

System z Premier Executive Event



Enterprise Modernization: Revolutionizing the economics of enterprise application development and maintenance

Hayden Lindsey

Vice President - Distinguished Engineer
Rational Enterprise Modernization,
Modeling and Construction
IBM Software Group



Businesses are challenged to deliver innovation

80%



64%

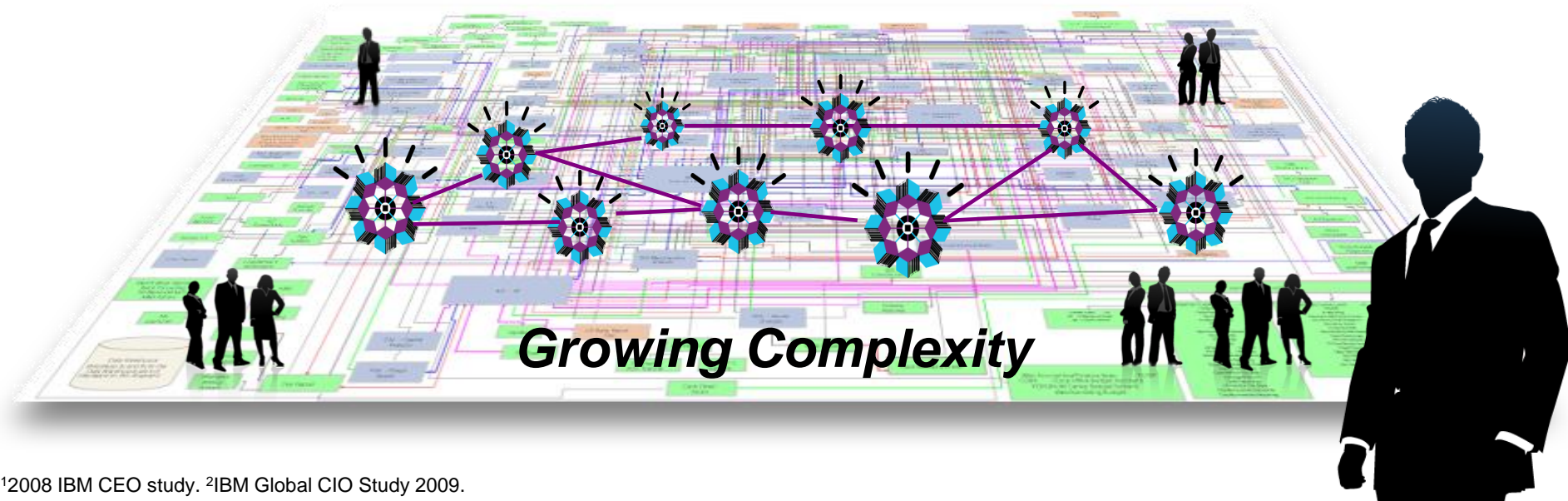


3x

CEOs anticipate turbulent change and bold moves.¹

of CIOs work with senior business executives to drive innovation.²

increase in the gap between leaders' need and their ability to deliver it.¹



¹2008 IBM CEO study. ²IBM Global CIO Study 2009.

Many companies consider IT an inhibitor to innovation and a source of inflexibility



“The message for IT is clear; business needs and expects greater agility from IT. A new approach to IT delivery models and sourcing options is required that allows IT organizations to be more responsive to the needs of the business.”

Gartner, October 14, 2008, “Changing the Cost Structure of IT Will Become a Business Imperative for Most CIOs”

Challenges to achieving greater value from your IT investments

Applications



“We don’t understand the effort, risk and impact of modernizing our legacy applications.”



People



“Our skills gap keeps growing. How do we stay current with all the language and technology changes?”



Teams



“Our teams on different platforms are struggling to communicate. How do we collaborate in the context of our work?”



Infrastructure



“We need a cost effective way to improve our infrastructure efficiency and free up capacity to handle more volume”



IBM Rational Enterprise Modernization solutions can help *Optimize your applications, people, team and infrastructure investments*

Increase flexibility



Boost productivity



Maximize business agility



Increase system utilization



- **Increase flexibility** by revitalizing existing application portfolios
- **Boost productivity and accelerate innovation** with modern skills
- **Maximize business agility** by bridging organizational silos
- **Increase system utilization** by leveraging hardware capabilities

Rational Software Delivery Platform powered by *Jazz*

Increase flexibility by revitalizing existing application portfolios

Increase flexibility

Revitalize Applications



Boost productivity

Empower People



Maximize business agility

Unify Teams



Increase system utilization

Exploit Infrastructure



Business intelligence for applications

Enterprise architecture and portfolio management

SOA tools for all platforms and languages

Operational reuse

User interface modernization

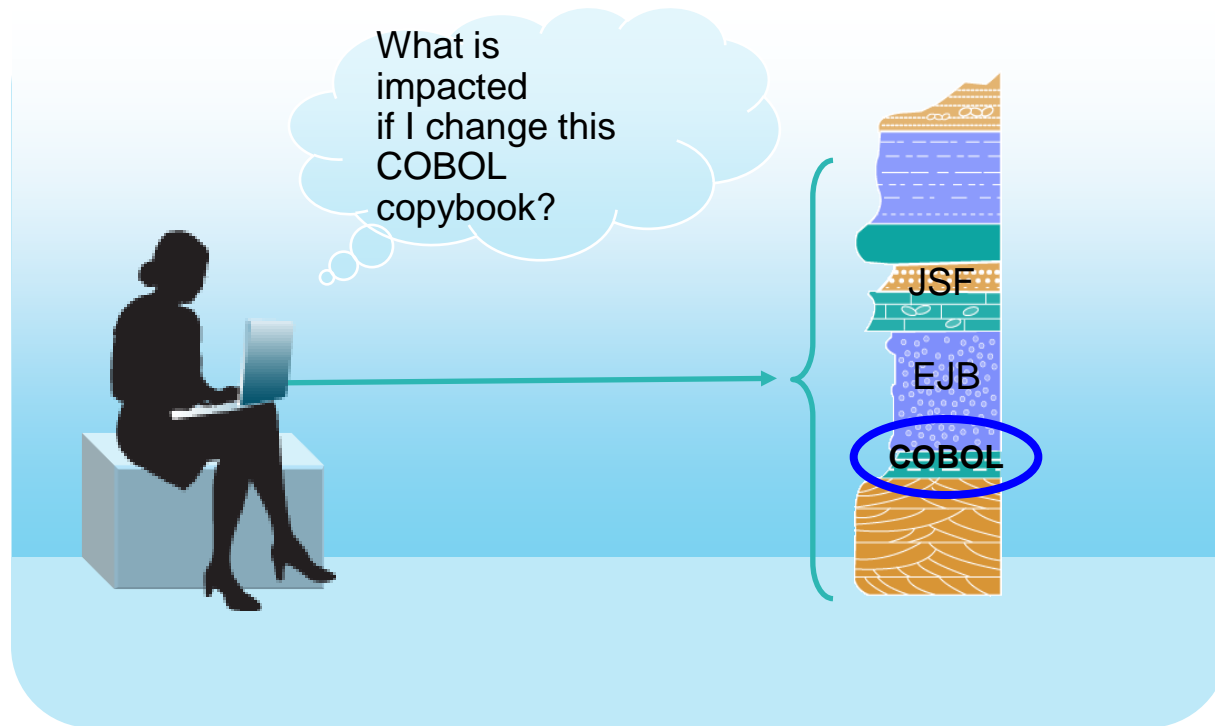
Application transformation tools and services

Quality across the organization

Rational Software Delivery Platform powered by *Jazz*

Enterprises want to...

Understand the impact and cost of change to their IT systems



But...

They have no business intelligence inventory of their application assets, relying instead on manual and error-prone processes and incomplete knowledge. They must compensate with more extensive planning and extra testing.

