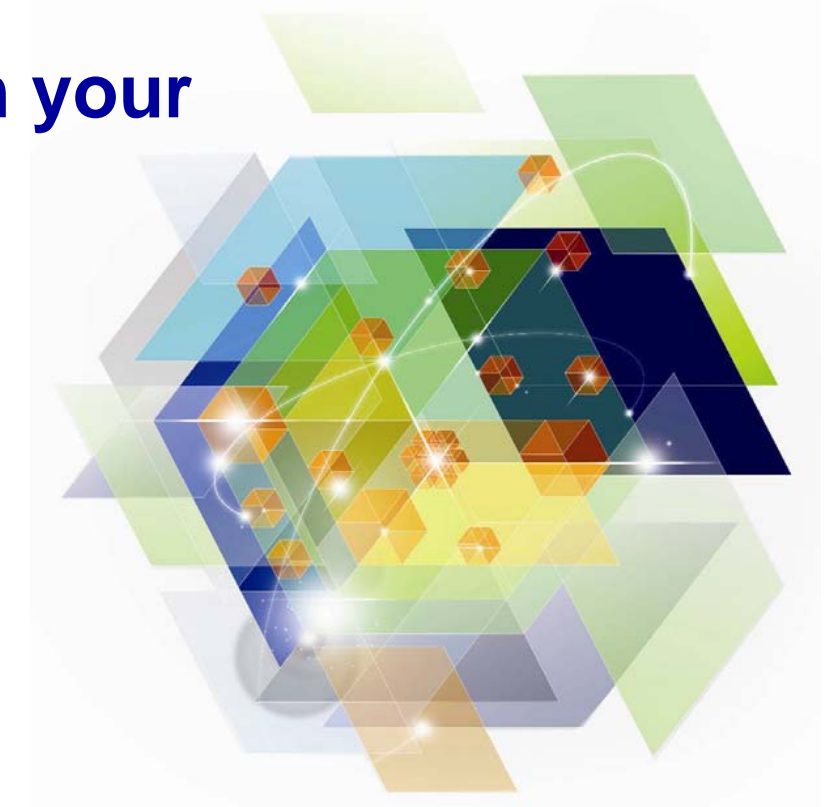IBM

Enterprise Modernization - Realizing Greater Value from your IT Investments
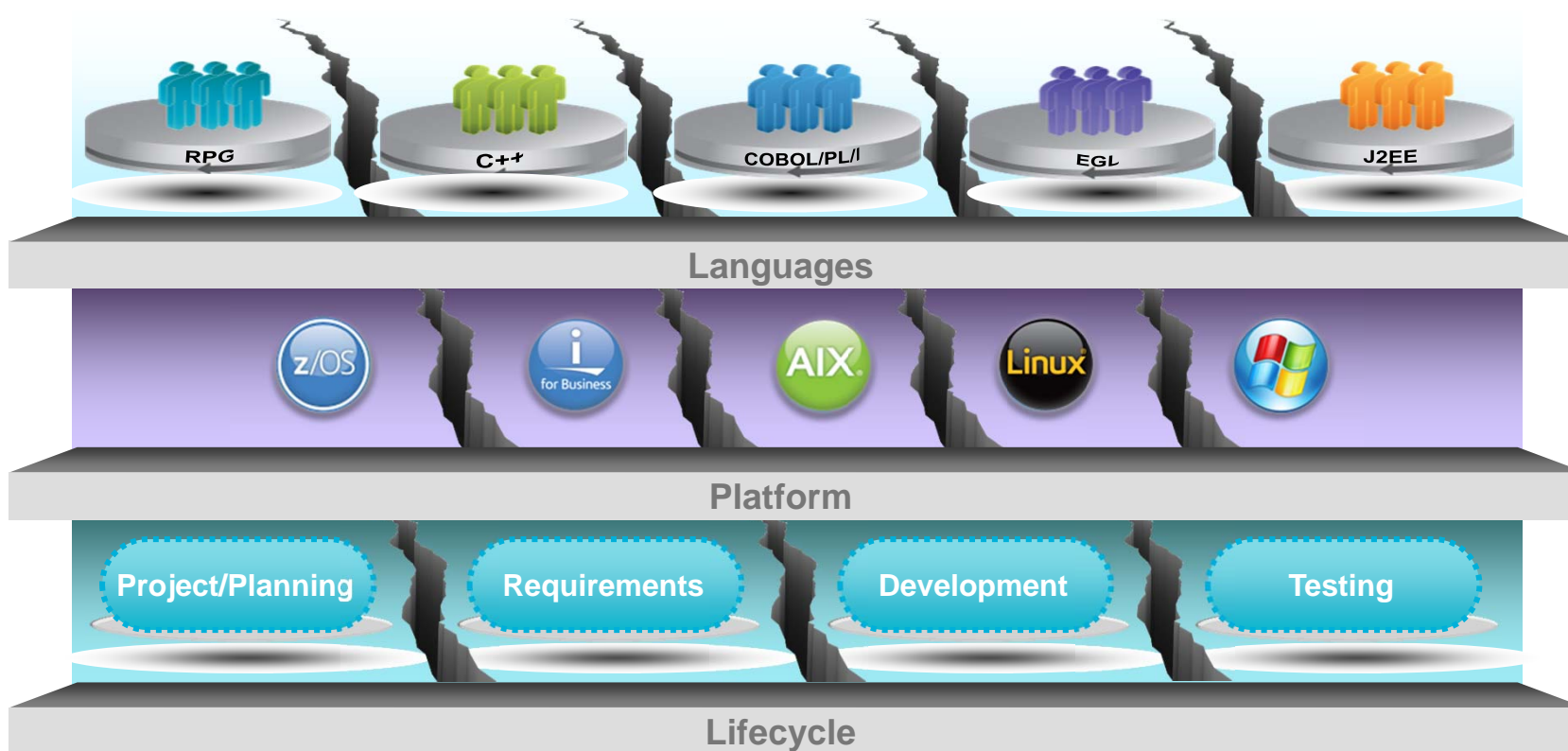
Hayden Lindsey

Vice President & Distinguished Engineer

Rational Enterprise Modernization and Emerging Technologies
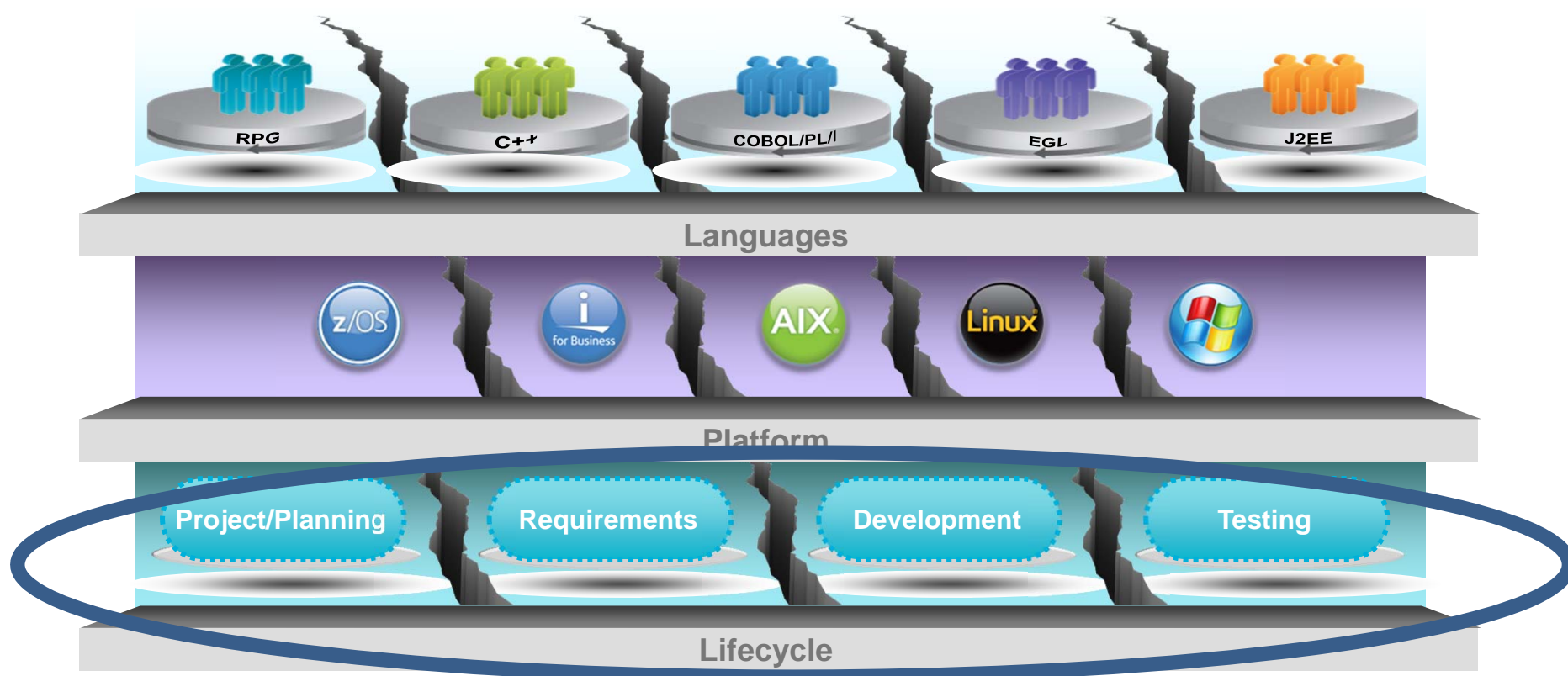
20 March 2012

Enterprise Integration Barriers
A main deterrent to recognizing greater value from your IT investments

Enterprise Integration Barriers
A main deterrent to recognizing greater value from your IT investments

