Enterprise Modernization
Delivering Greater IT Flexibility for Multi-Platform Organizations

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IBM Rational CTO Office

Change is the new norm

Soon there will be over 2 billion people are on the web

By 2010, there will be 1 billion transistors per human

China sends more text message in a week than the U.S. does in 1 year

"8 of 10 CEOs see significant change ahead" - 2008 IBM CEO Survey

By 2011 there will be trillions of interconnected objects – cars, planes, cameras, roadways, pipelines forming an "Internet of Things"

By 2010, there will be 30 billion RFID tags in circulation

There are 1 billion camera phones in use today

Companies are struggling to keep up

"The gap between expected change and the ability to manage it has almost tripled since 2006."

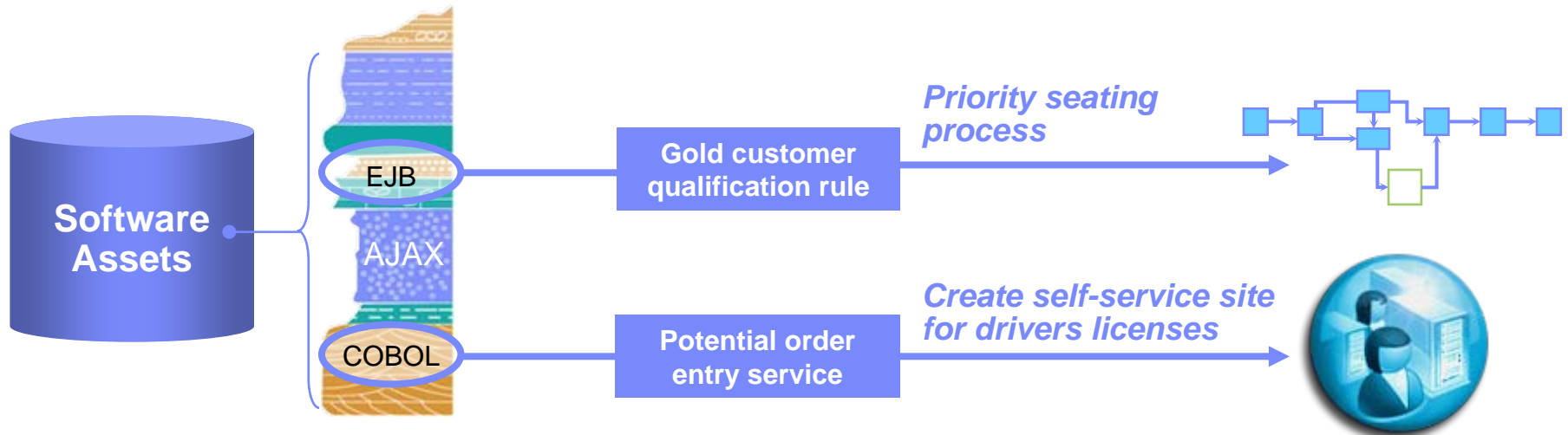*– 2008 IBM CEO study*
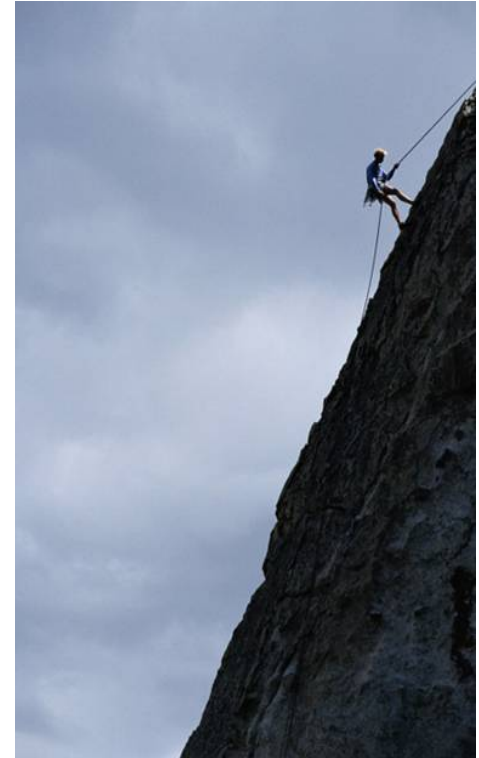
IT should be an enabler, not a burden

"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

Companies want to

Understand how their IT systems support their business processes, and then enhance them in a predictable manner


Software Assets

EJB

AJAX

COBOL

Gold customer qualification rule

Potential order entry service

Priority seating process

Create self-service site for drivers licenses

But…

They have no business intelligence inventory of their application assets, relying instead on manual processes & incomplete knowledge

