

Application Life Cycle Management – Implementing a Collaborative Approach to Software Development

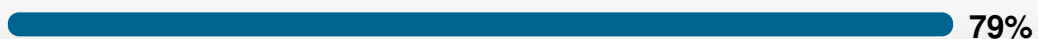
Hayden Lindsey, Vice President & Distinguished Engineer:
Rational Enterprise Modernization, Modeling and Construction

March 2011



Many businesses are challenged by growing complexity

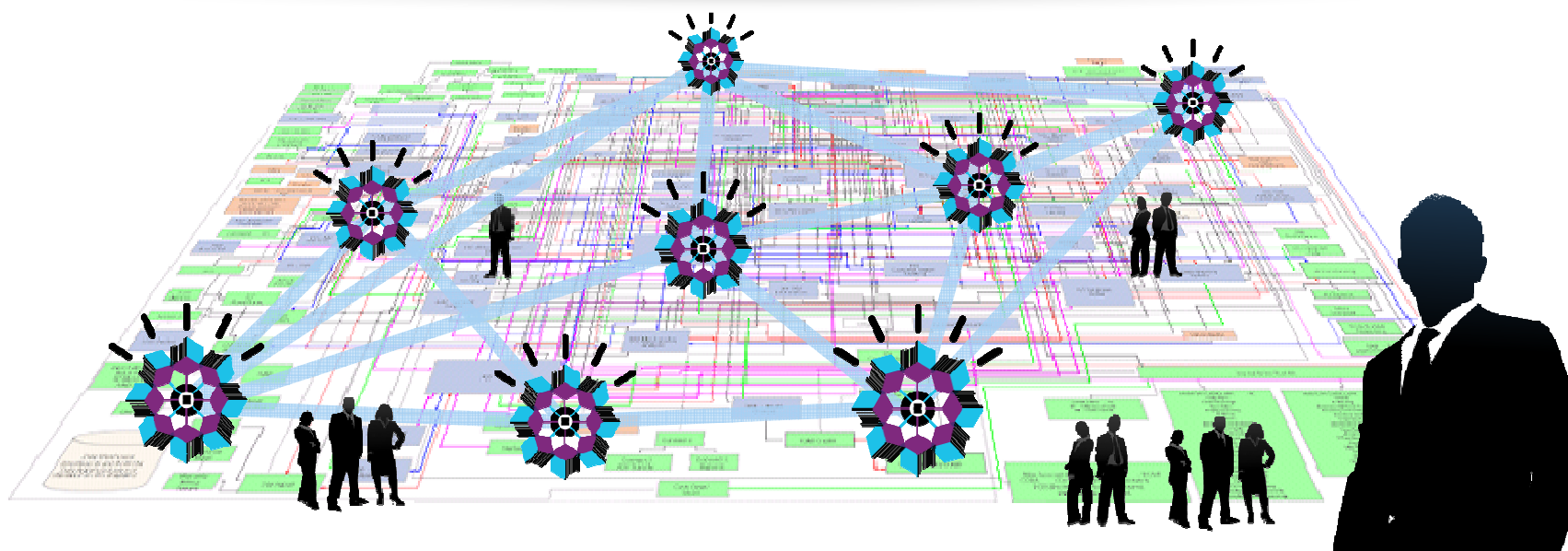
8 in 10 CEOs anticipate significant complexity ahead.



Half Feel prepared to handle it.

30%
complexity gap

Source: IBM Global CEO Study 2010
"Capitalizing on complexity".

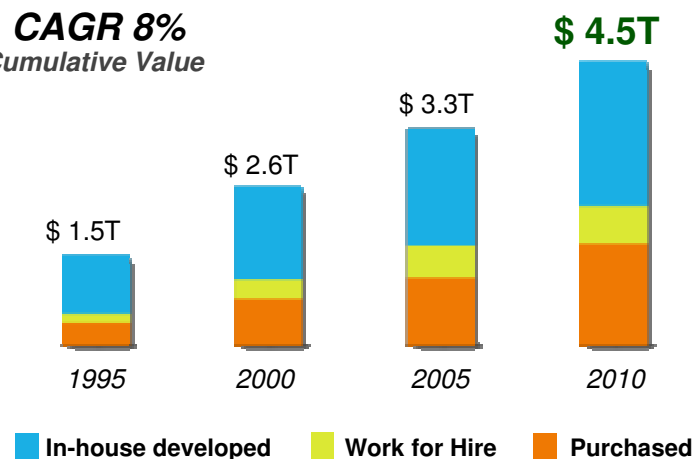


Growing Complexity

...and the numbers can be unpleasant

Investment

CAGR 8%
Cumulative Value

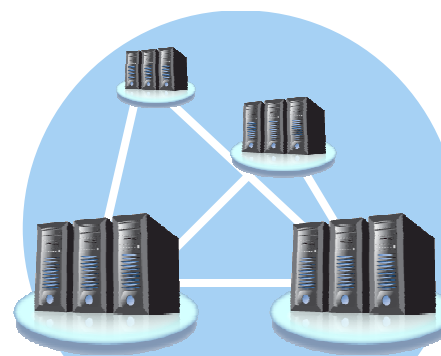


Challenges

- **70%** budget locked in maintenance
- **80%** of Mainframers are 50+ years old
- **50%** IT projects rolled back
- **85%** of distributed computing capacity is idle



Mainframe



Distributed

...and IT is often viewed as a root cause



“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”

Four key barriers preventing optimal return on IT investments

Decades of application investments



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

Islands of skills, languages and platforms



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

Poorly integrated teams



“We need to enable our teams to collaborate across platforms, languages, and environments.”

Infrastructure inefficiency

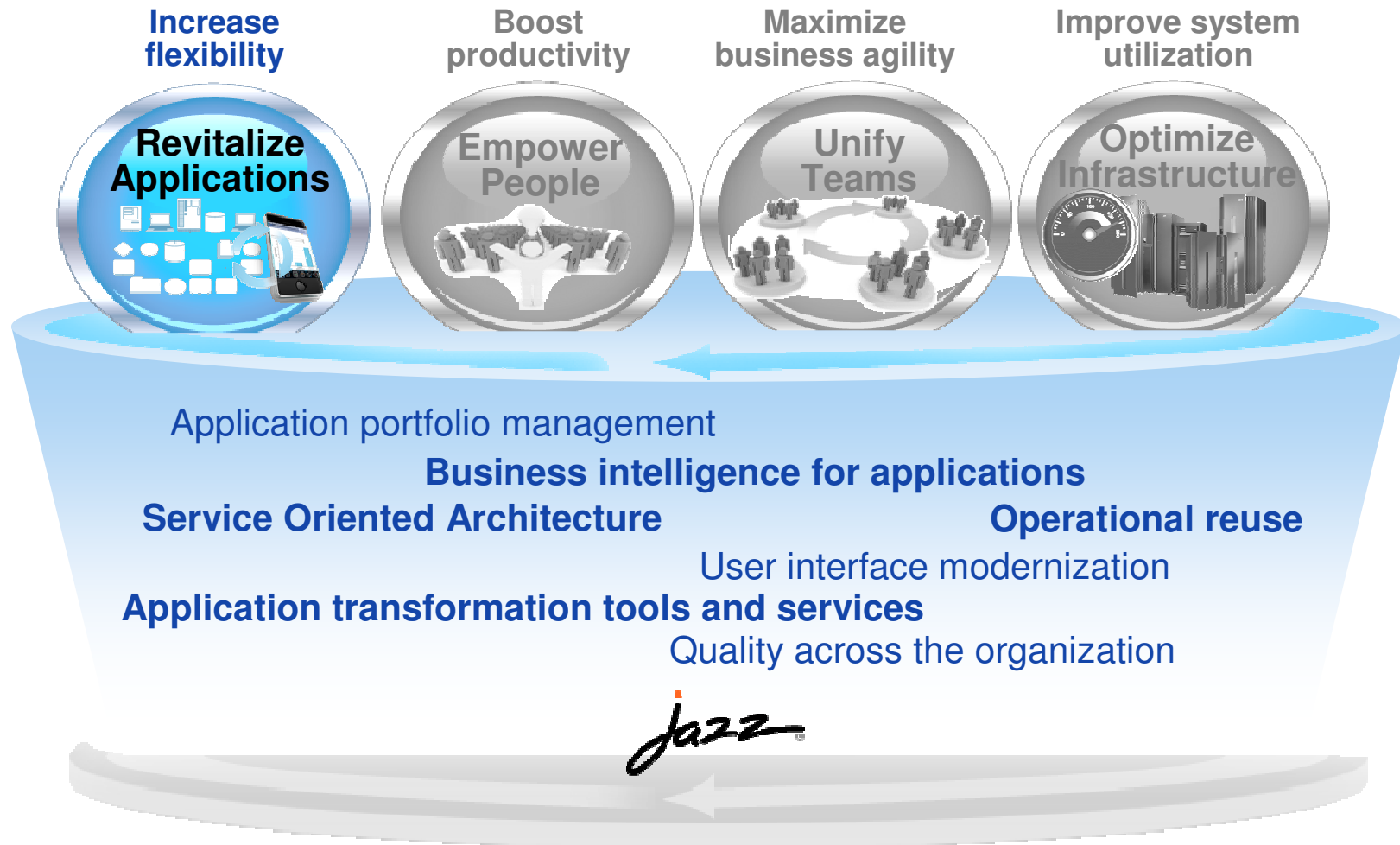


“We need a cost effective way to improve our infrastructure efficiency and free up capacity to handle more workload.”

Enterprise Modernization offers a low risk, high return approach



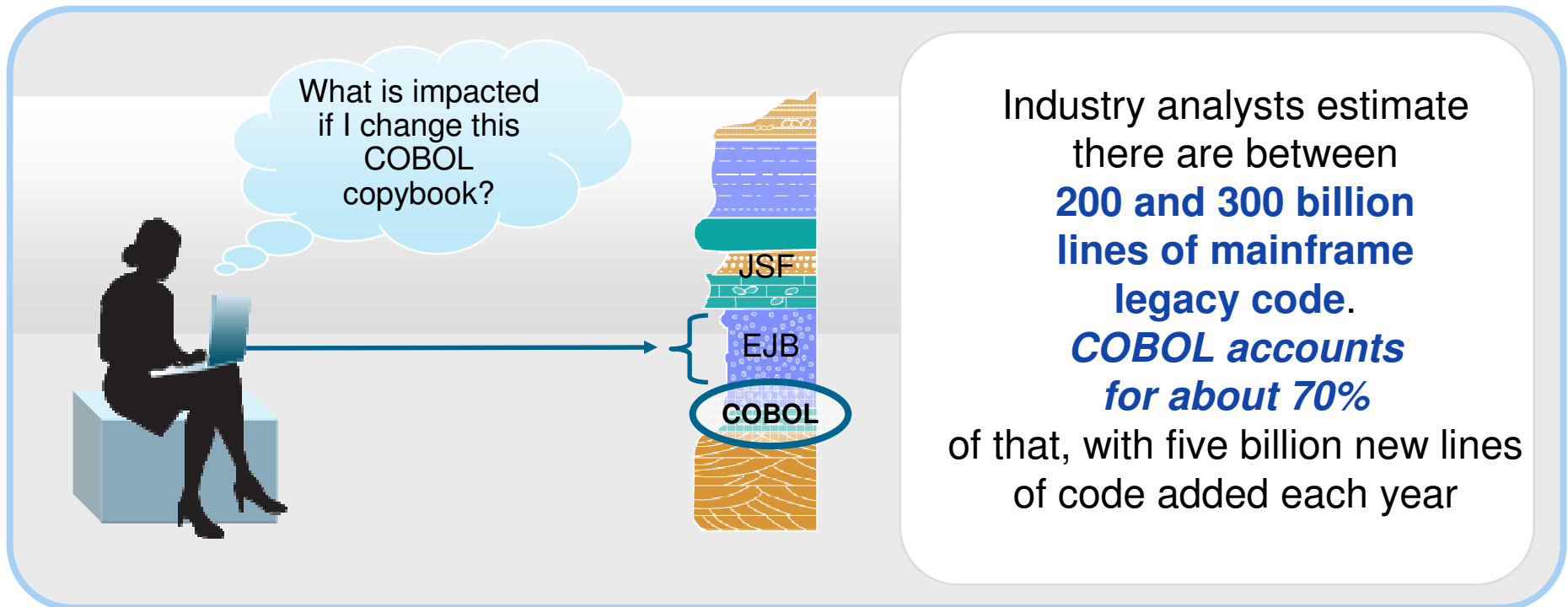
Increase flexibility by revitalizing existing application portfolios





Enterprises want to...

