IBM Rational Software
Development Conference
2008

WHERE TEAMS ARE R-HEROES

Enterprise Modernization
The Transformation of Application Development for All Platforms

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Agenda

▶ Enterprise Modernization

▶ Getting Started

▶ Q&A

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

The business landscape facing IT & business leaders
The need to innovate with less

Enable Innovation & Change

Average Lifetime of S&P 500 Companies

Increased competitive pressure to change and adapt while IT has an increasing role in every business process

What IT wants to do!

Enact Compliance Mandates

The changing global regulatory and business environment requires security, privacy and ongoing audit capabilities

What IT must do!

Rising Cost of Operations

2005 2006 2007 2008

Operational costs continue to grow at 10% CAGR … twice the rate of the IT budget. The cost of failed projects & rework compounds the problem

Inability to Innovate

2005 2006 2007 2008

Application development & support budgets are shrinking at nearly 10% CAGR dropping from 50% to about 35% of total IT labor spend

Bottom Line: Enable Business Flexibility...

To Enable Change, IT Must be Flexible

But it's easier said than done…

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

To enable flexibility, IT must overcome challenges such as:

▸ Poor understanding of current enterprise application assets

▸ Complex application architectures

▸ Skills lock-in

▸ Islands of development

▸ Limited funding for new investments

"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

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 – Improving IT Flexibility

1 - Assets

Understand, transform, reuse and manage enterprise application assets

2 - Architectures

Create or enhance SOA applications by reusing existing applications as services

4 – Team Infrastructure

Leverage modern processes, tools and middleware to reduce costs, improve quality and productivity

3 - Skills

Rapidly develop multi-platform applications using new and existing skills

5 - Investments

Invest resources in new opportunities

System z	Power Systems	Distributed

1. *Leverage value in existing assets*

2. *Drive innovation with SOA and web technology advancements*

3. *Leverage existing and new staff on multi-platform projects*

4. *Improve quality and flexibility with a consolidated team infrastructure*

5. *Reduce maintenance costs*

http://www-306.ibm.com/software/info/developer/solutions/em/
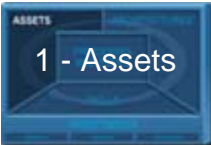
1 - Modernize your Asset Management

1 - Assets

Business Challenge
Difficulty understanding or leveraging existing systems

How can we…
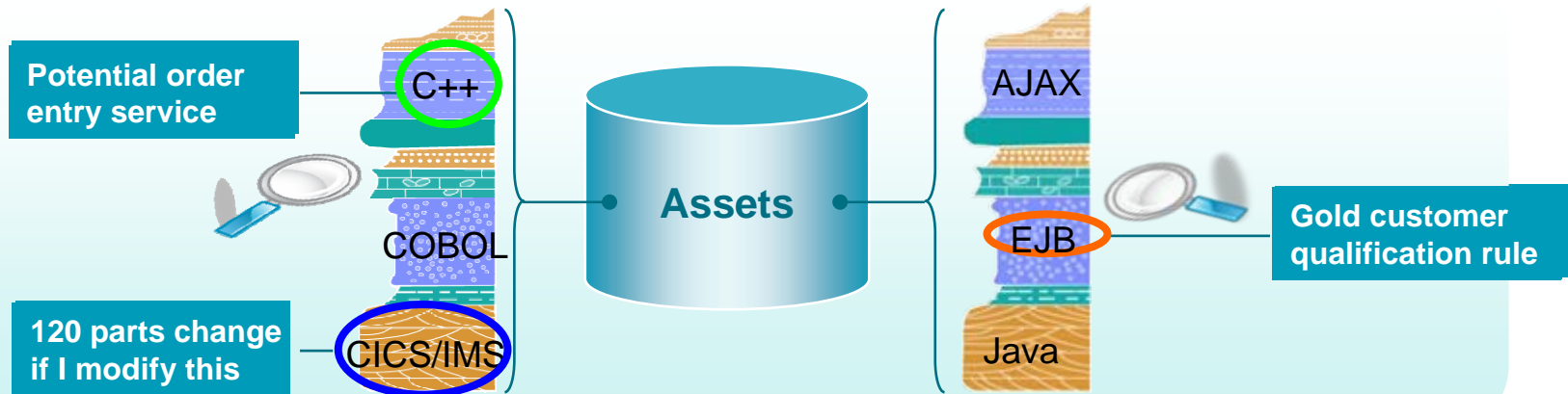
Rational Asset Analyzer – eGA 7/2008
- ✓ Provide view of S/W assets across enterprise
- ✓ Perform enterprise-wide impact analysis
- ✓ Workstation-based solution for quick ROI
- ✓ Create/update RAM with relevant RAA artifacts
- ✓ View dead code in source files