Solution: Business intelligence for applications

Restore lost application knowledge via technical analysis



Application Artifacts

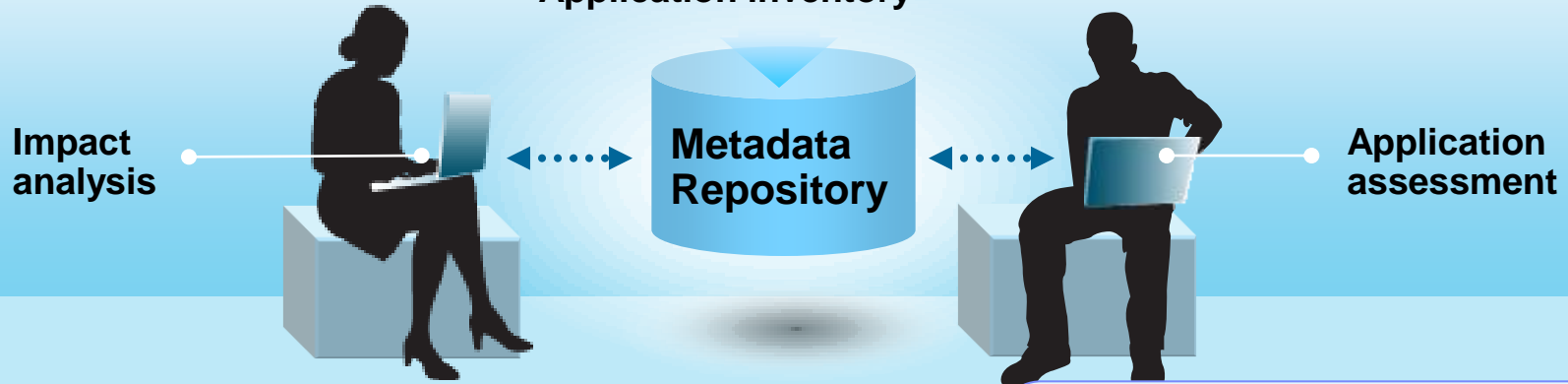
Mainframe

- COBOL
- PL/I
- DB2
- IMS/DC
- CICS
- Job Control Language
- High-level Assembler (HLASM)

Distributed

- Java
- WebSphere
- HTML
- WSDL
- Enterprise Archive (EAR)
- Web Archive (WAR)
- C++

Application inventory



*Rational Asset Analyzer
WebSphere Studio Asset Analyzer
Application Health Assessment*

Delivering...

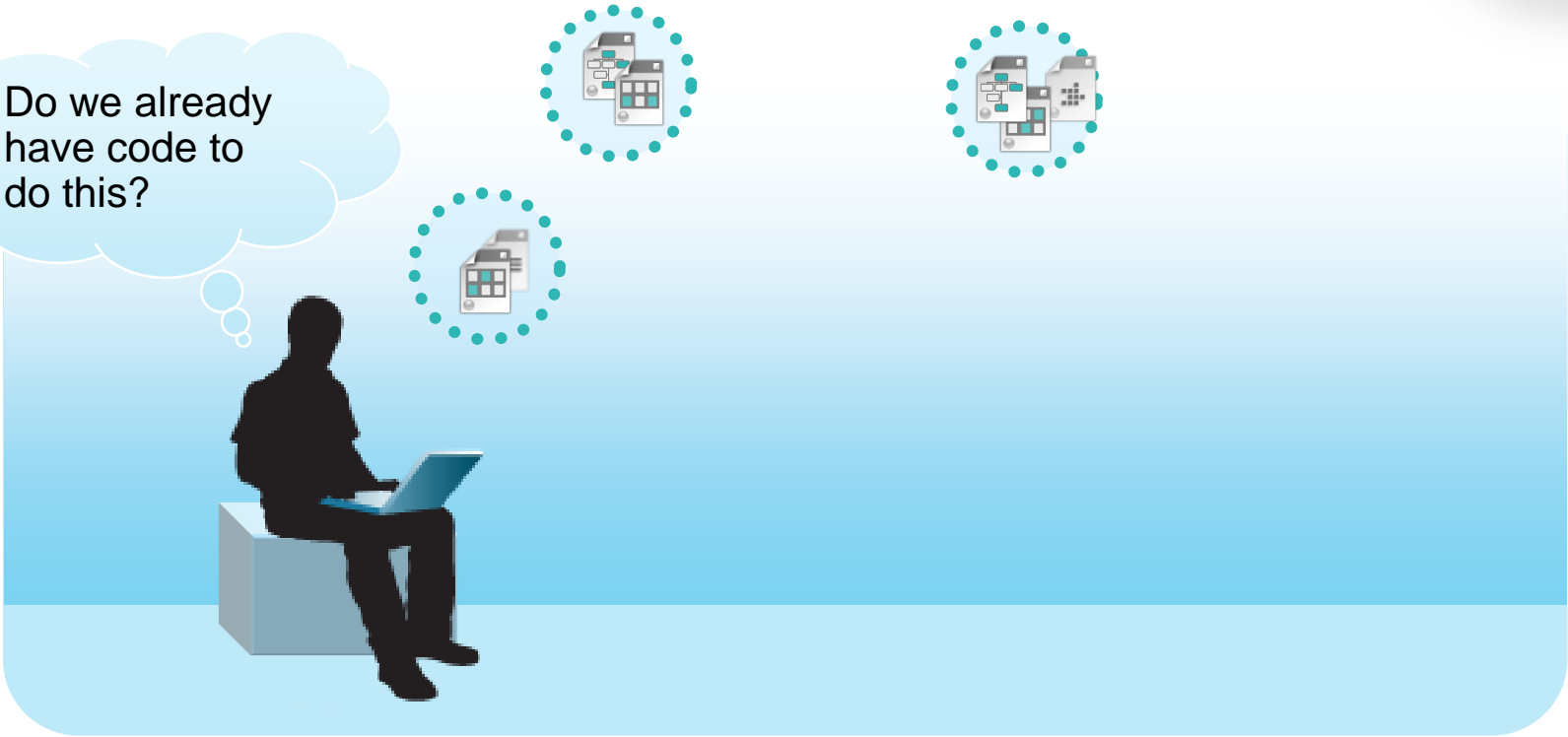
Reduced risk by quickly determining the full impact of proposed changes and lowered costs via dead code elimination, optimal planning, focused testing and faster development

Enterprises want to...

Reuse existing assets to reduce duplication and speed time to market



Do we already have code to do this?