Understand the impact and cost of changes to their IT systems; Harvest and manage business rules from existing applications, Analyze these rules, and minimize rework and points of failure



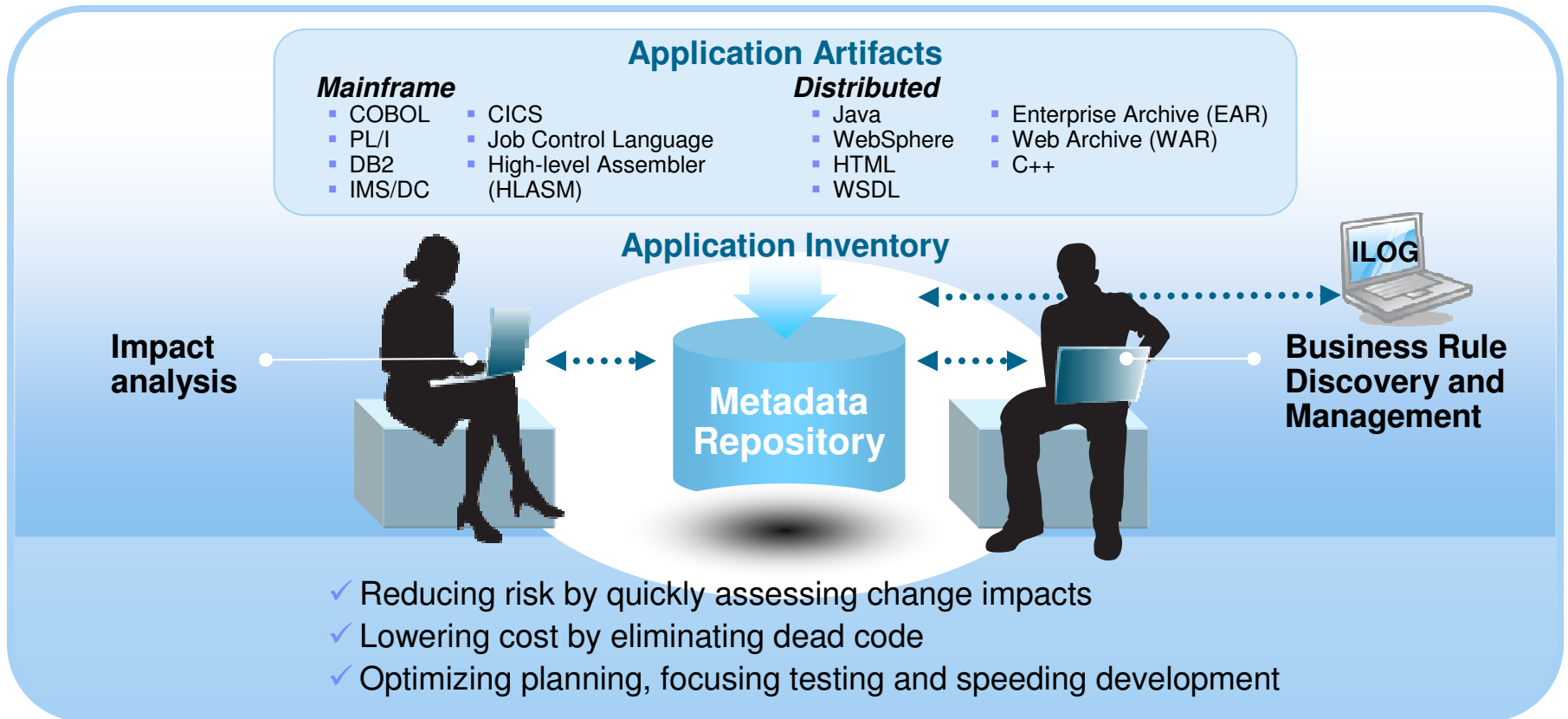
But...

They have no business intelligence inventory of their application assets, relying instead on manual, error-prone processes and incomplete knowledge. They must compensate with more extensive planning and extra testing and by manually 'searching' for code affected by business decisions.



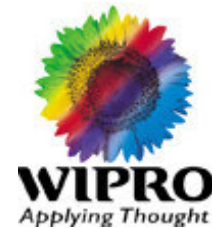
Solution: Business intelligence for applications

Restore lost application knowledge via technical analysis



“IBM Rational Asset Analyzer software is a robust and reliable tool that supports portfolio analysis of large applications in a short period of time, delivering accurate reports that give a clear understanding of the application at the business, architecture and program levels.”

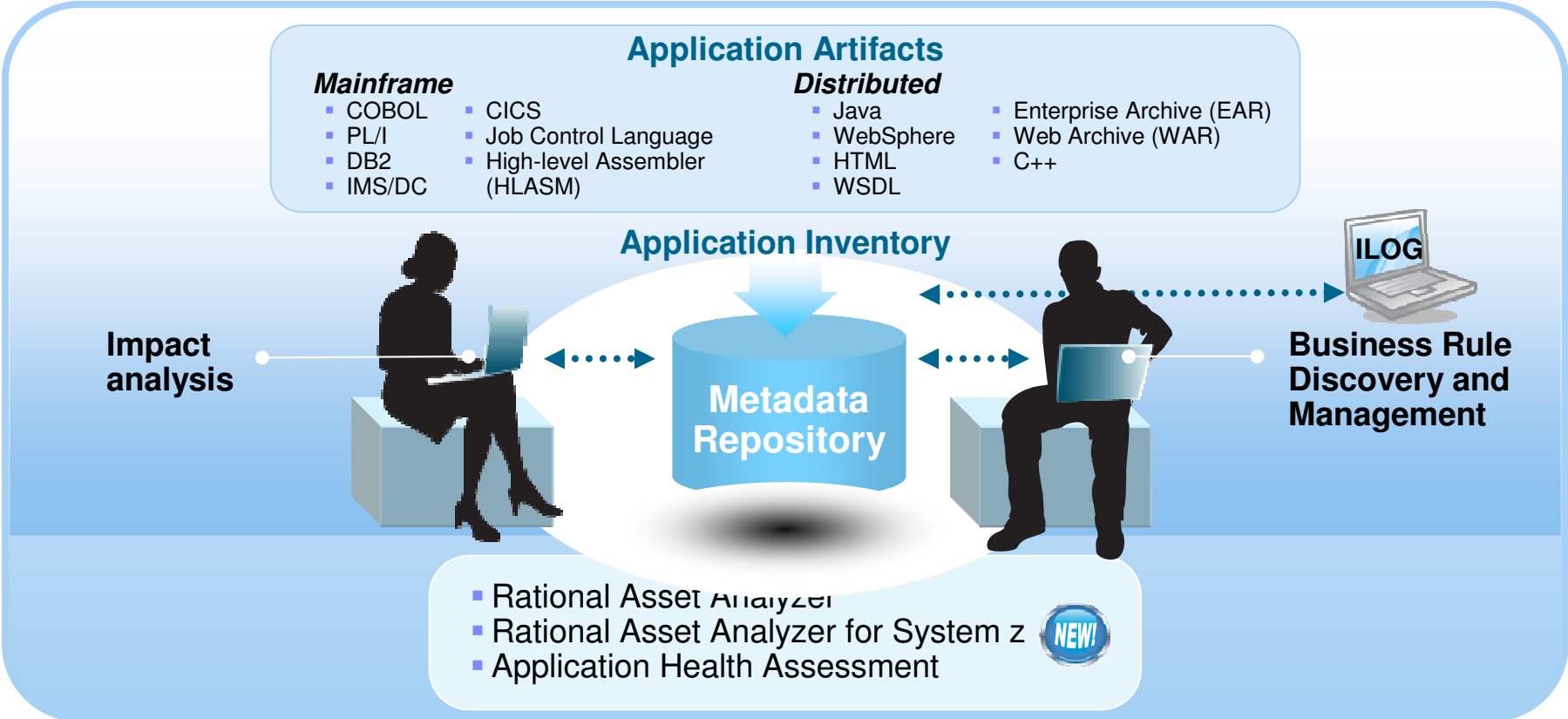
— Sihab Kolaparambil, practice manager, Wipro IT Business





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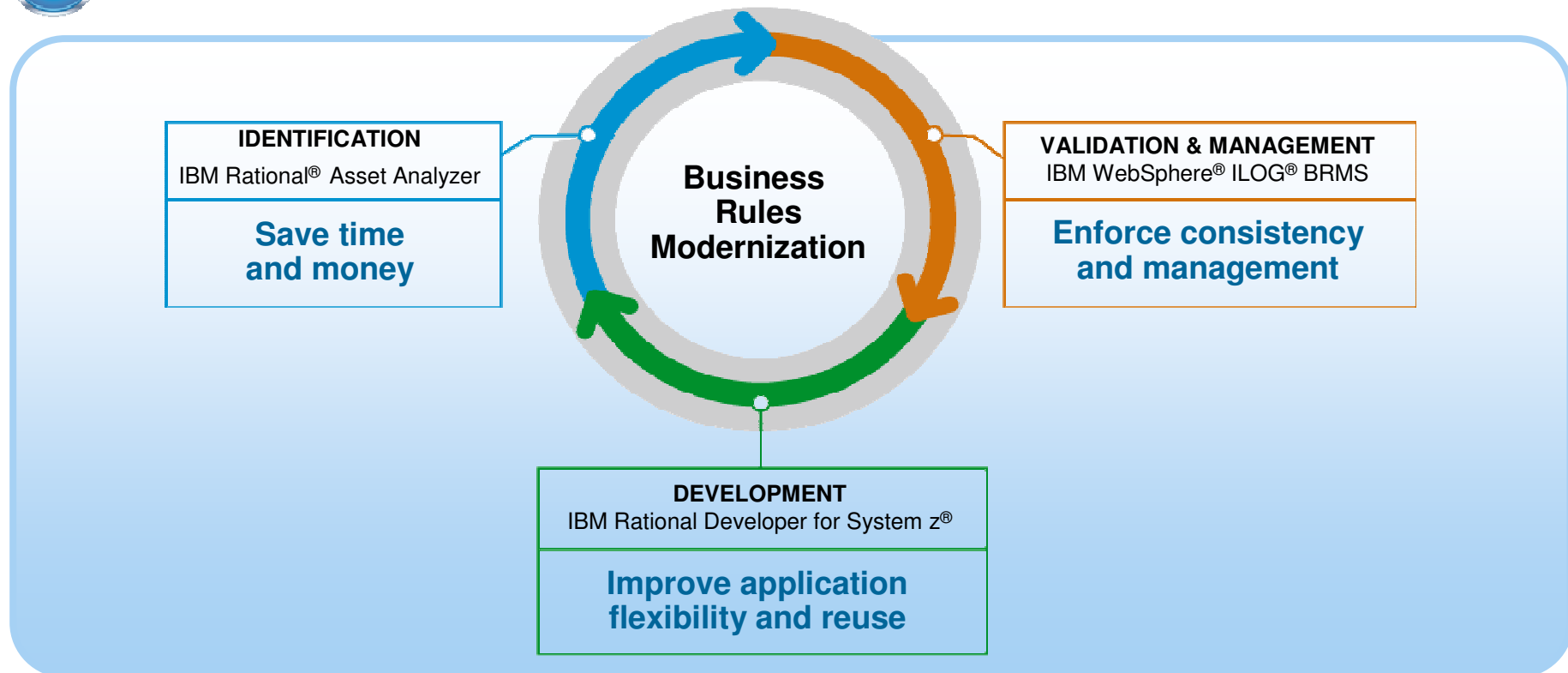


Announcing: Rational Asset Analyzer v6

Reduce the risk and cost of your application modernization projects



Recently Announced



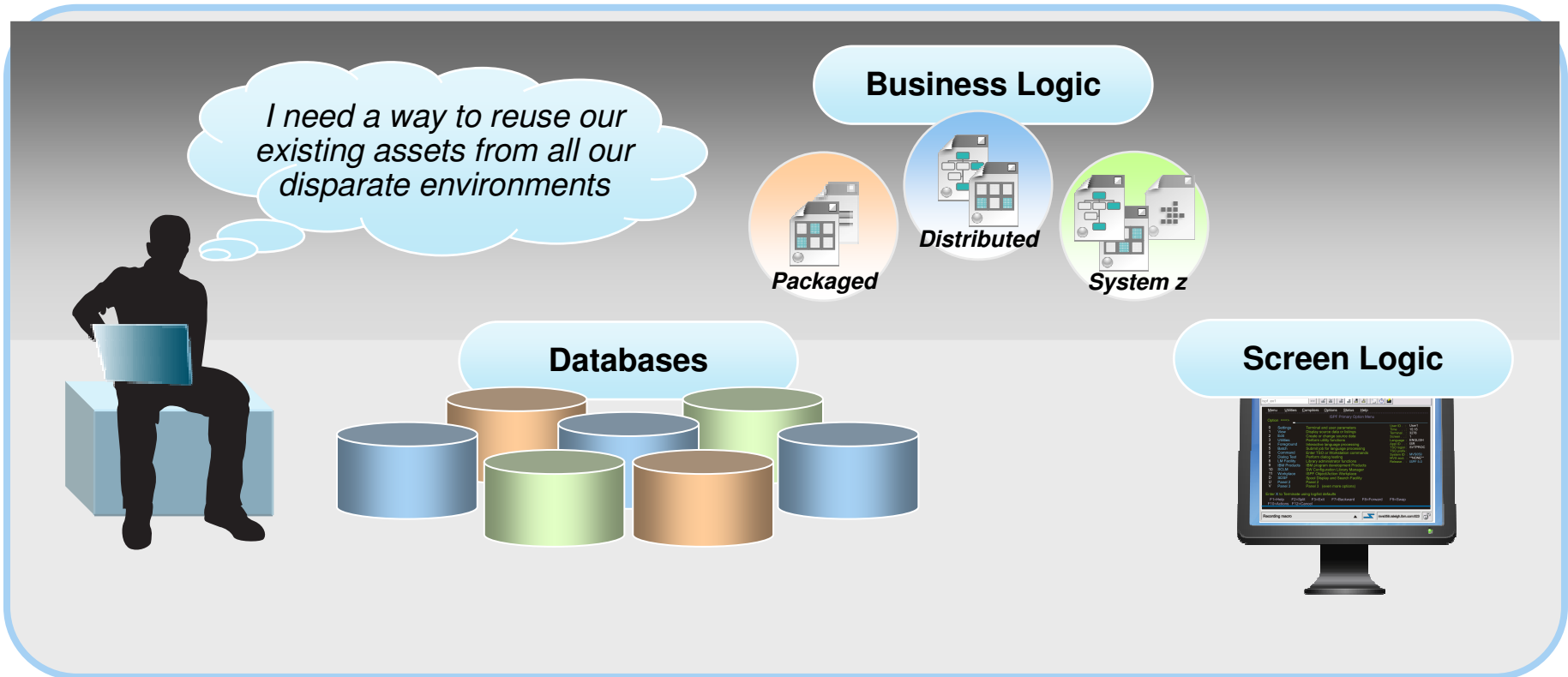
Delivering...

- New integration with WebSphere ILOG for business rule mining
- Centralized management, validation and testing of business rules
- Integrated development, maintenance and modernization of business rules



Enterprises want to...

