



## **Enterprise Modernization**

*The future runs on System z*

*Using Modern Architecture and  
Technology to Modernize, Extend and  
Accelerate Your Application Development  
and Delivery*

***Hayden Lindsey  
Vice President and Distinguished  
Engineer IBM Rational Enterprise Tools  
& Compilers***



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# Agenda



- ▶ Breaking News!
- ▶ Enterprise Modernization
- ▶ Getting Started
- ▶ Q&A



em z

United States [ change ]

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Software >

### System z Software

- System z software
- Products A to Z
- Products by category
- Services
- Trials and demos
- Library
- Case studies
- News
- Training and certification
- Events
- Support

→ IBM TV Video: Mainframe cost misconceptions

→ 2008 IMPACT

→ IBM Pulse 2008

#### Why System z software

System z™ has the power to drive an enterprise, using software to help reduce costs and improve flexibility, security, compliance and access to information through central resource management. [Learn more](#)

#### What we offer

- Information Management (Info Mgmt)**  
Creates new business value by transforming all forms of data into trusted information that's in business context.
- IT Service Management (ITSM)**  
Delivering visibility, control and automation to maximize return on investments, and accelerate business growth.
- SOA and Enterprise Modernization**  
Aligns IT and business to generate greater flexibility.  
Explore [products by category](#) or see the [products A-Z list](#). Get System z [support](#)

#### ShopzSeries

Find and buy System z software online.

#### Subscribe Now

Subscribe to the CCR2 e-newsletter

→ The Mainstream e-newsletter

#### Related information

- IBM System z hardware
- Mainframe blog
- System z software customer testimonials

**IBM Rational Enterprise Modernization products featured on System z Software page and part of February z10 launch**



[http://www-306.ibm.com/software/os/systemz/en\\_US/index.html](http://www-306.ibm.com/software/os/systemz/en_US/index.html)

**Rational**

**Solutions**

- Aerospace and defense
- Communications service providers
- Complex systems development
- Enterprise modernization
- Financial services
- Global development and delivery
- Regulatory compliance
- SOA lifecycle management

**Related links**

- Events
- Education
- Library
- News
- Services
- Support
- Trials and betas
- Warranties and licenses

## Enterprise modernization

1 2 3 4

→ Building next generation i5/OS applications

→ Building next generation System z applications

→ Maximizing the value of your IT investments

→ Rational Developer for System z

**Overview** | System z | System i | Distributed

**Rational software**

**Spotlight**

→ Announcing New Rational System i development tools

→ Webcast: Unleash the power of enterprise assets and skills with Smart SOA

→ Hayden Lindsey Podcast: The growing importance of enterprise modernization

**Highlights**

→ Podcast by Hayden Lindsey: Roadmap to Enterprise Modernization

→ Brochure: Enterprise modernization solution overview (552KB)

→ Demos: Enterprise modernization solutions

→ Whitepaper: Legacy systems renovation to SOA (301KB)

**Case Studies**

→ Ball State University bridges disparate systems and solves key administrative issue with IBM SOA solution

→ Rational Case studies

**Related links**

→ IBM Rational Software

**Why enterprise modernization**

Today your company is facing demands for new products and services, including global support for outsourced operations, integration with business partner and customer applications. Competitive factors are often driving new requirements. Frequently the IT organizations ability to rapidly respond to the business is severely limited by the architecture and years of evolution of existing systems. An incremental modernization approach leading to service-oriented architecture (SOA) is the path to provide the flexibility required to meet your business needs.

**What we offer**

To adopt an effective modernization approach you must first overcome the following challenges in your IT organization:

View graphic

- Understand and document business functions in existing systems
- Identify functionality that can be reused for new systems
- Enable existing and new IT staff to leverage modern architectures and technologies
- Enhance team collaboration and productivity
- Free up maintenance budgets for new development

The IBM Enterprise Modernization solutions help organizations cost-effectively and incrementally evolve core IT systems towards modern architectures and technologies—reducing maintenance burden and freeing up more of your resources to focus on developing new business requirements and capabilities.

- ▶ Accelerate Web, SOA and traditional application development and improve skills flexibility with
  - **EGL: IBM's newest business language** New!
  - **Rational Business Developer 7.1**
  
- ▶ Accelerate adoption of SOA technologies with
  - **Rational Developer for System z 7.1**
  - **Rational Developer for System i for SOA Construction v7.1** New!
  
