2007 System z Summit

DESTINATION z

Enterprise IT and the Modern Application Architecture

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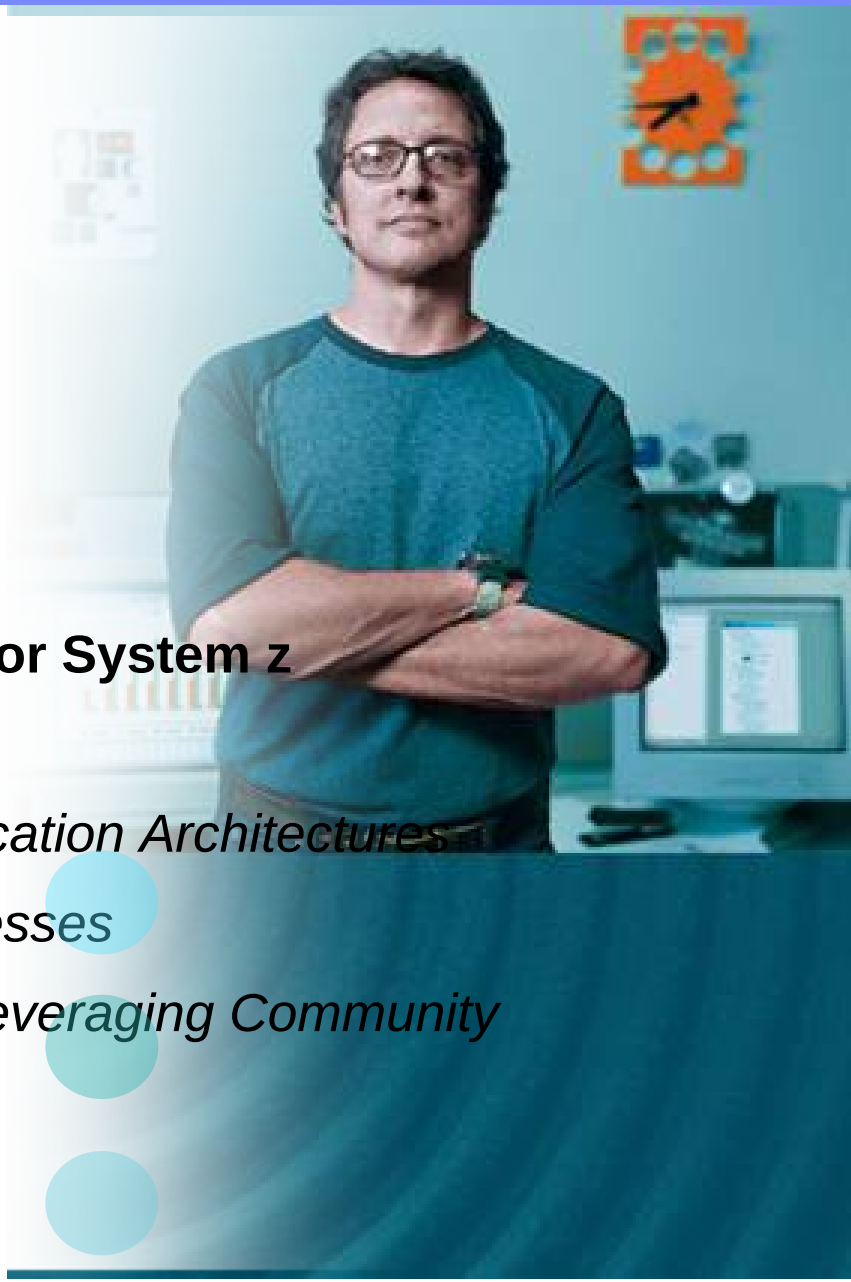
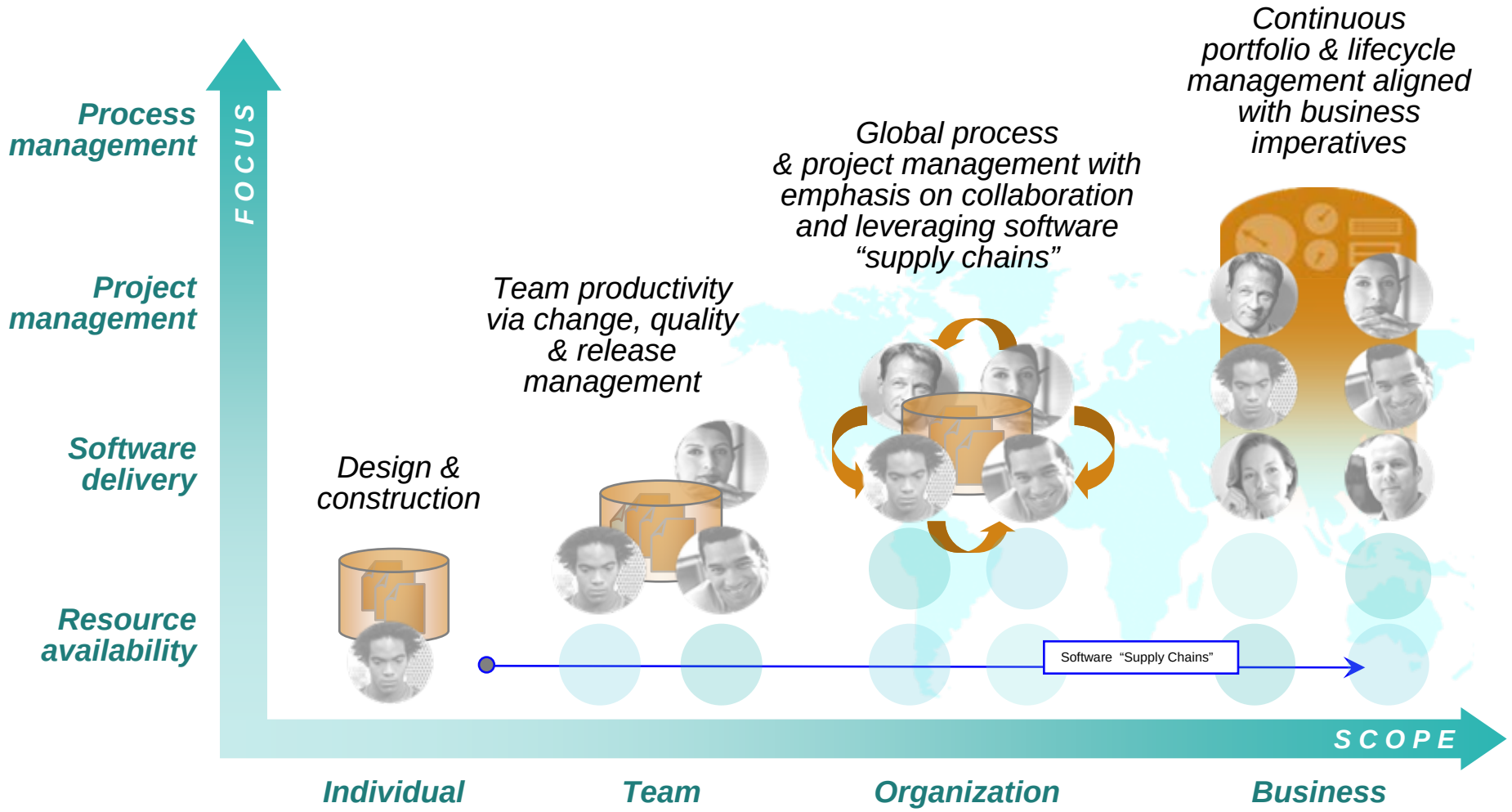
Today's Agenda