Companies want to

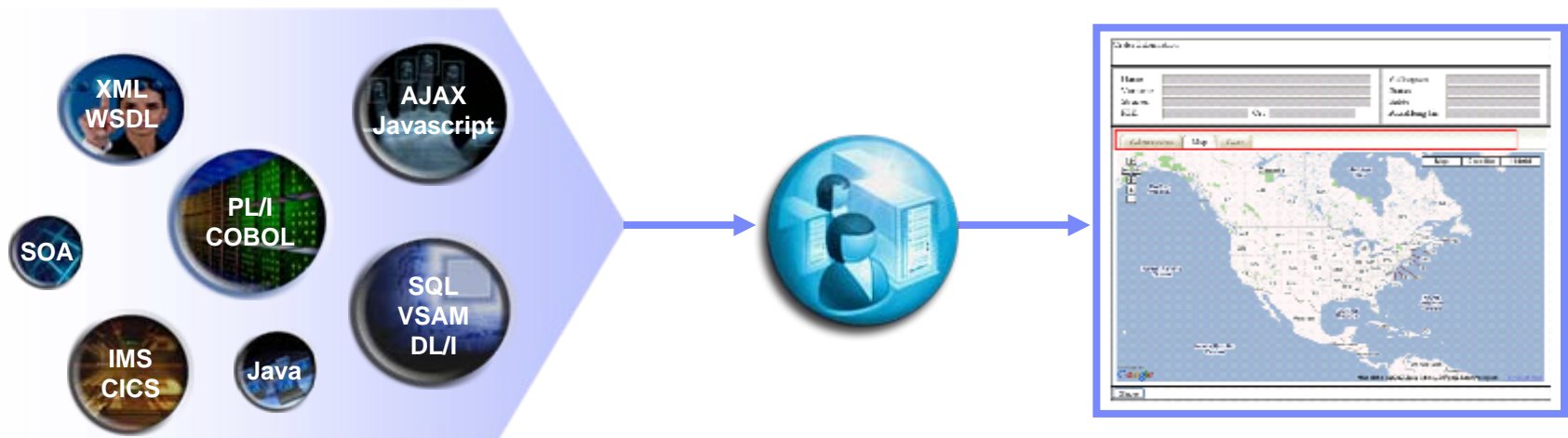Have an IT architecture that quickly adapts to support current business needs
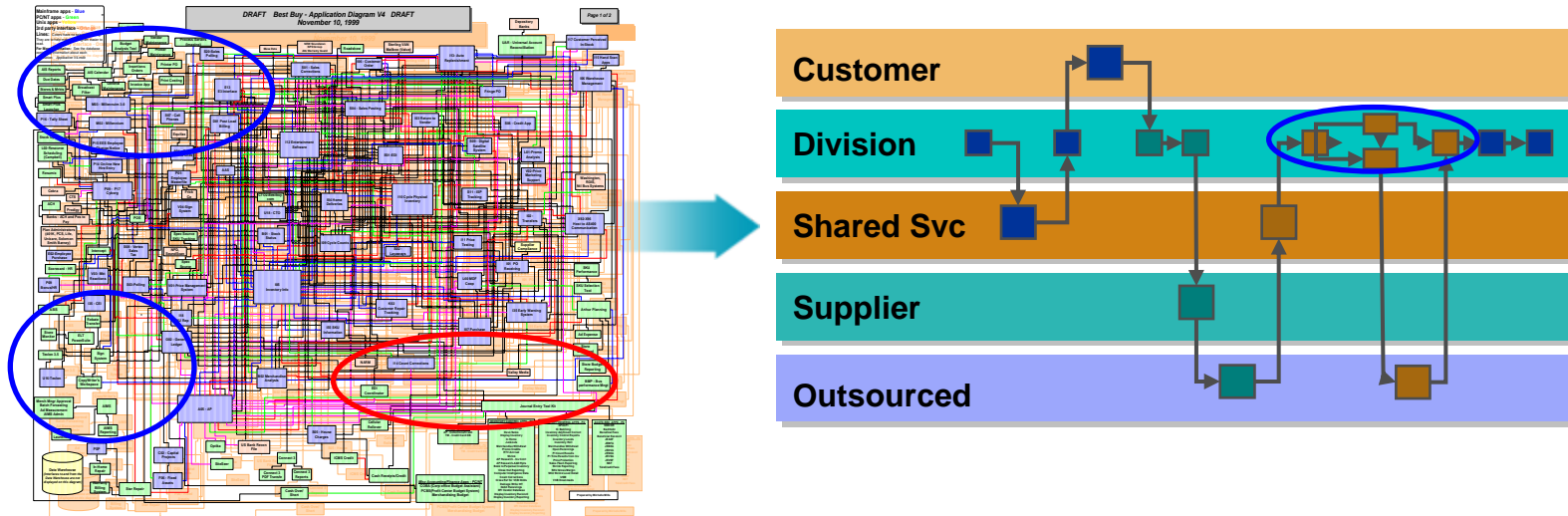
But…

They have application architectures that were incrementally built over the last 20-30 years that are no longer flexible or agile

Companies want to

Use existing developers to build modern cross-platform apps that leverage new technologies like Web 2.0
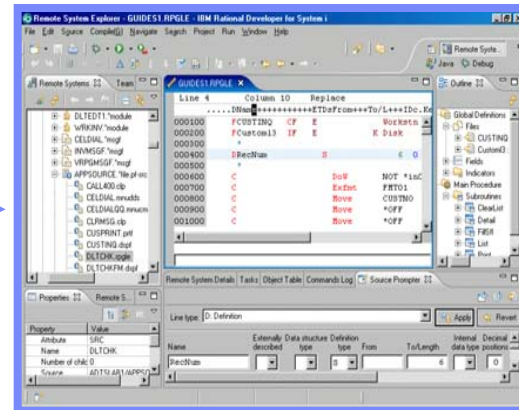

But…

They have developers that do not know all of these new technologies, and hiring all new people or doing massive retraining is unrealistic

Companies want to

Increase productivity of their "backend" development staff, as well as attract new employees to this work
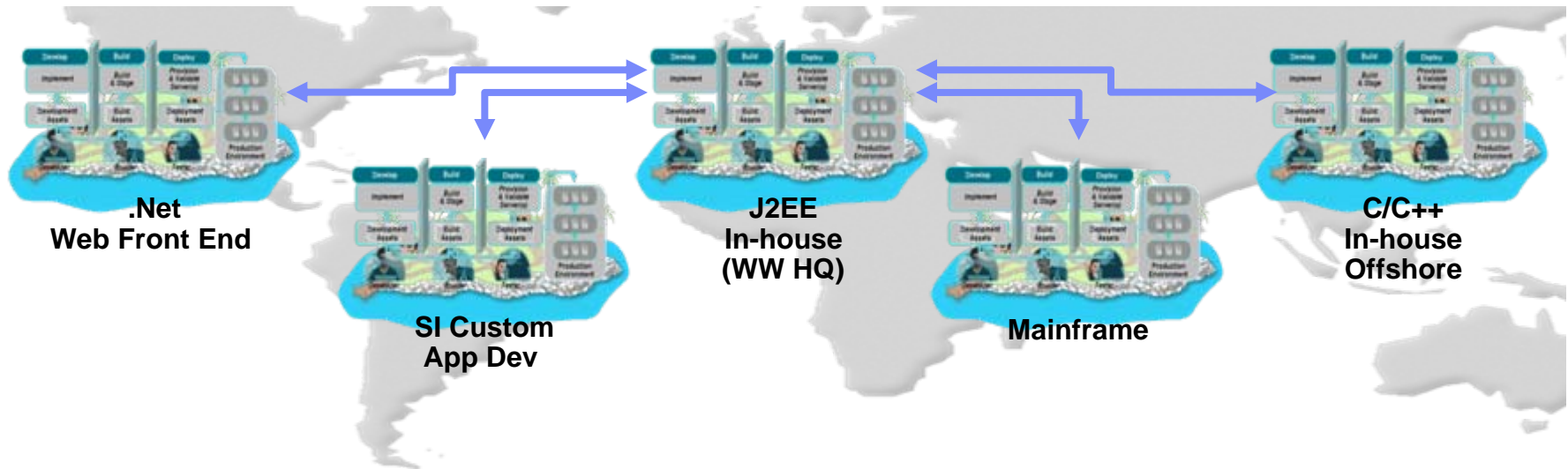