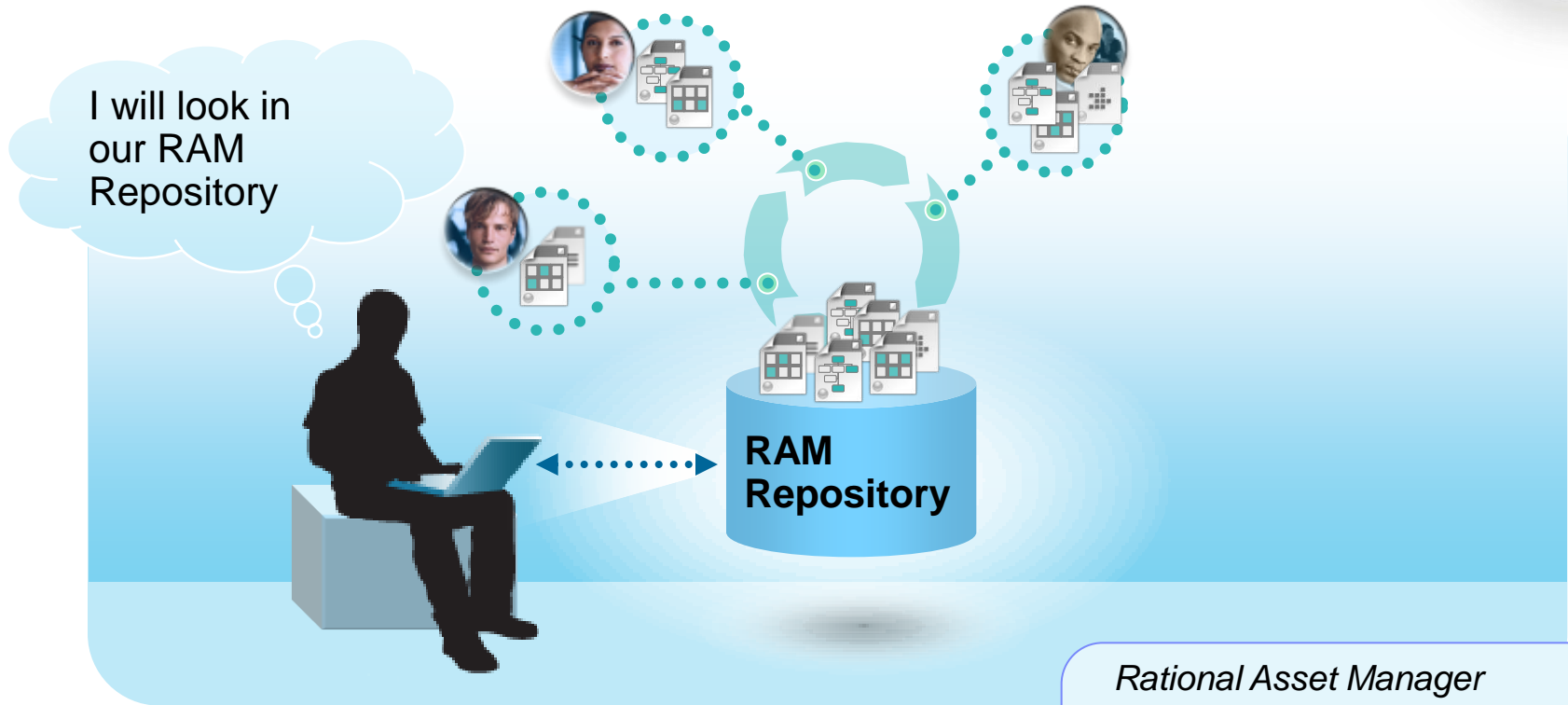


But...

They do not have the infrastructure to establish a reuse culture

Solution: Operational reuse

Instill proactive asset management of all IT artifacts into the organization's processes and culture by deploying a reuse infrastructure



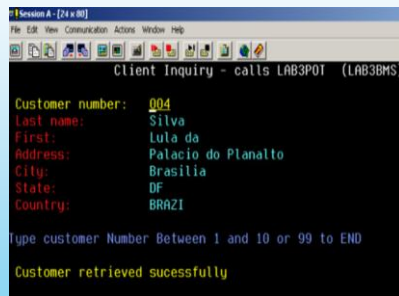
*Rational Asset Manager
WebSphere Service Registry and
Repository*

Delivering...

Greater reuse, development efficiency, faster time-to-market, and higher quality

Enterprises want to...

Provide a range of appealing, more intuitive user interfaces to increase employee productivity and boost customer satisfaction

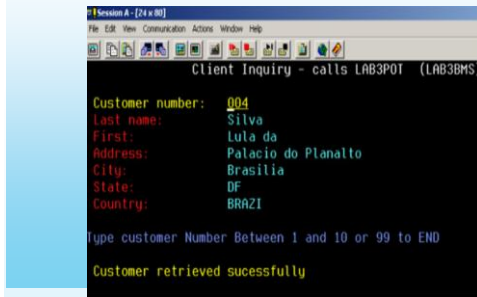


But...

The cost of replacing or re-writing these applications is prohibitive, and they may not have the necessary web and UI technology skills

Solution: User interface modernization

Deploy the ideal UI for your application, from quickly creating a modern Web UI out of an existing green screen application to customizing a highly interactive, graphical Web 2.0 UI



- Rational EGL*
- Host Access Transformation Services*
- Rational Developer for System z*
- Rational Developer for Power Systems*
- Rational Business Developer*
- Rational Application Developer*



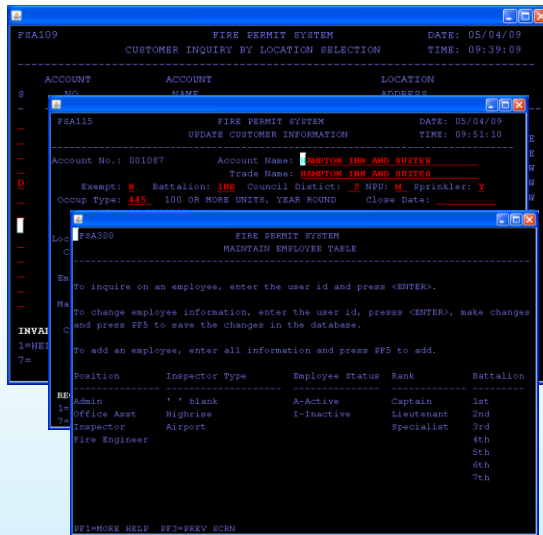
Delivering...

Greater customer satisfaction, lower employee training costs, and fewer errors from more modern and compelling UIs

UI Modernization with RME for Rich UI



Original Screens



Standard Transformation



Enhanced Transformation



- ✓ One to one screen to EGL RUI
- ✓ UI patterns mapping (list, detail, headers, message, etc)

- ✓ Combined UIs, improved flow, resizable panels, etc
- ✓ Combo boxes, radio buttons, date pickers, tabs, etc
- ✓ Mash-ups and integration with other systems

Enterprises want to...

Reduce tool support costs and move to modern platforms, languages, and tools for their multi-platform application development



Software AG Natural/Adabas
CA Ideal/Datacom and CoolGen
RPG and COBOL
Green screen text UIs



- System z – CICS
- System z – IMS
- System z – Linux*
- System z – Batch
- System z – WAS*
- System z – VSE
- IBM i - WAS
- IBM i - Native
- AIX
- HP - UX
- Solaris
- Linux
- Windows

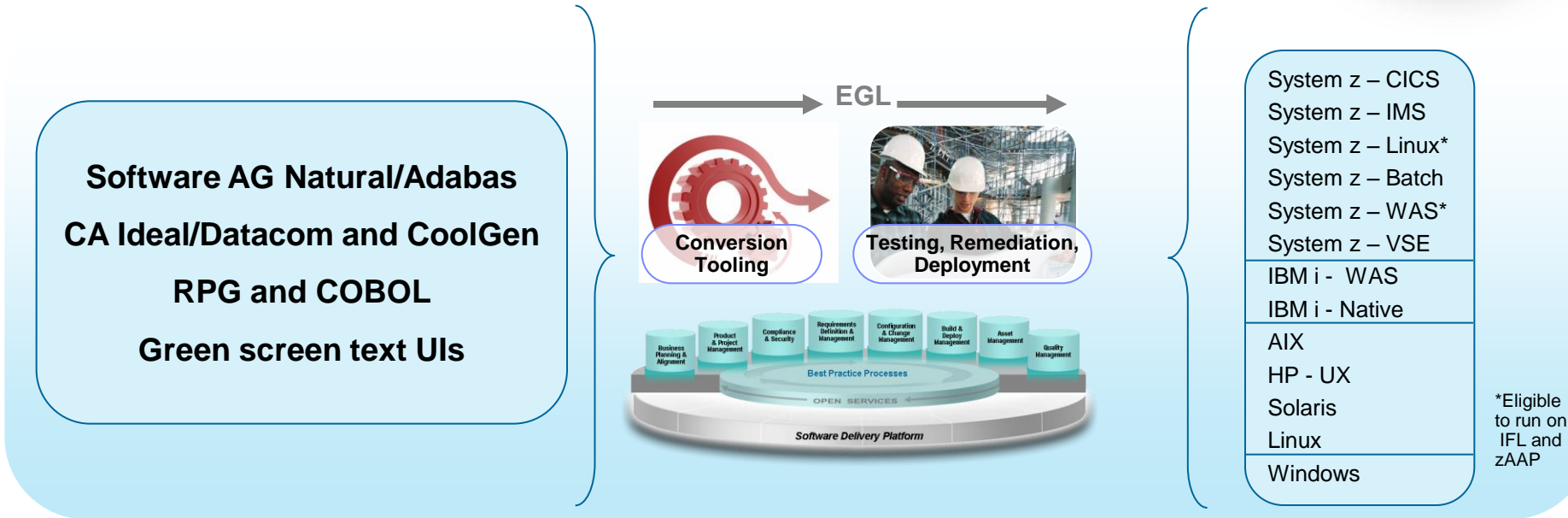
*Eligible to run on IFL and zAAP

But...