- **Executive View**
- **IBM Rational Software Strategy**
- **What's New in the Rational Software for System z**
  - *Leveraging Assets and Modern Application Architectures*
  - *Increasing Skills and Improving Processes*
  - *Addressing New Opportunities and Leveraging Community*



Customers are maturing their approach to software delivery



Fundamentals of the Rational software strategy

Rational. software

- ***Enabling governance***
  - Maximize value and flexibility of the knowledge-based workforce
  - Minimize chaos while maximizing individual decision rights
- ***Delivering flexible architectures***
  - Rethink modularity and granularity of software
  - Focus on “granular decomposition” for re-composition
  - Enable enterprise modernization
- ***Leveraging communities***
  - Leverage community effects from Open Source, Metcalf’s law, social networking

GOAL:
Delivering value efficiently and effectively in distributed organizations

IBM Rational Software Delivery Platform

Focus for System z

Help customers to implement **asset management** of existing applications and assets, from the practitioner level to the CIO level. .

Provide seamless change, build, and release management, as well as **team collaboration** for modern composite applications that cross System z and other system boundaries.

Architecture &

Process

Governance & Lifecycle Management

Process & portfolio management

Change & release management

Quality management

Architecture & construction

Distributed

Compilers

Provide solutions for System z and composite application based **quality management** processes.

Quality

Management

Construction

Mainframe

mpilers

500 Developers

Embrace industry architectural standards & technologies.

Simplify delivery of modern, **SOA** based composite applications.

Emphasize uniquely valuable elements of System z platform…and make them easy to leverage in our tools.

Ensure that customers have **enterprise modernization** solutions that transition them to a strategic destination.

Why …on System z

- **Excellent Qualities of Service**
- **Significant Existing Processing**
- **Very Large Developer Community**
- **Architecturally Compatible**
- **Operationally Superior**

Designed for data serving and SOA

Challenges and Opportunities

IT flexibility is a key enabler for today's businesses

To be successful, enterprises must mature and modernize their IT posture

…most companies face significant challenges in getting from "here" to "there"

…but they can realize great value by ***leveraging System z***

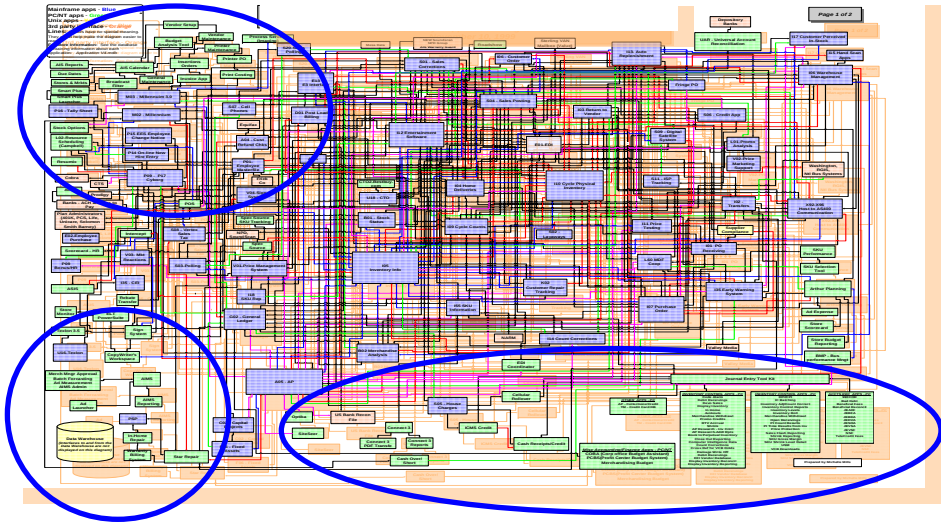
Challenge #1 - No inventory of current assets

- **Difficult to gauge impact of code changes without electronic dependency information**
- **Absence of asset inventory inhibits reuse in new contexts (e.g. as a service)**
- **Cannot separate business rules from the code, constraining flexibility**

Analyst studies have found it 5X less expensive to re-use existing applications than to write new applications.

Challenge #2 - Complex, tightly coupled architectures

- **Tightly-coupled architectures reduce flexibility and agility moving to new technologies**
- **Complexity hampers ability to reuse existing code for new projects**
- **Multiple implementation technologies and middleware inhibit staff and code mobility**