~~Maintain control over code provided by outsourcers~~, business partners, or acquired through a merger?

▶ Accelerate SOA efforts?

▶ Improve portfolio evolution decisions?

Solutions
Comprehensive inventory of assets for impact analysis & reuse

- ✓ Understand existing assets and relationships
- ✓ Identify services, refactor for reuse
  - *WebSphere Studio Asset Analyzer*
  - *Rational Asset Analyzer*
  - *X-Analysis* (Databorough)
  - *Rational Transformation Workbench*

- ✓ Manage assets during development
  - *Rational Asset Manager*

- ✓ Manage deployed services
  - *WebSphere Service Registry & Repository*

Potential order entry service — C++

120 parts change if I modify this — CICS/IMS

COBOL

Assets

AJAX

EJB — **Gold customer qualification rule**

Java
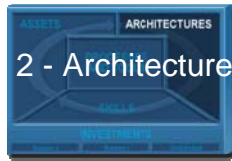
2 - Modernize your Architectures

Business Challenge
Inflexibility in adapting applications in support of business needs

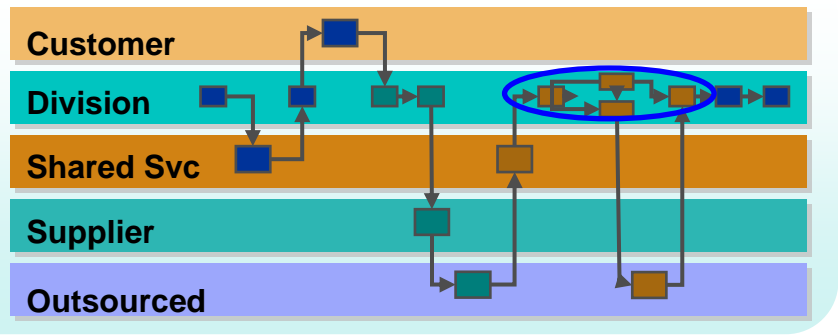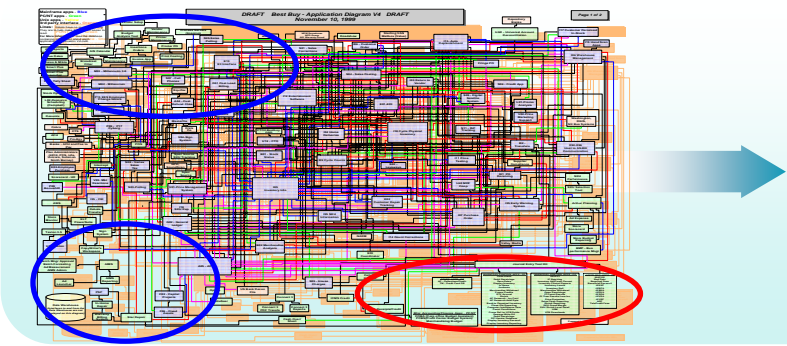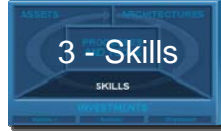**How can we…**

▸ **RDi SOA – 4/2008**
 - ✓ RDi and RBD in single offering
 - ✓ Robust, productive, easy to learn development environment
 - ✓ Web-enable your RPG applications

▸ Ensure our new SOA system will be more easy to extend and maintain than my current ones?