- ▶ Analyze, understand and enhance applications with
  - **Rational Transformation Workbench 3.1**
  
- ▶ Web-enable System z and IBM i applications with
  - **Host Access Transformation Services (HATS) 7.1**
  
- ▶ Enhance team collaboration and traceability with
  - **Rational ClearCase 7.0.1**
  - **Rational ClearQuest 7.0.1**
  - **Rational BuildForge 7.0.2**
  
- ▶ Maximize exploitation of hardware architecture with
  - **IBM C, C++, COBOL, PL/I, and FORTRAN compilers**

<http://www-306.ibm.com/software/info/developer/solutions/em/>



# Agenda



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# Change is at the Heart of Most Businesses

A view from over 2500 CXO's

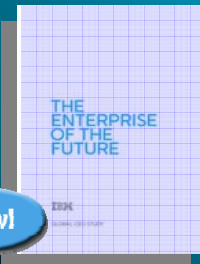
CFO Study



Human Capital Study



CEO Study



New!

Business Model Innovation

Global Integration

Talent Management

Business Transparency

# IT Must be a Key Enabler of Change

*“IT investments made 10 to 20 years ago are ... constraining the speed with which these businesses can change and respond to industry threats.” – Gartner’s Top Predictions for Industry Leaders, 2007 and Beyond*

- ▶ IT flexibility is a key enabler for today’s businesses to effectively and efficiently respond to change
- ▶ To be successful, you must mature and modernize your IT infrastructure
- ▶ However, doing so can be rather challenging...

*“Aligning IT with the business relates directly with an IT group attaining real flexibility.” – Butler Group*



# Customers are asking, can we.... ?

## ▶ **Leverage existing assets?**

- Discover and gain control over our existing enterprise application portfolio?
- Identify assets for reuse in a Service Oriented Architecture?

## ▶ **Leverage modern architectures?**

- Create services easily from existing code, including 3270 terminal applications?
- Define new services for all deployment platforms from initial design to implementation?

## ▶ **Leverage existing skills and attract new skills?**

- Exploit new technologies using existing staff that knows the business?
- Utilize new employees on any project independent of target platform?

## ▶ **Leverage a common development environment for all teams.**

- Lower costs due to elimination of duplicate tools and processes?
- Realize improved end-to-end communication and traceability across the entire lifecycle?

## ▶ **Leverage my development spending better?**

- Reduce maintenance costs, freeing resources to work on new projects?
- Improve application performance without expensive code changes?





# To Enable Change, IT Must be Flexible

*But it's easier said than done...*



To enable flexibility, IT must overcome challenges such as:

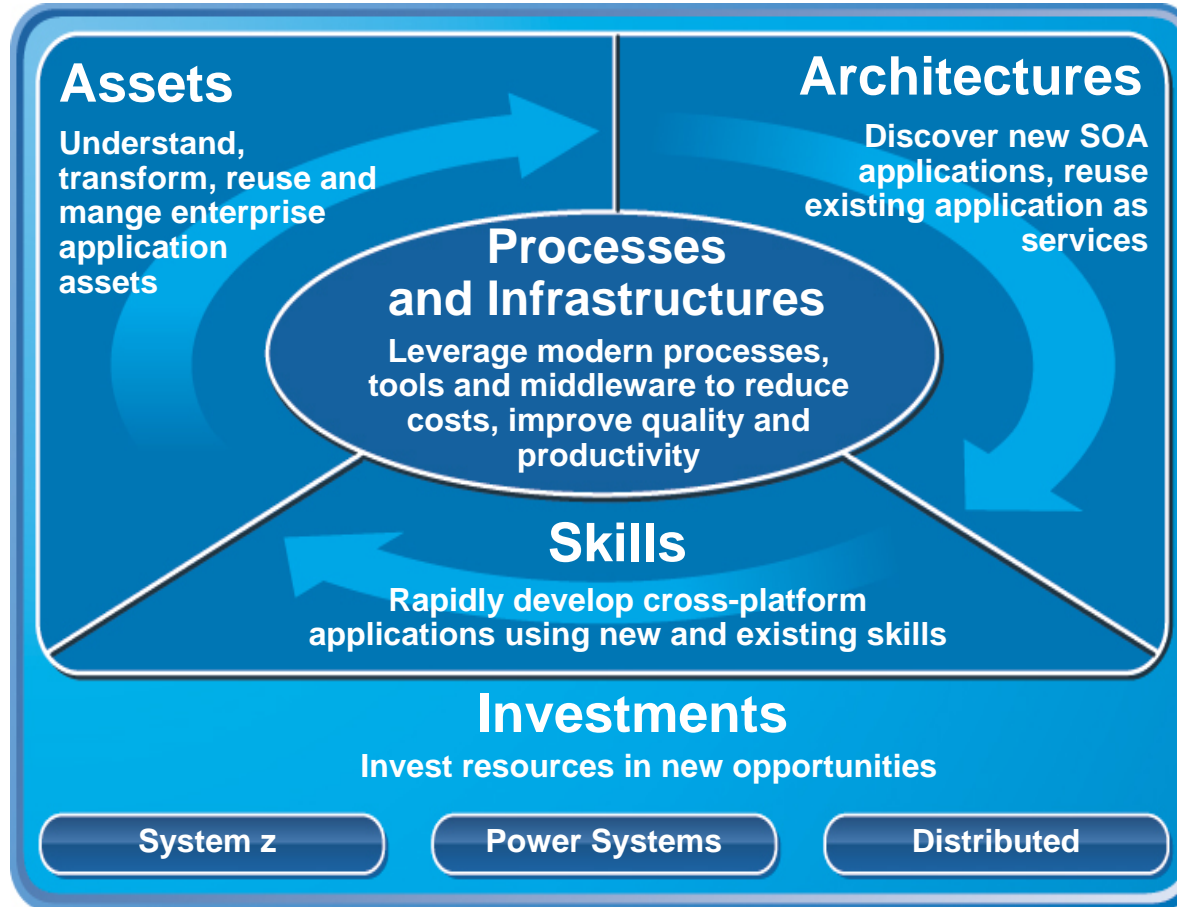
- ▶ No electronic inventory of current IT assets
- ▶ Complex application architectures
- ▶ Skills lock-in
- ▶ Islands of development
- ▶ Limited funding for new investments