RPG   C++   COBOL/PL/I   EGL   J2EE

Languages

z/OS   i for Business   AIX   Linux

Platform

Project/Planning   Requirements   Development   Testing

Lifecycle

Imperative 1: Real-Time Planning
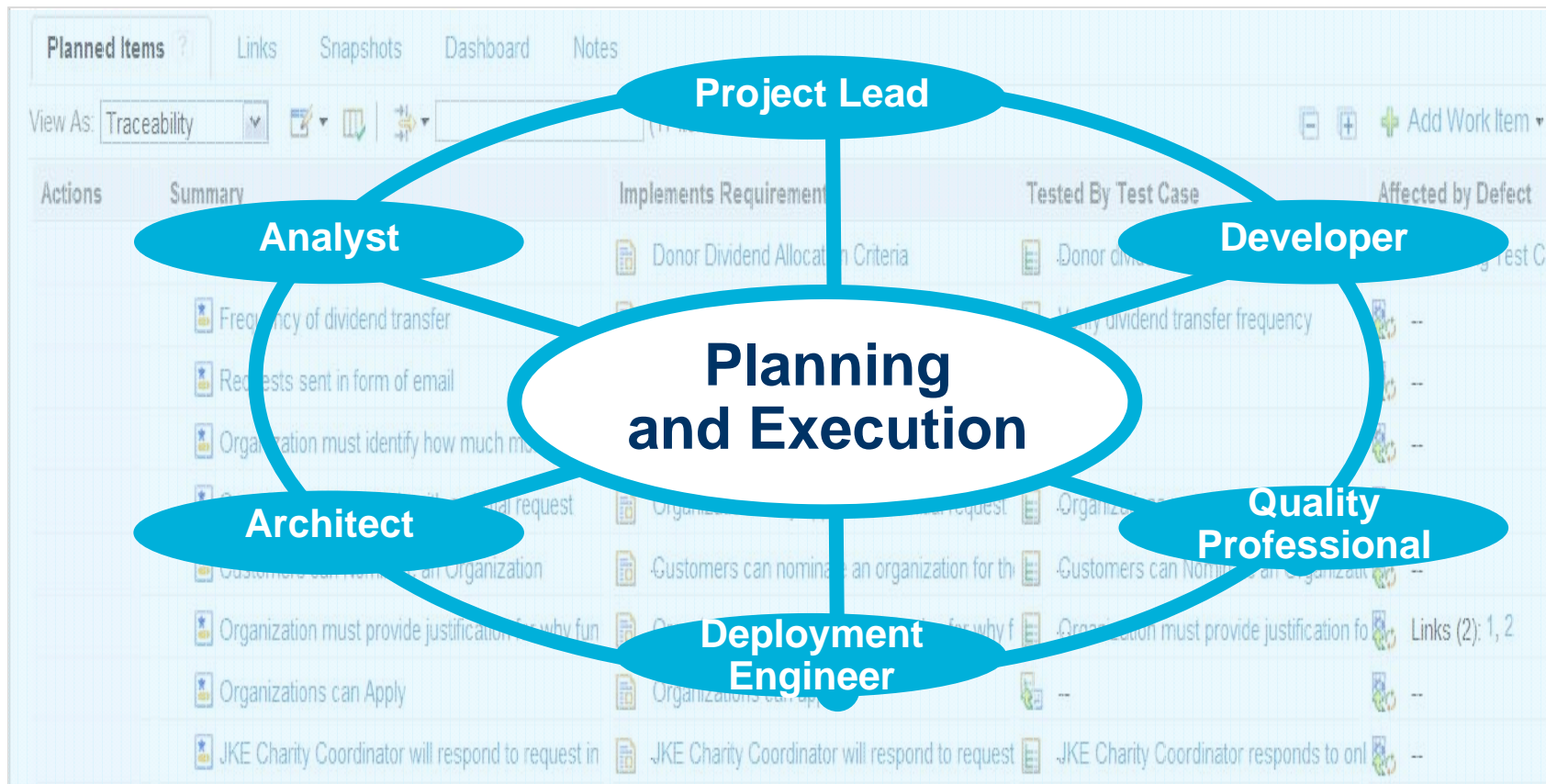
Improves time to delivery by:

- ✓ Providing a single plan spanning all stages of the development lifecycle
- ✓ Integrating planning with execution
- ✓ Allowing everyone to participate interactively in maintaining plan currency
- ✓ Helping teams respond timely to unexpected changes

Imperative 2: Lifecycle Traceability

Instant access to details from any point in the development process

| Customer | Final Product | Build Artifacts | Environment | Supporting Systems | Requirements Management | Initial Idea |

Improves quality by:
- ✓ Enabling impact analysis across all artifact types
- ✓ Helping to quickly understand context by tracing links to associated artifacts, e.g. corresponding requirements
- ✓ Delivering transparency enabling fully informed decisions
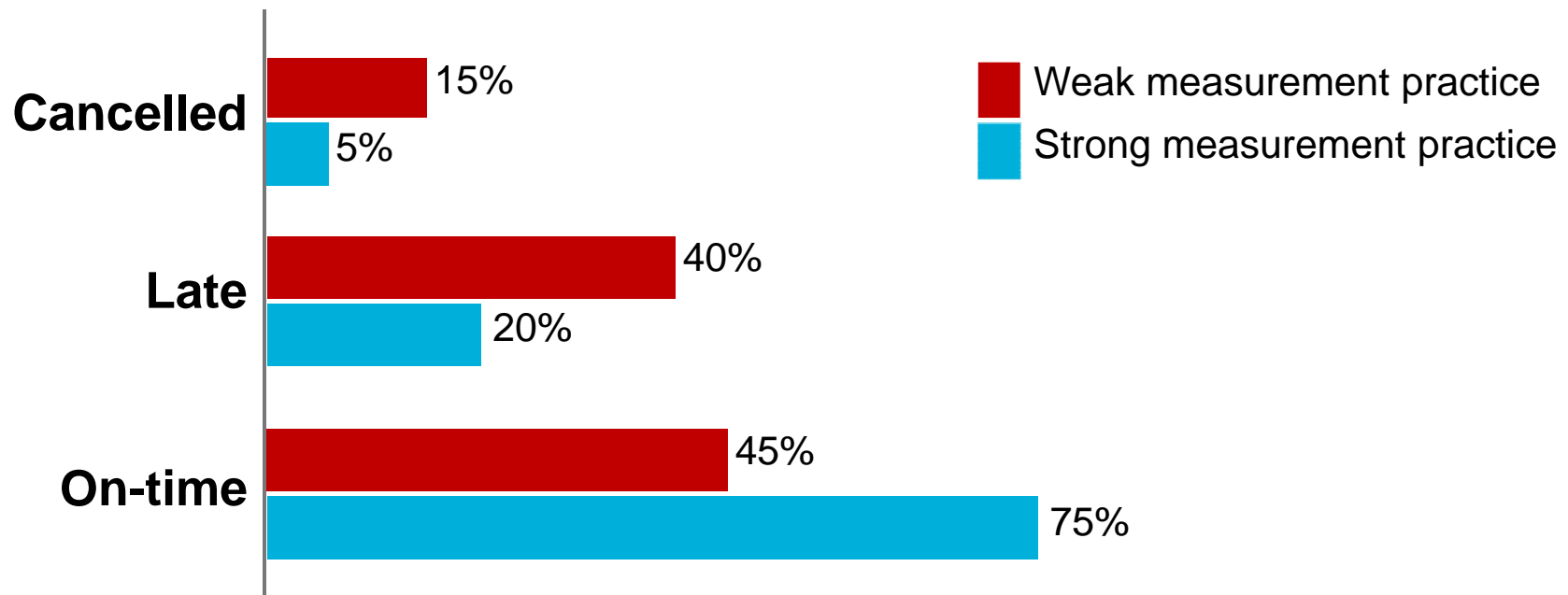
Imperative 3: In-Context Collaboration
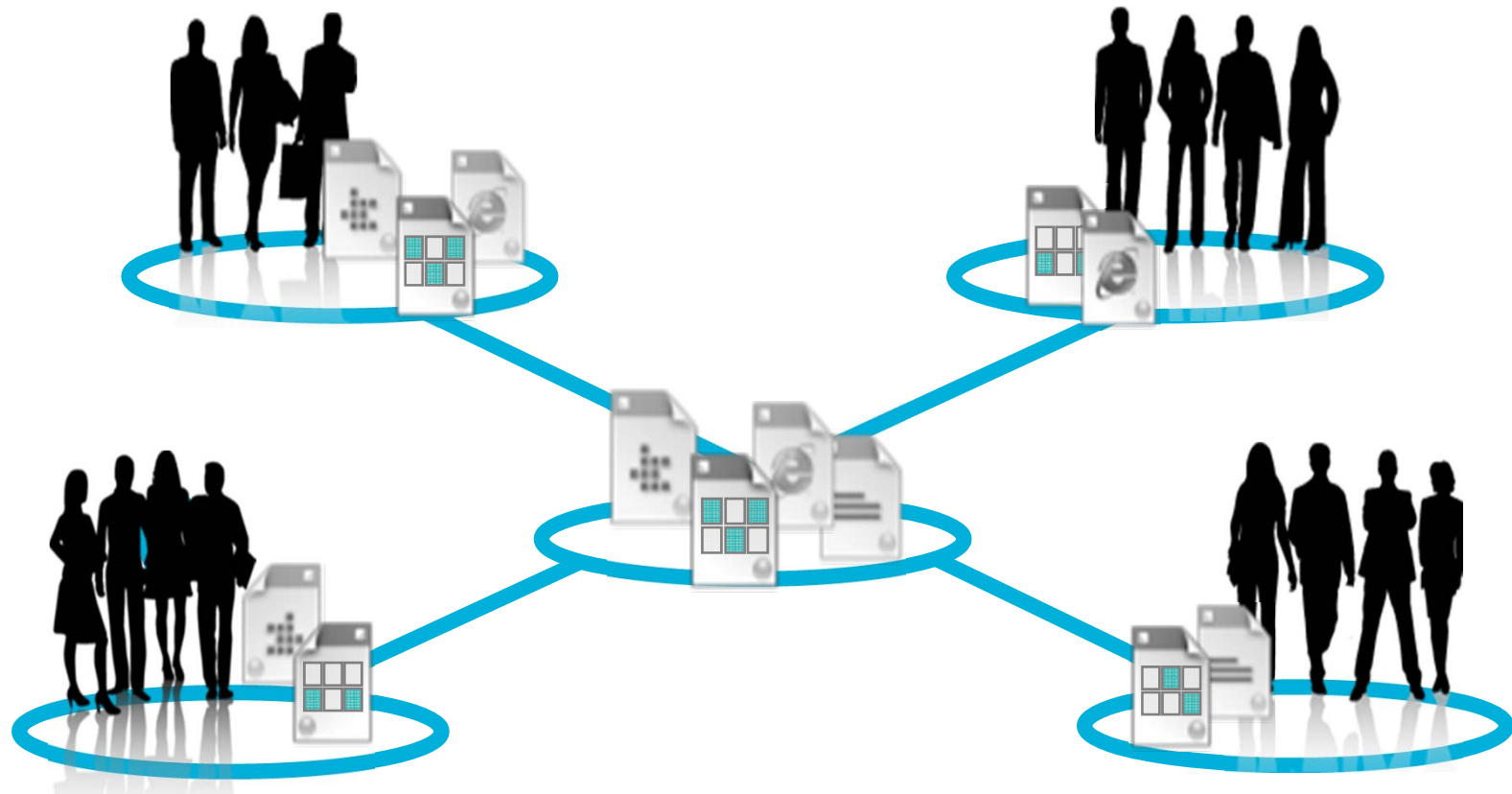
Maximizes time to value by:
- ✓ Making information immediately accessible to the team in the context of their work
- ✓ Empowering teams to collaborate and regularly review software artifacts
- ✓ Providing a single source of truth hosted in a shared repository for all team members