They are stuck on poorly supported, expensive, legacy development platforms

Solution: Application transformation tools and services

Migrate from older languages and expensive tools to modern development platforms, languages, databases and tools



*Eligible to run on IFL and zAAP

Delivering...

Greatly reduced development platform support costs, and more flexible, integrated development environment for making future application enhancements

Rational Migration Extension for Natural
Rational Migration Extension for CA
Rational Migration Extension for Rich UI
Rational Migration Extension for IBM i

Boost productivity and accelerate innovation with modern skills

Increase flexibility

Revitalize Applications



Boost productivity

Empower People



Maximize business agility

Unify Teams



Increase system utilization

Exploit Infrastructure



Modern IDEs for all platforms and languages

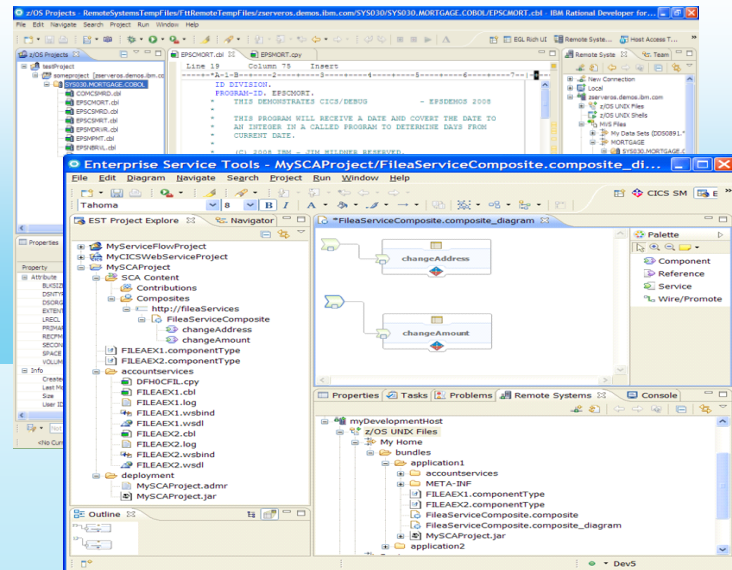
Modern business language

Enterprise training programs, communities and resources

Rational Software Delivery Platform powered by *jazz*

Enterprises want to...

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

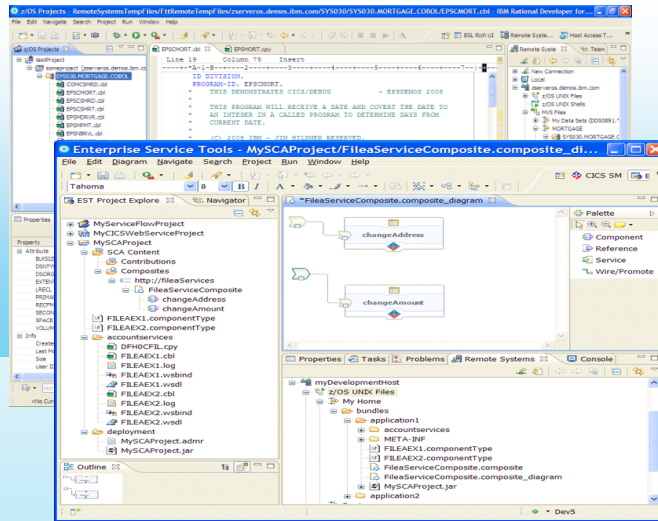


But...

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

Solution: Comprehensive, multi-platform IDEs

Upgrade to modern Eclipse-based tools to develop and maintain enterprise applications spanning multiple platforms, languages, and technologies



*Rational Developer for System z
Rational Developer for Power Systems **NEW!**
Rational Application Developer
Rational Business Developer*

Delivering...

22%-37% improvement in developer productivity¹, modern tools with which to attract new talent, and 50%-80%¹ reduction in host CPU usage with workstation syntax checking

The original System z development environment

ISPF has provided consistent tooling for decades...but it is limiting



Challenges...

- Constant connection to mainframe is required
- Development shares processor with production use; gets lower priority
- Inability to create cross-platform components
- ISPF green screen UI is unappealing to new hires
- MIPS used for development vs. production

Today's mainframe development environment with a modern IDE (and still some ISPF)



Modern IDEs add value

- Higher productivity; more attractive for new developers
- Ability to offload some development MIPS
- Integration with complete application lifecycle tools

But challenges remain

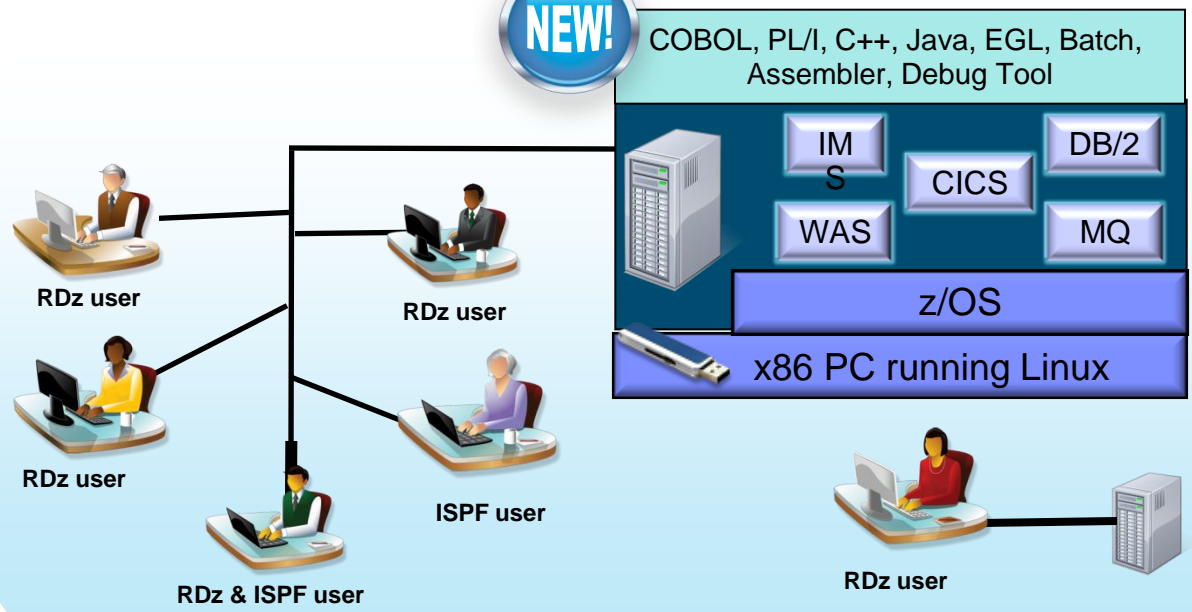
- Business pressures to reduce development MIPS further
- Test delays caused by dependencies on operations team, thus hurting productivity

Announcing the RDz Unit Test Feature

System z environment for testing on x86 Linux systems



NEW!



- Liberate developers to rapidly prototype new applications Develop and test System z applications anywhere, anytime
- Free up mainframe development MIPS for production capacity
- Eliminate costly delays by reducing dependencies on operations staff

Note: This Program is licensed only for development and test of applications that run on IBM z/OS. The Program may not be used to run production workloads of any kind, nor more robust development workloads including without limitation production module builds, pre-production testing, stress testing, or performance testing.

Enterprises want to...