Legend: Blue = System z

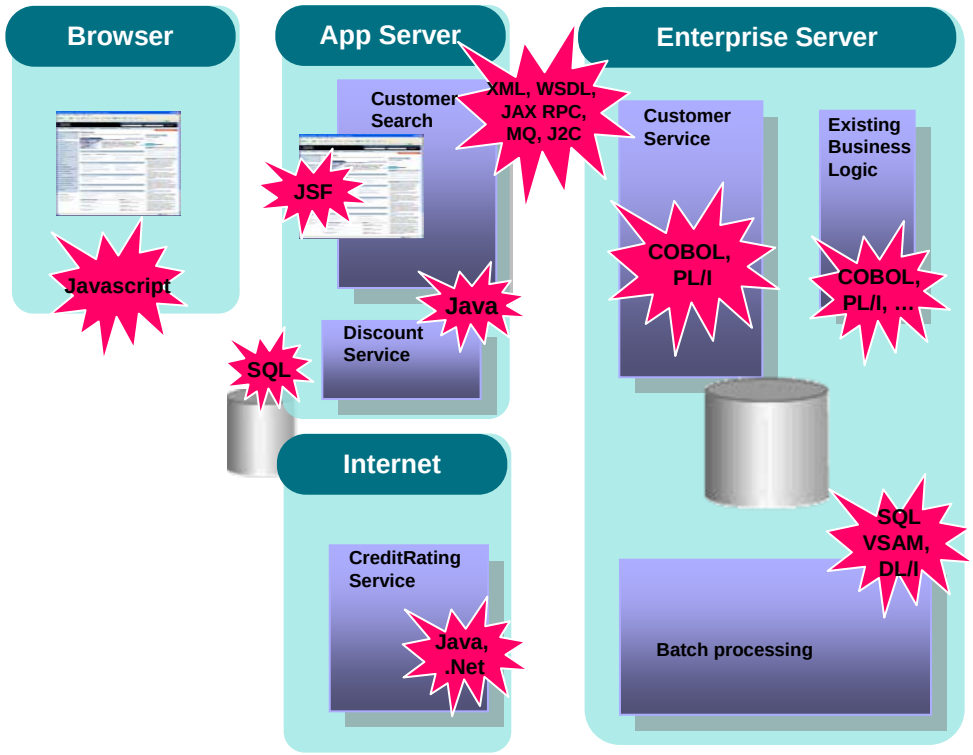
- **Absence of asset inventory inhibits reuse in new contexts (e.g. as a service)**

"Today's IT architectures, arcane as they may be, are the biggest roadblocks most companies face when making strategic moves."

The McKinsey Quarterly Special to CNET News.com, "Flexible IT, Better Strategy", January 24, 2004

Challenge #3 – Skills lock-in

- **Hard to maintain existing applications due to dwindling IT skills**
- **Difficult to attract new development talent**
- **Limited ability to exploit hardware innovation without retraining traditional developers to Java**
- **Constrained IT flexibility due to skills islands**



"200 Billion lines of COBOL code in existence" ***eWeek***

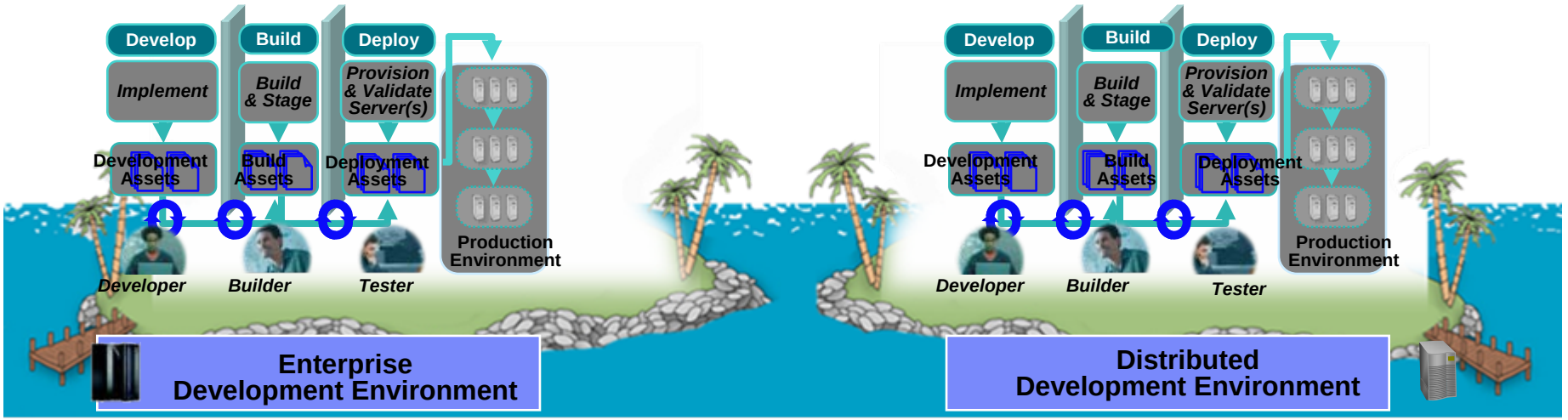
"5 Billion lines of COBOL code added yearly" ***Bill Ulrich, TSG Inc.***