Imperative 4: Development Intelligence

Measurement Practices Impact Project Success

Cancelled
- Weak measurement practice: 15%
- Strong measurement practice: 5%

Late
- 40%
- 20%

On-time
- 45%
- 75%

- ■ Weak measurement practice
- ■ Strong measurement practice

Source: Capers Jones, Measurement, Metrics and Industry Leadership, 2009 and Software Engineering Best Practices, McGraw Hill, 2010.

Improves predictability by:
- ✓ Applying business intelligence techniques to software and systems development
- ✓ Enabling fact-based decision making
- ✓ Steering projects and programs to deliver on-time

Imperative 5: Continuous Improvement

Assess

Act

Steer

ROADMAP

jazz
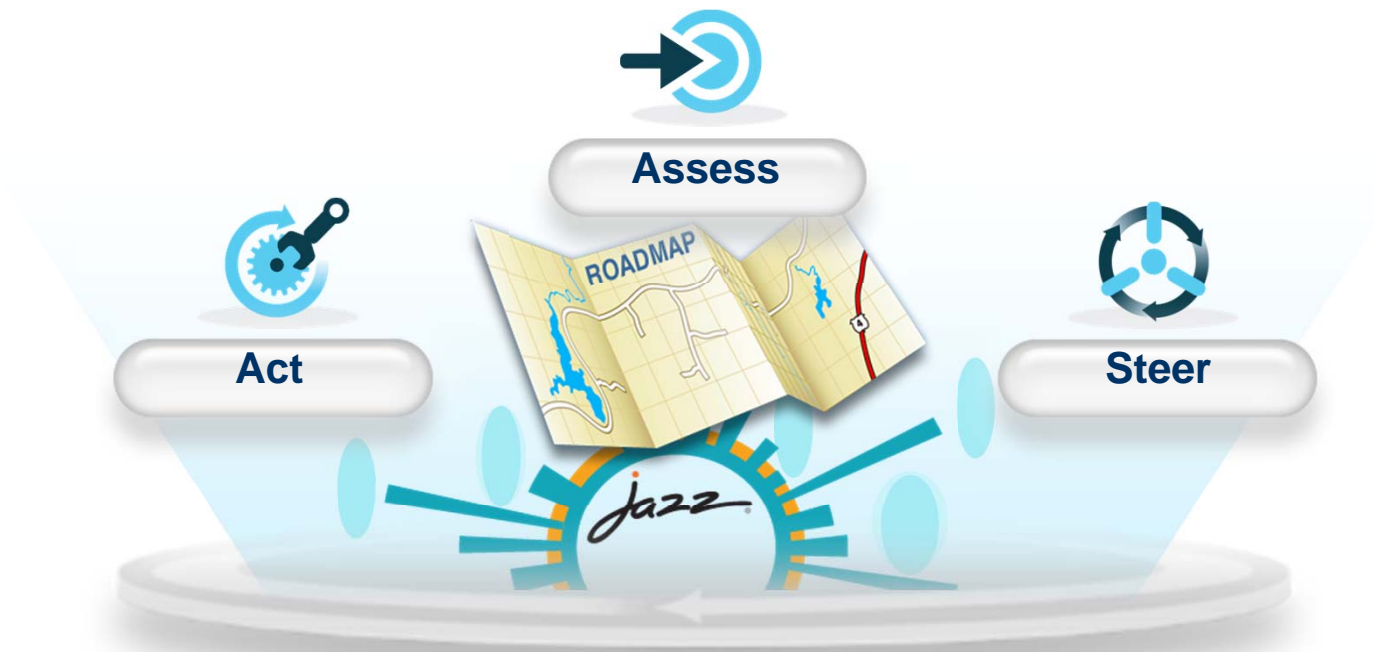
> *"Successful analytics requires taking it beyond software and reporting, and into the realm of management practices and operations improvement."*
>
> Information Management Online, February 23, 2011

Reduces cost by:
- ✓ Delivering "out of the box", customizable, development process templates
- ✓ Improving delivery through ongoing adoption of best practices and automation
- ✓ Promoting both incremental and breakthrough improvement
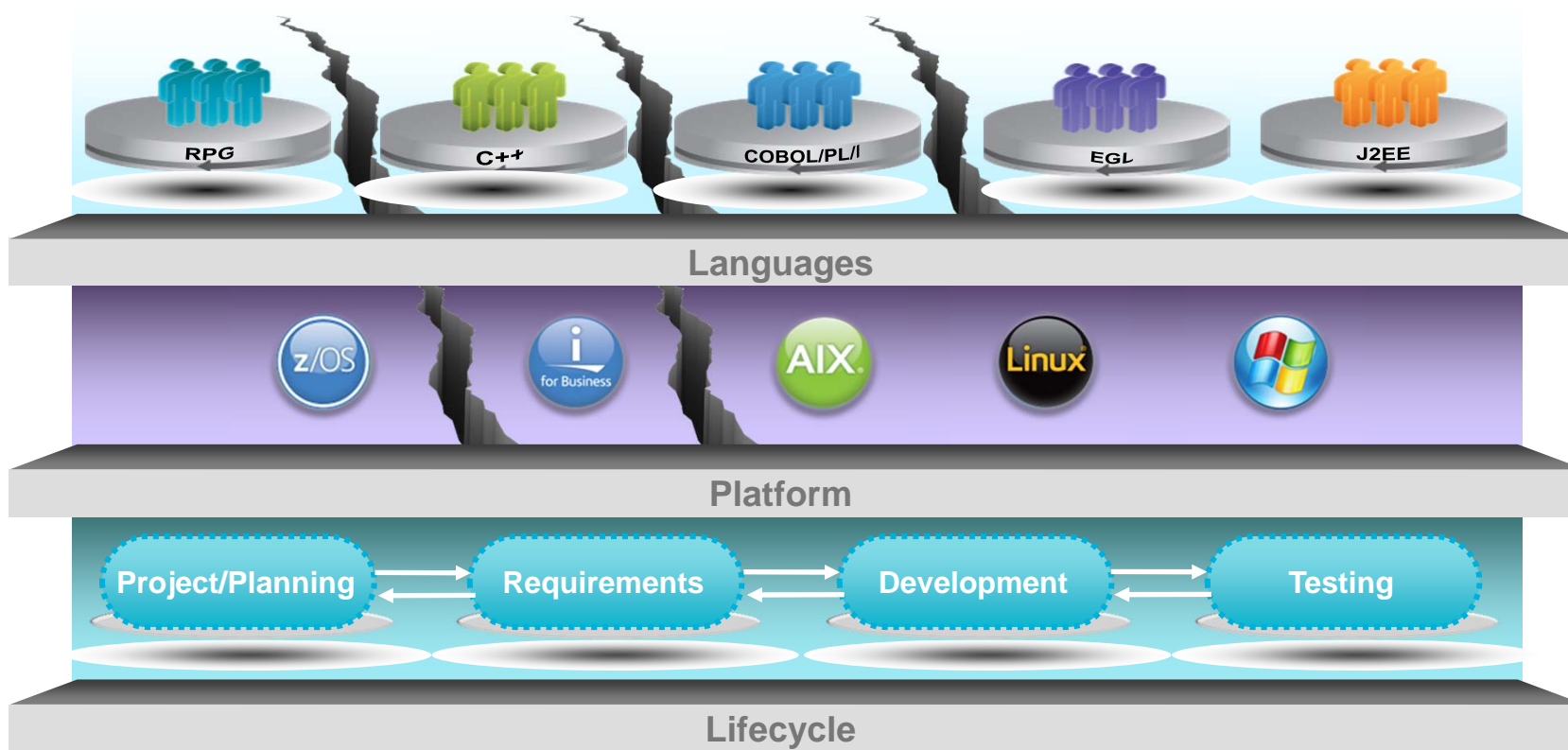
The Five Imperatives of Application Lifecycle Management
Improve productivity 4-6% annually