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



But...

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



Solution: Modernize, extend and reuse existing assets *5x lower costs and reduced risk through SOA*



“The Service Flow modeling in Rational Developer for System z enabled us to convert our CICS screens to the web without any reprogramming. This reduced our risk, lowered cost, saved months of work and allowed us to complete the project on time.”

— Paul Williams, Director of IT, Trustmark National Bank





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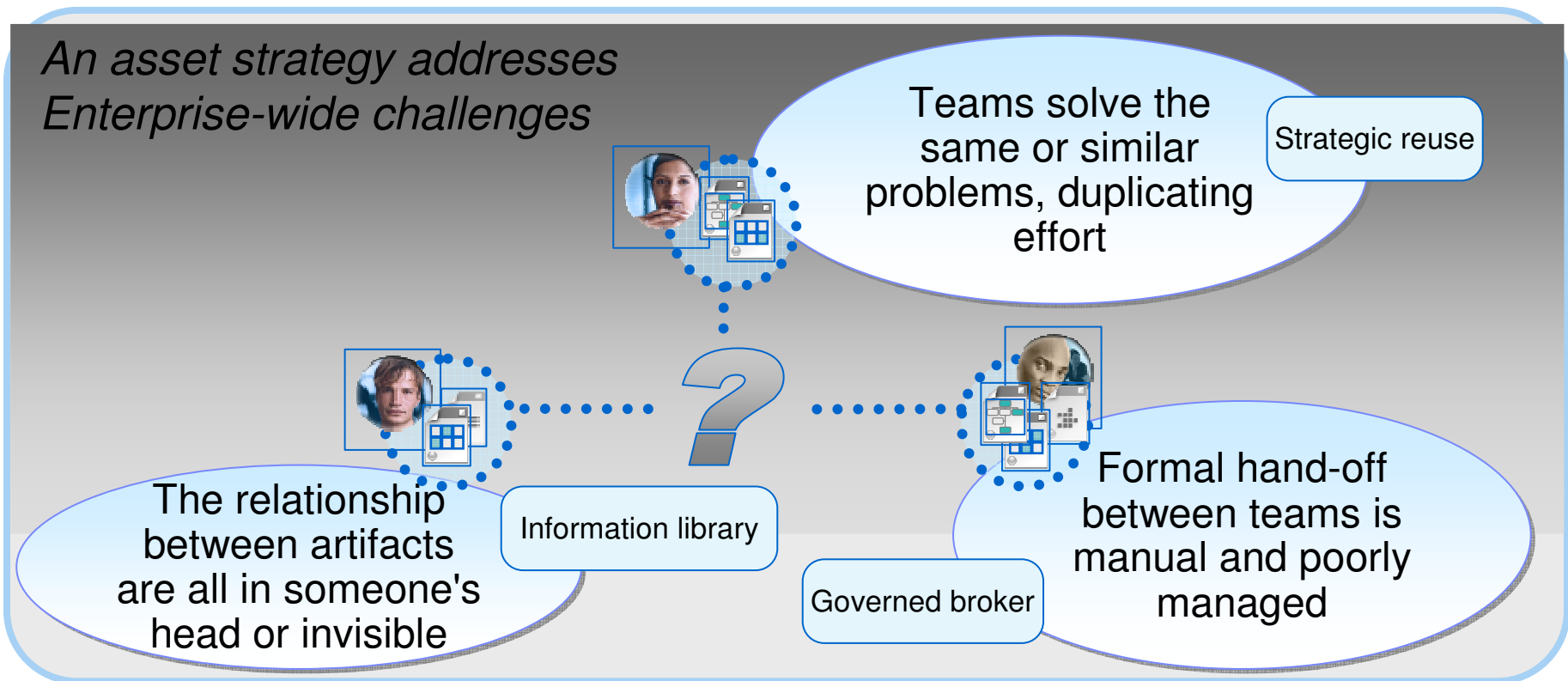
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Enterprises want to...

Get more value from the assets created by each team



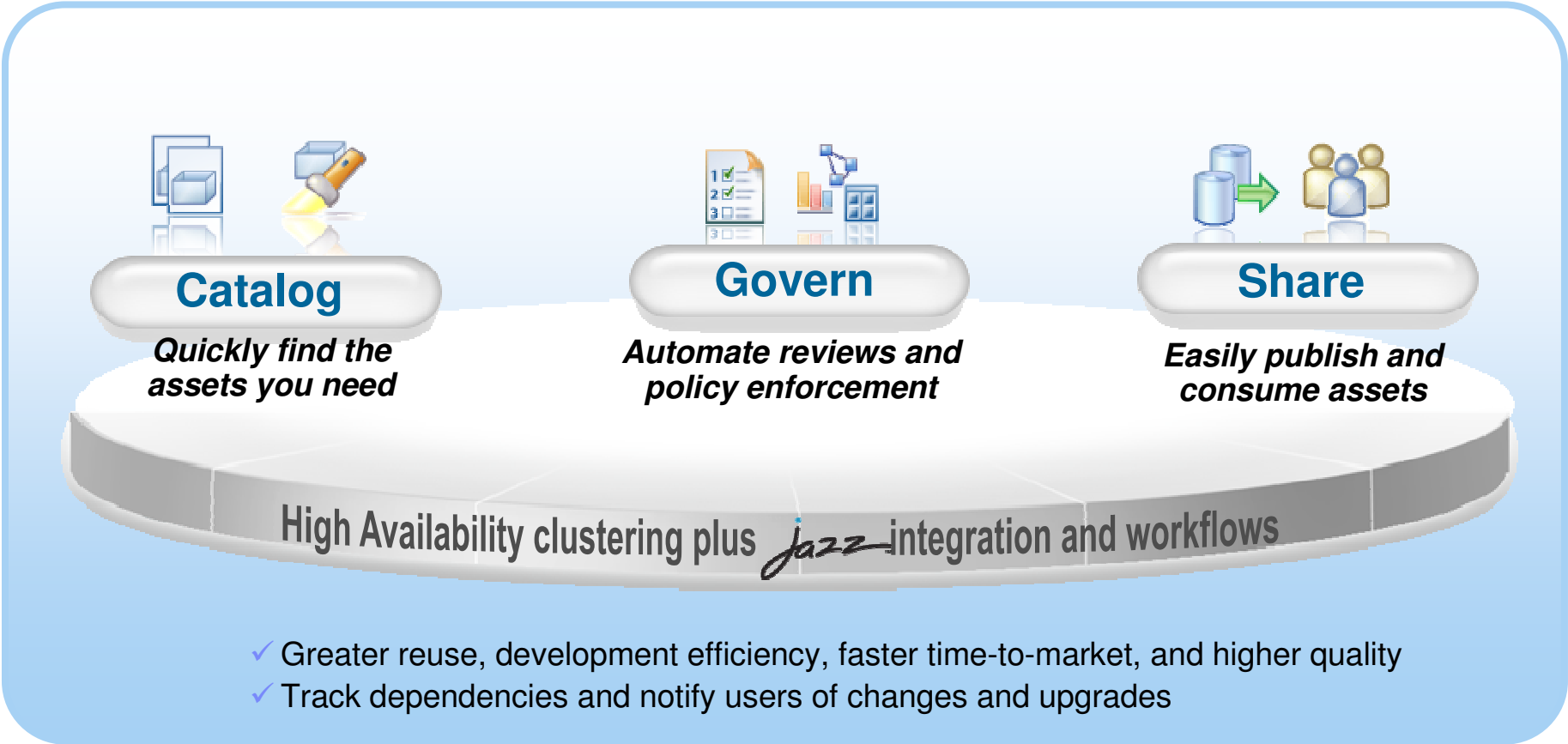
But...

They do not have the infrastructure or culture to implement a software asset strategy



Solution: Re-usable, high value assets

Transform software artifacts into meaningful software assets to be shared or referenced throughout the organization



"In the past, our personnel were forced to use a multitude of interfaces to find the information they required. With Rational Asset Manager, they now have a single point of entry. As a result, they have faster access to information."

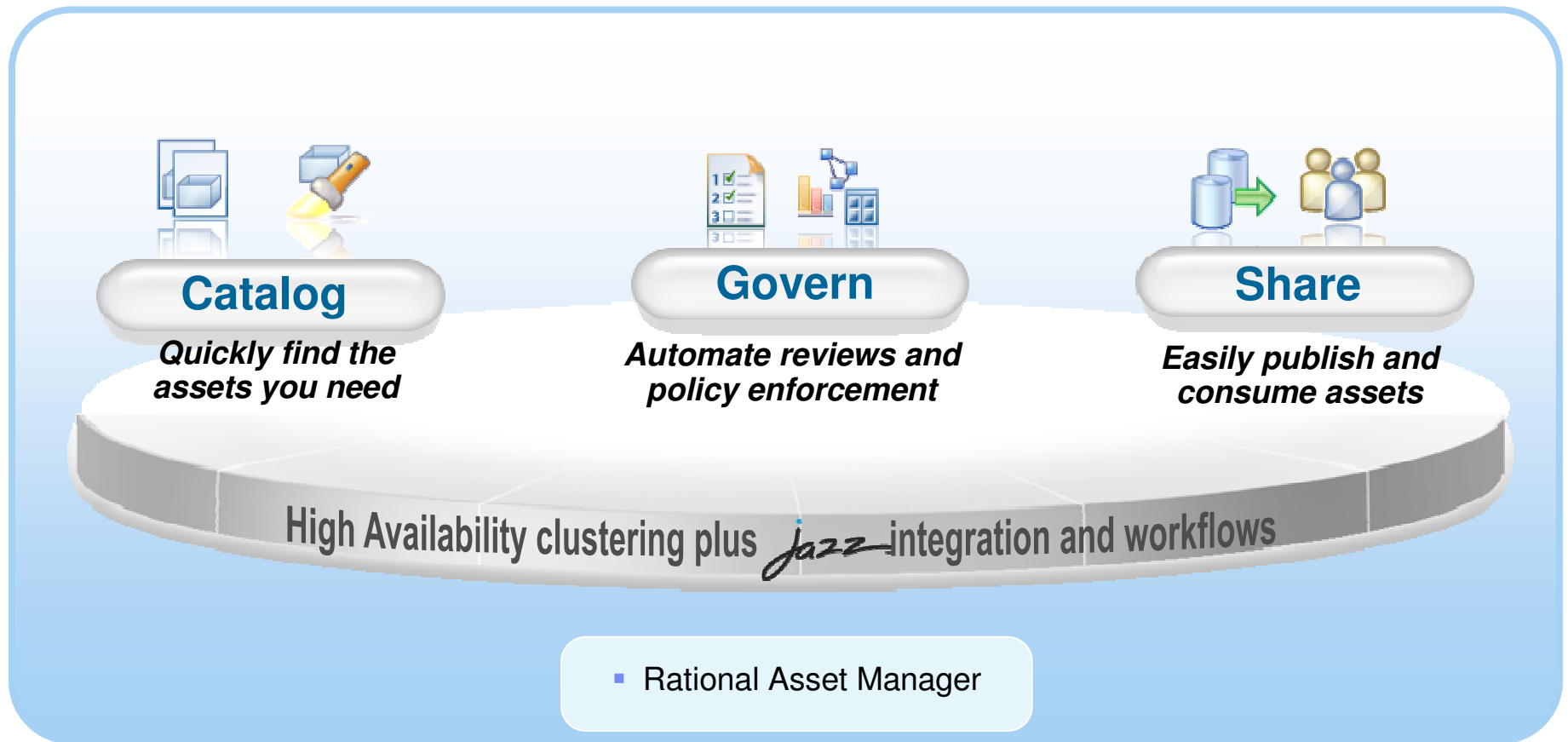
— Edwin Freekenhorst, IT Architect, Shell





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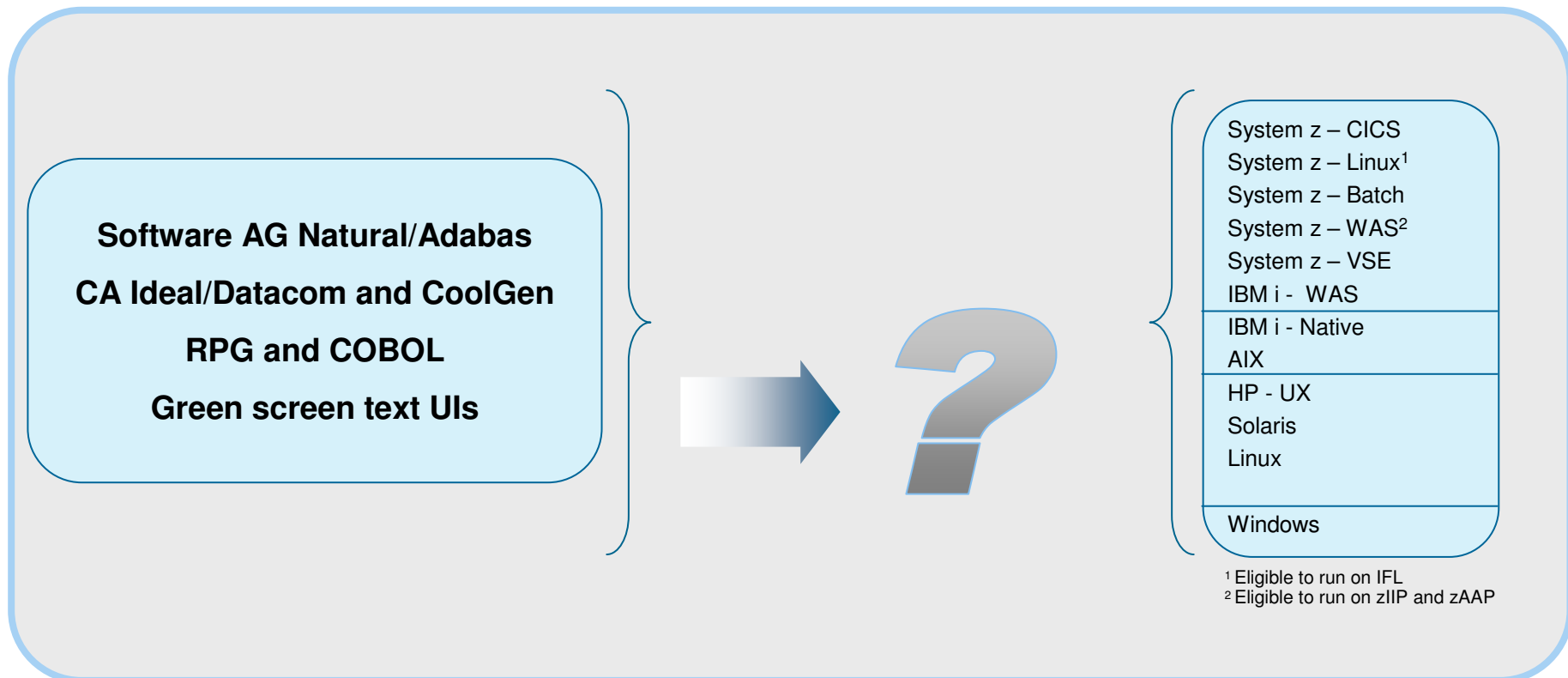
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Enterprises want to...