But…

They have antiquated development tools which deliver low productivity and are repulsive to younger staff

Companies want to

Enable multi-platform and cross-geo collaboration and governance

**.Net
Web Front End**

**SI Custom
App Dev**

**J2EE
In-house
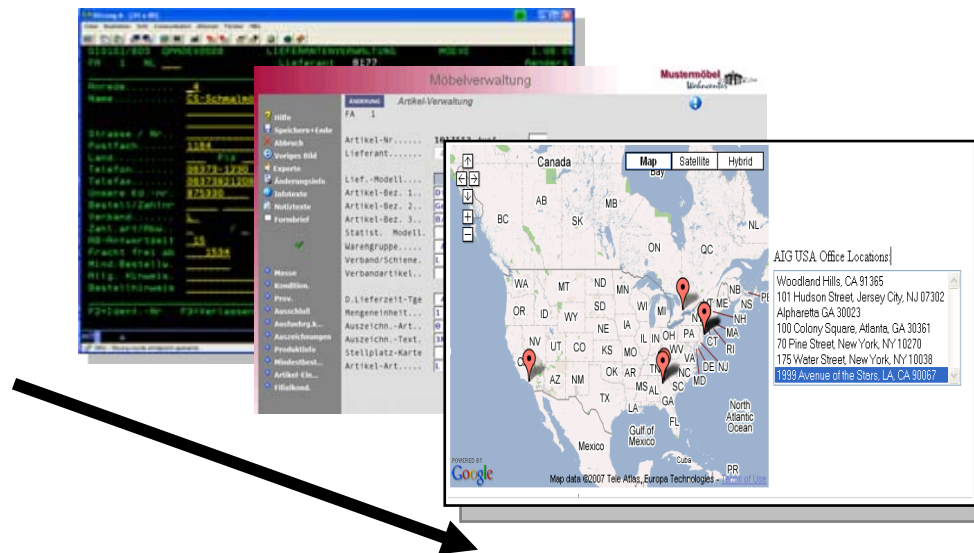(WW HQ)**

Mainframe

**C/C++
In-house
Offshore**

But…

They have different tools, processes and team infrastructure for each deployment platform, greatly complicating development of composite apps

Companies want to

Present a sophisticated, modern user interface to their customers and employees
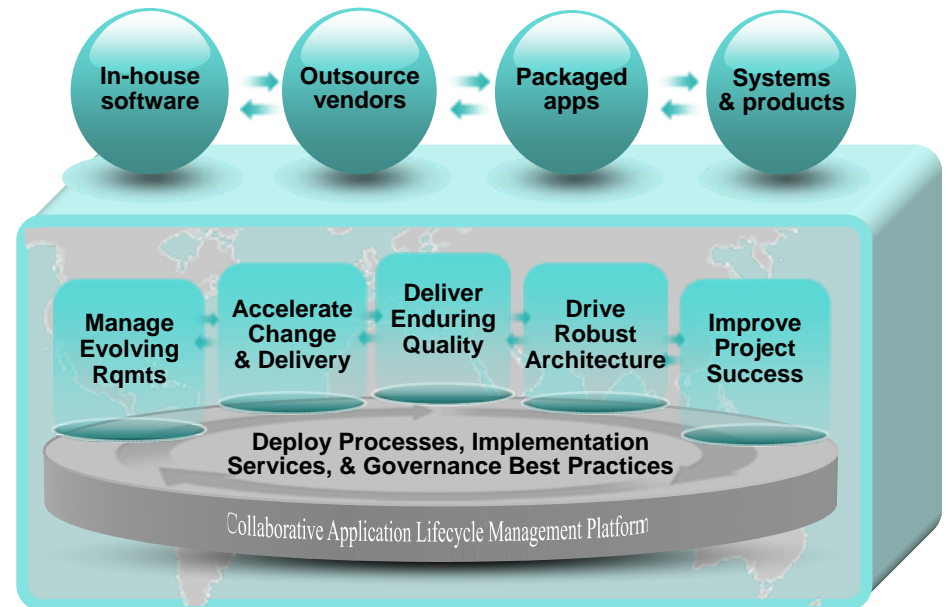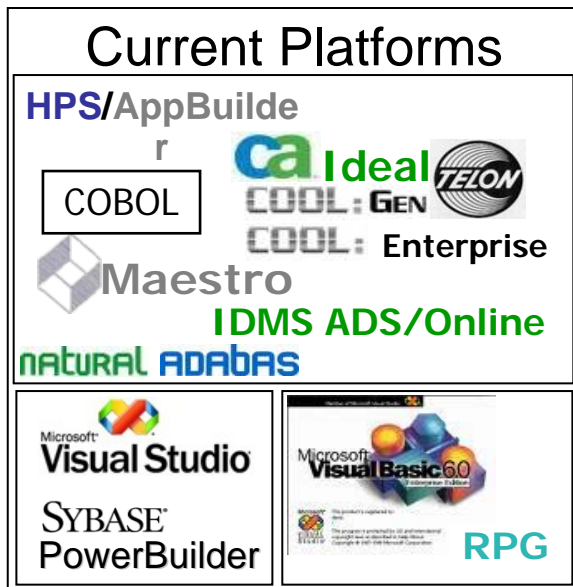