# Enterprise Modernization - The Road Ahead



- ▶ You need a unique modernization strategy based on:
  - Your business requirements
  - Your budget
  - Your staffing constraints
- ▶ Choose one or more of the options on the next pages to begin your modernization efforts
- ▶ Rational and our business partners can help you formulate your own customized strategy for modernization
- ▶ Let's look at our solutions ...

# Enterprise Modernization – Solution Overview



- ✓ *Leverage value in existing assets*
- ✓ *Drive innovation with SOA and web technology advancements*
- ✓ *Leverage existing and new staff on multi-platform projects*
- ✓ *Improve quality and flexibility with a consolidated team infrastructure*
- ✓ *Reduce maintenance costs*

<http://www-306.ibm.com/software/info/developer/solutions/em/>



# Modernize your Asset Management



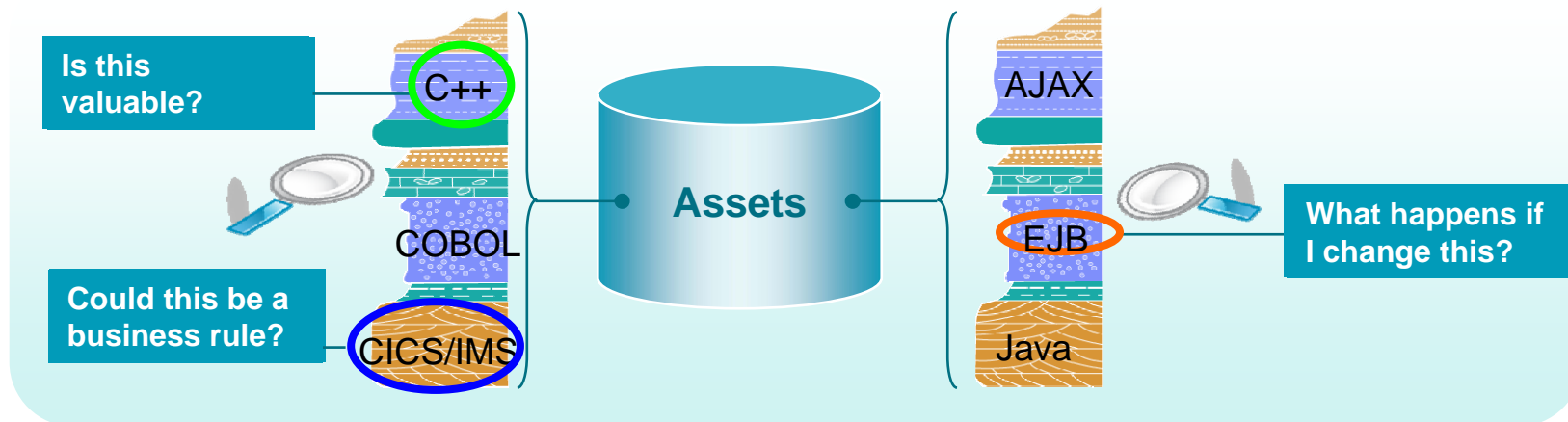
## Challenge No Electronic Inventory of Assets

### How can we...

- ▶ Discover and understand code dependencies so a change does not break production?
- ▶ Learn about application relationships and structures for new staff?
- ▶ Maintain control over code provided by outsourcers, business partners, or acquired through a merger?
- ▶ Identify assets for reuse in a SOA?