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



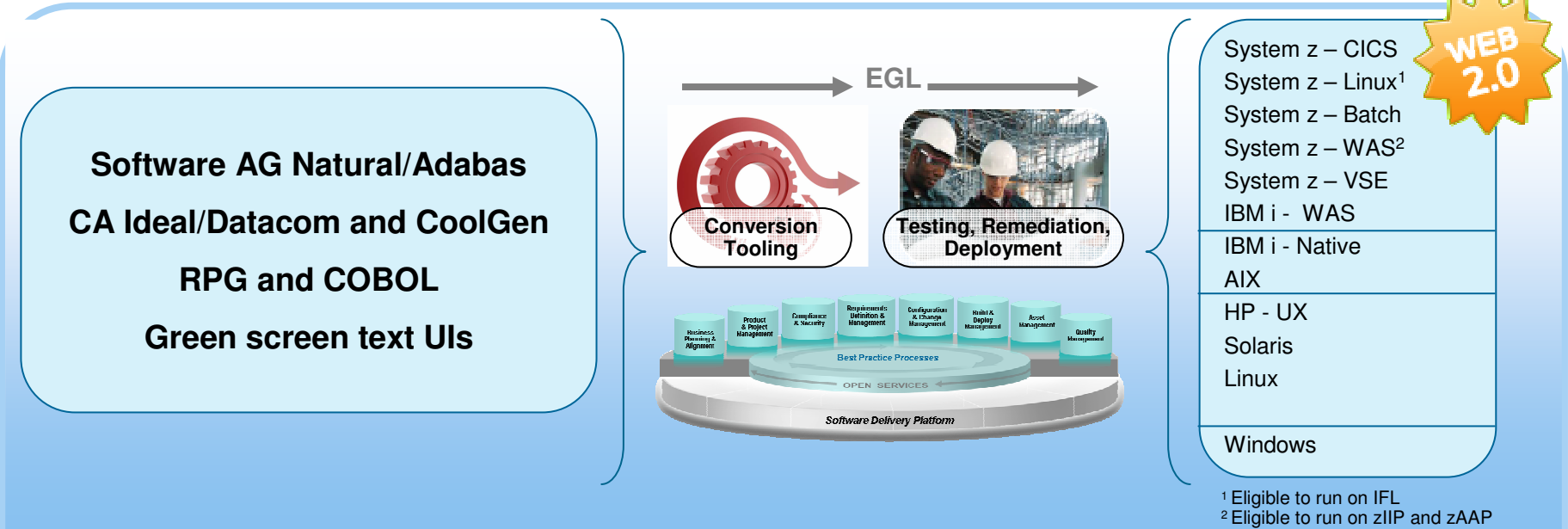
But...

They are using older languages and/or 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



- ✓ Greatly reduced development platform support costs
- ✓ More flexible, integrated development environment

Operating costs were reduced 55 percent by migrating from the VAGen legacy application to Java. *“The migration to EGL combines the best of both worlds: The stability of IBM System z and the flexibility of Java.”* Massive cost savings are also included!

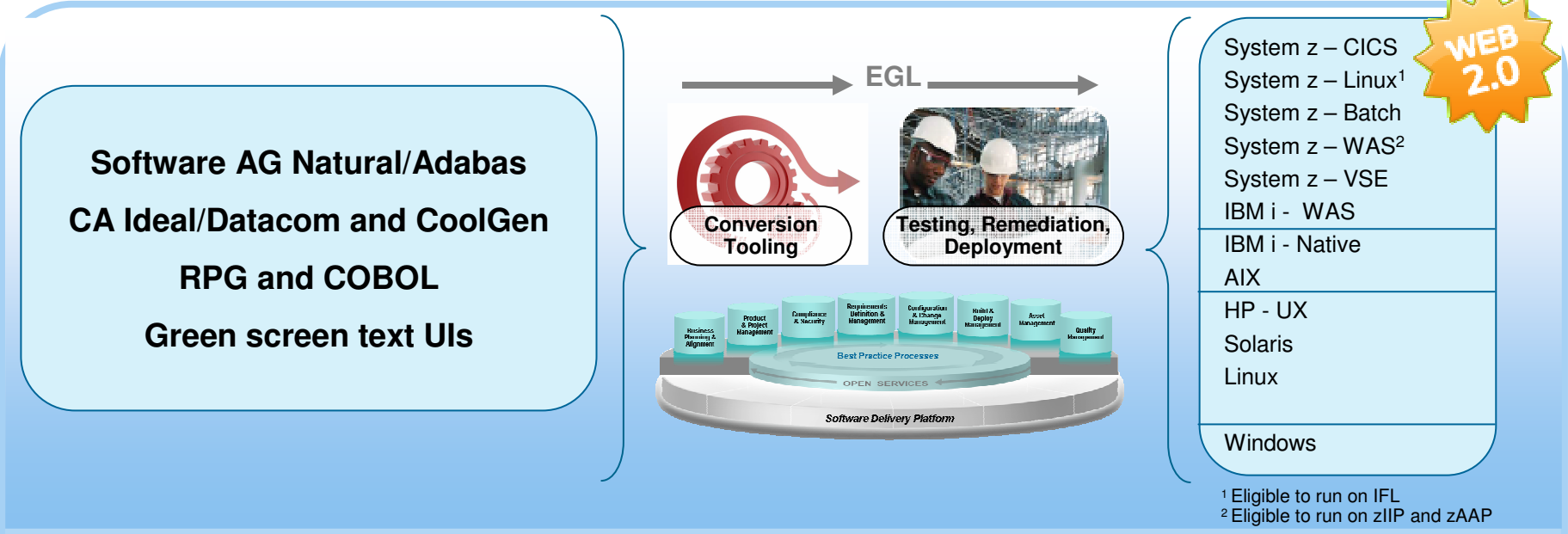
— Frank Landewee, project manager, Atos Origin GmbH, Essen





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

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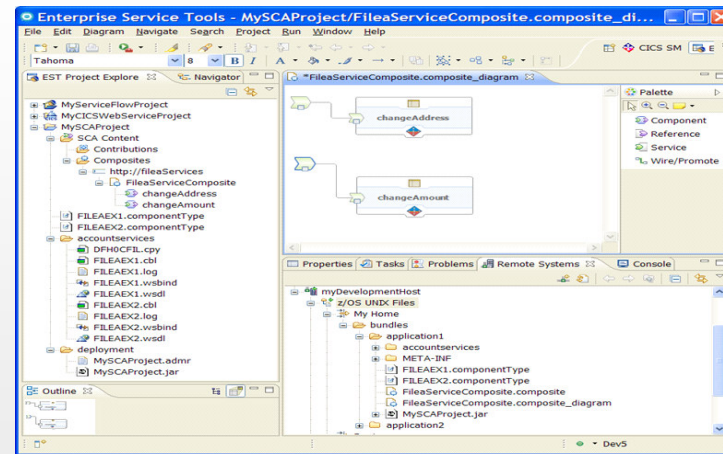
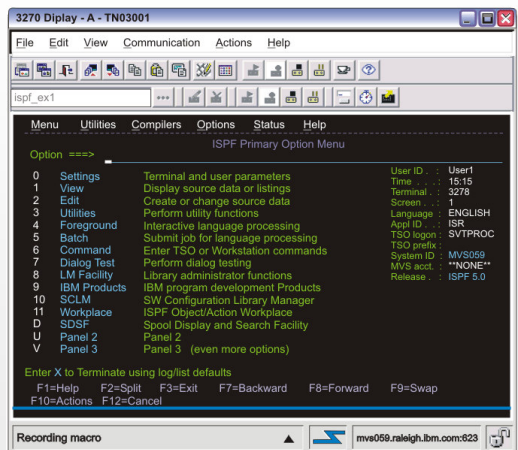
Boost productivity and accelerate innovation with modern skills





Enterprises want to...

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



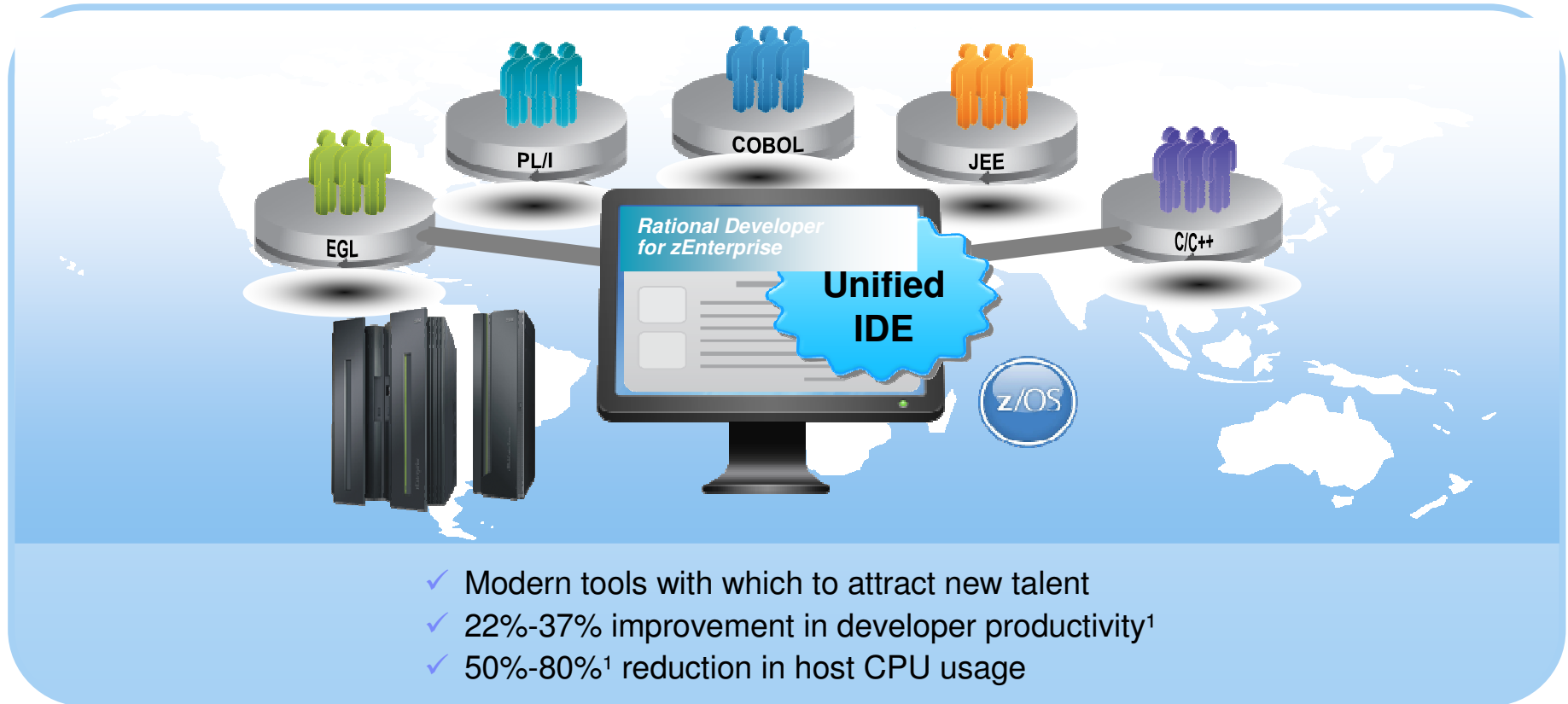
But...