Solutions
Flexible architectures to enable business agility

✓ Expose 3270 and 5250 applications as web services
 – *Host Access Transformation Services*

✓ Quickly create web services from existing COBOL, RPG, PL/I, Java, or EGL applications
 – *Rational Developer for System z (SFM)*
 – *Rational Developer for System i for SOA*
 – *Rational Business Developer*

✓ Create new platform-independent services
 – *Rational Business Developer (EGL Service keyword)*

✓ Leverage MDD - xform UML to EGL, COBOL, WSDL, etc
 – *Rational Software Architect*

Customer

Division

Shared Svc

Supplier

Outsourced

3 - Modernize your Skills - Languages

3 - Skills

Business Challenge
Staff in ~~~~~~lls silos"

How can w~

▸ Exploit ~ ~without retrainin~ ~ss?

▸ Use new employees on any project, independen~ of the target platform?

▸ ~~vide modern~~ UI~ by reusing ~isting skill~

RBD 7.1 – 3/2008
✓Standalone offering
✓TUI, Webtrans
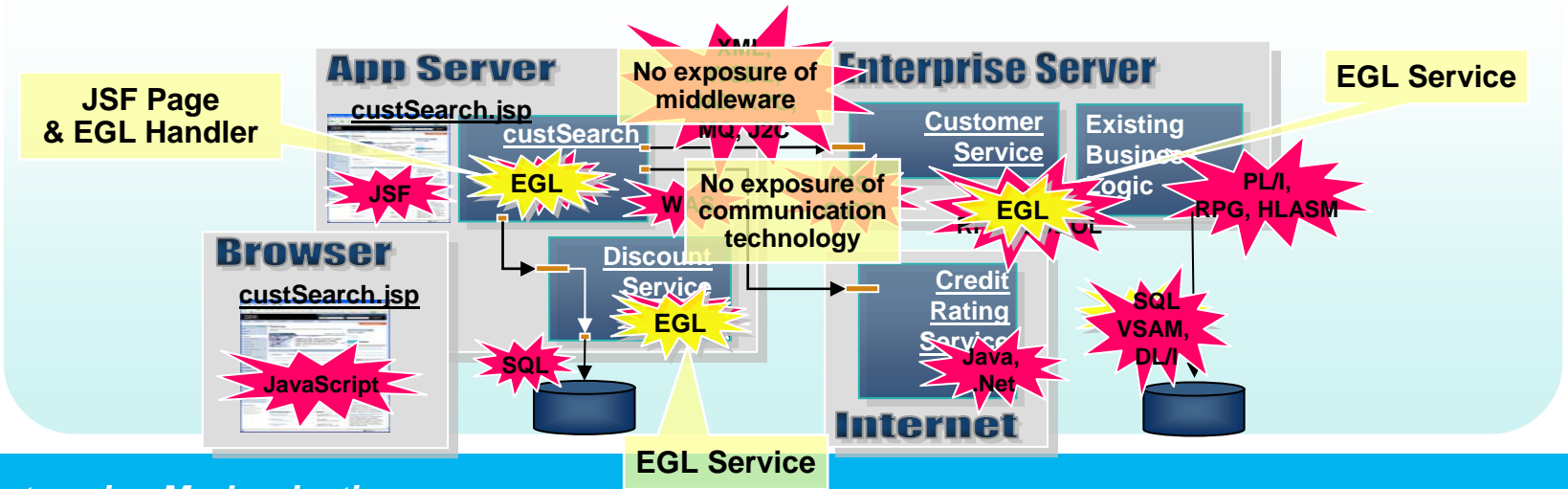✓IMS, DL/I, MQ
✓Portal support
✓BIRT reports
✓VAGen migration

RBD 7.5 – 4Q08
✓Web 2.0 - rich internet applications

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 (EGL)*

JSF Page & EGL Handler

EGL Service

App Server
custSearch.jsp
custSearch
JSF
EGL

No exposure of middleware
XML,
MQ, J2C

Enterprise Server
Customer Service
Existing Business Logic
EGL

EGL Service

No exposure of communication technology

PL/I, RPG, HLASM

Browser
custSearch.jsp
JavaScript

Discount Service
EGL

SQL

Credit Rating Service
Java, .Net

Internet

EGL Service

SQL VSAM, DL/I

Web 2.0 - Rich Internet Apps

- Users now expect modern, interactive UIs: Dojo, Google Maps, etc.