But…

They don't know how to upgrade their archaic green screen applications without rewriting their applications

Companies want to

Reduce costs and move to modern platforms, languages, and tools for all development

Current Platforms

HPS/AppBuilder

COBOL

CA Ideal
TELON
COOL:GEN
COOL: Enterprise

Maestro

IDMS ADS/Online

natural ADABAS

Microsoft Visual Studio
SYBASE PowerBuilder

Microsoft Visual Basic 6.0

RPG

In-house software → Outsource vendors → Packaged apps → Systems & products

Manage Evolving Rqmts | Accelerate Change & Delivery | Deliver Enduring Quality | Drive Robust Architecture | Improve Project Success

Deploy Processes, Implementation Services, & Governance Best Practices

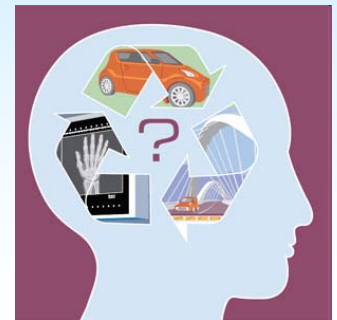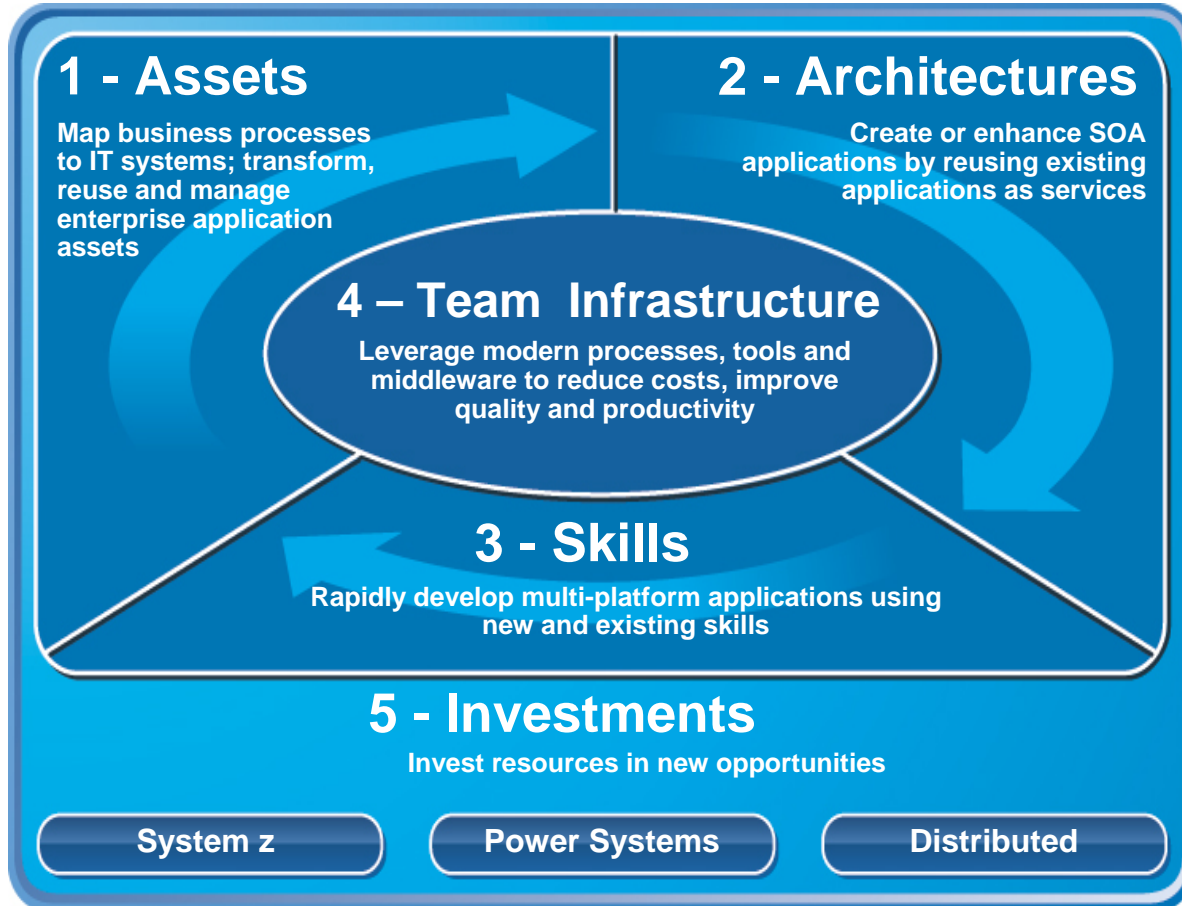Collaborative Application Lifecycle Management Platform

But…

They are stuck on unsupported, expensive, legacy development platforms

Managing Software Delivery - for System z … and distributed

▸ Multi-platform development is the norm; System z is key in most enterprises

▸ However, many think of z development as "different and unique", constraining efficiency & flexibility

▸ Rational's Enterprise Modernization solutions provide:
  - a consolidated platform for multi-platform application development
  - a collaborative, integrated environment that supports innovation
  - the same power and flexibility for all types of applications, including z

▸ With totally modern tools for System z, you can choose your deployment platform for new applications based upon runtime requirements (e.g. QoS, proximity to data)
… and NOT based on out-dated perceptions of z development

▸ It is time to re-think how z development is done! Let's look at some of our solutions

Enterprise Modernization – Improving IT Flexibility

1 - Assets

Map business processes to IT systems; 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 to support and enhance business processes*

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/

Business intelligence and technical analysis of application systems

- ✓ Map business processes to IT systems

- ✓ Harvest business rules & potential services within existing apps, including 3270 apps