They have antiquated development tools which deliver low productivity and are repulsive and unfamiliar 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



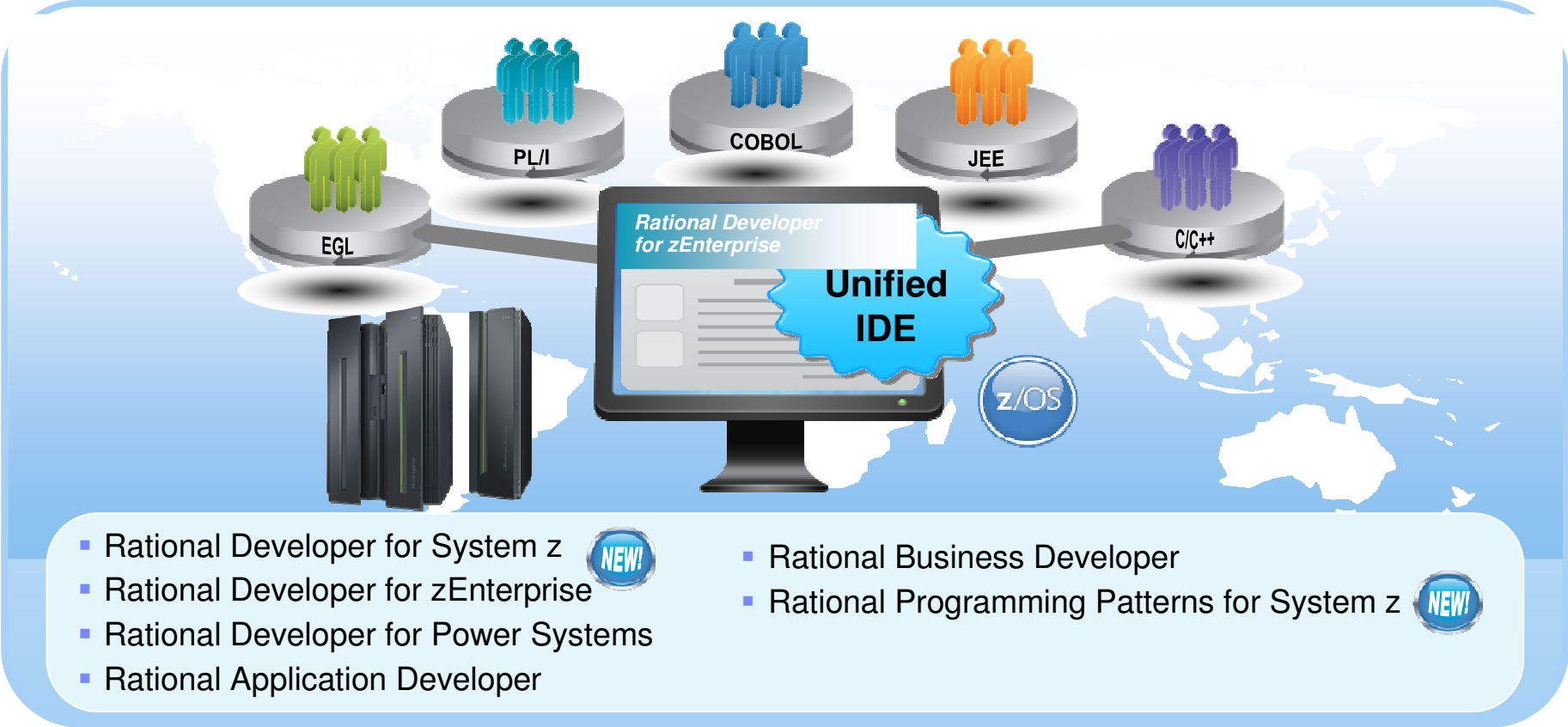
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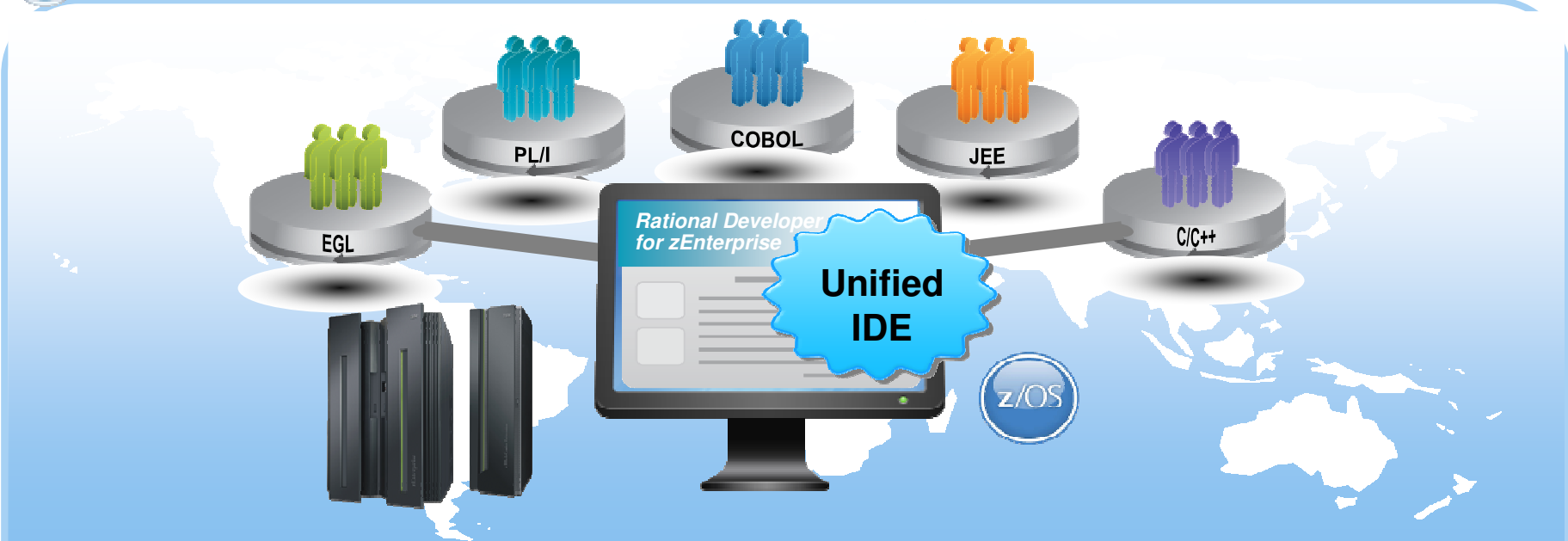




Announcing: Rational Developer for zEnterprise v8.0.1

Gain productivity and efficiency through a multiplatform IDE

NEW! Recently Announced



- ✓ Lower your enterprise development and maintenance costs
- ✓ Enhance your developer productivity and flexibility

Delivering...

- Cross-platform debugging including z/OS, Linux for System z, Power Systems, WAS, etc
- Multiplatform development across Java, COBOL, PL/I, HLASM, C/C++, EGL, etc.
- Increased usability for typical development operations cuts development time



Announcing: Rational Developer for System z v8.0.1

Improve mainframe skills and attract new development and support staff

NEW! *Recently Announced*

- ✓ Lower development cost
- ✓ Faster time-to-market
- ✓ Enhanced productivity
- ✓ Increased application quality



Delivering...

- Enhanced productivity for code restructuring, refactoring and batch modernization
- Enhanced performance and robustness for real-time source code validation
- Centralized IDE customization to reduce administration costs and ensure consistency



Rational Programming Patterns for System z v8.0.1

Preserve and extend your VA Pacbase investments



Recently Announced

- ✓ Experience the Power of programming patterns
- ✓ Low cost migration from VisualAge Pacbase v3.5
- ✓ Leverage traditional and new programming skills
- ✓ Comprehensive integrated development platform



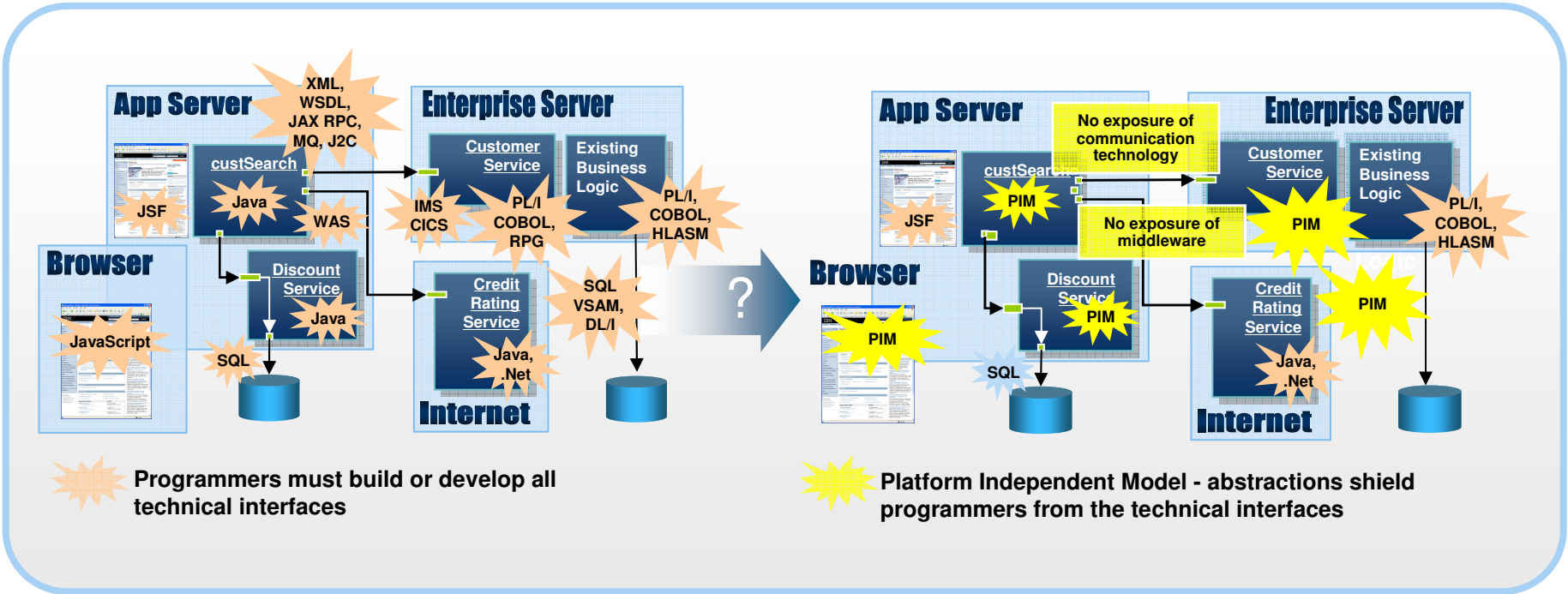
Delivering...

- New integrated development environment for Pacbase models and programs
- Fully integrated with Rational Developer for System z and Rational Team Concert
- Ultimate platform flexibility



Enterprises want to...

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



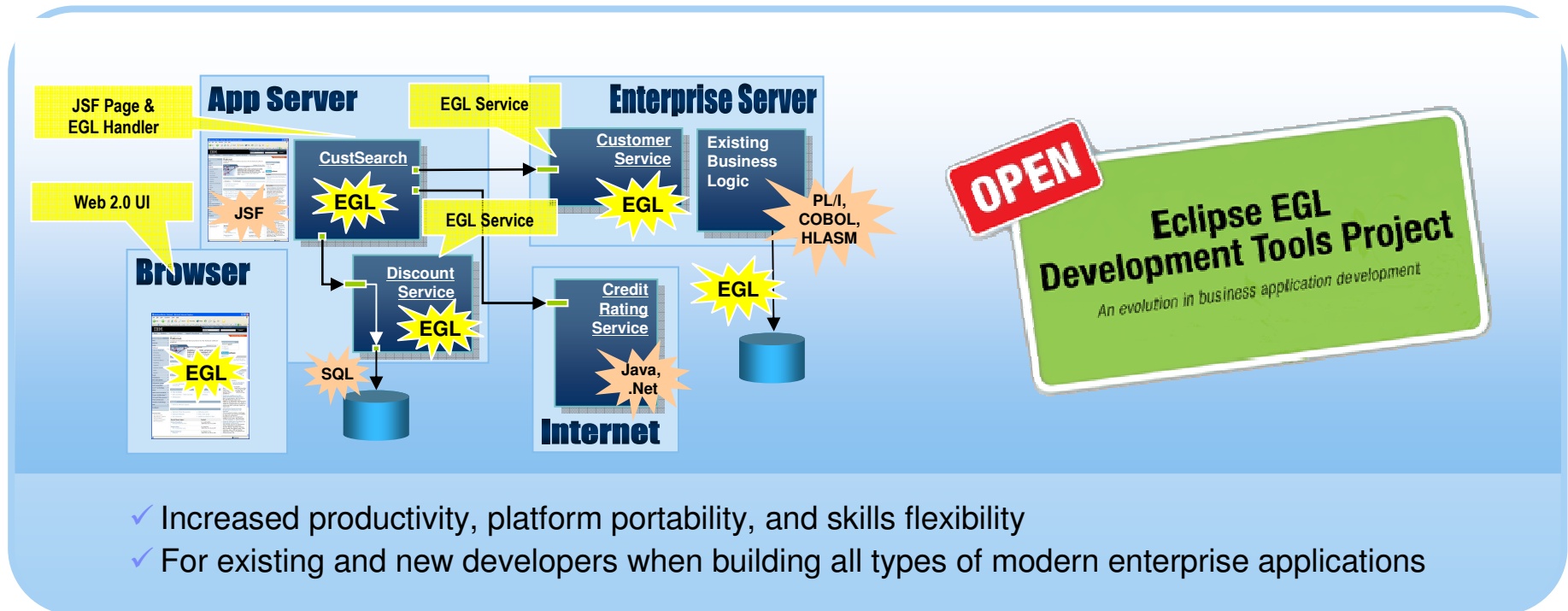
But...

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



“... We want to avoid the ‘skill silos,’ what we really need is a large group of general developers who should not worry about target platforms and focus on developing business components, and only a small number of technology specialists, so that we can swiftly allocate general developers to upcoming business needs... EGL is helping us achieve this goal...”