## Solutions Comprehensive inventory of assets for impact analysis & reuse

- ✓ Understand existing assets and relationships
  - *WebSphere Studio Asset Analyzer*
- ✓ Understand and refactor existing assets for reuse
  - *Rational Transformation Workbench*
- ✓ Create and manage assets during development
  - *Rational Asset Manager*
- ✓ Deploy and manage services in a production environment
  - *WebSphere Service Registry & Repository*



# Modernize your Architectures



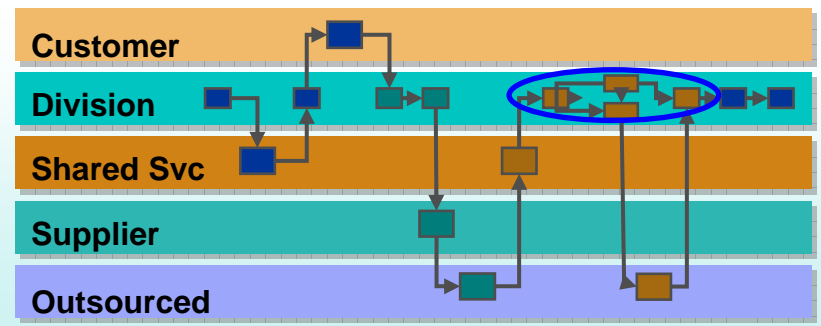
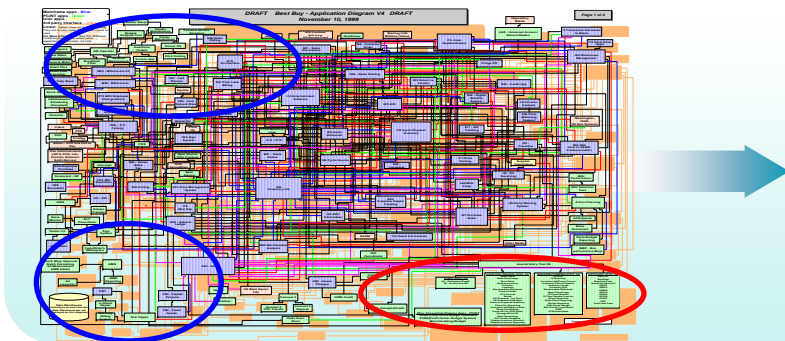
## Challenge Complex Application Architectures

### How can we...

- ▶ Create web services easily from existing code, including CICS, IMS, and green screen applications?
- ▶ Define new services for all deployment platforms from initial design to implementation?
- ▶ Use Model-Driven Development (MDD) to improve quality and productivity?

## Solutions Flexible architectures to enable business agility

- ✓ Transform 3270 applications to web services
  - *Host Access Transformation Services*
- ✓ Quickly create web services from existing COBOL, PL/I, Java, or EGL applications
  - *Rational Developer for System z, with SFM*
  - *Rational Business Developer* New!
- ✓ Transform UML to EGL, COBOL, Java, WSDL, C++
  - *Rational Software Architect*
- ✓ Create new services
  - *Rational Business Developer, with EGL Service*



