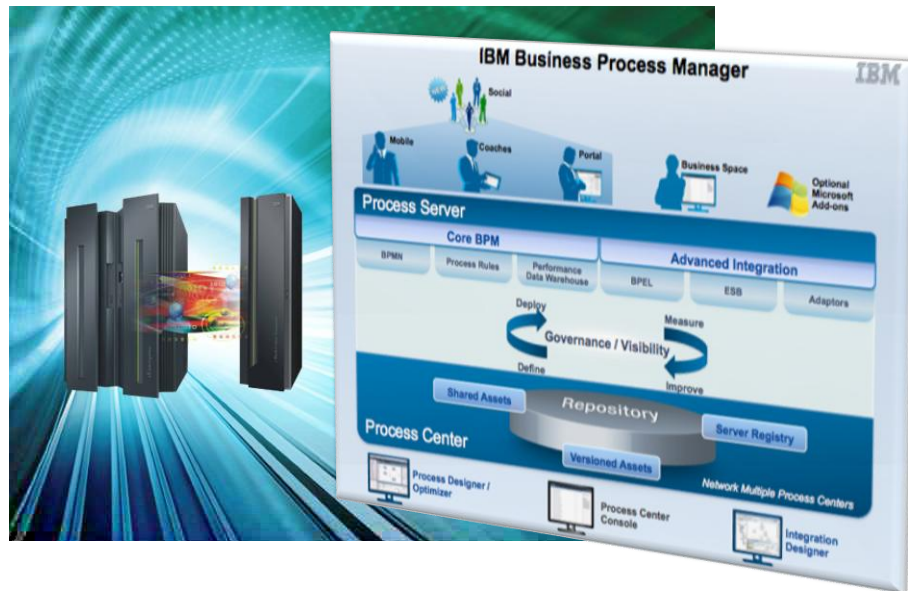
Managing change confidently

Collaboration for better business outcomes

Modernize and Extend Your zEnterprise Processes

Business Process Manager Advanced for z/OS

- **Simplify operations** by centralizing graphical process logic for high volume process automation
- Leverage co-location with CICS, IMS, or DB2 for **superior performance**, scalability, and access to data
- **Modernize** existing mainframe applications by adding a “layer of process” versus rip-and-replace



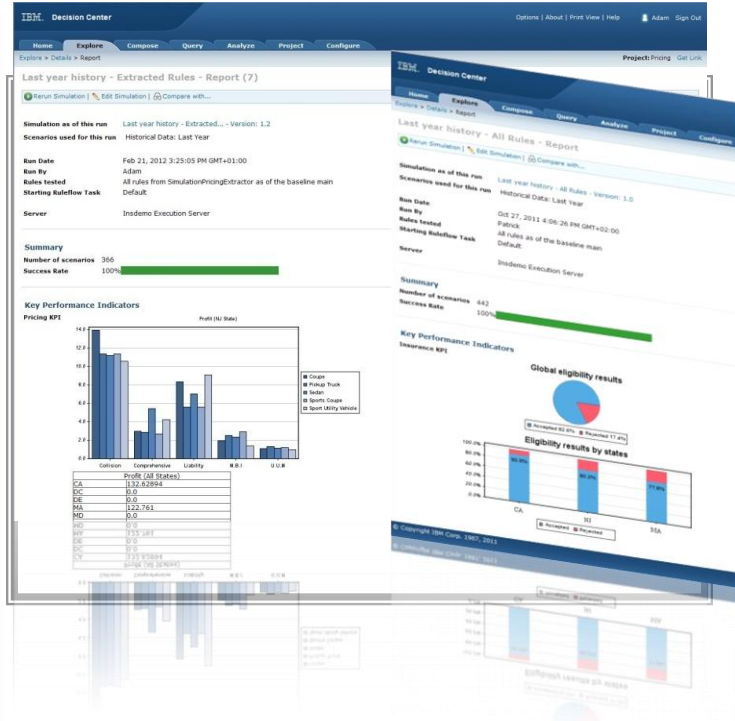
Proof Point:



- Reduced loan origination time by up to **93%** while increasing the average throughput of the number of loans that can be processed by **460%**
- Provided **insight** into volume of loans in process, average disbursements, time for completion and other key business metrics that can be used to manage loan policies

Modernize and Manage Your zEnterprise Decision Logic

- ## IBM Operational Decision Manager for z/OS
- Provides multiple z/OS specific runtimes with options to host within your CICS, IMS Batch and COBOL Batch applications.
 - Simplifies decision versioning by centralizing assets, making it painless to change, audit, deploy, & reuse rules
 - Facilitates incremental modernization of mainframe applications by replacing embedded-in-the-code decision logic with changeable business terminology kept in a central repository.
 - Leverages co-location of your business decisions with your CICS and Batch applications for superior performance, scalability, and access to data.



What's New:

- Next generation decision engine optimizes rule runtime execution for even better performance
- Support for IMS transactional applications with rule execution
- Full web-based Business Console which provides dynamic collaboration between business experts and analysts

IBM Operational Decision Management

Consider z/OS if you have...