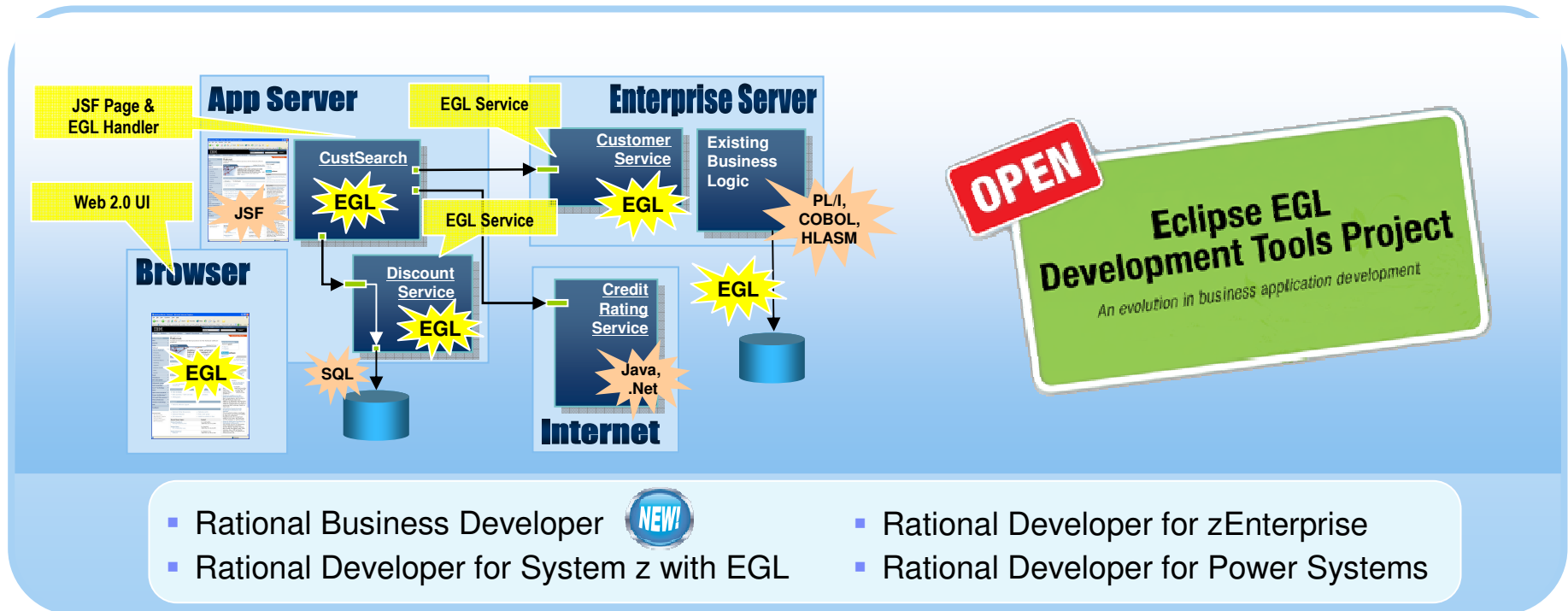
— Lieven Gouwy, IT Architect, KBC, Redmonk Podcast





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Announcing: Rational Business Developer v8.0.1

Multiplatform business language for modern application development

NEW! *Recently Announced*

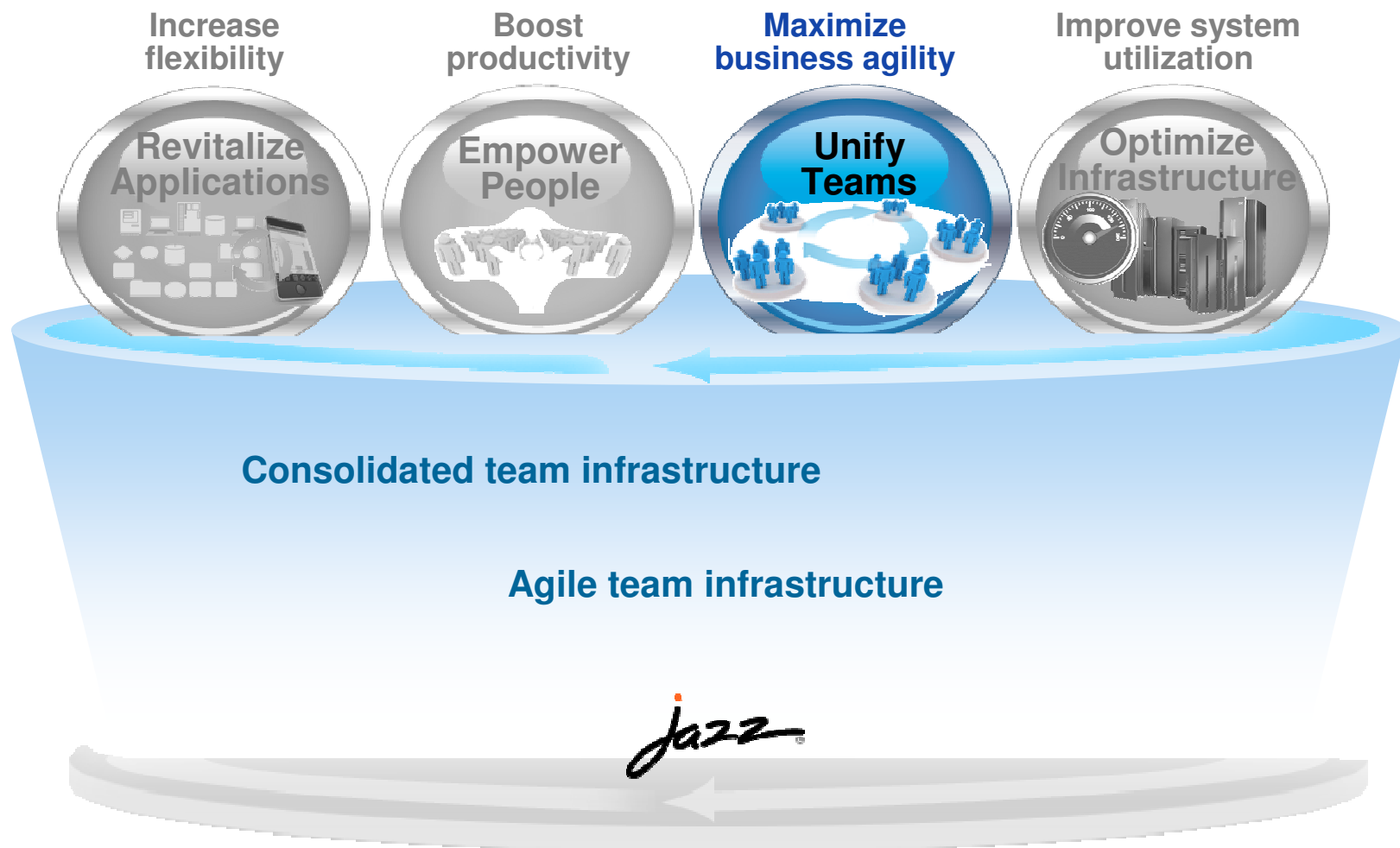
- ✓ Faster time to market
- ✓ Improved productivity
- ✓ Leverage traditional programming skills
- ✓ Ultimate platform flexibility



Delivering...

- New support for creating rich web UI business applications using open technologies (Dojo)
- Improved visual editing, debug and integrated test capabilities
- New Open Source EGL Development Tools Project now live at <http://www.eclipse.org/proposals/egl/>

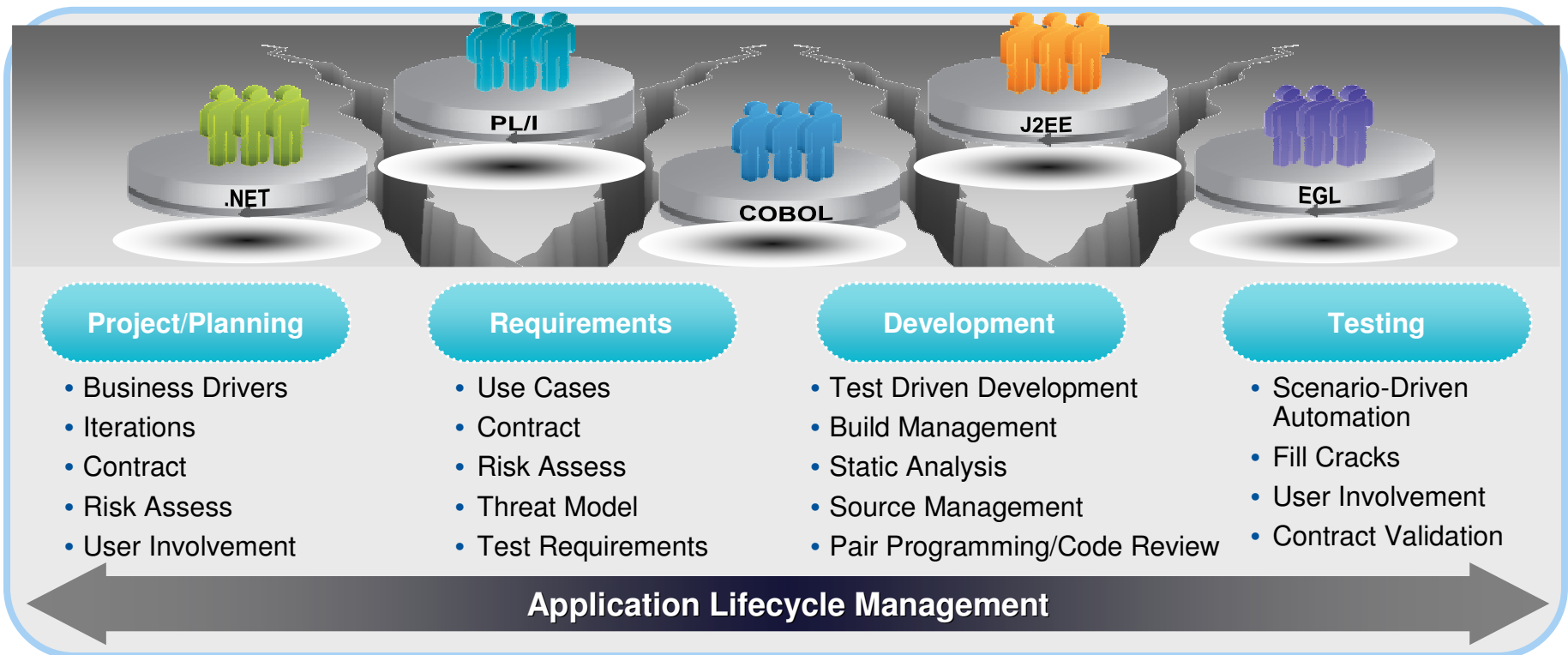
Maximize organizational agility by unifying development teams





Enterprises want to...

Deliver to market faster and cheaper by exploiting agile and test-driven development practices, effectively tracking end-to-end requirements, reducing team infrastructure costs and increasing cross-geo collaboration and governance

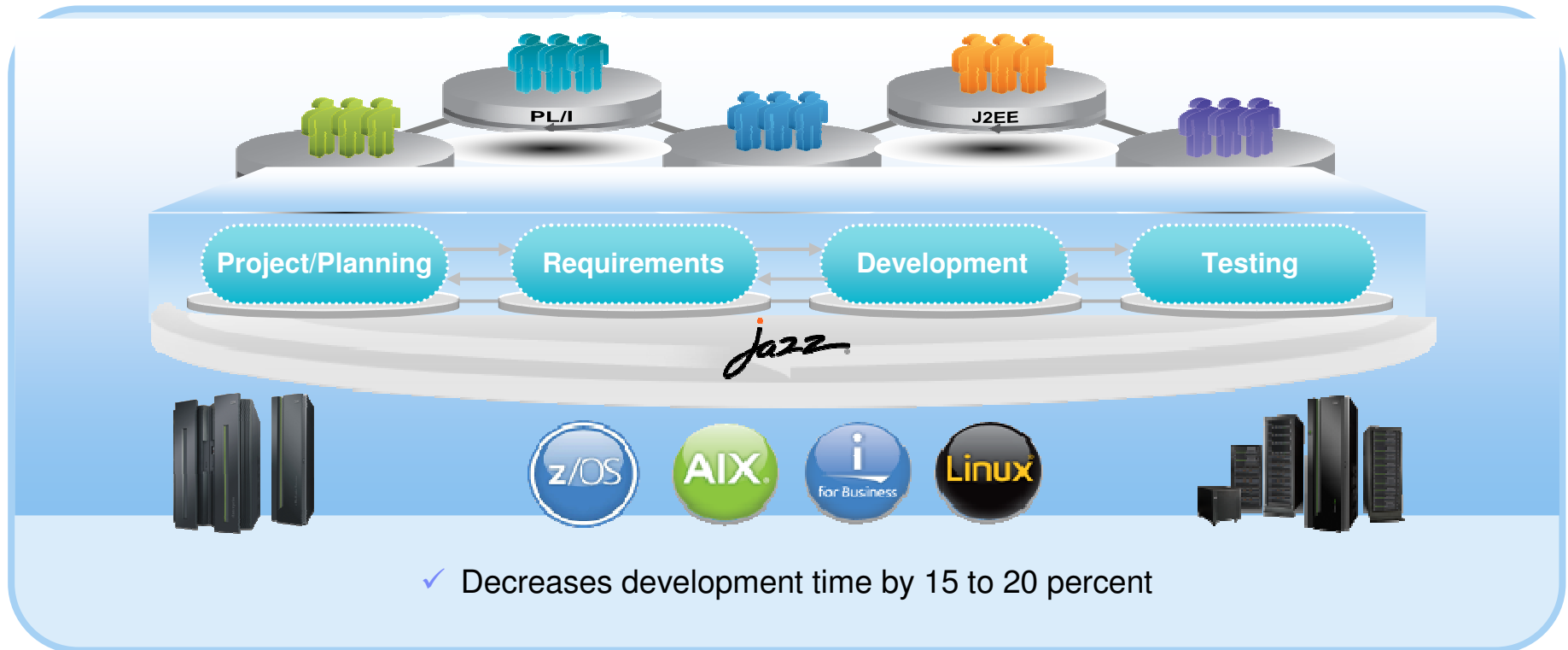


But...

They have “islands” of development, each with different tools and processes that do not support real-time collaboration, integration, comprehensive oversight, or lifecycle traceability, all of which results in reduced quality and slower time to market



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



“Building an agile development team requires a multiplatform approach, and Sodifrance uses Rational Developer for System z and Rational Team Concert for System z to help application teams synchronize their efforts and improve collaboration. Rational on System z offers a powerful and valuable combination for any company that wants to boost its development team’s productivity.”