- ✓ Refactor existing System z apps for reuse

- ✓ Perform impact analysis for all enterprise assets

- ✓ Manage asset development & deployment throughout the software lifecycle
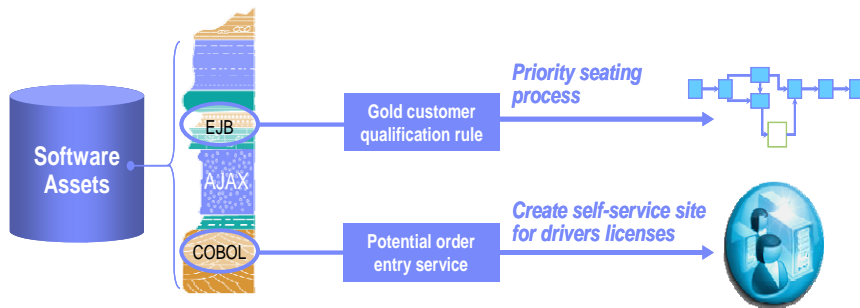
Enterprise portfolio management

- ✓ Identified obsolete code within automotive systems, and began "decommissioning"

- ✓ Performed impact analysis across massive systems with WSAA and RTW

- ✓ Communicated impacts to affected development teams

Rational Asset Analyzer
WebSphere Studio Asset Analyzer
Rational Transformation Workbench
Rational Asset Manager
WebSphere Service Registry & Repository
Enterprise PL/I Compiler
X-Analysis (from Databorough)

Software Assets

EJB
AJAX
COBOL

Gold customer qualification rule

Priority seating process

Potential order entry service

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Flexible architectures to enable business agility

✓ Expose 3270 and 5250 applications as web services

✓ Quickly create web services from existing COBOL, RPG, PL/I, Java or EGL code

✓ Create new platform-independent services

✓ Leverage MDD - transform UML to EGL, COBOL, WSDL, etc
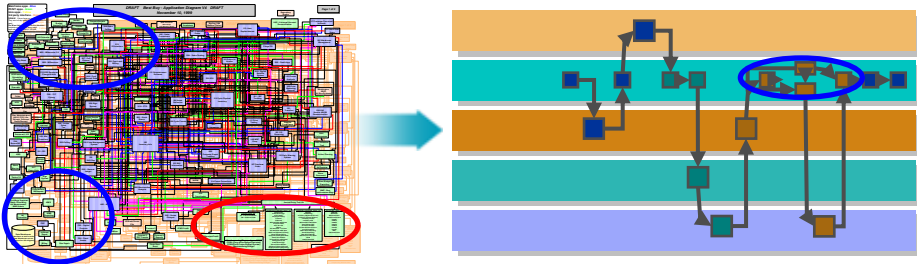
Modern architectures

THOMSON REUTERS

✓ Used RDz to enable SOA and web initiatives to position the company for growth

✓ Aligned mainframe development plans with technological roadmap

✓ Implemented modern application modeling such as workflows and web enablement with RDz

Host Access Transformation Services
Rational Developer for System z with Java
Rational Developer for System z with EGL
Rational Developer for System i for SOA
Rational Business Developer
Rational Software Architect

New!
New!

Leverage new & existing skills to build new applications

✓ Use existing staff to build end-to-end, multi-platform apps, including sophisticated Web 2.0 and SOA solutions

✓ Use abstractions to hide technology, middleware, and platform complexities

✓ Attract new staff with EGL - "IBM's newest business language"

✓ Harness a growing community of partners, ISVs, and customers with the EGL Café
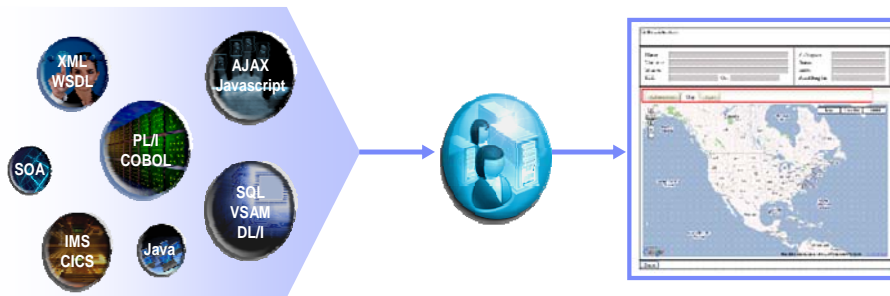
Cross-platform application development

✓ Platform independence of EGL making movement of core banking application from IBM i to System z possible

✓ One application, supported on multiple platforms with EGL

Rational Business Developer
*Rational Developer for System z with EGL*

EGL – Enabling Web 2.0 for the enterprise

COMING SOON!

✓ Users now expect modern, interactive UIs (e.g. Google™ Maps, ESPN ™ Gamecast)

✓ Browsers are ubiquitous and increasingly powerful

✓ Web 2.0 for enterprise apps requires browsers for presentation logic, backend servers for business and data access logic

✓ Implementation involves many low-level technologies

✓ EGL Rich UI hides complexities, enabling business developers to build sophisticated Web 2.0 solutions

RSDC conference scheduler application for iPhone, built with EGL Rich UI
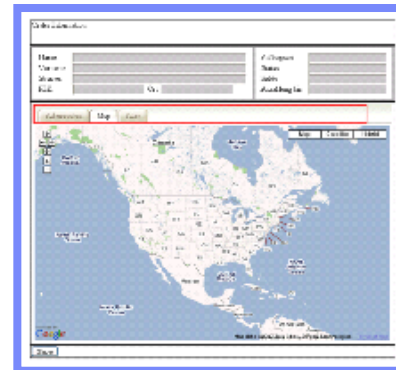
Google Maps is a familiar example of Web 2.0 technology at work

Achieve high productivity, attract new talent with modern IDEs

- ✓ Attract new talent with modern Eclipse-based IDEs

- ✓ Develop new workloads faster using built-in high productivity features

- ✓ Reduce System z MIPS by offloading edit & test to developer workstations

**Rapid application development**   ◆❯ Bayern LB

- ✓ Consolidated its software development environment to better support the organization's core applications