Build modern, multi-platform applications with existing and new staff

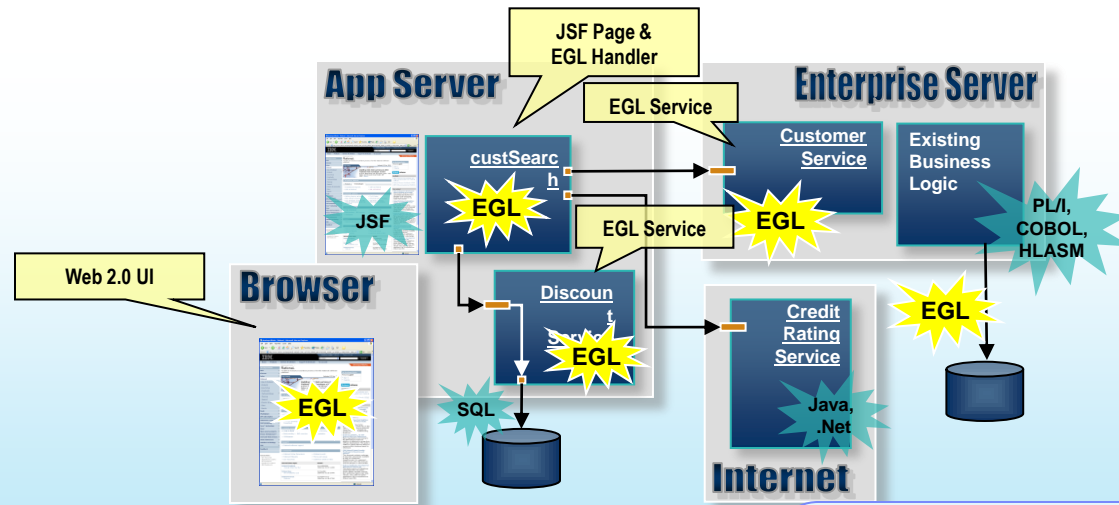


But...

They have different teams of developers for each platform, and re-training them to all the new technologies is costly, time consuming, and often impractical

Solution: EGL – An open, modern business language

Build new or extend existing multi-platform enterprise applications in EGL with its middleware abstractions, high productivity language, modern IDE, and extensible architecture

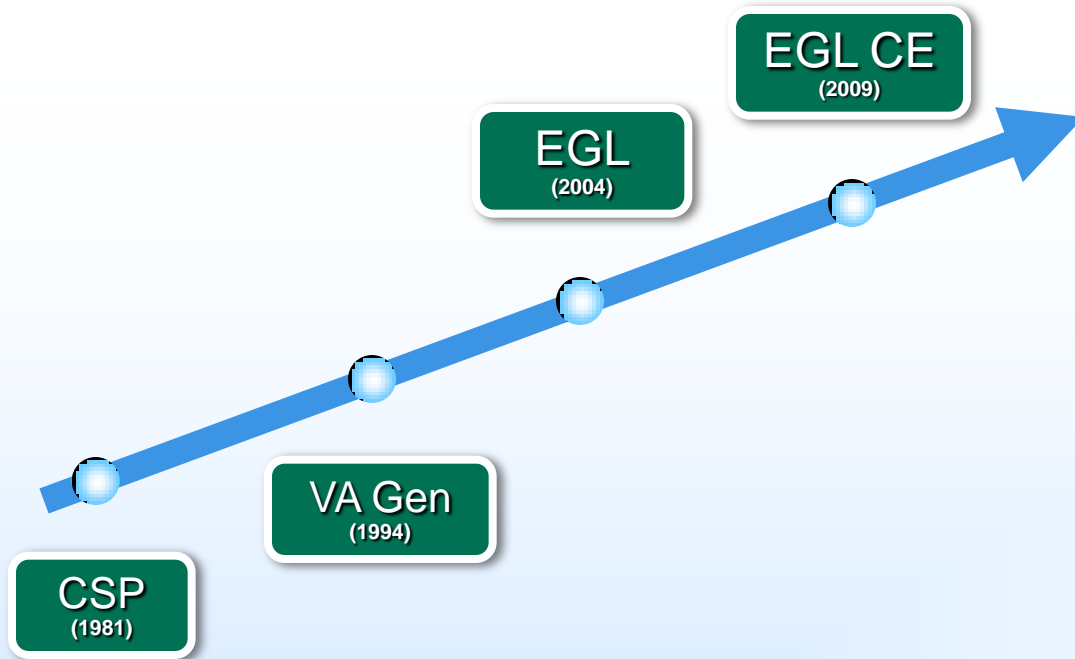


*Rational Business Developer
 Rational Developer for System z with EGL
 Rational Developer for Power Systems **NEW!***

Delivering. . .

High productivity, platform portability, and skills flexibility, for existing and new developers when building all types of modern enterprise applications

EGL: 30 years of innovation and investment



EGL to date ...

- ✓ Represents 30 years of innovation and continued investment by IBM
- ✓ Introduced in 2004 as the follow on to CSP and VisualAge Generator
 - ✓ Designed for extensibility
- ✓ Thousands of customers using EGL and predecessor technologies
- ✓ Migration paths have preserved customers' investments

What we have heard ...

We prefer open languages because they are less risky to our business

We believe innovation is accelerated by giving others the ability to participate

We want to see an active community promoting awareness and growing skills

OPEN

Announcing
**Eclipse EGL
Development Tools Project**

An evolution in business application development



CLEAR BLADE



- Open source project at Eclipse.org for the EGL language, compiler, source editing tools, debugger, and generators for Java and JavaScript
- Initial contribution based on technology in IBM Rational Business Developer
- Core EGL development by IBM and other participants in the open on Eclipse
- Project launched June 7, 2010



Benefits of an open EGL ...

- **Reduces risk**
 - Jointly developed in the open at Eclipse.org
 - Source available under Eclipse Public License (EPL)
- **Accelerates innovation**
 - Gives others (not just IBM) the ability to ...
 - Build tools that compliment the tools provided by IBM
 - Extend deployment to new runtime platforms
 - Add language extensions to support new concepts
- **Broadens awareness and community**
 - Opens EGL to new audiences
 - Gives others the opportunity to be involved in the planning and development process



Tools and solutions from IBM

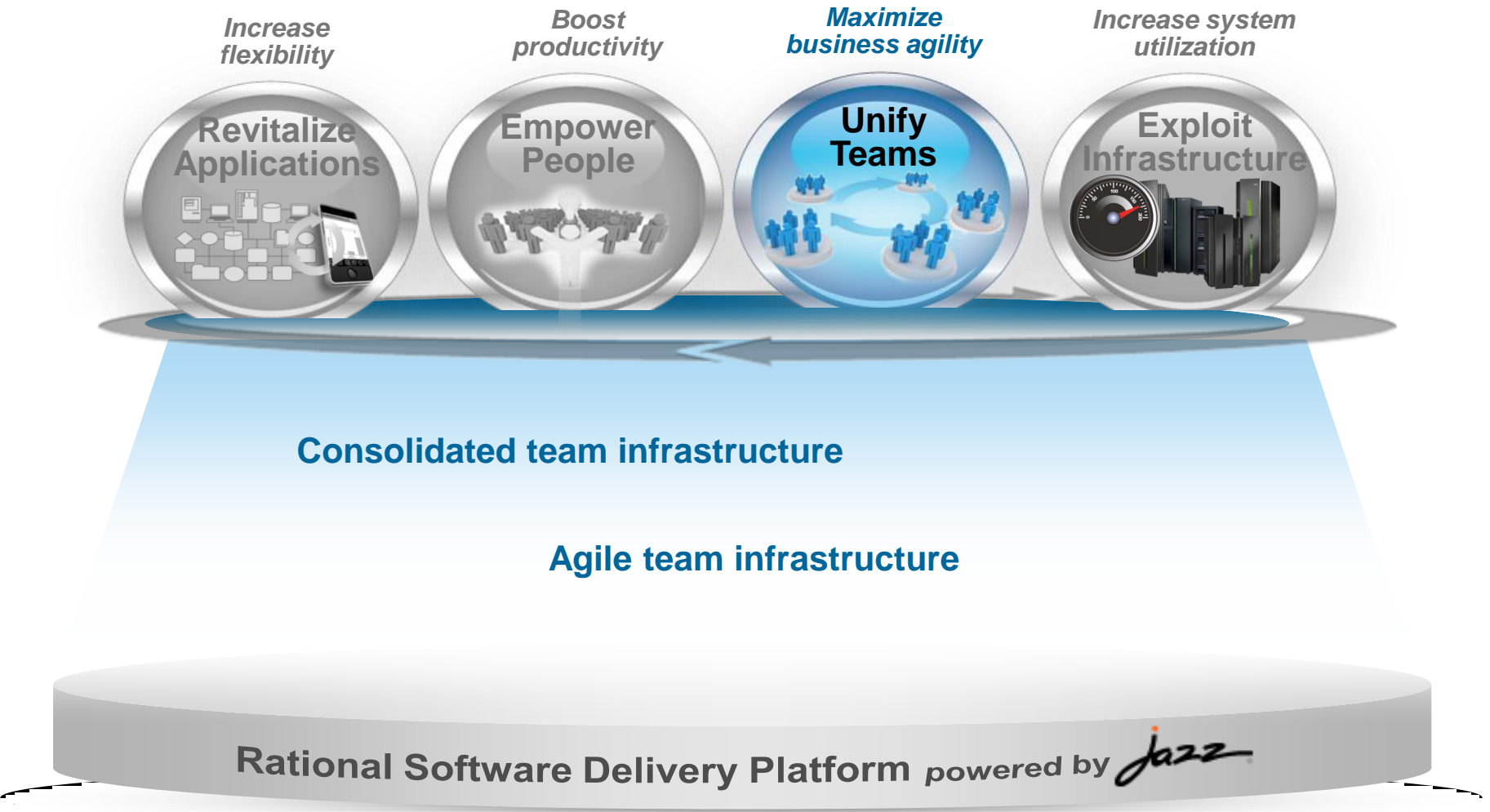
- Rational Business Developer
- Rational Developer for z with EGL
- Rational Developer for i for SOA
- Rational Migration Extensions