# Modernize your Skills - Languages



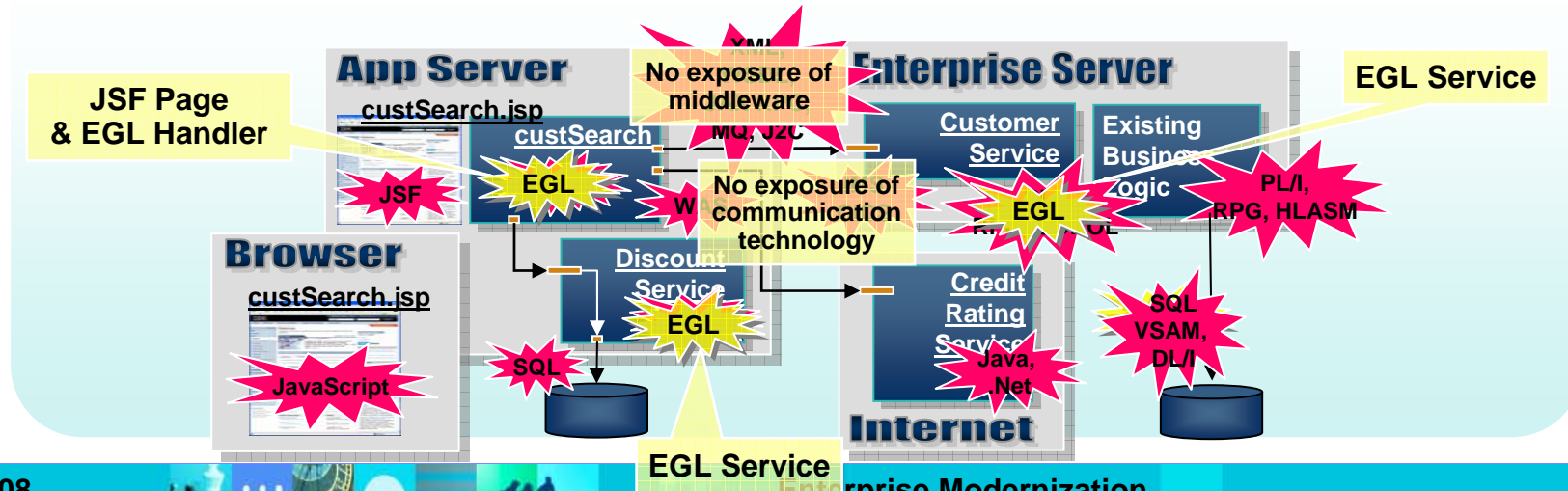
## Challenge Skills Lock-in

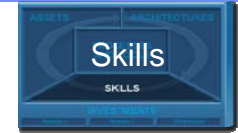
### How can we...

- ▶ Exploit new technologies and innovation without retraining our existing staff that knows the business?
- ▶ Use new employees on any project, independent of the target platform?
- ▶ Provide modern web UIs leveraging existing skills and systems?

## Solutions Powerful tools & abstractions for multi-platform development

- ✓ Apply existing business-knowledgeable staff to build all elements of multi-platform applications ... end-to-end from Web 2.0 to services to business transactions
- ✓ Attract new staff with IBM's newest business language
  - *Rational Business Developer*





# Modernize your Skills - IDEs

## Challenge

### Low productivity for Enterprise developers

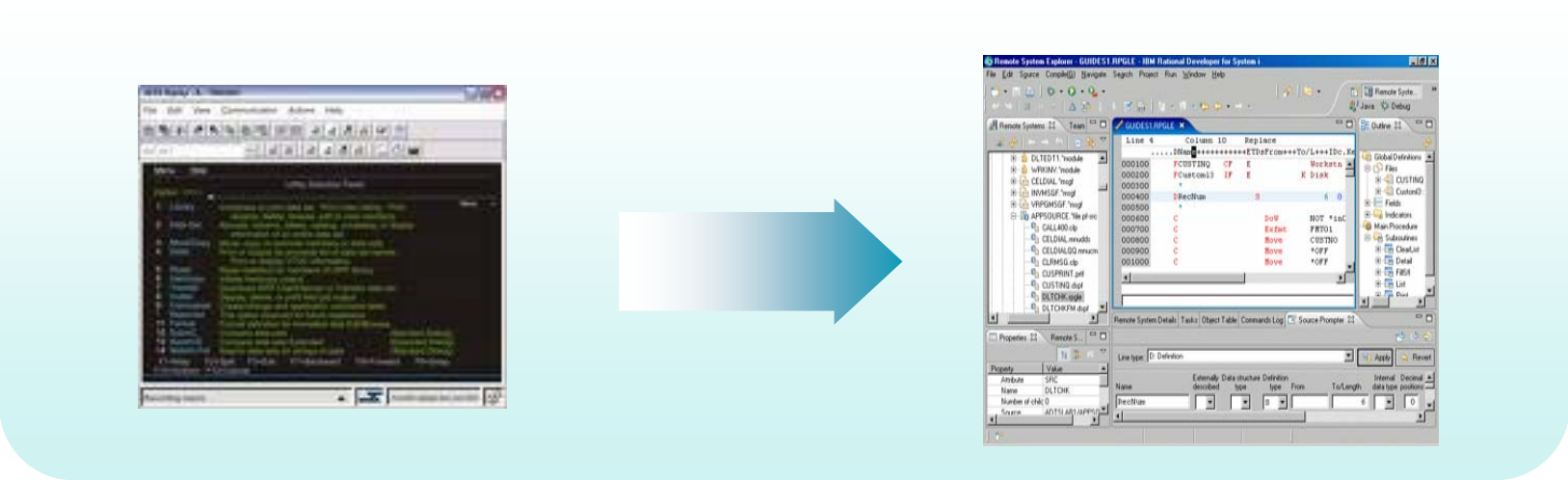
How can we...

- ▶ Achieve higher productivity than green screen editors?
- ▶ Attract new and younger developers to System z and IBM i development projects?
- ▶ Access enterprise resources from developer workstations?

## Solutions

### Achieve high productivity, attract new talent with modern IDEs

- ✓ Use modern IDEs to develop and maintain code
  - Rational Developer for System z
  - Rational Business Developer
  - Rational Application Developer



# Modernize your Quality Management



## Challenge Inconsistent and immature test processes across teams

### How can we...

- ▶ Automate functional testing to reduce risk, lower cost and improve quality?
- ▶ Drive consistent performance characteristics?
- ▶ Improve traceability and reduce problem determination cycles?
- ▶ Ensure our web sites are secure, and comply with required standards?