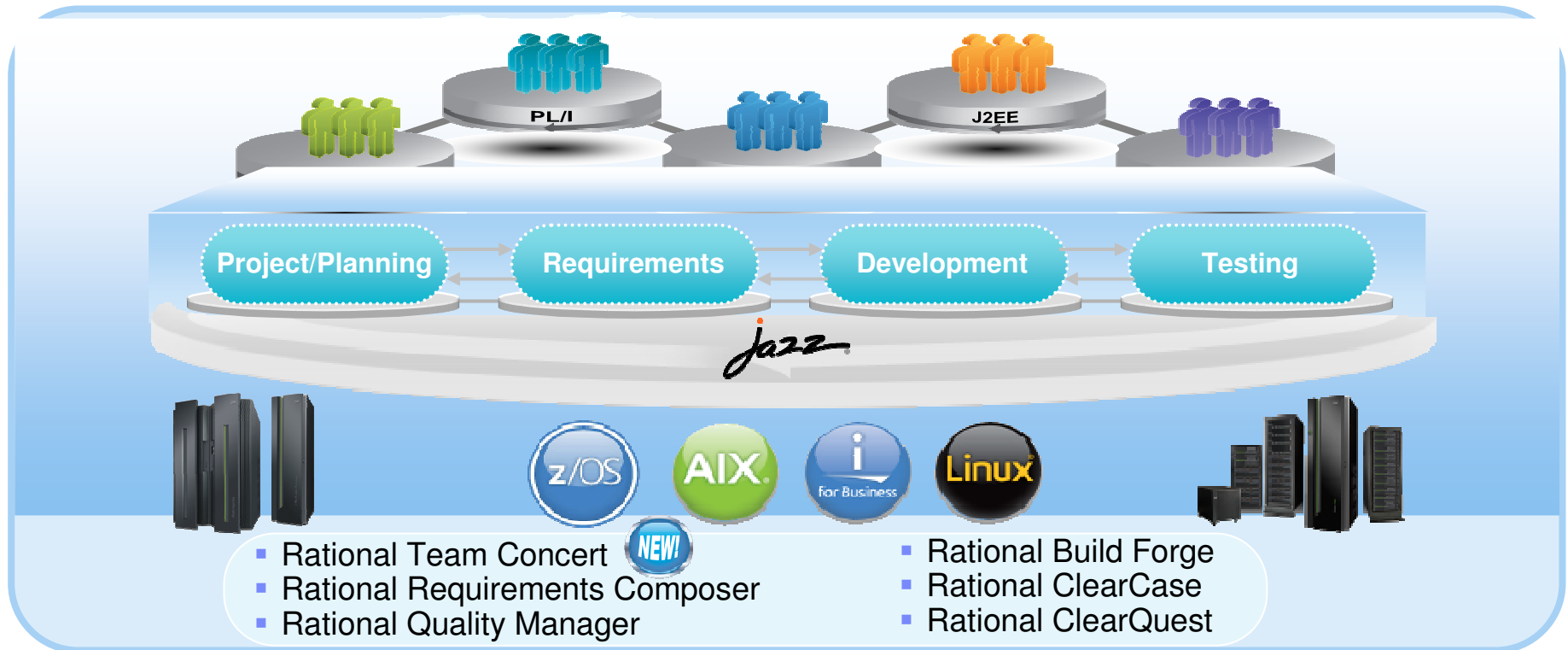
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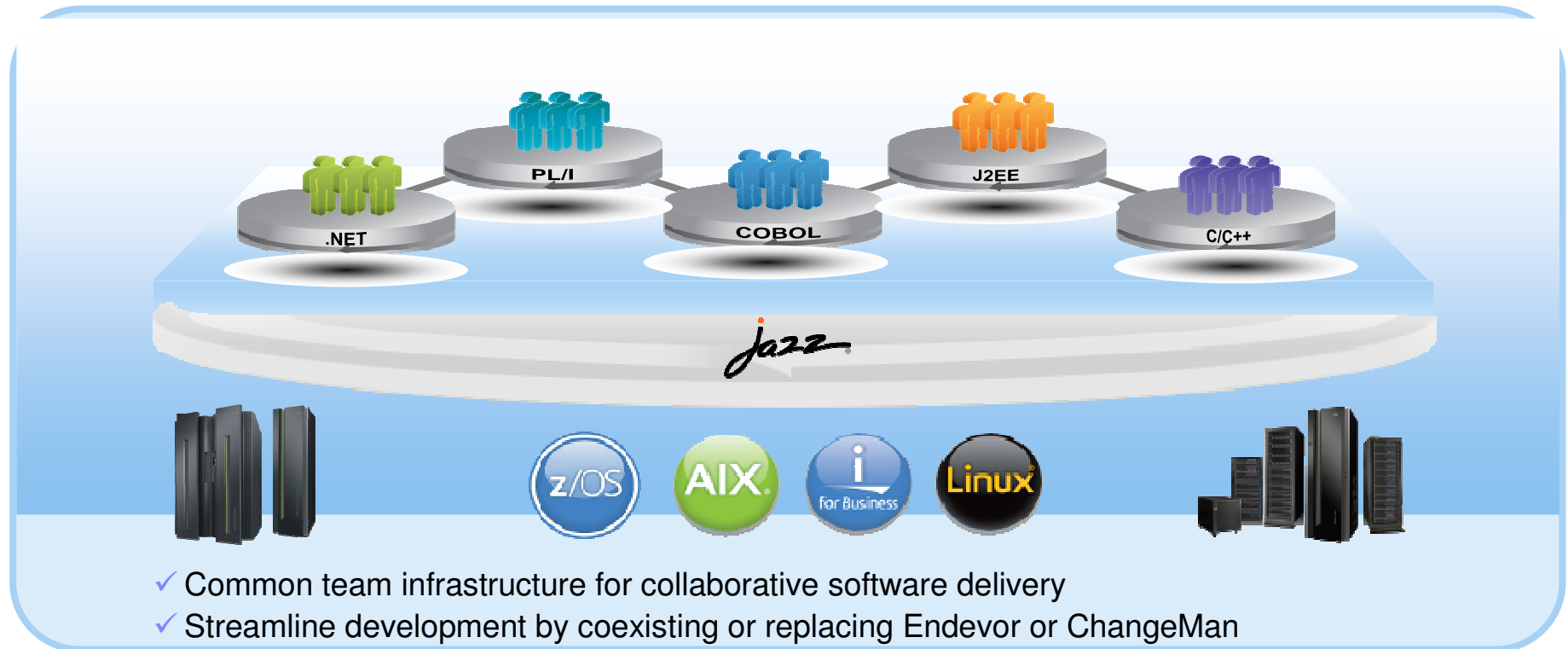




Announcing: Rational Team Concert v3.0

Unify disparate teams, gain efficiency and productivity

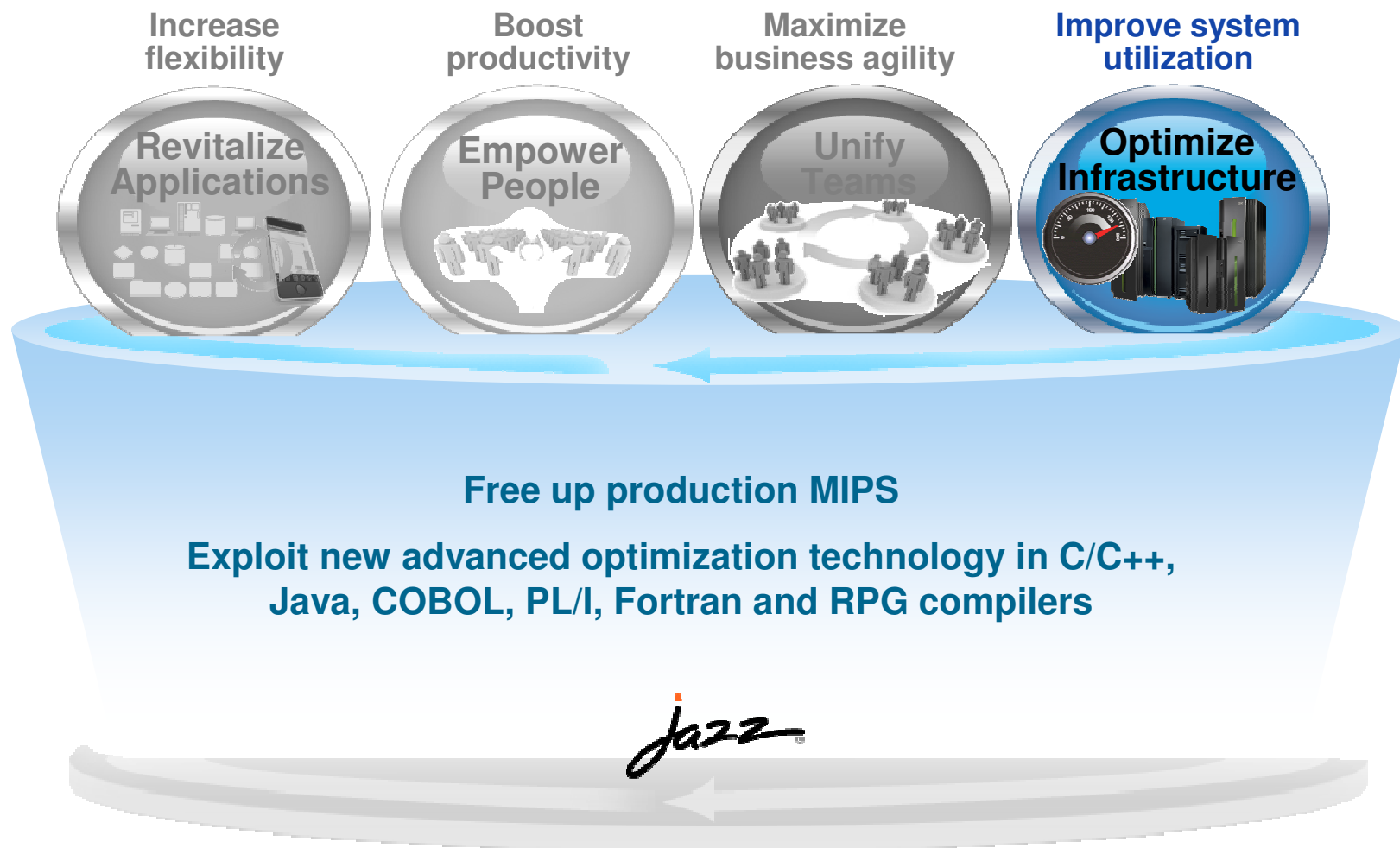
NEW! *Recently Announced*



Delivering...

- Single integrated platform for managing delivery of multiplatform projects
- New support for advanced dependency analysis and build capabilities for z/OS
- New integrated ISPF client for z/OS source edit, compile and debug

Improve application performance by fully exploiting latest hardware





Enterprises want to...

Reduce budget by decreasing application development MIPs usage to make more cycles available for production use

Application Development



Operations



Cost

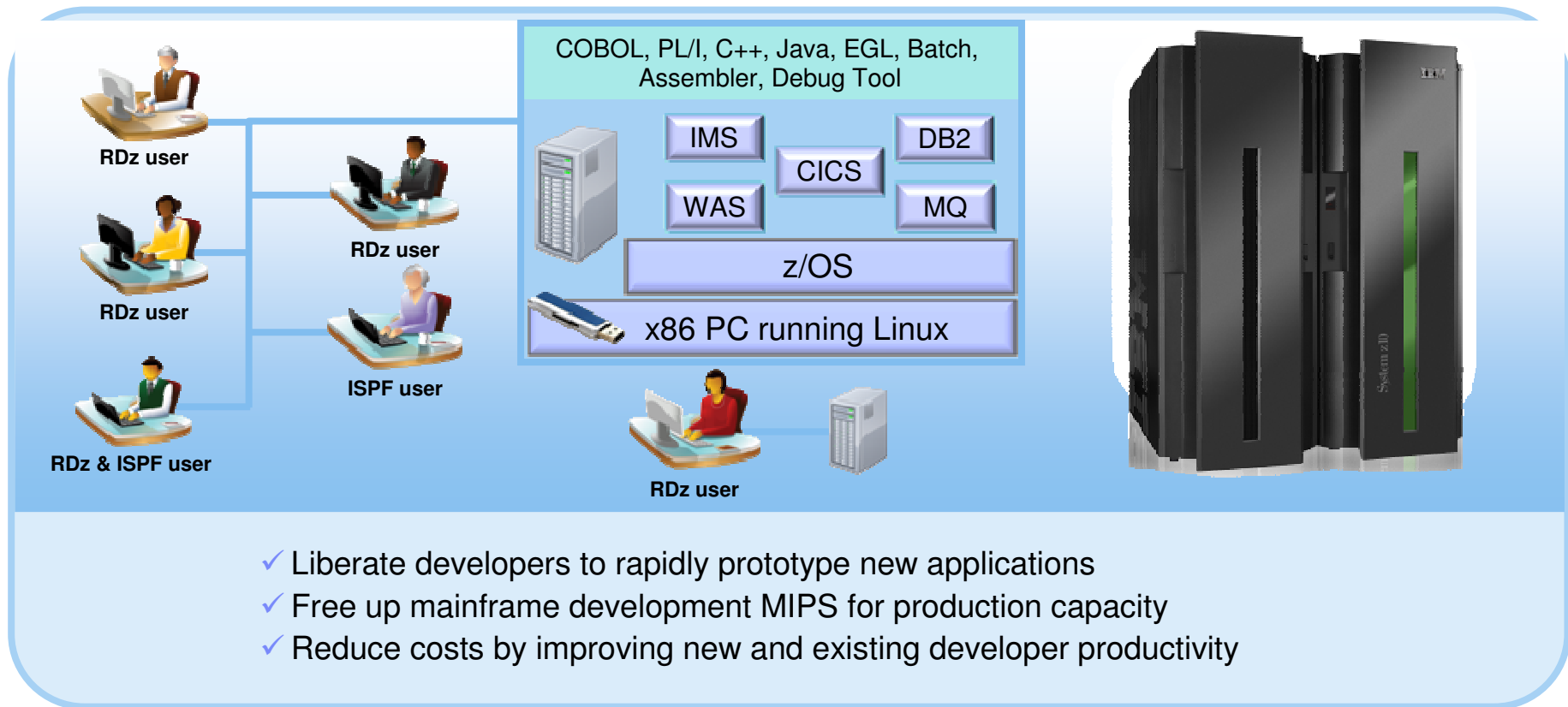


But...