1. Accelerate **time to delivery** with real-time planning

2. Improve **quality** with lifecycle traceability

3. Maximize **time to value** with in-context collaboration

4. Refine **predictability** with development intelligence

5. Reduce **costs** with continuous improvement
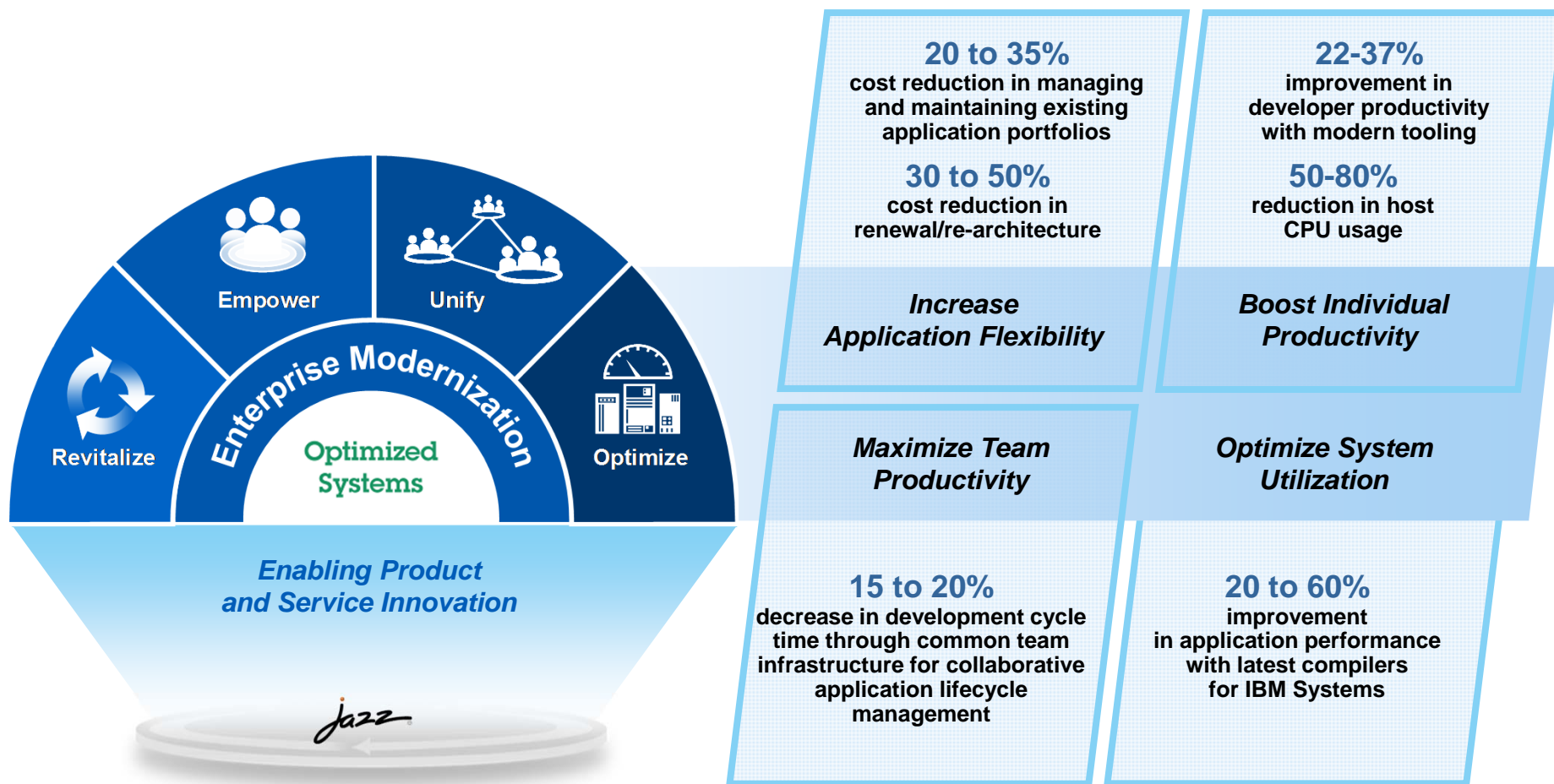
Remaining Enterprise Integration Barriers

Languages

RPG | C++ | COBOL/PL/I | EGL | J2EE

Platform

z/OS | i for Business | AIX | Linux | Windows

Lifecycle

Project/Planning → Requirements → Development → Testing

IBM Enterprise Modernization

An incremental and continuous approach to achieving greater value and performance from your IT investments

20 to 35% cost reduction in managing and maintaining existing application portfolios **30 to 50%** cost reduction in renewal/re-architecture ***Increase Application Flexibility***	**22-37%** improvement in developer productivity with modern tooling **50-80%** reduction in host CPU usage ***Boost Individual Productivity***
Maximize Team Productivity **15 to 20%** decrease in development cycle time through common team infrastructure for collaborative application lifecycle management	***Optimize System Utilization*** **20 to 60%** improvement in application performance with latest compilers for IBM Systems

Boost productivity and accelerate innovation with modern skills; Maximize organizational agility by unifying development teams

- **Modern IDEs for all platforms and languages**

- **Modern business languages**

- Enterprise training programs, communities and resources

- **Consolidated and agile team infrastructure**

Empower **Unify**

Revitalize

Enterprise Modernization

Optimize

Enabling Product and Service Innovation

jazz
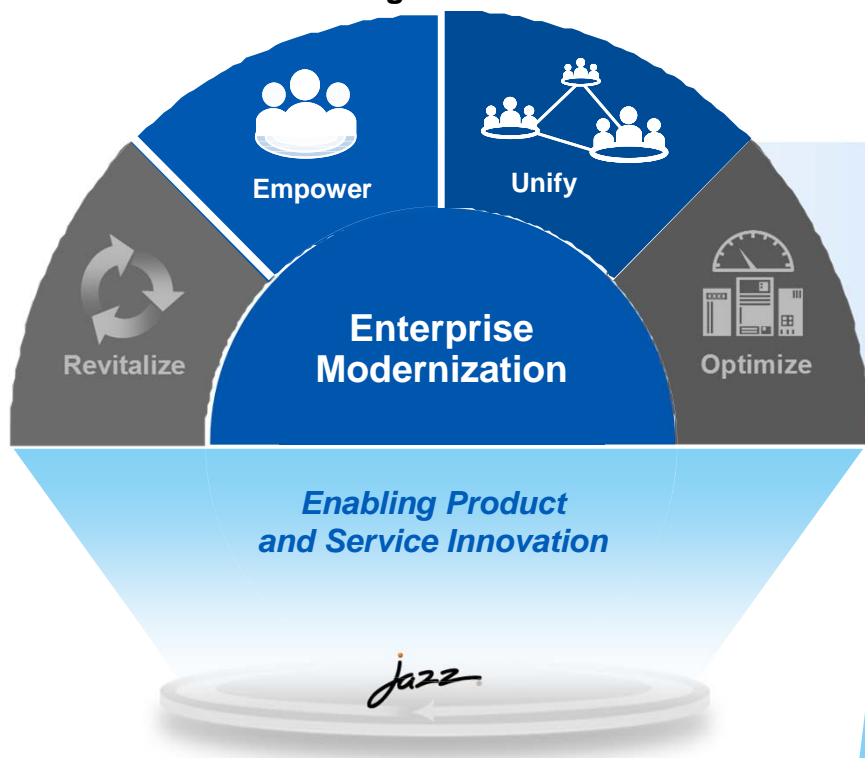
20 to 35%
cost reduction in managing and maintaining existing application portfolio

30 to 50%
cost reduction in renewal/re-architecture

Increase Application Flexibility

22-37%
improvement in developer productivity with modern tooling

50-80%
reduction in host CPU usage

Boost Individual Productivity

Maximize Team Productivity

Optimize System Utilization

15 to 20%
decrease in development cycle time through common team infrastructure for collaborative application lifecycle management

20 to 60%
improvement in application performance with latest compilers for IBM Systems

COBOL Fun Facts

200x more COBOL transactions/day than **Google searches**

5 billion new COBOL LOC yearly

250 billion LOC of COBOL in existence

COBOL training **no longer offered** at most universities

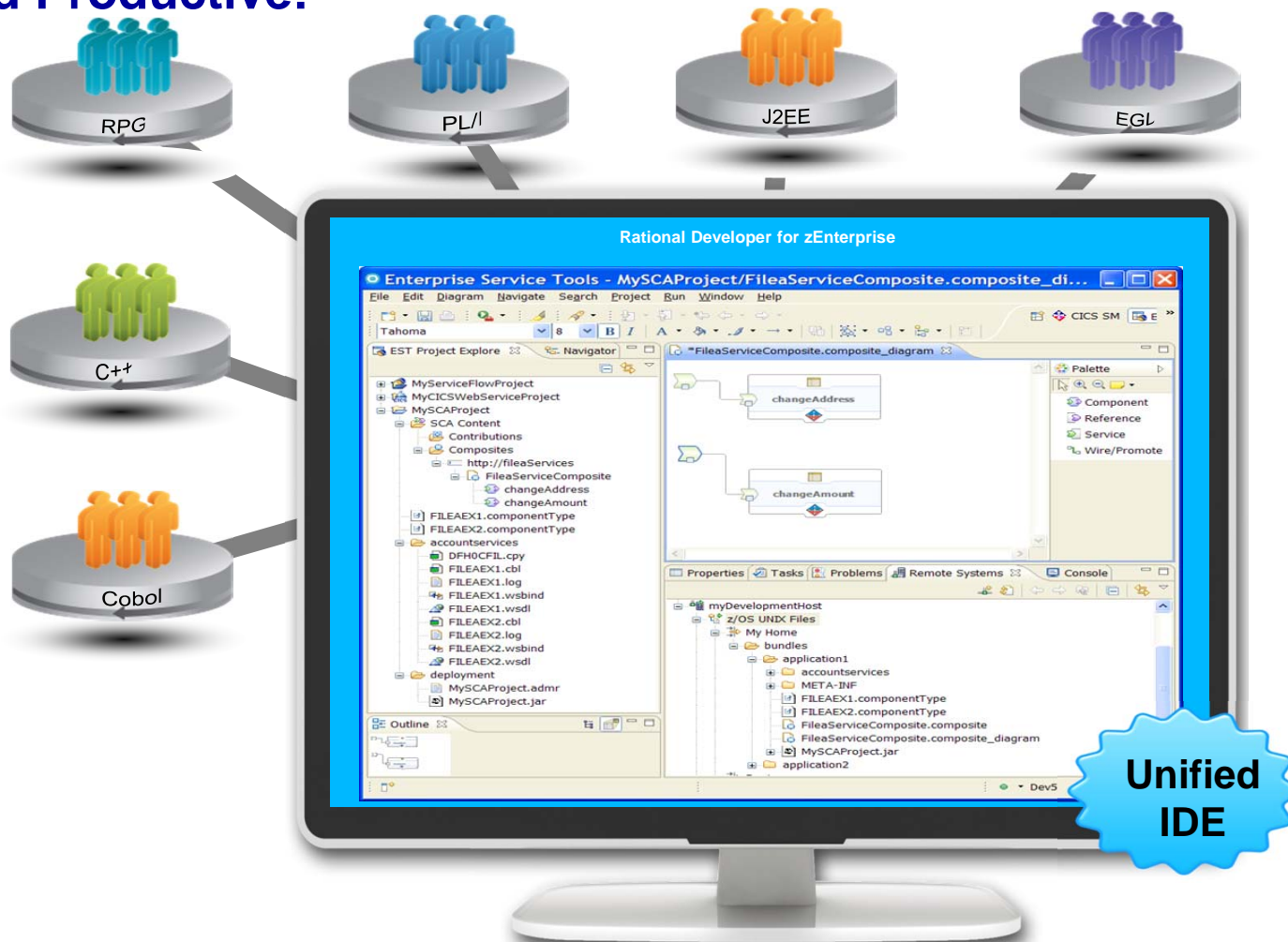**80%** of all active code is **COBOL**

85% of all transactions are **COBOL**

ISPF…Modern? Productive?