- ✓ Leveraged RDz to integrate Java and PL/I development environments

- ✓ Permitted end-to-end debugging, regardless of platform
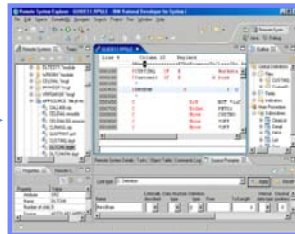
Rational Developer for System z with Java
Rational Developer for System z with EGL
Rational Developer for System i
Rational Developer for System i for SOA Construction
Rational Business Developer
Rational Application Developer

Common infrastructure & tooling to improve collaboration and governance

✓ Use the same end-to-end lifecycle tools, and processes for System z, i and distributed

✓ Exploit Jazz to increase collaboration and communication for all geographies, roles, programming languages and development platforms

✓ Improve governance with project management and reporting that spans all platforms

✓ Automate testing, including 3270 apps
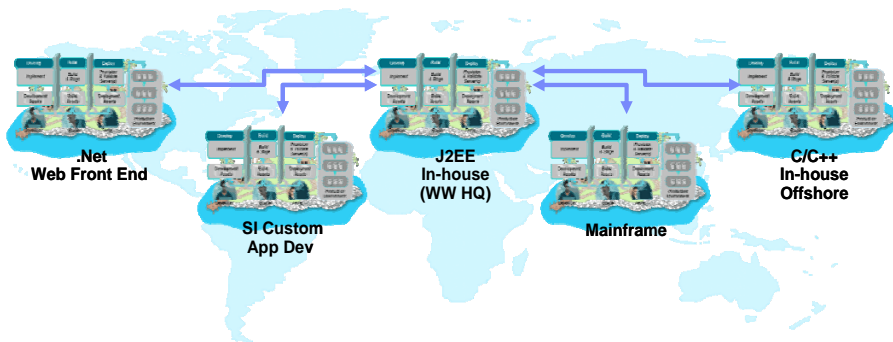
Unified change and release management

✓ TSO users can use ClearCase from a familiar environment

中国银行
BANK OF CHINA

✓ Significantly less effort to synchronize z/OS and distributed teams

✓ Increased productivity/reduced errors per build and release cycle

.Net
Web Front End

SI Custom
App Dev

J2EE
In-house
(WW HQ)

Mainframe

C/C++
In-house
Offshore

Rational AppScan
Rational ClearCase
Rational ClearQuest
Rational BuildForge
Rational Functional Tester
Rational Method Composer
Rational Performance Tester
Rational RequisitePro

New! *Rational Team Concert*
New! *Rational Team Concert for System z*
New! *Rational Team Concert for System i*
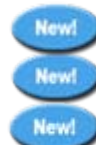
Software innovation through collaboration

COMING SOON!

eGA 4Q08

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

✓ **"Think and work in unison"**
  – Integrated source control, work item and build management

✓ **Assess real-time project health**
  – Capture data automatically and unobtrusively

✓ **Automate best practices**
  – Dynamic processes accelerate team workflow
  – Out-of-the-box or custom processes

✓ **Unify software teams**
  – Integrate a broad array of tools and clients
  – Extend the value of ClearQuest and ClearCase

✓ **Exploit Quality of Service of z/OS**
  – Hosted on z/OS with DB2 & WAS

✓ **z/OS and IBM i development support (coming)**
  – RPG support, COBOL, PL/I & EGL support, native builds, RDz, RBD, RDi integration, existing SCM integration

IBM Rational Team Concert for System z/i

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

Create impressive UIs quickly

- ✓ Quickly and easily extend your 3270 and 5250 applications to the web

- ✓ Leverage rich UI and Web 2.0 technologies with existing and new developers
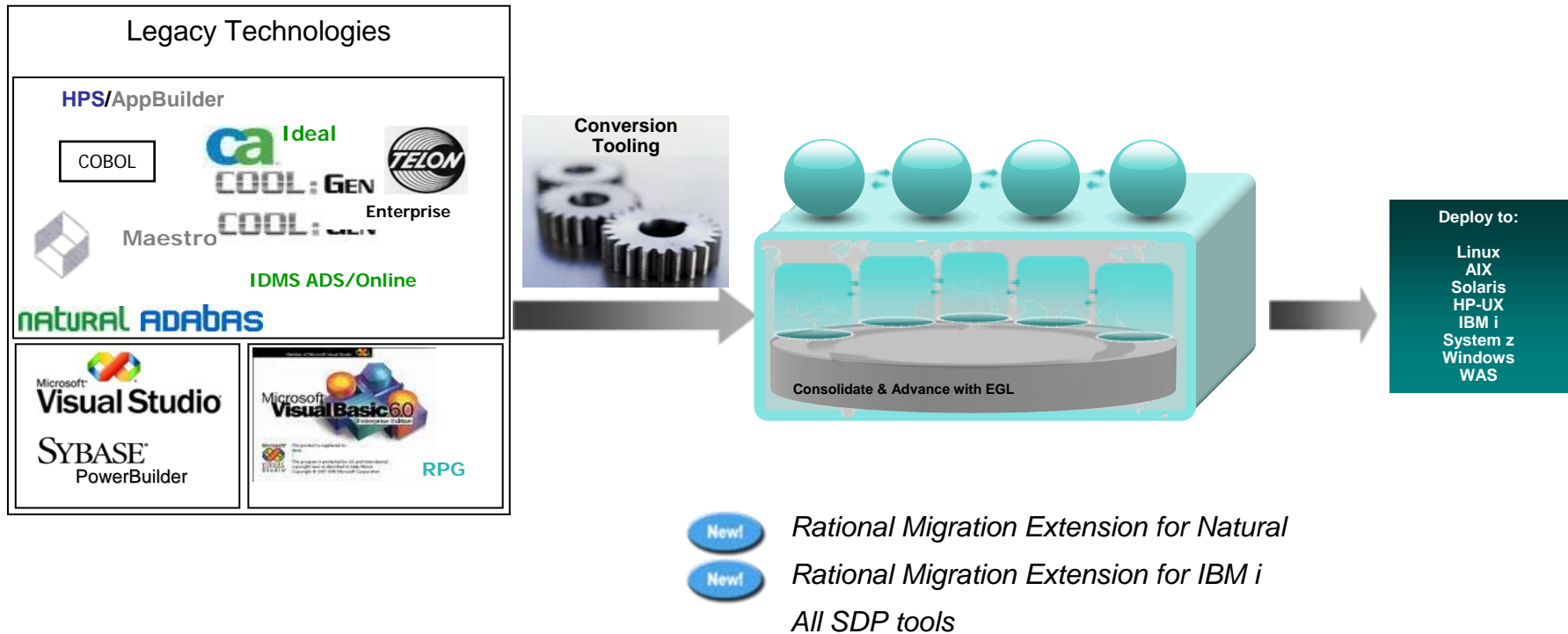
User interface modernization