IBM tools provide support for WebSphere Application Server, development of EGL JSF and TUI applications, generation of COBOL, and more ...

Read the project proposal:

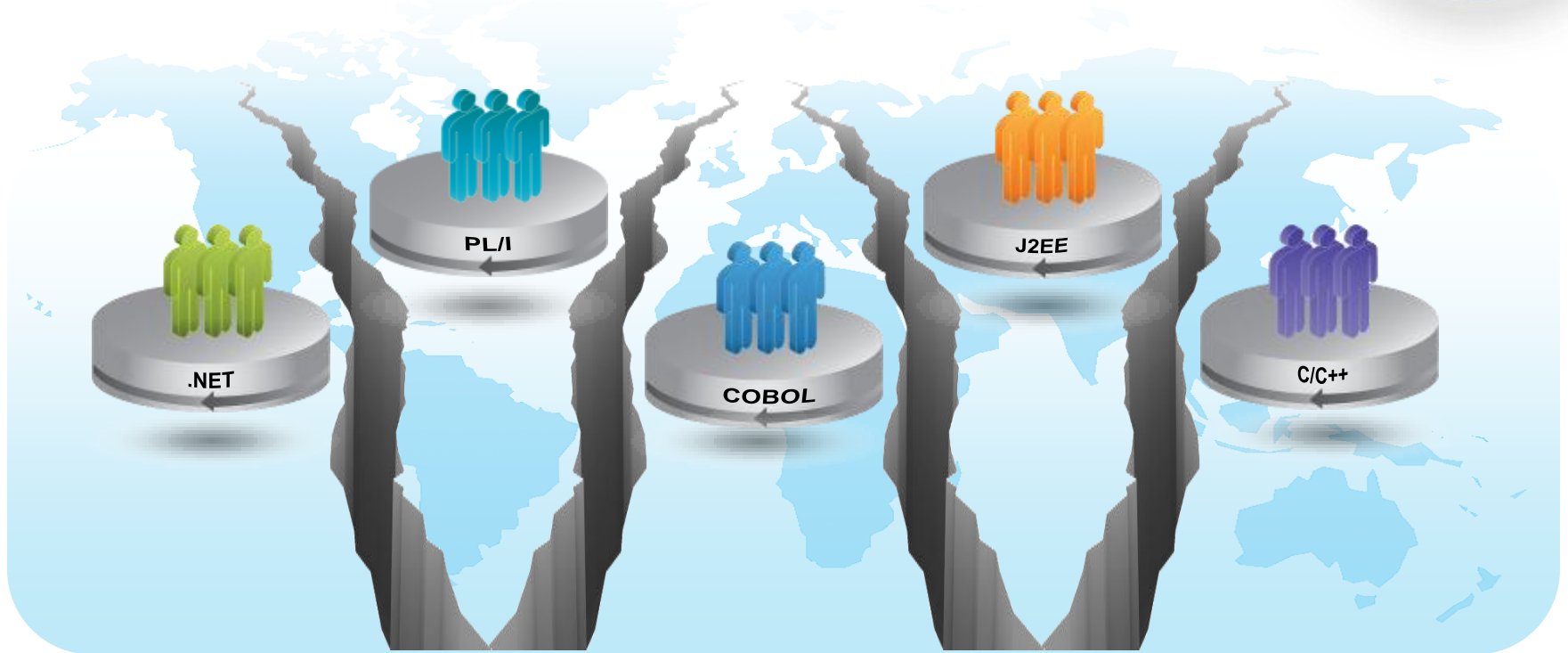
www.eclipse.org/proposals/egl

Maximize organizational agility by unifying development teams



Enterprises want to...

Enable agile, multi-platform and cross-geo collaboration and governance while reducing their team infrastructure costs

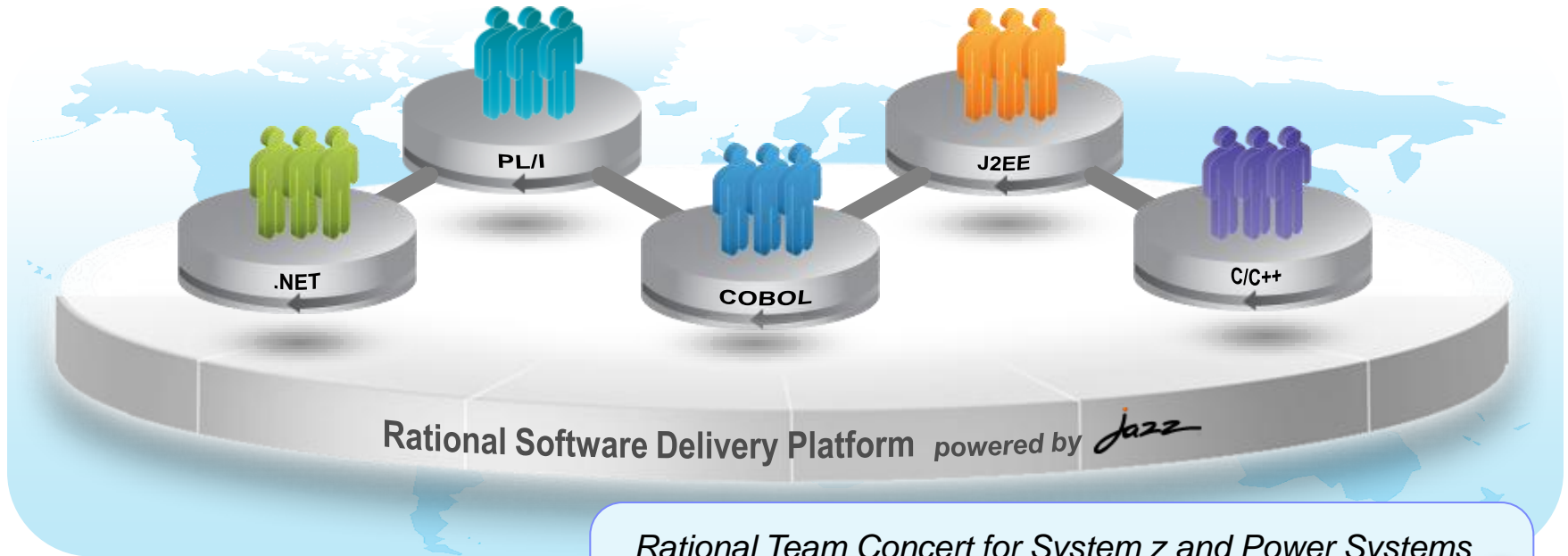


But...