- Browsers are ubiquitous and increasingly powerful

- Reap the benefits of Client-Server architectures:
  - Presentation logic within the browser
  - Server used for business and data access logic
  - Server bandwidth and response times increase

- But typically, many low-level technologies to learn:
  - JavaScript, HTML, CSS, Ajax, Dojo, SilverLight, SOAP, WSDL, Flex, XML, JSON, Google Maps, HTTP, etc
  - Focus is on "how" instead of "what"

- EGL Rich UI hides these details and complexities:
  - Focus is on "what" instead of "how"
  - Improves developer productivity
  - Enables more developers to build Web 2.0 solutions
  - Easily extensible with new widget sets

Rational Business Developer - EGL Café
Building a Community for Business Developers

▸ **Attract participation with compelling experience - Partners, Users, Prospects**

▸ **Capture "Wisdom of the Crowd" – Experience knowledge base**

▸ **Sustainable Participation – Team, Users**

▸ **Leverage re-use to reduce effort**

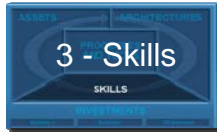▸ **Extending community to CICS, IMS, COBOL, RPG, and PL/I developers**

www.ibm.com/rational/eglcafe

New!
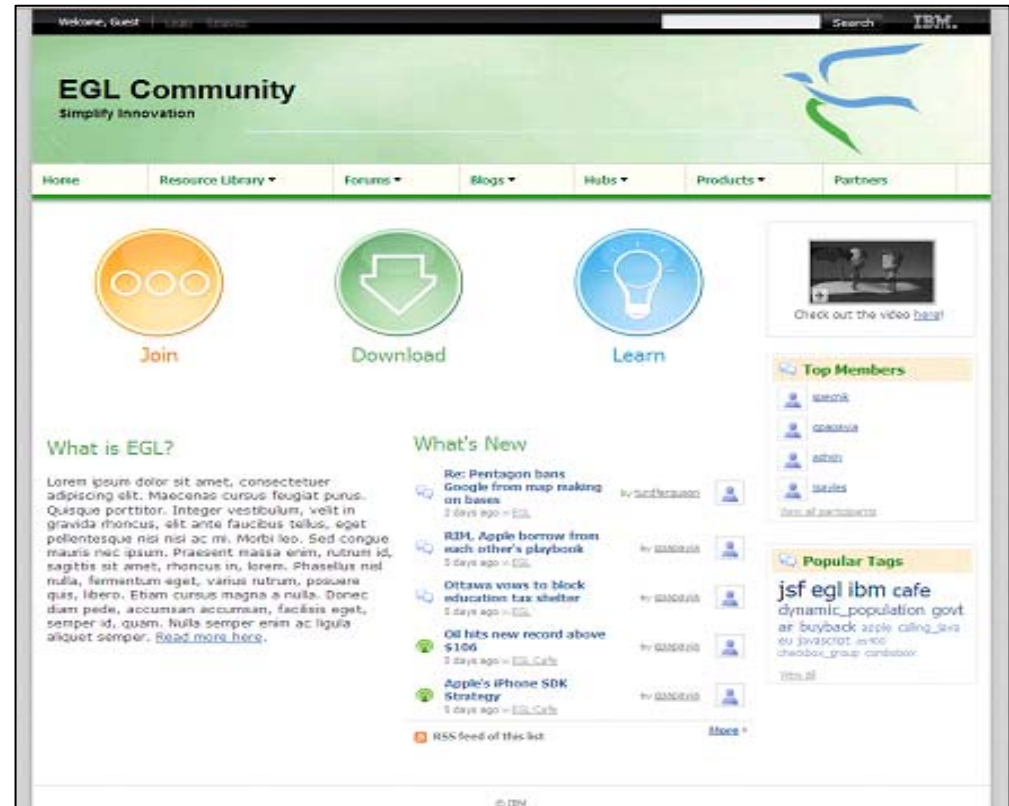
Resources:	**Download, Learn, Presentations, Video/viewlet, Sample Code**
Community:	**Clients, Partners, Influencers, Press, News & Events**
Collaboration:	**Blogs, Forums, Tips & Techniques Comments, Ratings**
Testimonials:	**Case Studies, Celebrations!**