- ✓ Decreased development cycle time from 11 to 6 months with HATS

- ✓ Sped creation of new customer services

- ✓ Improved operational efficiency
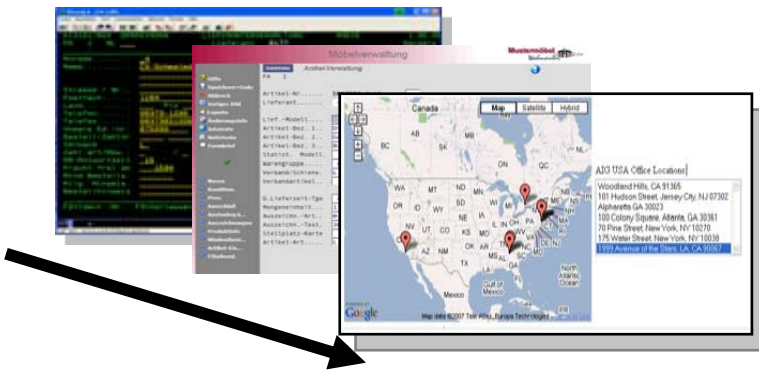
Host Access Transformation Services
Rational Business Developer 7.5 (4Q08)
Rational Developer for System z with EGL
On AlphaWorks today!

Modernize your development investments

✓ Migrate from out-of-date and expensive legacy development platforms onto the IBM Rational Software Delivery Platform (SDP)

✓ Transform Natural/ADABAS apps to EGL/DB2 to move to modern language and tools platform, save money

✓ Transform RPG apps to EGL for customers and ISVs requiring multi-platform solutions

Legacy Technologies

HPS/**AppBuilder**

COBOL

ca **Ideal**
COOL:GEN
TELON
Enterprise

Maestro **COOL:GEN**

IDMS ADS/Online

natural ADABAS

Microsoft
Visual Studio
SYBASE
PowerBuilder

Microsoft
Visual Basic 6.0
RPG

Conversion Tooling

Consolidate & Advance with EGL

Deploy to:

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

Rational Migration Extension for Natural

Rational Migration Extension for IBM i

All SDP tools

What can I do now?

Learn new stuff
- **Modern Application Architecture for COBOL Developers -** *design and integrate composite applications across CICS and WebSphere*
- **EGL Distance Learning -** *10 days of FREE instructor-led virtual class*
- **Web 2 Architectures for IBM Mainframe Developers** *– extend the value of mainframe applications in modern Web 2.0 architectures*
- **System z Solution Videos & Demos -** *Translated solution videos and demo to help you raise awareness of Enterprise Modernization offerings*

Get quick ROI today
- *Rational Asset Analyzer – find out what assets can be reused today*
- *Host Access Transformation Services – quickly turn your green screens into web UIs*
- *Rational AppScan – make sure your web sites are hacker-proof*

Take small steps
System z & IBM i Starter packs - Software bundles to simplify getting started on your modernization journey
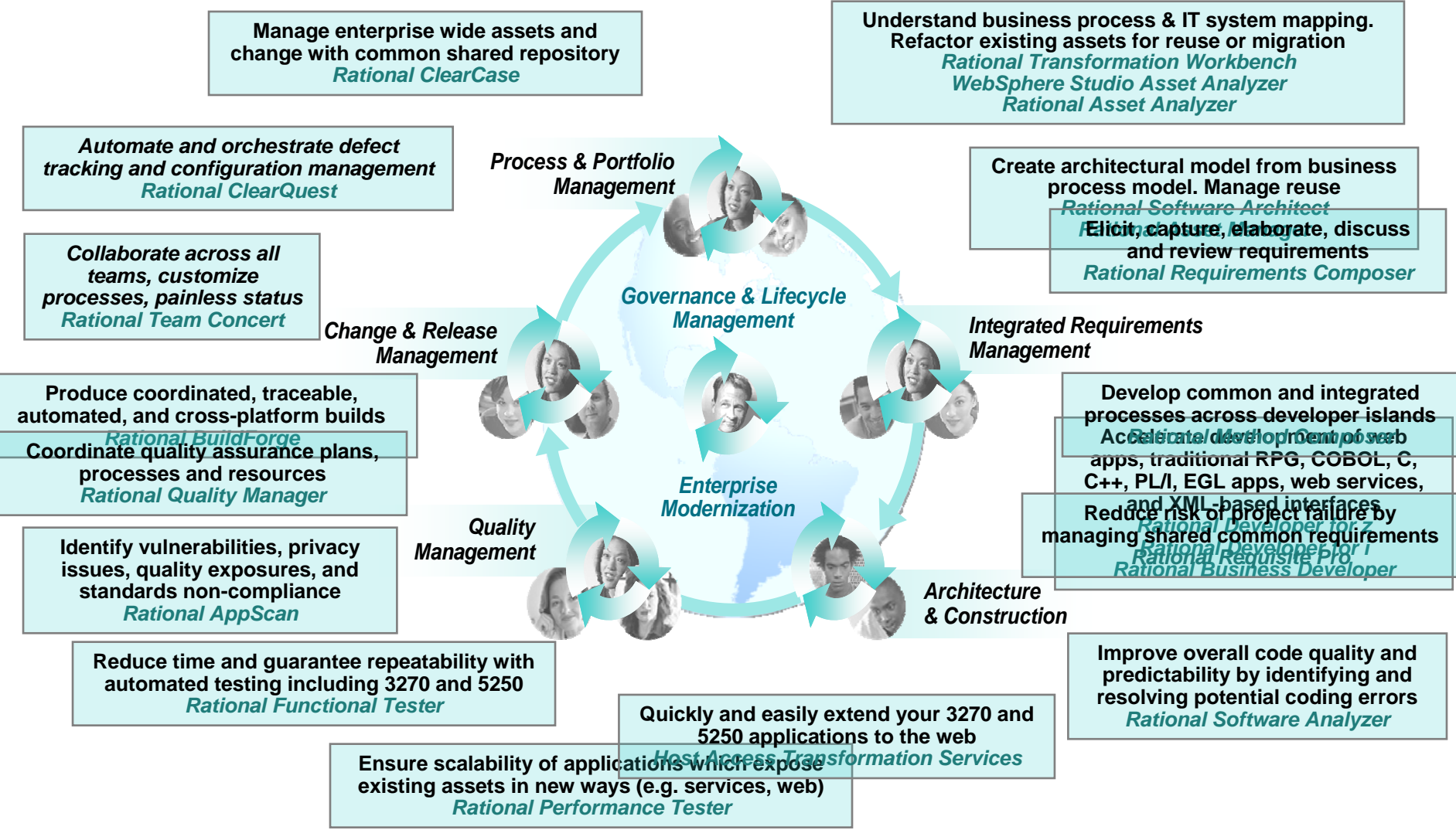
Try it out
System z & IBM i Sandboxes - Fully hosted online System z and IBM i environments to experiment, try and buy