Modern and Productive!

- Rational Developer for System z
- Rational Developer for zEnterprise
- Rational Developer for Power Systems
- Rational Application Developer
- Rational Business Developer
- Rational Programming Patterns for System z

Middleware Complexities Exposed

App Server

Search — Java

JSF

XML, WSDL, JAX RPC, MQ, J2C

WAS

Browser

JavaScript

Discount Service — Java

SQL

Enterprise Server

Customer Service

Existing Logic

IMS, CICS

PL/I, COBOL, RPG

PL/I, COBOL, ASM

SQL, VSAM, DL/1

Internet

Customer Rating

Java, .Net

Middleware Complexities Hidden

App Server

Search
EGL

Discount Service
EGL

EGL

Browser

EGL

Enterprise Server

Customer Service
EGL

Existing Logic
PL/I, COBOL, ASM

EGL

Internet

Customer Rating
Java, .Net

OPEN

Eclipse EGL Development Tools Project
An evolution in business application development

- Rational Business Developer
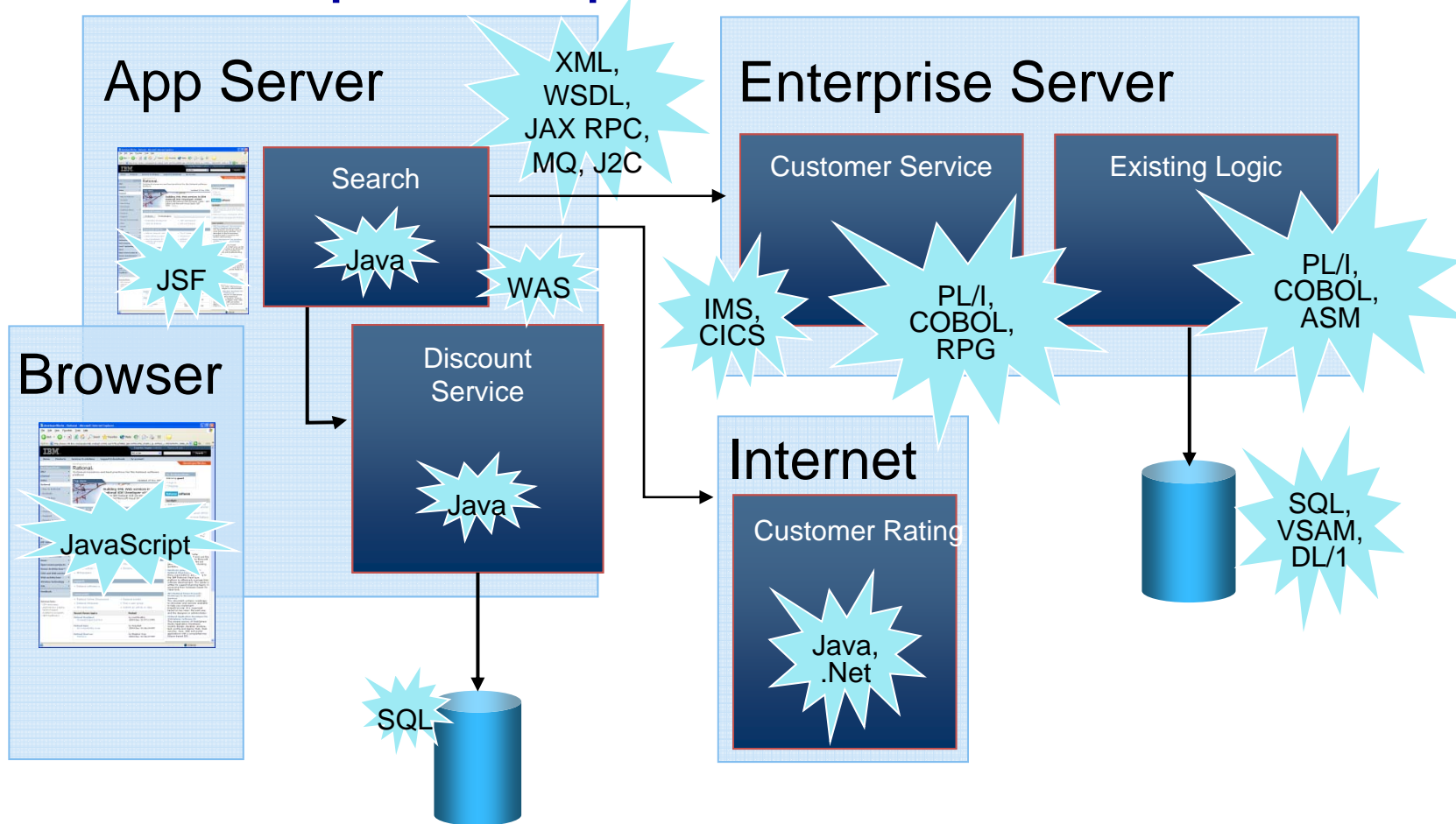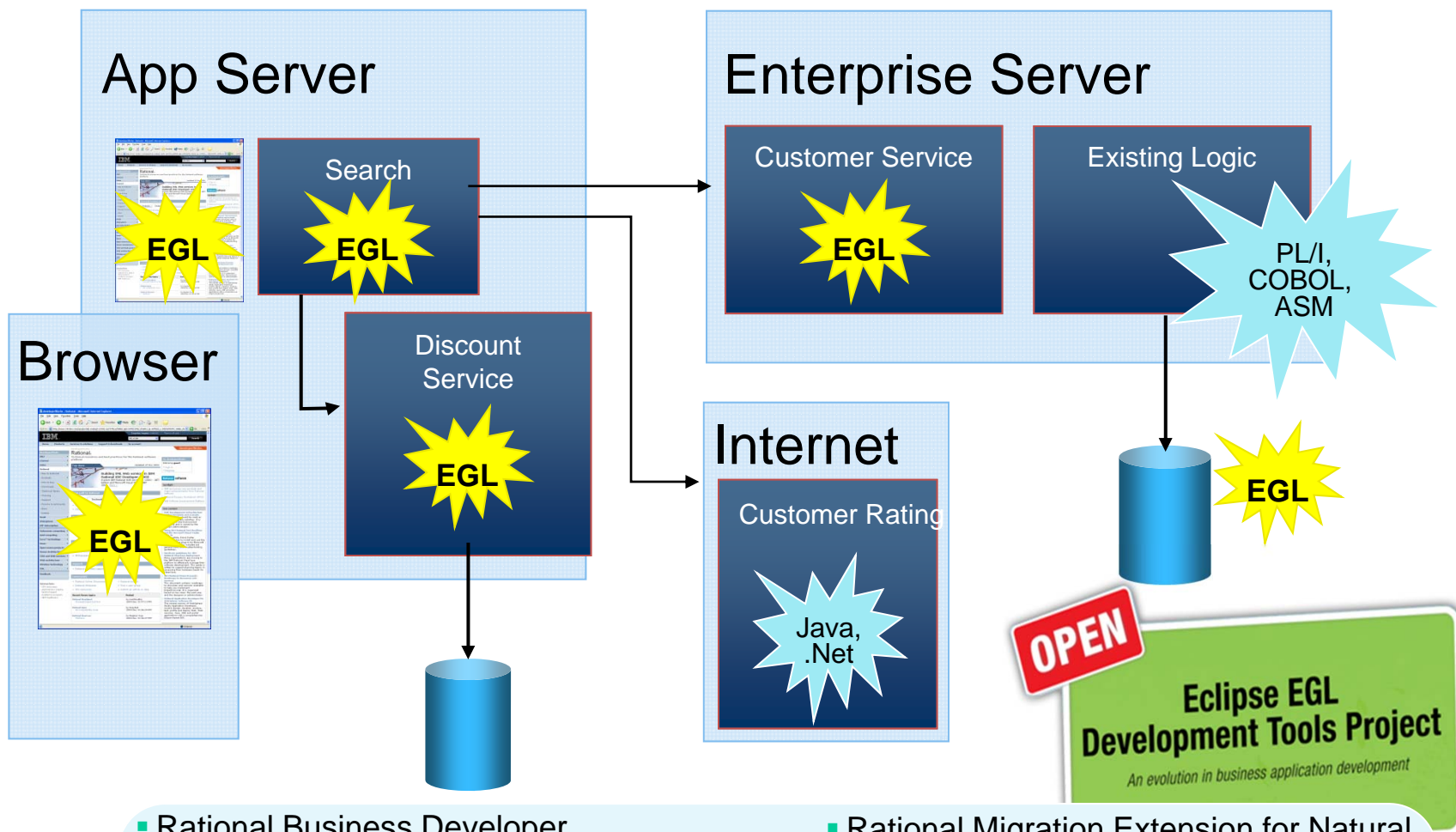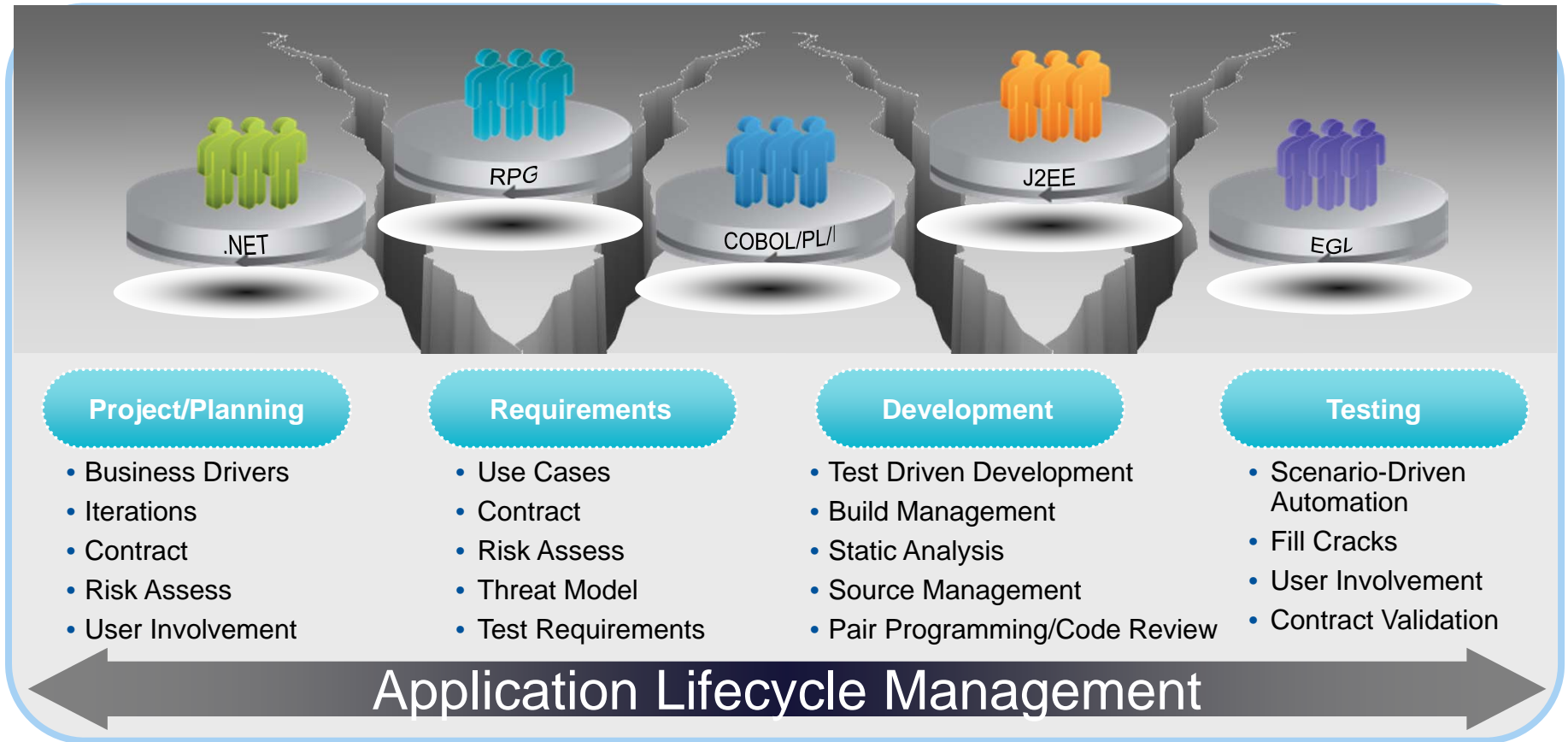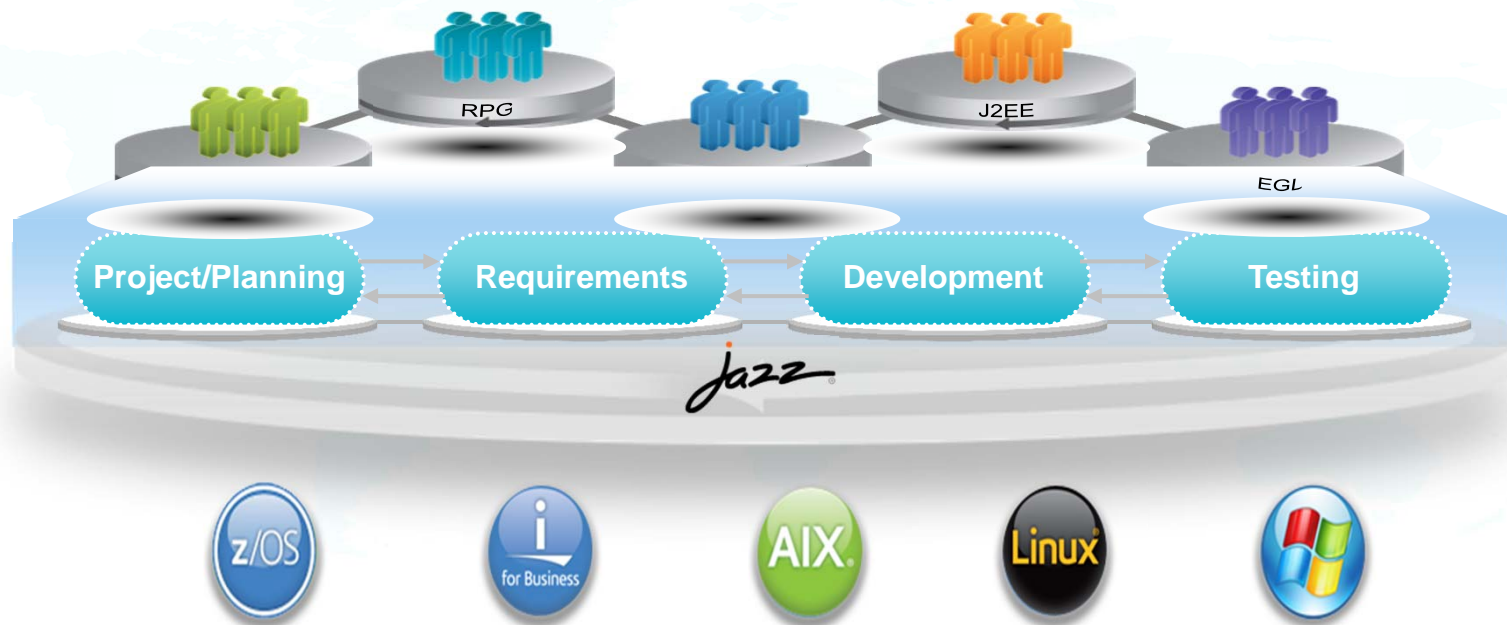- Rational Developer for System z with EGL
- Rational Developer for zEnterprise
- Rational Developer for Power Systems
- Rational Developer for I for SOA Construction