IBM

3 - Modernize your Skills - IDEs

3 - Skills

SKILLS

Business Challenge
Low productivity, non-competitive tools for new developers

RDz 7.5 – 4Q08
- ▶ Real-time syntax checking
- ▶ Simpler integrated build tooling
- ▶ Integrated program analysis tools
- ▶ Generate VSAM and QSAM access
- ▶ Generate COBOL from UML activity diagrams
- ▶ Decrease client & host resource usage

How can you:

- ▶ Achieve ... development ...

- ▶ Attract new and younger developers to backfill retiring System z and IBM i developers?

- ▶ Simplify license management by standardizing on a single, multi-platform development IDE?

- ▶ Free up System z MIPS for production use?

Solutions
Achieve high productivity, attract new talent with modern IDEs

- ✓ Use modern IDEs to develop and maintain code
- ✓ Debug and test from workstation
  - *Rational Developer for System z*
  - *Rational Developer for System i*
  - *Rational Business Developer*
  - *Rational Developer for System i for SOA Construction*
  - *Rational Application Developer*
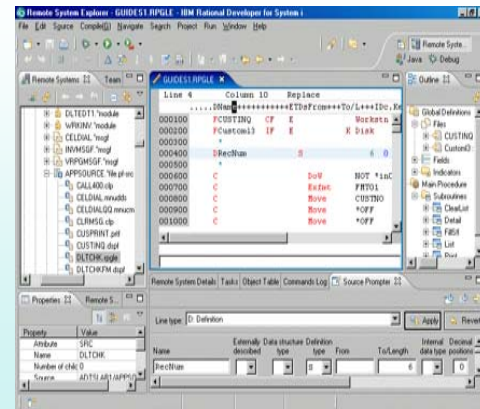
4 - Modernize Your Team Infrastructure

4 – Team
Infrastructure
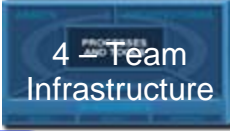
Business Challenge
**Inefficien...
in mul...**

How can we...

- Increase quality and improve responsiveness for multi-platform development teams?

- Simplify management of team infrastructure for multiple development teams?
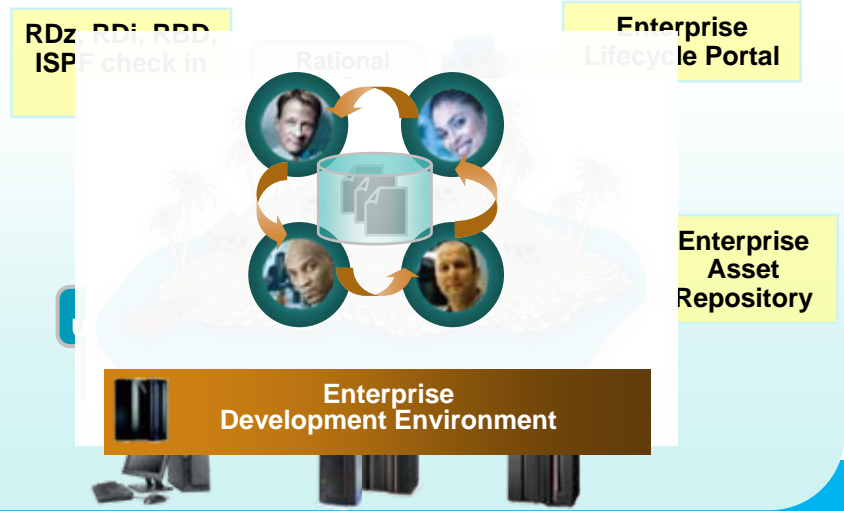
- Reduce team infrastructure costs across the enterprise?