## Solutions Save time and improve quality with modern Quality Mgmt solutions

- ✓ Reduce time and guarantee repeatability with automated testing, including 3270 and VT
  - *Rational Functional Tester*
- ✓ Create test scripts from requirements and document results for any type of testing
  - *Rational Manual Tester*
- ✓ Ensure scalability of applications which expose existing assets in new ways (e.g. services)
  - *Rational Performance Tester*
- ✓ Identify vulnerabilities, privacy issues, quality exposures, and standards non-compliance
  - *Rational AppScan*

Don't be the next headline!

GBLA  
ISO 27001

PCI Data Security Standard

HIPPA  
ISO 17799  
Basel II





# Modernize Your Team Infrastructure



## Challenge Islands of development

### How can we...

- ▶ Consolidate mainframe and distributed development environments to improve responsiveness, increase quality, reduce costs?
- ▶ Create event-based lifecycle management to eliminate inconsistent and mismatched versions across platforms?
- ▶ Establish end-to-end communication and traceability across the entire lifecycle?

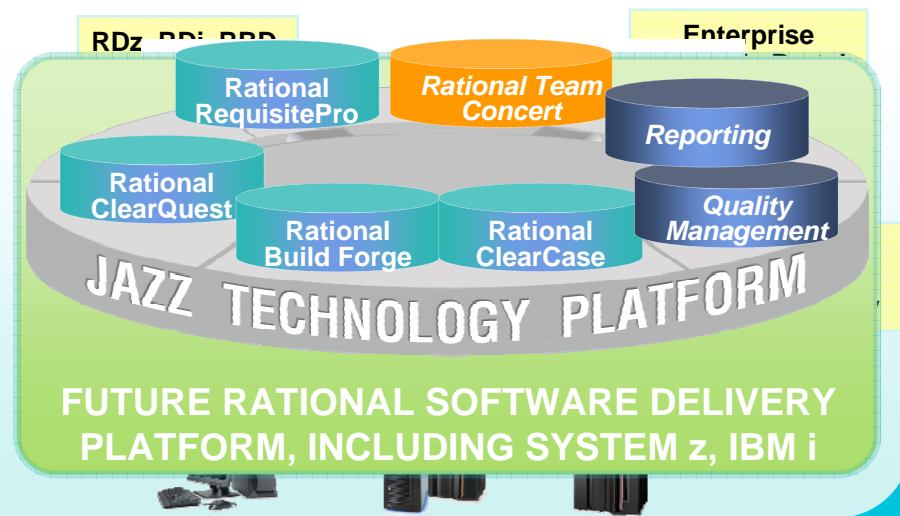
## Solutions Provide coordination, traceability, consistency across platforms

- ✓ Manage enterprise-wide assets and change with common team support for System z
  - Rational Team Concert
  - Rational ClearCase
- ✓ Automate and orchestrate defect tracking and configuration management
  - Rational ClearQuest
- ✓ Produce coordinated, traceable, automated, and cross-platform builds
  - Rational BuildForge

Coming Soon!



Distributed Development Environment



# Rational Team Concert for System z & IBM i

*Modern, collaborative team support*

Coming  
Soon!

## Rational Team Concert For System z & IBM i

### Rational Team Concert

#### The Jazz Platform:

*An Open, Services Oriented Architecture that*

- Enables teams to **collaborate in real time** in the context of their work
- Provides visibility into accurate **current project health information** drawn directly from actual work across the team
- Automates traceability and auditability by **managing artifacts and their inter-relationships** across the lifecycle
- Enables custom **process enactment** via process automation & definable checkpoints
- Provides an **extensible technology platform** for building products & adapters

#### A New Family of Products based on Jazz Technology

- Consolidates the team's assets and activities on a Team Server
- Optimized for Agile development teams
- In-place collaboration between team members
- Support and enforcement for development processes
- Transparency of status and trends through automated data-gathering and reporting
- Low administrative footprint
- ClearCase & ClearQuest Connectors

#### A New Family of Products based on Rational Team Concert targeted for z/OS & IBM i development

- Provides an integrated set of collaborative software delivery lifecycle tools for z/OS & IBM i development including source control, change management, build and process management
- Includes specialized support for traditional language artifacts such as COBOL and RPG
- Supports multi-tier software development and application modernization efforts
- Native z/OS & IBM i file system support
- z/OS & IBM i artifact builds
- Hosted natively on either z/OS or IBM i