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

Disconnected Teams and Infrastructure

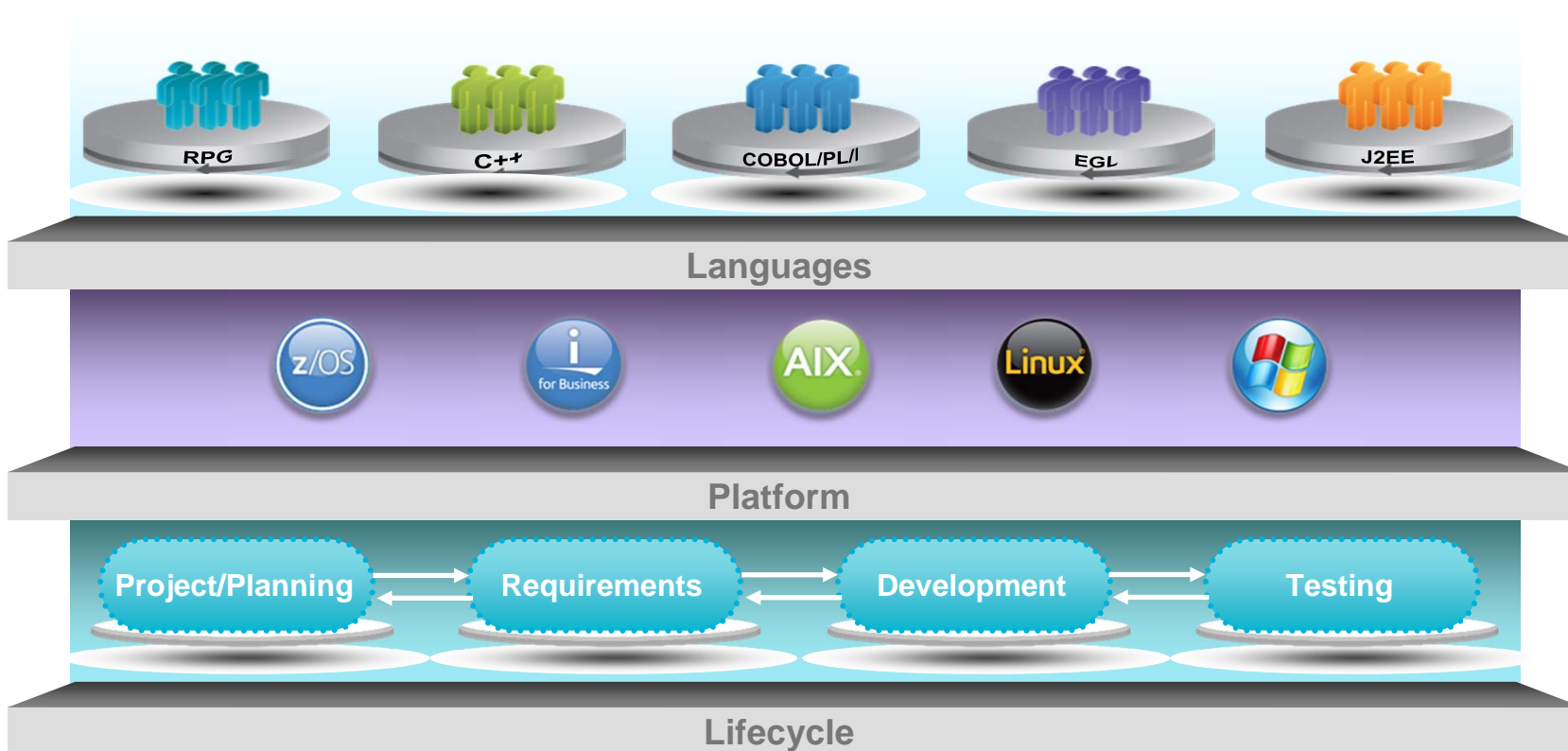| Project/Planning	Requirements	Development	Testing
• Business Drivers • Iterations • Contract • Risk Assess • User Involvement	• Use Cases • Contract • Risk Assess • Threat Model • Test Requirements	• Test Driven Development • Build Management • Static Analysis • Source Management • Pair Programming/Code Review	• Scenario-Driven Automation • Fill Cracks • User Involvement • Contract Validation