CC 7.1 – 2H08
- ✓ Template builds via CC Explorer
- ✓ IPv6 support
- ✓ Implementation Guide improvements
- ✓ ISPF client performance improvements

Solutions
Provide coordination, traceability, consistency across platforms

- ✓ Consolidate enterprise and distributed source code management
  - *Rational ClearCase*

- ✓ Automate and orchestrate defect tracking and configuration management across the enterprise
  - *Rational ClearQuest*

- ✓ Produce coordinated, traceable, automated, and cross-platform builds
  - *Rational BuildForge*

RDz, RDi, RBD,
ISPF check in

Enterprise
le Portal

Enterprise
Asset
Repository

**Distributed
Development Environment**

**Enterprise
Development Environment**

Software Innovation through Collaboration

▶ **Real time, in-context team collaboration**
- Make software development more automated, transparent and predictive

▶ **"Think and work in unison"**

IBM Rational Team Concert

Rational Team Concert for System z – beta starts 7/2008
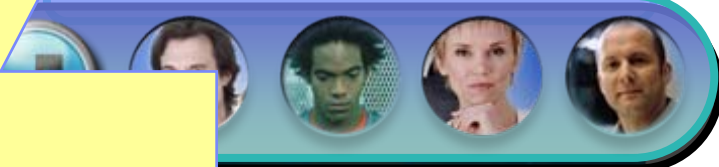**Rational Team Concert for IBM i – beta starts 7/2008**
- ✓ Collaborative team environment for z/OS, IBM i, and distributed
- ✓ Specialized support for all language artifacts such as COBOL, PL/I, RPG, EGL, Java
- ✓ Native z/OS & IBM i file system support
- ✓ z/OS & IBM i artifact builds
- ✓ Hosted on z/OS, IBM i or distributed

Beta program information:
https://www14.software.ibm.com/iwm/web/cc/earlyprograms/rational/RTCiz2008/

- Extend the value of ClearQuest and ClearCase
- Support for System z and IBM i servers (beta 3Q)

Open and extensible on

Jazz
- ✓ Collaborate in context
- ✓ Right-size governance
- ✓ Day one productivity

transparent *integrated presence*
wikis OPEN real-time reporting
chat automated hand-offs Web 2.0
custom dashboards automated data gathering
EXTENSIBILITY *Eclipse plug-ins* services
architecture **FREEDOM TO CREATE**

JAZZ TEAM SERVER

5 - Modernize your Development Investments

5 - Investments

Business Challenge
Archaic green screen applications

How can we

HATS 7.1 3/2008
- Mobile device support
- Visual macro editor (tech preview)
- JSR 168 support (portlet standard)
- Web services usability improvements

Create modern Web 2.0 rich web UIs without training staff in Javascript, XML, JSON, etc?

Solutions
Create impressive UIs quickly

✓ Quickly and easily extend your 3270 and 5250 applications to the web
 – *Host Access Transformation Services*

✓ Leverage rich UI and Web 2.0 technologies with existing or new developers
 – *Rational Business Developer 7.5 (2H08)*
 – *On AlphaWorks today!*

modernization
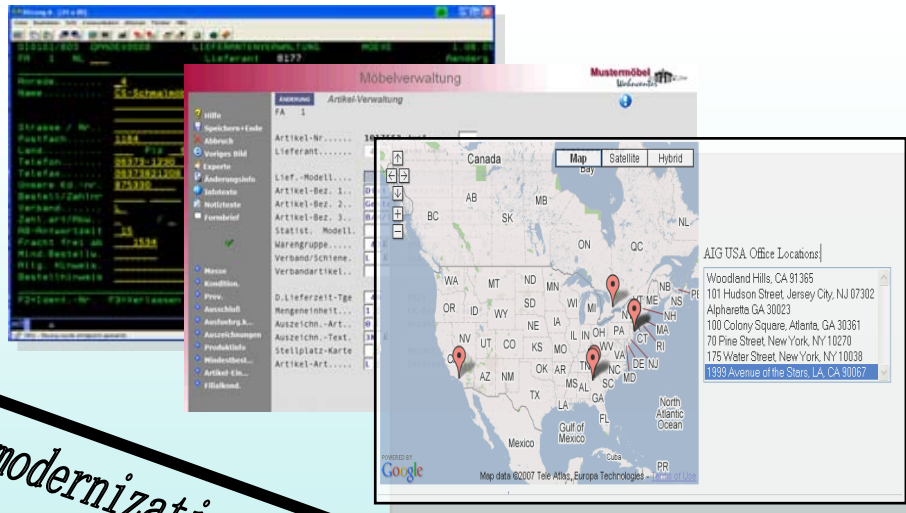
5 - Modernize your Development Investments