They have “islands” of development, each with different tools, processes and team infrastructure, and they do not support real-time collaboration or integrated, comprehensive oversight

Solution: Collaborative application lifecycle management

Deploy new, common team infrastructure for source control, change management and build that empowers your team with integrated collaboration, process automation, and reporting



*Rational Team Concert for System z and Power Systems
Rational ClearCase / Rational ClearQuest
Rational Buildforge*

**RTC
Version 3
now in
Beta!**

Delivering...

Improved communication, higher quality, informed decision-making, and more automated, transparent and predictable software development

Improve application performance by fully exploiting modern hardware

Increase flexibility



Boost productivity



Maximize business agility



Increase system utilization



Exploit new advanced optimization technology in C/C++, Java, COBOL, PL/I and Fortran compilers

Rational Software Delivery Platform powered by *jazz*

Enterprises want to...

*Maximize application performance on existing hardware
to reduce capital expenses*

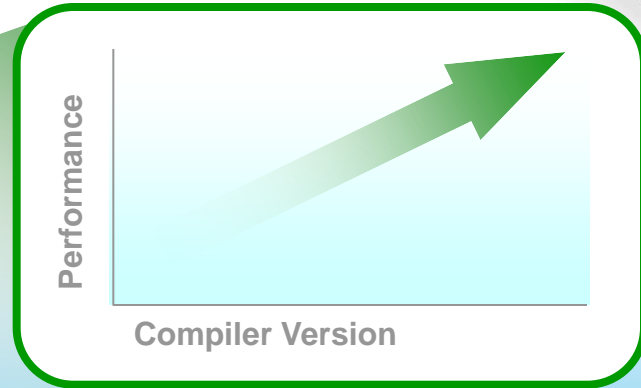


But...

They have back-level compilers or are not fully using optimization

Solution: Advanced compiler technology

Exploit new advanced optimization technology in C/C++, Java, COBOL, PL/I and Fortran compilers



**Same hardware + *NEW* compiler
= Increased Performance**

***NEW* hardware + *NEW* compiler
= Maximum Performance**

- IBM XL C/C++ for AIX and Linux
- IBM XL Fortran for AIX and Linux
- IBM COBOL for z/OS, AIX
- IBM PL/I for z/OS, AIX
- IBM WebSphere® Development Studio (IBM i compilers)

Delivering...

*Lower capital outlays by increasing capacity,
and improved performance of application suite*



Customers are adopting Rational solutions for Enterprise Modernization

**Improved productivity
by 15%**

**UniCredit modernizes
mainframe development
and testing with IBM
Rational Developer for
System z software**

*More than 200 developers at
HVB IS began using IBM
Rational Developer for
System z software to
develop mainframe
applications for IBM System
z servers.*

**Increased
developer productivity
by 15%**

**Wipro and its customer
chose IBM Rational
Business Developer and
EGL technology to
transform the application**

*The new system accesses the
customer's existing IBM DB2
information management
system running on an IBM
System i platform, and now
includes IBM WebSphere
Application Server software to
support a modern, three-tier
architecture.*

**Reduced
development time by
15-20%**

**SoforTe improves
productivity for developers
and customers with IBM
Rational software on System
z and Rational Team Concert
for System z**

*SoforTe chose to implement
RDz and RTCz on an IBM
System z10 Business Class
server running z/OS and clients
running Microsoft® Windows®
clients to provide a modern
powerful development
environment for its customers.*

IBM Rational Enterprise Modernization key announcements

Continuing the evolution to optimize System z software development

NEW!

- Rational Migration Extensions for RUI and CA
- Rational Developer for System z Unit Test Feature
- EGL open source on eclipse.org
- Rational Team Concert for System z beta



To learn more visit: ibm.com/software/rational/modernization/



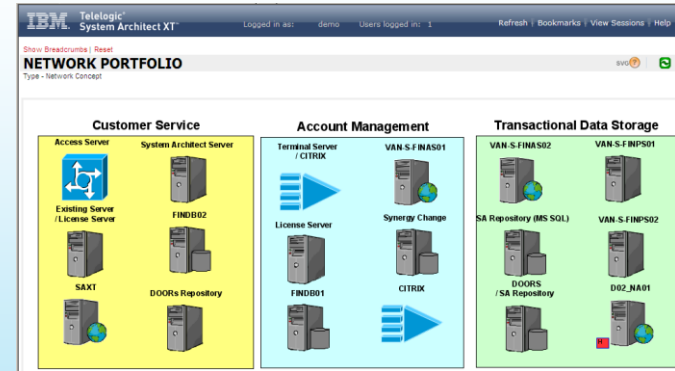
Learn more at:

- [IBM Rational software](#)
- [Rational launch announcements](#)
- [Rational Software Delivery Platform](#)
- [Accelerate change & delivery](#)
- [Deliver enduring quality](#)
- [Enable enterprise modernization](#)
- [Ensure Web security & compliance](#)
- [Improve project success](#)
- [Manage architecture](#)
- [Manage evolving requirements](#)
- [Small & mid-sized business](#)
- [Targeted solutions](#)
- [Rational trial downloads](#)
- [developerWorks Rational](#)
- [Leading Innovation](#)
- [IBM Rational TV](#)
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- [IBM Rational Case Studies](#)

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Enterprises want to...

Better align IT activities and investments with their business goals and objectives

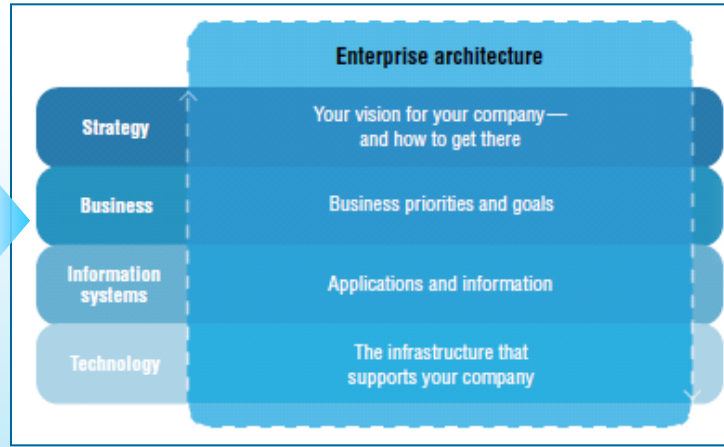
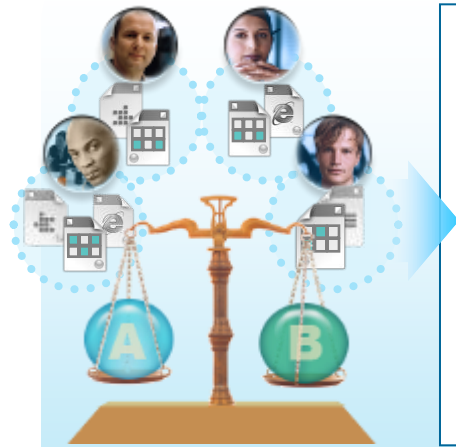


But...

They do not have a tool or process for capturing business goals or prioritizing projects, nor for linking them to the associated IT efforts. They rely instead upon less rigorous verbal discussions and difficult-to-maintain documents.

Solution: Enterprise architecture and portfolio management

Make enterprise IT planning actionable and traceable



Rational System Architect
Rational Focal Point
Rational Project Conductor

Delivering...

Understanding of current application infrastructure, prioritization of cost-cutting and consolidation candidates, impact analysis of portfolio decisions, and central oversight of architecture, risks, demands, and investment management

Enterprises want to...