Testing takes too long and the systems are overloaded trying to meet the development and test needs in parallel with the production requirements



Solution: Test mainframe applications on x86 Linux server



“RDz Unit Test gives our developers the ability to have their own z/OS environment to prototype, compile, debug and test while our customers make the necessary changes to their test, QA and production environments... This shortens our time to delivery, shortens our project cycles, makes our customers happy and increases our margins...”

At the price...it's a no brainer.”
— Eric Simone, CEO, ClearBlade





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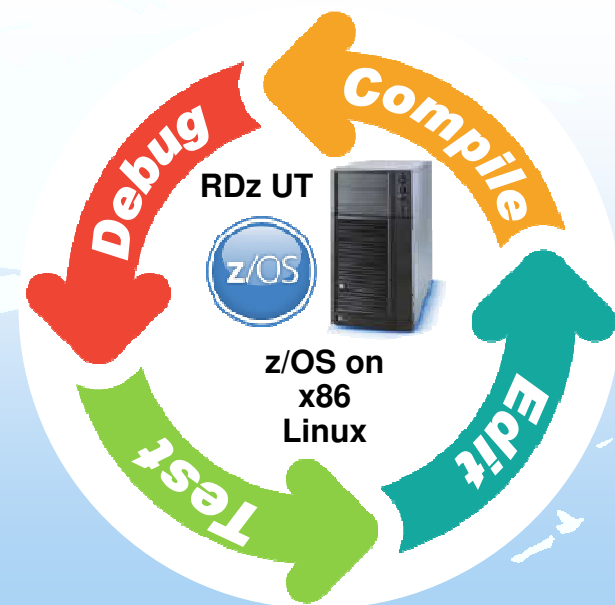


Announcing: Rational Developer for System z Unit Test Feature v8.0.1

Increase flexibility, portability, and free-up production capacity

NEW! *Recently Announced*

- ✓ Easy access to z/OS
- ✓ Free up production MIPs
- ✓ Enable quick, agile approach
- ✓ Portable z/OS development



Delivering...

- Updated Middleware, now available for use in Education
- Develop and test z/OS applications on a dedicated x86 Linux machine
- Facilitates quick system changes to test configurations during development



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

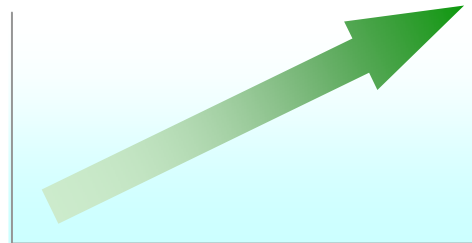


Solution: Advanced compiler technology

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



Performance



Compiler Version

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

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

- z/OS XL C/C++ v1.12 on zEnterprise* delivers up to 60% performance improvement
- Enterprise PL/I V4.1 on zEnterprise* delivers up to 27% performance improvement
- XL C/C++ v11, XL Fortran v13 delivers *industry leading* SPEC® CPU2006 performance*

✓ Lowers capital outlays by increasing capacity and improving performance of application suite

"... the Metal C optimization levels are just incredible. We're really impressed, there is no way that any of us assembler programmers can write code as efficient and keep it readable and do it in a reasonable amount of time.."

— Gregg Willhoit is the Chief Architect at DataDirect Technologies

PROGRESS
SOFTWARE

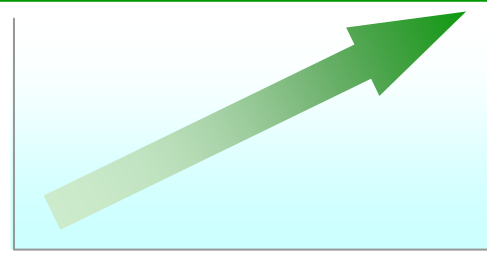


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- IBM XL C/C++ for AIX and Linux
- IBM XL Fortran for AIX and Linux

- IBM COBOL for z/OS, AIX
- IBM PL/I for z/OS, AIX

- IBM WebSphere® Development Studio (IBM compilers)

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PROGRESS
SOFTWARE



Announcing: Compilers for System z and Power Systems

Improve application performance, productivity, and return on investment

NEW! *Recently Announced*

IBM zEnterprise 196

- z/OS XL C/C++ v1.12
- Enterprise PL/I for z/OS v4.1
- Enterprise COBOL for z/OS v4.2



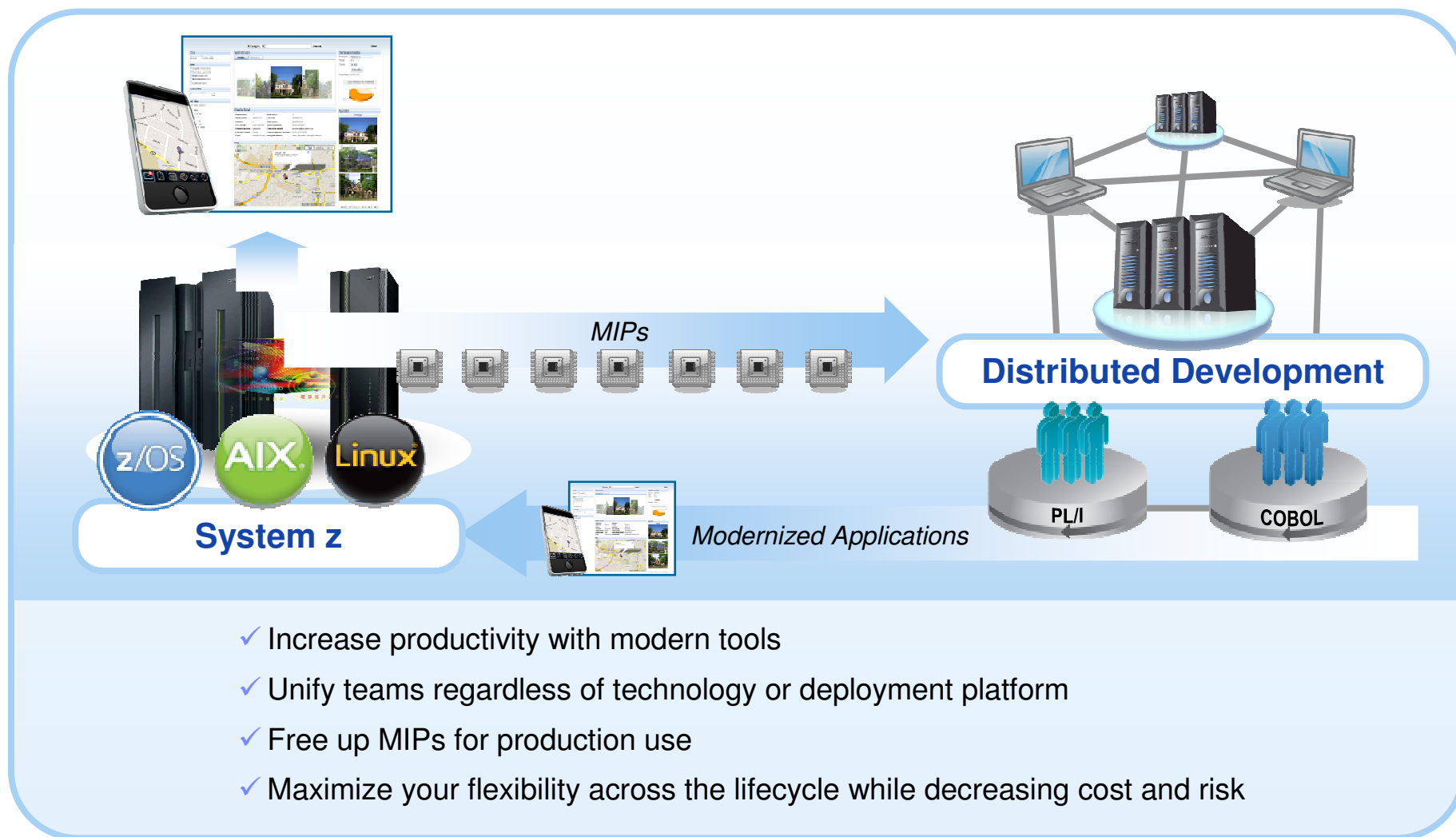
zEnterprise BladeCenter Extension (zBX)

- XL C/C++ for AIX and Linux v11.1
- XL Fortran for AIX and Linux v13.1
- COBOL for AIX v4.1

Delivering...

- Performance improvements for applications with enhanced compiler optimization technology
- Exploitation of new zEnterprise 196 and POWER7 hardware
- Productivity improvements with enhanced reporting, problem determination, performance tuning, and code portability support

Breaking down the barriers



Getting started

Next steps to modernize your enterprise applications



To learn more visit:

ibm.com/software/rational/announce/modernization/



[*Try latest System z software for free*](#)



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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 with IBM Rational software on System z and Rational Team Concert for System z

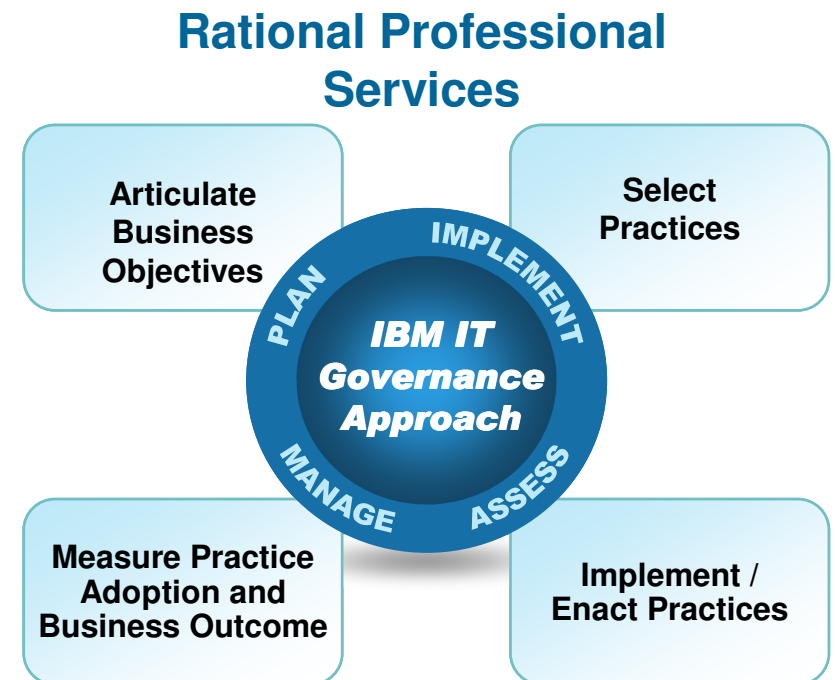
SoforTe chose to implement RDz and RTCz on an IBM System z10 Business Class server running z/OS and clients running Microsoft® Windows® clients to provide a modern powerful development environment for its customers.

Leverage IBM Services to get started today

- **Executive Services**
 - Schedule an Enterprise Modernization Executive Planning Session to define modernization strategies

- **Application Modernization Services**
 - Application Assessments to:
 - Develop Modernization roadmaps to resolve specific business issues
 - Improve Application Quality and Performance
 - Identify opportunities for business software delivery improvements

- **People and Team Modernization Services**
 - Provide Implementation Services for Rational Enterprise Modernization tools
 - Provide SCM migration assistance
 - SDLC Assessments to:
 - Improve Software Delivery performance
 - Implement Software Delivery Metrics to more effectively manage the software development environment





Enterprises want to...

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

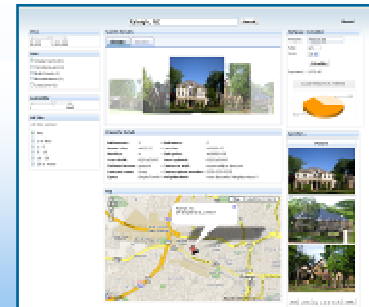
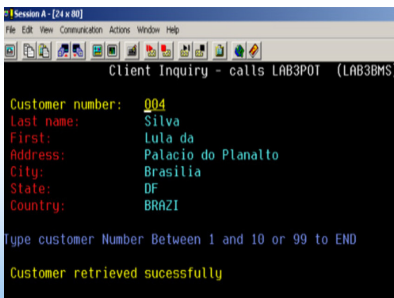


But...

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



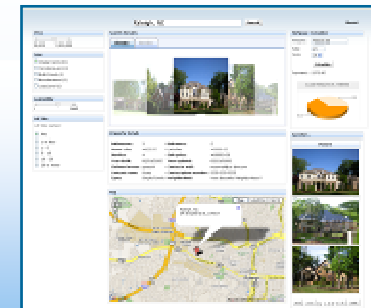
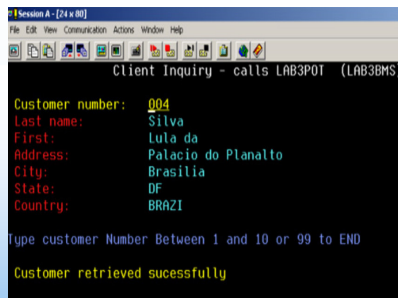
- ✓ Greater customer satisfaction, lower employee training costs, and fewer errors from more modern and compelling UIs

“IBM Rational HATS enables us to create a one-stop shop online where our dealers can find anything they need, print any reports they need, and submit warranty registrations much more quickly and easily than they could before.”
 — Sonja Muhm, Programmer Analyst, Winnebago Industries



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

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