5 - Investments

Business Challenge
Unsupported legacy development platforms

Rational Migration Extension for Natural – eGA 6/2008
✓ Transform Natural/ADABAS apps to EGL/DB2 to move to modern language and tools platform, save money

Rational Migration Extension for IBM i – eGA 6/2008
✓ Transform RPG apps to EGL for customers and ISVs requiring multi-platform solutions

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

Microsoft Visual Studio

Microsoft Visual Basic 6.0

SYBASE PowerBuilder

RPG

Conversion Tooling

Consolidate & Advance with EGL

Process & portfolio management

Change & release management

Quality management

Architecture & construction

Integrated Requirements Management
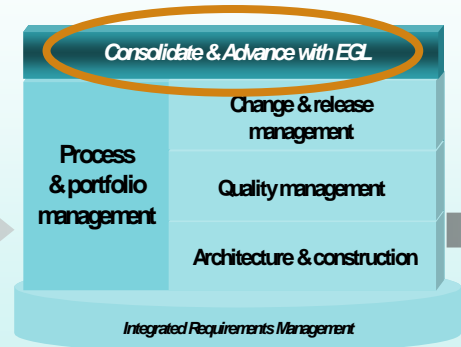
Deploy to:

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

IBM Rational Software Delivery Platform
and so much more

Rational RequisitePro
- ✓Reduce risk of project failure by managing shared common requirements

Rational Functional Tester
- ✓Reduce time and guarantee repeatability with automated testing, including 3270, 5250, and VT

Rational Method Composer RUP for System z
- ✓Take advantage of best practices

Rational Performance Tester
- ✓Ensure scalability of applications which expose existing assets in new ways (e.g. services)

In-house software ⇄ Outsource vendors ⇄ Packaged applications ⇄ Systems & products

Manage Evolving Requirements → Accelerate Change & Delivery → Deliver Enduring Quality → Manage Architecture → Improve Project Success