# Modernize your Development Investments

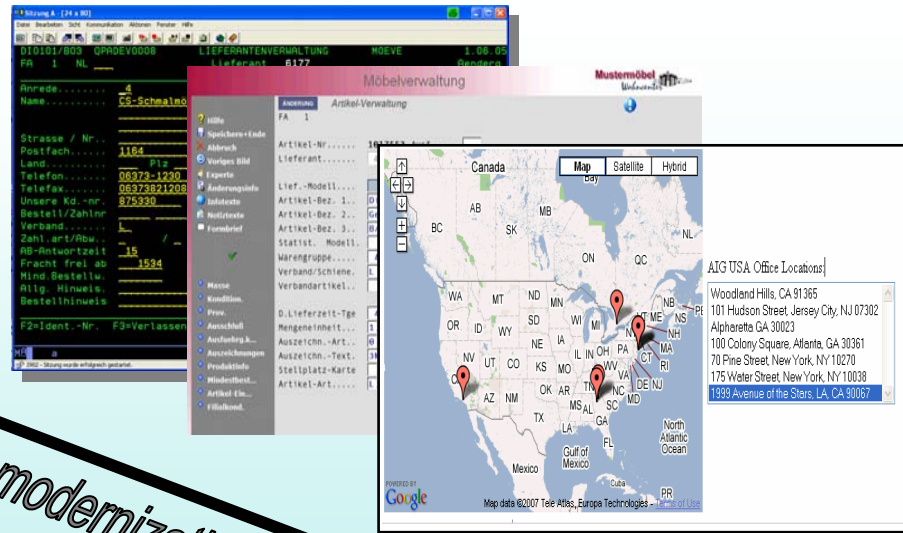
## Challenge Archaic green screen UIs

### How can we...

- ▶ Make incremental improvements within the context of a long-term strategic modernization plan?
- ▶ Create modern Web 2.0 rich web UIs without training staff in Javascript, XML and REST?

## Solutions Create impressive UIs quickly

- ✓ Quickly and easily create impressive UIs for your 3270 applications
  - *Host Access Transformation Services*
- ✓ Leverage rich UI and Web 2.0 technologies
  - *Rational Business Developer 7.x*
  - *On AlphaWorks today!*



# Modernize your Development Investments



## Challenge

### Unsupported legacy development platforms

How can we...

- ▶ Efficiently move to modern development platforms, languages, and tools?

## Solutions

### Save money by moving off old platforms and languages

- ✓ Migrate from out-of-date and expensive legacy development platforms onto the IBM Rational Software Delivery Platform (SDP)
  - *EGL, DB2*
  - *All SDP tools*

### Non IBM Technologies

HPS/AppBuilder

COBOL

Ca Ideal TELON

COOL: GEN

COOL: Enterprise

Maestro

IDMS ADS/Online

NATURAL ADABAS

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Microsoft Visual Studio

SYBASE PowerBuilder

Microsoft Visual Basic 6.0

RPG



### Deploy to:

Linux  
AIX  
Solaris  
HP-UX  
IBM i  
System z  
Windows  
WAS

# Modernize your Development Investments



## Challenges Not leveraging hardware improvements

### How can we...

- ▶ Improve the performance of mission critical applications without the need for code changes?
- ▶ Take advantage of modern hardware architectures (e.g. parallel, SIMD)?
- ▶ Support mixed language environments?

## Solution Improve performance and flexibility without code changes

- ✓ Exploit hardware improvements to improve application performance and “gain capacity”
  - *IBM Compiler Technology*
- ✓ Use language standards conformance to support mixed language environments, improving flexibility
  - *IBM Compiler Technology*

XL C for AIX Enterprise Edition  
 XL C/C++ for AIX Enterprise Edition  
 XL C/C++ for Linux Advanced Edition  
 z/OS XL C/C++  
 C/C++ for z/VM  
 COBOL for AIX

XL Fortran for AIX Enterprise Edition  
 XL Fortran for Linux Adv Edition  
 PL/I for AIX  
 Enterprise PL/I  
 Enterprise COBOL



# Accelerating software innovation

## Customer successes

- ▶ Create web UIs for existing host applications
- ▶ Identify business services to leverage across the enterprise
- ▶ Extend COBOL and RPG applications for SOA transformation
- ▶ Gain staff flexibility by breaking skills silos
- ▶ Unify enterprise and distributed teams

Rational. software



### User interface modernization

- ✓ Decreased development cycle time from 11 to 6 months with HATS
- ✓ Sped creation of new customer services
- ✓ Improved operational efficiency



### Enterprise portfolio management

- ✓ Identified obsolete code within automotive systems, and begin “decommissioning”
- ✓ Performed impact analysis across massive systems with WSA and RTW
- ✓ Communicated impacts to potentially affected development teams



### Rapid application development

- ✓ Developed new application framework based on IBM COBOL standard
- ✓ Used RDz to design new COBOL to provide online banking services



### Cross-platform application development

- ✓ Standardized on RBDe and RAD to unify application development across all platforms and transaction managers (e.g., WAS, IMS)
- ✓ Achieved rapid time to market



### Unified change and release management

- ✓ Created highly automated cross-platform solution using ClearCase to manage and support the software lifecycle for COBOL and Java development



# Agenda



- ▶ Breaking News!
- ▶ Enterprise Modernization
- ▶ **Getting Started**
- ▶ Q&A



# How to get started?

New!