- Significant volume or importance of applications on z/OS needing decision management
- Home-grown business logic embedded within Cobol, CICS, Java, PL/1 or C based z/OS applications
- Need for an enterprise decision management system with heterogeneous enterprise platforms (including z/OS)

Because you will get...

- Reduction in costs by:
 - non-IT staff changing z/OS applications in a controlled manner using business terms
 - Exploiting java specialty engines
 - Sharing rules across java and Cobol apps
- Cross platform changes automated to improve outcome quality
- Integration of rules seamlessly with Cobol apps at nearly equivalent performance as native Cobol application logic

Proof Point...



IMMIGRATION & CHECKPOINTS AUTHORITY

Challenge:

- Effectively and continuously adapting screening of more than 140 million visitors per year for unauthorized entry or illegal activity

Benefits:

- Reduced the time it takes to modify screening criteria from weeks to hours, a 96 percent improvement
- Increased risk targeting accuracy and speed enabling detection of suspicious activity in less than a second

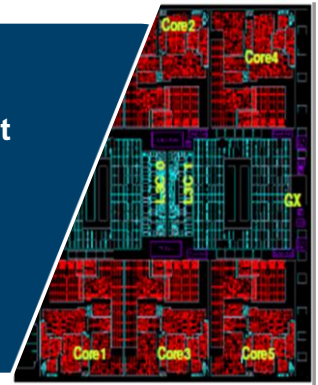
Get the Most out of WebSphere with zEnterprise EC12

- Exploitation of new **NEW Java enhancements** with up to **~11x improvement** to Java over last three generations of hardware & software
- **WAS on z/OS** throughput up to **32% better**
- Up to **25% performance improvement** with **CICS**
- Up to **~30% improvement** running **WebSphere Operational Decision Management** using Java SDK7
- Continued support for rapid implementation and configuration using **DataPower® XI50** (both standalone and as zBX blade)



IBM zEnterprise® EC12 (zEC12)

- Up to 25% Uniprocessor performance improvement over IBM zEnterprise 196 (z196), fastest superscalar chip with 6 cores at 5.5 GHz
- Up to 50% Total capacity improvement over z196 (over 78,000 MIPS)
- Up to 120 total cores (101 cores configurable for client use)
- Run up to 20% more Linux® systems concurrently (Consolidate 1000's of Linux systems)



Operational Analytics



Efficiency at Scale



Trusted Security and Resiliency



The Value of the System z Environment - Realized Through Highly Connected, Agile and Optimized Transaction Platforms

Process Integrity

Reliable execution of distributed business activity

Transactional Strength

Robust applications demonstrate resilience and scalability in the face of workload challenges

Co-location

Mission-critical applications and processes co-located for performance

Scalability

To billions of transactions per day with high utilization rates



Dependability

Through a robust and resilient infrastructure

Interconnected

Throughout enterprise with high speed cross-memory communications

High Availability

99.999%

Dynamic Infrastructure

IT must adapt to changing infrastructure cost pressures, contention for limited resources, and changing business priorities

Thank You



© Copyright IBM Corporation 2012. All rights reserved. The information contained in these materials is provided for informational purposes only, and is provided AS IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, these materials. Nothing contained in these materials is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software. References in these materials to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in these materials may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way. IBM, the IBM logo, Rational, the Rational logo, Telelogic, the Telelogic logo, and other IBM products and services are trademarks of the International Business Machines Corporation, in the United States, other countries or both. Other company, product, or service names may be trademarks or service marks of others.

Trademarks

- The following are trademarks of the International Business Machines Corporation in the United States and/or other countries.

- | | | | |
|----------------|-----------------|--------------------|---------------|
| • AIX* | • FICON* | • POWER7* | • System z* |
| • BladeCenter* | • IBM* | • PR/SM | • Tivoli* |
| • CICS* | • IBM (logo)* | • Smarter Banking* | • WebSphere* |
| • Cognos* | • POWER* | • System p* | • zEnterprise |
| • DataPower* | • Power Systems | • System x* | • z/OS* |
| • DB2* | • POWER4 | • System z10* | • z/VM* |

- * Registered trademarks of IBM Corporation

- The following are trademarks or registered trademarks of other companies.

- Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.
- IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency which is now part of the Office of Government Commerce.
- Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
- Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.
- Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.
- Windows Server and the Windows logo are trademarks of the Microsoft group of countries.
- ITIL is a registered trademark, and a registered community trademark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office.
- UNIX is a registered trademark of The Open Group in the United States and other countries.
- Java and all Java based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.
- Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc. in the United States, other countries, or both and is used under license therefrom.
- Linear Tape-Open, LTO, the LTO Logo, Ultrium, and the Ultrium logo are trademarks of HP, IBM Corp. and Quantum in the U.S. and other countries.

- * Other product and service names might be trademarks of IBM or other companies.

- Notes:

- Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.
- IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.
- All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.
- This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.
- All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.
- Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.
- Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.