Application Lifecycle Management

Integrated Teams and Infrastructure

Collaborative Lifecycle Management

- Rational Team Concert
- Rational Requirements Composer
- Rational Software Architect Design Manager
- Rational Quality Manager
- Rational Build Forge
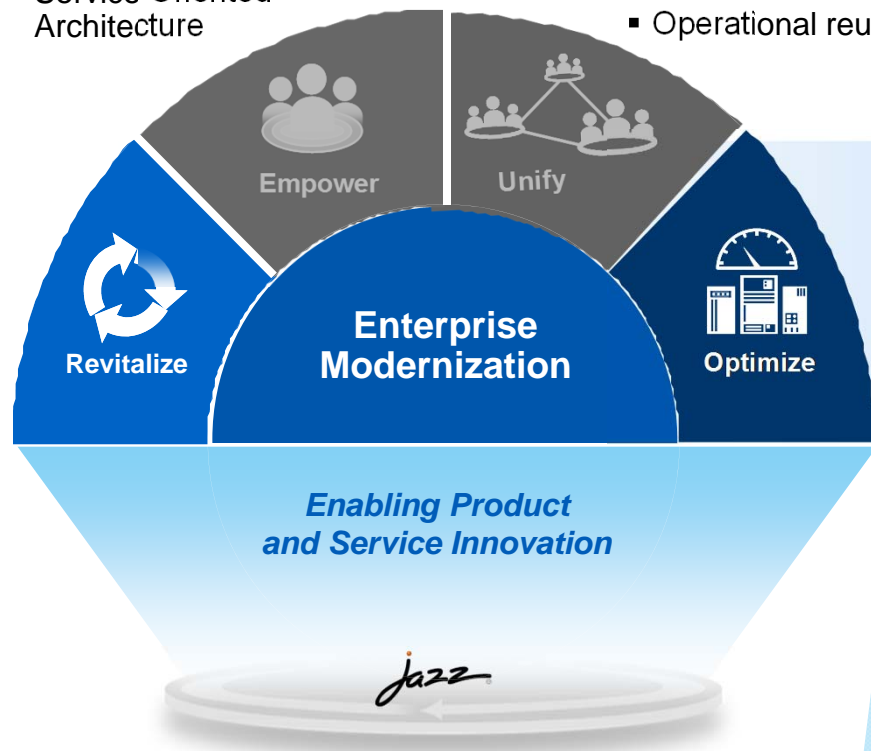
Integrations That Really Do Matter!

Languages

RPG   C++   COBOL/PL/I   EGL   J2EE

Platform

z/OS   i for Business   AIX   Linux

Lifecycle

Project/Planning → Requirements → Development → Testing

Show Videos

Increase flexibility by revitalizing existing application portfolios; Improve responsiveness and costs by optimizing system utilization

- **Application portfolio management**
- Business intelligence for applications
- Application security
- **Mobile channel access**
- Service Oriented Architecture

- User interface modernization
- Application transformation tools and services
- Quality across the organization
- Operational reuse

- **Free up production MIPS**
- Exploit new advanced compiler optimizations

Empower **Unify**

Revitalize

Enterprise Modernization

Optimize

Enabling Product and Service Innovation

jazz

20 to 35%
cost reduction in managing and maintaining existing application portfolios

30 to 50%
cost reduction in renewal/re-architecture

Increase Application Flexibility

22-37%
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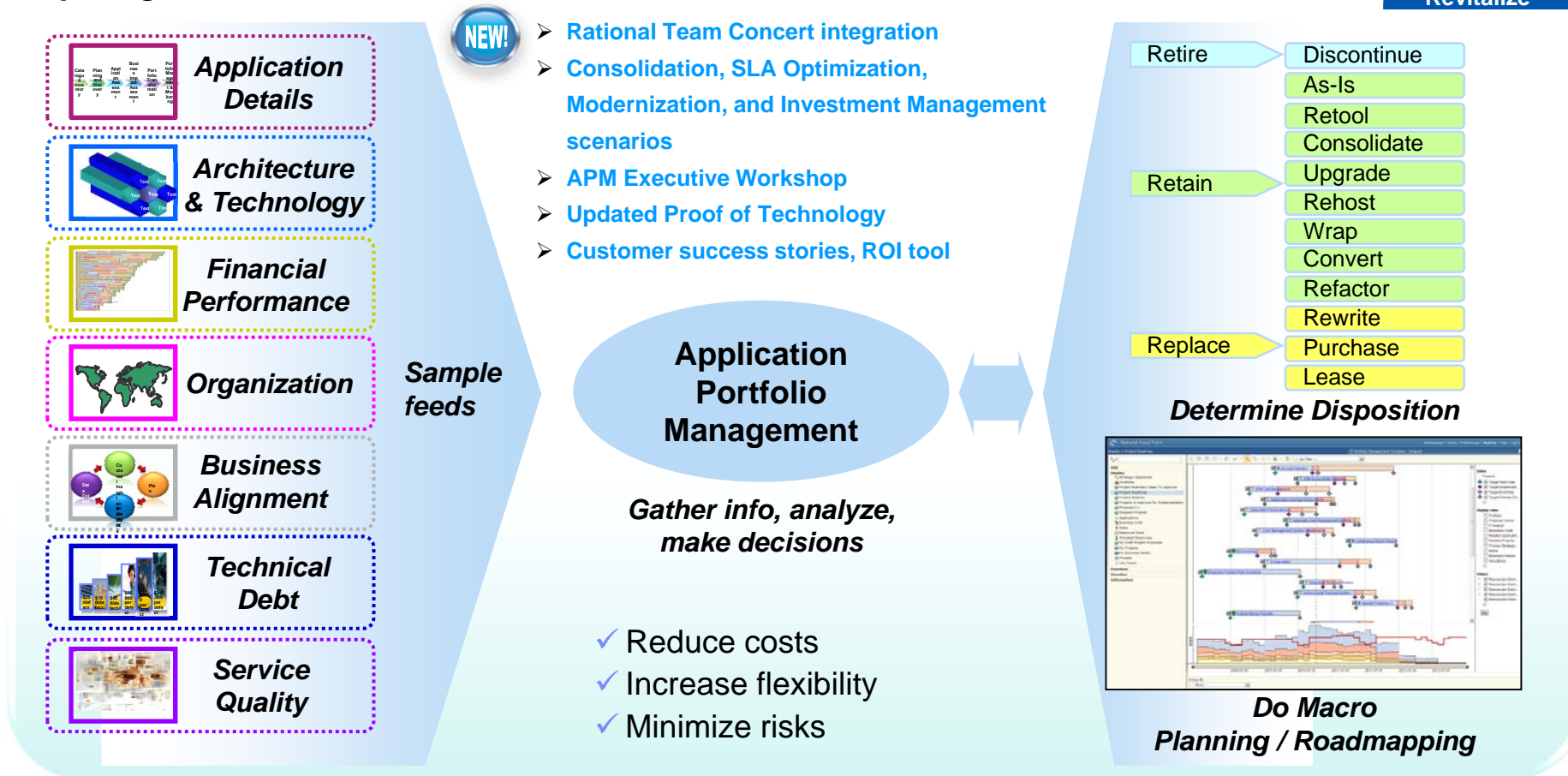*Boost Individual Productivity*

Maximize Team Productivity

15 to 20%
decrease in development cycle time through common team infrastructure for collaborative application lifecycle management

Optimize System Utilization

20 to 60%
improvement in application performance with latest compilers for IBM Systems

Comprehensive application portfolio management
Helps organizations make faster and better-informed decisions

Revitalize

- Application Details
- Architecture & Technology
- Financial Performance
- Organization
- Business Alignment
- Technical Debt
- Service Quality

Sample feeds

NEW!
- ➤ Rational Team Concert integration
- ➤ Consolidation, SLA Optimization, Modernization, and Investment Management scenarios
- ➤ APM Executive Workshop
- ➤ Updated Proof of Technology
- ➤ Customer success stories, ROI tool

Application Portfolio Management

Gather info, analyze, make decisions

- ✓ Reduce costs
- ✓ Increase flexibility
- ✓ Minimize risks

Retire
- Discontinue

Retain
- As-Is
- Retool
- Consolidate
- Upgrade
- Rehost
- Wrap
- Convert
- Refactor
- Rewrite

Replace
- Purchase
- Lease

Determine Disposition

Do Macro Planning / Roadmapping

"Smarter APM and associated application revitalization has enabled IBM's IT to cut maintenance costs by 20% and defects by 58%."
— IBM Corporation