Resources to help you kick-start your System z software innovation

## System z Sandbox

Example assets and best practices providing low-risk, practical, hands-on path to leveraging IBM solutions

- ▶ Full version software trials
- ▶ 'Try online' hosted System z environments
- ▶ Hands-on-exercises

## System z Starter Packs

Solution to help you incrementally evolve core IT systems towards modern architectures and technologies

- ▶ Discover, reuse and grow
- ▶ Develop and manage
- ▶ Test and track

Jump-start  
your  
modernization  
projects!

## Education Series

### Modern Application Architecture for COBOL Developers

Learn how to design and integrate composite applications across CICS and WebSphere – leveraging existing COBOL processes

Learn more at:

[www.ibm.com/rational/modernization](http://www.ibm.com/rational/modernization)





# How to get started?

## System z Enterprise Modernization Starter Packs

### Discover, Reuse and Grow

- ▶ **Rational Transformation Workbench**  
Discover what you have
- ▶ **Rational RequisitePro**  
Document and share why you have it
- ▶ **Rational Developer for System z**  
Maintain, extend and develop
- ▶ **Rational Business Developer**  
Quickly and efficiently grow new applications
- ▶ **Rational Software Architect**  
Model new applications across platforms

### Develop and Manage

- ▶ **Rational Developer for System z**  
Maintain, extend and develop
- ▶ **Rational ClearCase**  
Manage assets
- ▶ **Rational ClearQuest**  
Manage change
- ▶ **Rational Asset Manager**  
Manage development assets
- ▶ **Rational Business Developer**  
Quickly and efficiently build new applications

### Test and Track

- ▶ **Rational Manual Tester**  
Test authoring and execution
- ▶ **Rational Functional Tester**  
Automate functional and regression testing
- ▶ **Rational Performance Tester**  
Multi-user load testing and performance testing tool
- ▶ **Rational ClearQuest**  
Track defects and manage change

### Offering Terms

- ▶ 40% discount
- ▶ Minimum 2 products purchased per Starter Pack (no maximum)
- ▶ Up to 50 licenses per product
- ▶ Free 1-3 day workshop may be scheduled subject to availability



# Summary

**Rational.** software

## Governing the business process of software and systems delivery

*Decades of proven process expertise  
and customer success*

- ▶ To be flexible, you must mature and modernize your IT tools and processes
- ▶ Rational solutions can help you
  - Discover application knowledge to achieve new levels of business value and innovation
  - Reduce time to market and risk by reusing existing assets to deliver new solutions
  - Increase productivity and eliminate skills silos by simplifying development environments
  - Improve efficiency and lower costs by optimizing processes, tools, and infrastructures
  - Discover incremental ways to modernize with quick ROI on your schedule

Learn more through Rational podcasts: <http://www-306.ibm.com/software/rational/podcasts/>

You can get started today. We can help!



# IBM Rational Software Development Conference 2008

June 1 – 5, 2008; Orlando, Florida



IBM Rational Software Development Conference 2008

WHERE TEAMS ARE **R-HEROES**

June 1-5, 2008 • Orlando, FL

RU READY TO SAVE THE DAY?

SAVE  
THE  
DATE!

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- Over 300 sessions – 14 tracks
- Executive Summit 2008
- 3- and 5-hour Technical Workshops
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- Exhibit hall showcasing complimentary product and services
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- IBM Solution Center
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for more information



# RSDC 2008 Around the World

Location	Dates	Attendance
Seoul, Korea	March 1	1000
Sharm El Sheikh, Egypt	June	150
Orlando, Florida	June 1-5	3500
Denmark, Sweden	June 10	100
Brazil, San Paulo	June 18-19	200
Bangalore, India	August 21-23	2400
Shanghai, China	July 10	600
ASEAN (TH, SG, MY and PH)	August 12,14,19, 21	1000
Munich, Germany	September 4 & 5	150
London, UK	September 22-23	300
Paris, France	September	125
South Africa 2 one-day events	Johannesburg –Oct 10 CapeTown – October 11	150.
Japan	October 9 & 10	800
Rome, Italy	October 9	300
Milan, Italy	October 7	300
Taipei, Taiwan	October	812
ERUC	Nov	500



IBM Rational Software  
**COMES TO YOU**

17 conferences driving 12,000 attendees



# Questions





### Learn more at:

- ▶ [IBM Rational software](#)
- ▶ [IBM Rational Software Delivery Platform](#)
- ▶ [Process and portfolio management](#)
- ▶ [Change and release management](#)
- ▶ [Quality management](#)
- ▶ [Architecture management](#)
- ▶ [Rational trial downloads](#)
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# IBM Rational Software Delivery Platform

*Accelerating software innovation on System z*