Deploy Process & Governance Best Practices

Collaborative Application Lifecycle Management Platform

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

Rational AppScan
- ✓Identify vulnerabilities, privacy issues, quality exposures, and standards non-compliance
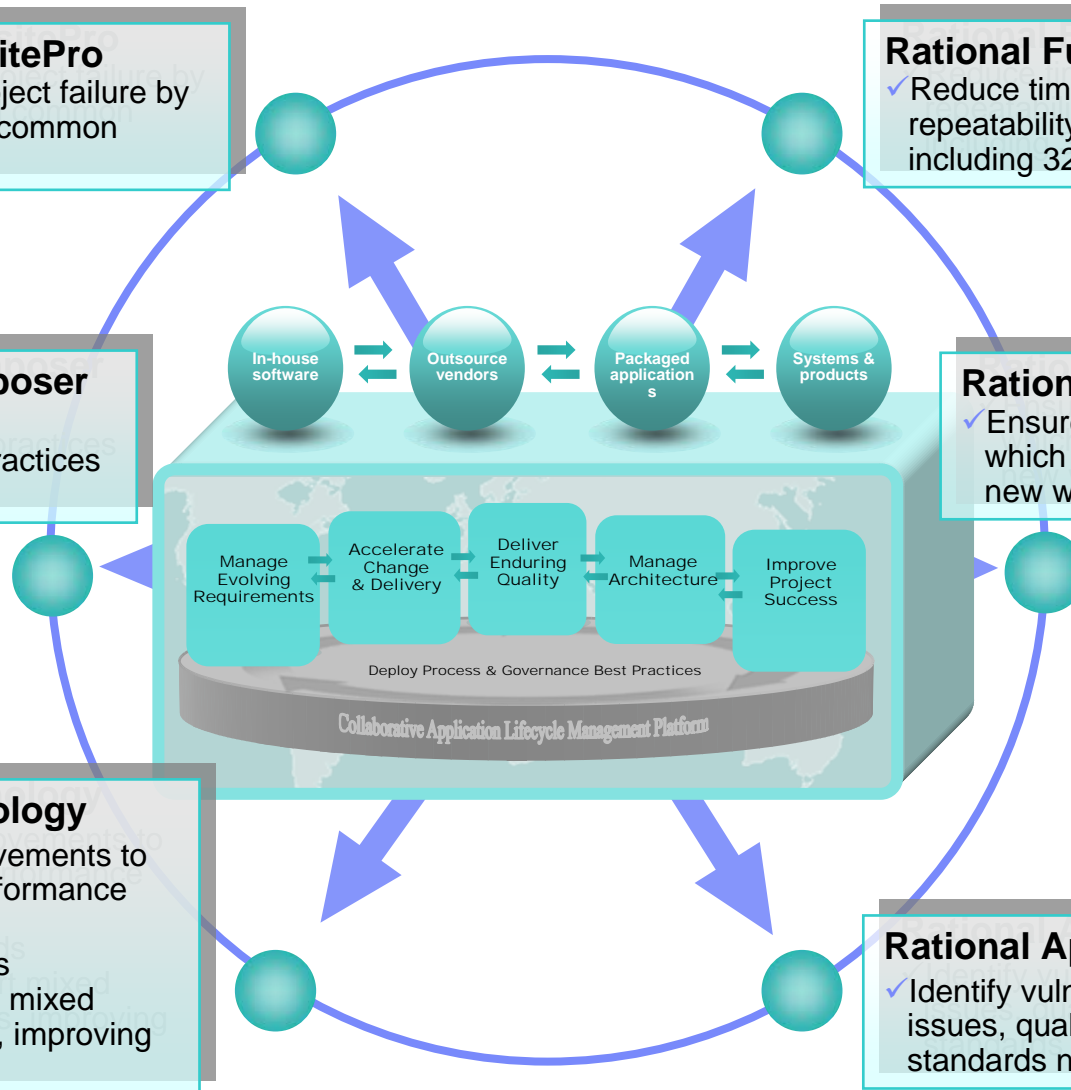
Accelerating software innovation

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 WSAA 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 EGL/RBD 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

▶ Enterprise Modernization

▶ Getting Started

▶ Q&A

How to get started?

Resources to help you kick-start your Enterprise software innovation

New!

System z, IBM i Sandboxes

Fully hosted online System z and IBM i environments to experiment, try and buy

Education Series

Modern Application Architecture for COBOL Developers

Learn how to design and integrate composite applications across CICS and WebSphere

EGL Distance Learning
10 days of FREE instructor-led virtual class!

System z, IBM i Starter Packs

Software bundles to simplify getting started on your modernization journey

▸ Discover, Reuse, & Grow
▸ Analyze & Modernize
▸ Develop & Manage
▸ Test & Track

Jump-start your modernization projects!

Learn more at:
www.ibm.com/rational/modernization

i for Business

Summary

- ✔ Change is at the heart of most businesses
- ✔ IT flexibility is a key enabler of change
- ✔ Rational EM solutions provide this flexibility
- ✔ You can get started today

Leverage value in existing assets

Drive innovation with SOA and web technology advancements

1 - Assets

2 - Architectures

4 - Processes and Infrastructures

Improve quality and flexibility with a consolidated team infrastructure

3 - Skills

Leverage existing and new staff on multi-platform projects

5 - Investments

System z

Power Systems

Distributed

Reduce maintenance costs

Collaborate with us

Design Partner Program

Lab Advocacy Program

Board of Advisors

Voice of the Customer Events

Rational Software Development Conference

jazz.net

developerWorks

Beta Programs

RFE Community

Rational User Groups

Customer Acceleration Program

➔ Learn more at www.ibm.com/software/rational/collaborate

QUESTIONS

IBM

THANK YOU

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
- Leading Innovation Web site
- developerWorks Rational
- IBM Rational TV
- IBM Rational Business Partners

Enterprise Modernization