Enterprises want to…

Provide compelling and intuitive mobile UIs (B2B, B2E, B2C, M2M) regardless of the end-user platform
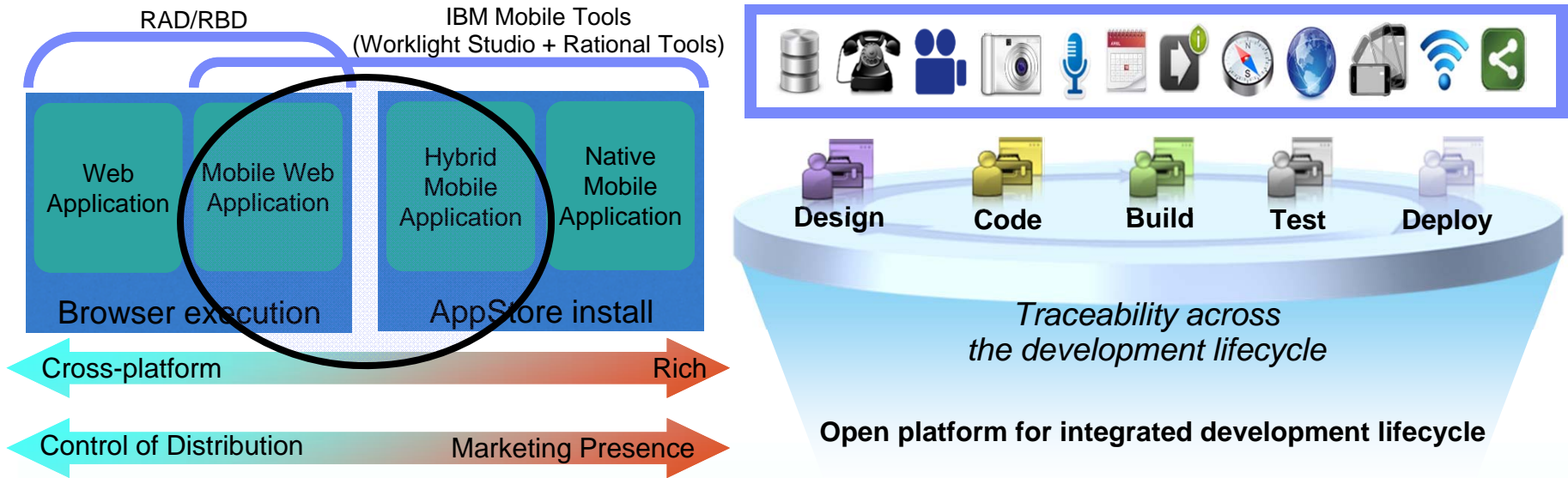
Revitalize

But…

They lack the skills and time to replace or re-write their existing applications, and they cannot afford "one off" applications for each mobile device platform.

Solution: IBM Mobile Tools

Design, code, build, test and deploy your code with mobile in mind and independent of the target platform; Integrate mobile development into your broader enterprise-wide teams, processes and tools

Revitalize

RAD/RBD

IBM Mobile Tools
(Worklight Studio + Rational Tools)

Web Application	Mobile Web Application	Hybrid Mobile Application	Native Mobile Application

Browser execution

AppStore install

Cross-platform ◄————► Rich

Control of Distribution ◄————► Marketing Presence

Design **Code** **Build** **Test** **Deploy**

Traceability across the development lifecycle

Open platform for integrated development lifecycle

✓ Develop all aspects of application—mobile UI, browser UI, services—with one tool family

✓ Manage all aspects of development—requirements, modeling, coding, testing, deploying—with one integrated ALM suite

✓ Develop once for all mobile platforms—iPhone, Android, Blackberry, etc—with ability to customize for platform uniquenesses

Over 60% of respondents indicate mobility spend in the range of 10–40% of total IT spend and nearly 80% of organizations plan to spend the same or more on mobility in the next 12–18 months — The State of Mobile Enterprise Software in 2011: An IDC Survey of Applications, Platforms, Decisions, and Deployments

IDC
Analyze the Future

Solution: IBM Mobile Tools

Design, code, build, test and deploy your code with mobile in mind and independent of the target platform; Integrate mobile development into your broader enterprise-wide teams, processes and tools
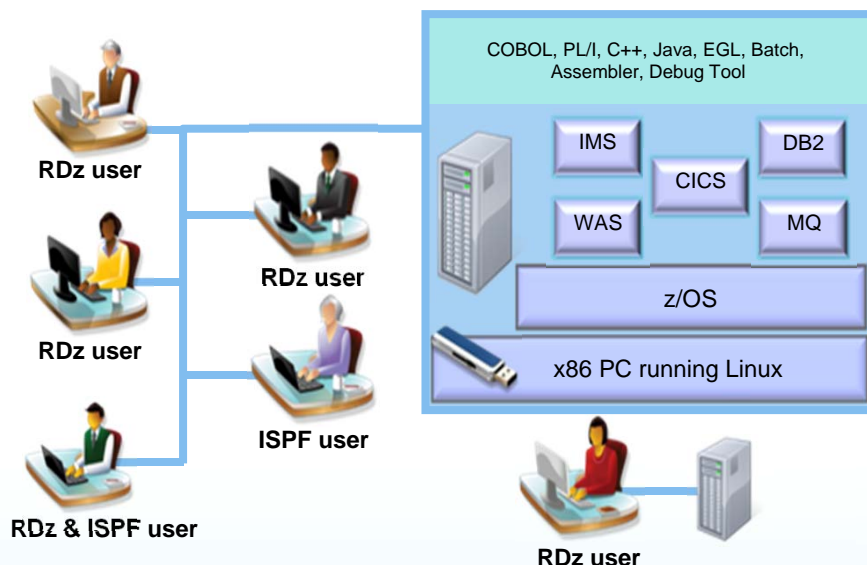
Revitalize
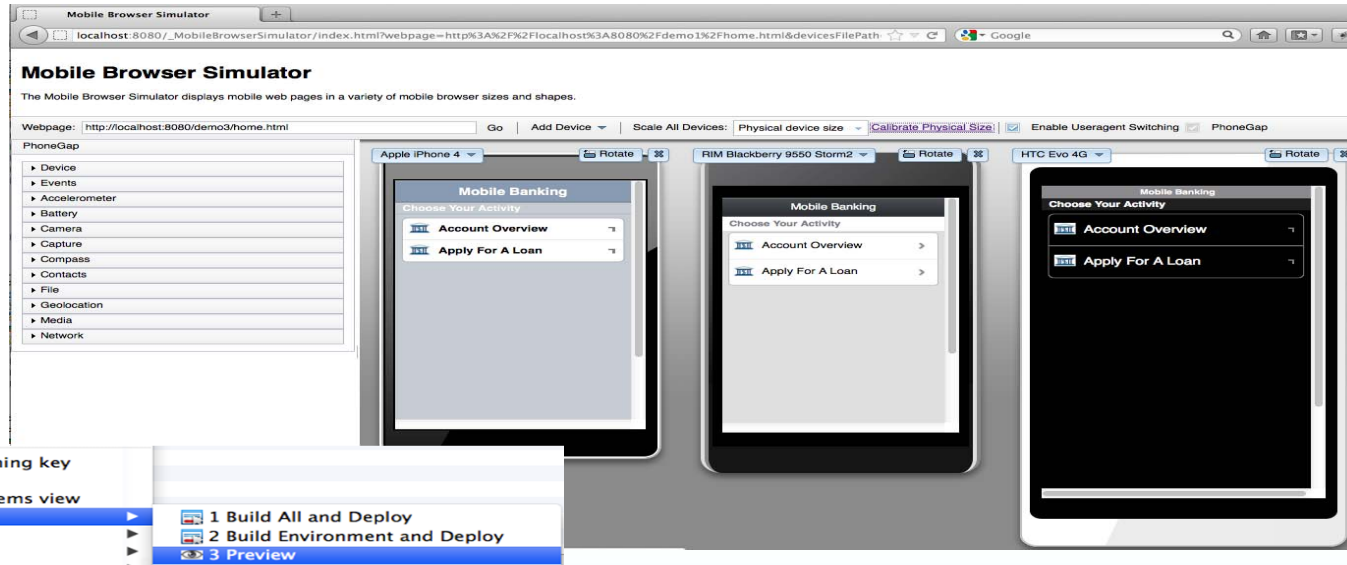
- Rational Application Developer
- Rational AppScan
- Rational Asset Manager
- Rational Business Developer
- Rational Focal Point

- Rational Quality Manager
- Rational Requirements Composer
- Rational Rhapsody
- Rational Team Concert
- **Worklight** and **GREENHAT**

Over 60% of respondents indicate mobility spend in the range of 10–40% of total IT spend and nearly 80% of organizations plan to spend the same or more on mobility in the next 12–18 months — The State of Mobile Enterprise Software in 2011: An IDC Survey of Applications, Platforms, Decisions, and Deployments

IDC — *Analyze the Future*

Test mainframe applications on x86 Linux server

Optimize

COBOL, PL/I, C++, Java, EGL, Batch, Assembler, Debug Tool

IMS		DB2
	CICS	
WAS		MQ

z/OS

x86 PC running Linux

RDz user

RDz user

RDz user

RDz user

ISPF user

RDz & ISPF user

RDz user

NEW!

➢ **More flexible licensing options**
  ➢ **UT without RDz**
  ➢ **Floating users**
➢ **Support for zEnterprise (z196) architecture**
➢ **Support for z/OS 1.12, z/OS 1.13, CICS 4.2, and WAS 8.0**

✓ Liberate developers to rapidly prototype new applications
✓ Free up mainframe development MIPS for production capacity
✓ Reduce costs by improving new and existing developer productivity

"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

CLEAR BLADE®

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.

Getting started
Next steps to modernize your enterprise applications

www.ibm.com/rational/modernization

- **Try latest System z software for free**

- **Sign up for free web-based training**

- **Join IBM Rational Cafe Communities**

- **Get prescriptive service solutions**

- **Success stories**

- **Latest news on System z twitter**

- **Latest customer videos**

- **Latest skills: System z job board**

www.ibm.com/software/rational

www.ibm.com/software/rational

Four key barriers preventing greater 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."

IBM enterprise modernization solutions
Achieving greater value and performance from your IT investments

Revitalize Applications

✓ Cut maintenance costs and project risks by understanding and managing application portfolios

✓ Increase flexibility by modernizing and reusing existing application assets

Empower People

✓ Boost developer productivity with a common IDE and modern business language for multiplatform applications

Unify teams

✓ Increase organization agility by unifying teams with a collaborative team infrastructure for all platforms

Optimize Infrastructure

✓ Free up development MIPS for production use by offloading development and test activities

✓ Reduce capital expenses by maximizing application performance on existing hardware

Empower

Unify

Enterprise Modernization

Optimized Systems

Revitalize

Optimize

jazz