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

The Rational Software Delivery Platform
Accelerating software innovation for the entire enterprise

Manage enterprise wide assets and change with common shared repository
Rational ClearCase

Understand business process & IT system mapping. Refactor existing assets for reuse or migration
Rational Transformation Workbench
WebSphere Studio Asset Analyzer
Rational Asset Analyzer

Automate and orchestrate defect tracking and configuration management
Rational ClearQuest

Create architectural model from business process model. Manage reuse
Rational Software Architect

Elicit, capture, elaborate, discuss and review requirements
Rational Requirements Composer

Collaborate across all teams, customize processes, painless status
Rational Team Concert

Process & Portfolio Management

Governance & Lifecycle Management

Change & Release Management

Integrated Requirements Management

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

Develop common and integrated processes across developer islands
Rational Team Concert

Coordinate quality assurance plans, processes and resources
Rational Quality Manager

Accelerate development of web apps, traditional RPG, COBOL, C, C++, PL/I, EGL apps, web services, and XML-based interfaces
Rational Developer for z
Rational Developer for i
Rational Business Developer

Enterprise Modernization

Reduce risk of project failure by managing shared common requirements
Rational Requisite Pro

Identify vulnerabilities, privacy issues, quality exposures, and standards non-compliance
Rational AppScan

Quality Management

Architecture & Construction

Improve overall code quality and predictability by identifying and resolving potential coding errors
Rational Software Analyzer

Reduce time and guarantee repeatability with automated testing including 3270 and 5250
Rational Functional Tester

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

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

COMING SOON!

Perform business intelligence & technical analysis of application systems

New!
- ✓ Rational Asset Analyzer 5.5 - 7/2008
- ✓ Rational Asset Manager 7.1.0.1, with zLinux support
- ✓ Rational Host Access Transformation Services 7.5
- ✓ Rational Host Integration Solution 7.5
- ✓ Rational Transformation Workbench 3.1
- ✓ WebSphere Service Registry & Repository 6.2
- ✓ WebSphere Studio Asset Analyzer 5.1

Leverage new and existing skills
- ✓ Rational Business Developer 7.5, 7.5.1

Achieve high productivity, attract new talent:

New!
- ✓ Rational Developer for System z 7.5
  - ▪ RDz for SOA Construction with EGL
  - ▪ RDz for SOA Construction with Java
- ✓ Rational Business Developer 7.5, 7.5.1
- ✓ Rational Application Developer 7.5

Products in blue will ship in 4Q08

New!
Identifies a new Rational product or offering introduced in 2008

Enable common infrastructure, collaboration and governance:
- ✓Rational AppScan Build Edition 7.8   New!
- ✓Rational AppScan Developer Edition 7.8   New!
- ✓Rational AppScan Enterprise Edition 5.5
- ✓Rational AppScan Standard 7.8   New!
- ✓Rational AppScan Tester Edition 5.5
- ✓Rational BuildForge 7.1, with zLinux support
- ✓Rational ClearCase 7.1, with z/OS Extensions
- ✓Rational ClearQuest 7.1
- ✓Rational Functional Tester 7.1, with 3270 extensions
- ✓Rational Method Composer 7.5
- ✓Rational Performance Tester 7.1
- ✓Rational Policy Tester 5.5
- ✓Rational Quality Manager 1.0   New!
- ✓Rational RequisitePro 7.1
- ✓Rational Requirements Composer 1.0   New!
- ✓Rational Service Tester for SOA Quality 7.1 – formerly Rational Tester for SOA Quality
- ✓Rational Software Analyzer 7.0 – 4/2008
- ✓Rational Software Architect 7.5
- ✓Rational Team Concert 1.0 – 6/2008   New!
- ✓Rational Team Concert for System z 1.0   New!
- ✓Rational Test Lab Manager 7.1   New!

Forward-looking statement – may change without notice

Learn more…

External Web sites

- EM Solution Page on ibm.com
- EM Sandbox
- EGL Cafe

Demos

- Video: Accelerating software innovation on System z
- Enterprise Modernization Product Demos

Whitepapers/Brochures

- Brochure: Enterprise modernization solution overview
- Solution Sheet: IBM Enterprise Modernization Solutions for System z
- Developer Productivity Study – EGL vs. .NET
- Whitepaper: Unleash the power of mainframe assets into SOA

Customer Facing Webcasts/Podcasts

- Webcast by Scott Hebner: Accelerating software innovation on System z
- Podcast by Hayden Lindsey: Roadmap to Enterprise Modernization

ibm.com/rational/modernization

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 Business Partners](#)
- [IBM Rational Case Studies](#)