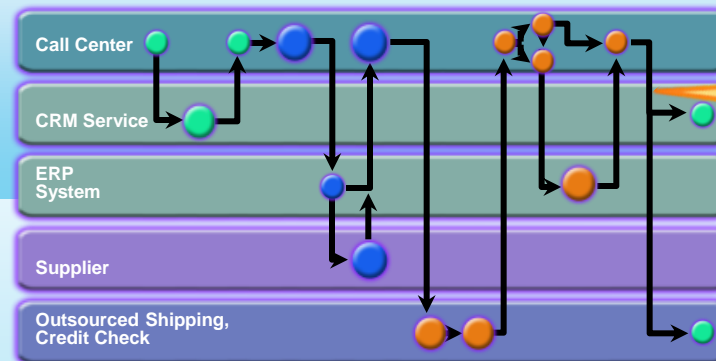
Have a nimble IT organization that leverages SOA to respond more quickly to the needs of the business



Customer Order & Fulfillment



Customer Order & Fulfillment



But...

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

Solution: SOA tools for all platforms and languages

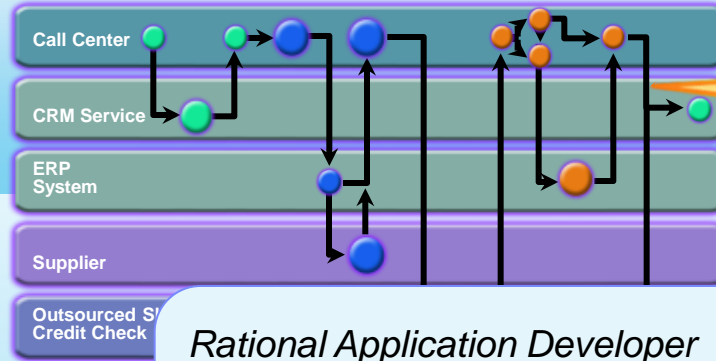
Use powerful tools to quickly begin SOA evolution by harvesting and repurposing proven assets



Customer Order & Fulfillment



Customer Order & Fulfillment



*Rational Application Developer
Rational Developer for System z
Rational Developer for Power Systems
Rational Business Developer
Host Access Transformation Services*

Delivering...

5x lower costs and reduced risk through reuse of existing assets, higher productivity, and platform portability of new services

How to get started?



Sandboxes for SOA, System z and Power

- ✓ Try IBM's latest software for SOA, BPM, System z and Power Systems for free
- ✓ A low risk cloud based approach to try out several new offerings and integrated solutions



Sign up for 2010 Rational Developer for System z - Free Distance Learning Classes

<http://www-949.ibm.com/software/rational/cafe/docs/DOC-3303>

<http://www.ibm.com/developerworks/downloads/emsandbox/>
<http://www.ibm.com/developerworks/downloads/soasandbox/>

Rational Cafés



Join our COBOL, RPG, EGL and C/C++ Communities

→ [Learn more](#)

IBM Rational Cafés

- ✓ To help, IBM has implemented solutions that feature community-based knowledge sharing - that give your developers instant, secure access to shared content, and opportunity to interact with IBM experts on topics related Enterprise Modernization

<http://www-949.ibm.com/software/rational/cafe/index.jspa>

To learn more visit:
www.ibm.com/software/rational/announce/modernization/

www.ibm.com/software/rational/announce/power/

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Ultimate flexibility and affordability for System z application development

What if you could:

- Optimize your enterprise assets, skills, and infrastructure investments?
- Better manage the costs and risks of your modernization efforts?
- Further reduce the costs of mainframe application development and test?

Rapid prototyping of z/OS applications

The new release of [IBM Rational® Developer for System z®](#) revolutionizes the way organizations develop and test mainframe applications.

With the new [Unit Test feature](#), you can quickly deploy a more affordable System z application development and test environment on a low-cost x86 Linux® system.

Find out how [IBM Enterprise Modernization solutions](#) can help you unleash the full potential of your System z platform.

- Boost productivity. Liberate your developers to rapidly prototype System z applications.
- Increase flexibility. Build and test new System z applications virtually anytime!
- Increase utilization. Free up mainframe development MIPS for production capacity.
- Reduce cost. Experience MIPS savings with our integrated workbench offerings.

Eclipse open source project for EGL

In addition to the flexible and affordable System z development offering, IBM has submitted a proposal to the Eclipse Foundation to create an open source project for EGL.

As an established business language, EGL:

- Speeds innovation. Use [IBM Rational Business Developer](#) and EGL to develop rich business applications faster and with a proven, open business application language.
- Enables ultimate platform flexibility. Deploy application workload to the environments of your choice both now and in the future with EGL.
- Helps reduce costs and provides modern tools. Use [Rational Business Developer](#) and EGL to consolidate legacy, expensive, and difficult to staff technologies on a single, open programming language and tooling platform.

Additional resources to get you started

- [IBM Rational solutions for System z](#)
- [Try the latest System z software in our new and enhanced System z Sandbox](#)
- [IBM Rational Café Community for COBOL, RPG, C/C++, and EGL developers](#)

We're here to help

Easy ways to get the answers you need.

- Call me
- Request a quote
- E-mail IBM

Or call us at:
 877-426-3774
 Priority code:
 109HG03W

Spotlight

- Trials and demos
- Customer references
- Webcasts
- Brochures and articles

Brochure: Slash maintenance costs while incrementally evolving core systems (1.65MB)

→ Article: What's new in Rational Team Concert for System z, Version 2.0

Resources

Launch webcast
 Revolutionizing today's banking systems

New e-Kit
 IBM System z can do it
 → Register for the e-Kit

Online trial
 Rational solutions for System z Sandbox

United States [change]

Home Solutions Services Products Support & downloads My IBM Welcome Saleem Padani [Not you?] [IBM Sign in]

IBM Power Systems Software

Power your innovation

Build smarter products and services faster with reduced cost and risk

IBM Rational solutions for Power Systems

Rationalizing Power

Today, businesses can do more with less and make the most of their IT investments. As the economy recovers, organizations look for ways to further optimize and extend the value of their IT investments with the least cost and disruption to existing infrastructure.

IBM Rational® solutions for Power Systems™ servers provide organizations with new, cost-effective, and practical optimization opportunities that free resources to build new smarter products and services that deliver business value.

These Rational solutions help accelerate development and delivery of multipatform applications on IBM AIX®, IBM i, and Linux® operating systems that can help:

- Improve system utilization by exploiting new POWER7 hardware and existing system capabilities
- Boost productivity and accelerate innovation with modern development environments
- Enhance organizational agility by leveraging a common team infrastructure
- Increase flexibility by better managing and integrating application portfolios

Increase system utilization. The IBM Rational high performance compilers for [C/C++](#), [COBOL](#), [Fortran](#), [PLJ](#), and [RPG](#) offer cost savings and utilization from your existing infrastructure. Modern compilers can leverage multi-core and parallelization which improves performance and scalability of your applications.

Boost productivity. [IBM Rational Developer for Power Systems Software](#), [IBM Rational Application Developer for WebSphere® software](#), and [IBM Rational Business Developer](#) offer a common developer desktop delivering integrated development tools for AIX, IBM i, and Linux operating systems across multiple languages.

Maximize business agility. [IBM Rational Team Concert™ for Power Systems Software](#) offers a common server infrastructure enabling collaborative coordination for development teams for all Power Systems environments.

Increase flexibility. [IBM Rational Developer for Power Systems Software](#), [IBM Rational Host Access Transformation Services \(HATS\)](#), and [IBM Rational Migration Extension](#) can help extend the value of existing investments in IBM i, AS/400®, iSeries®, System i®, green screen, RPG, and COBOL applications by exploiting decades worth of business value embodied in these systems.

Spotlight

- Cover Story: IBM VP Scott Hebner - Rationalizing Power
- IBM Power Systems Announcement: Power your planet
- Launch webcast on April 15th: Smarter systems for a smarter planet
- IBM Rational solutions for Power Systems

Trials and demos

Brochures and articles

Key resources

The time to innovate is now

Innovate2010

Join us for Innovate 2010, the premier software and product delivery event, June 6 to 10 in Orlando, Florida.

→ Register now!

Launch webcast on April 15th: Smarter systems for a smarter planet
 → Register for the webcast

New e-Kit: Power your Innovation
 → Register for the e-Kit

Online Trials: IBM Power Systems Sandbox
 → Register or sign in to get started