"2 Million COBOL developers" ***Gartner***

Challenge #4 - Islands of development

- **Duplicate infrastructures limit IT and skills flexibility, introduce errors, reduce productivity**
- **Constrained IT flexibility due to skills islands**
- **Multiple infrastructures increases costs, less available for new projects**

- **Lack of traceability inhibits end-to-end governance**

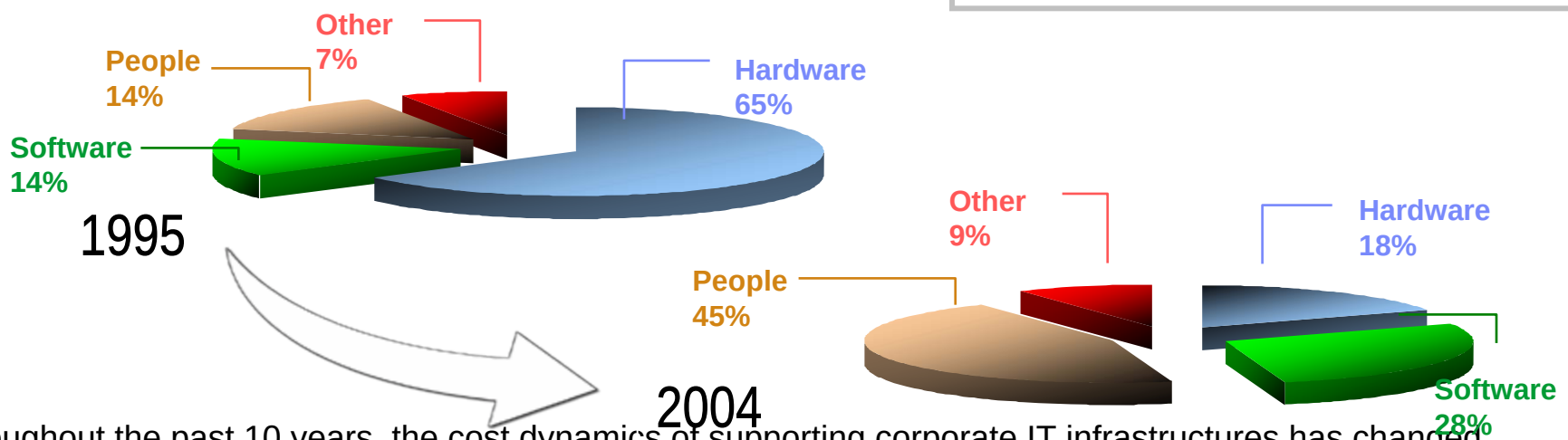


Challenge #5 – Limited budget for new investments

- **Resources not available to exploit new opportunities**
  - ~78% (and rising!) of IT budgets go to maintenance of existing applications and infrastructure
- **Stranded on platforms that are expensive, unsupported and not integrated; cannot leverage new technologies and middleware advances**
- **No tactical plan for quick improvements that incrementally fit into enterprise modernization strategy**

We typically see . . .

People expense has tripled as a %
Software expense has doubled as a %
Hardware is less than 1/3 of its original %



Throughout the past 10 years, the cost dynamics of supporting corporate IT infrastructures has changed significantly, as has the landscape.

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Driving visibility & collaboration in software delivery

New and Enhanced!

Gain business intelligence for software assets

- **Create asset inventories and ROI best practices**
- **Govern asset utilization with meaningful instrumentation**
- **Enable asset traceability & architectural governance**

Improved return on software assets

Promote application flexibility with SOA

- Separate service flow from service implementation for optimal flexibility
- Agile development supporting today's and tomorrow's SOA technologies
- Reuse services from existing processing

Deliver service through process reuse

Improve team flexibility and skills

- Leverage business developer skills across service platforms
- Utilize new employees on any projects independent of target platforms
- Adaptable processes & lifecycle service integration

Greater innovation & alignment w/ evolving business priorities

Modernize team infrastructure and project insight

- Enhanced process modeling, analytics & lifecycle automation
- Eased global team access with intuitive, Web 2.0 experiences
- New high-availability & security features enabling global teams

Improved project success rates and team productivity

Innovation in collaborative software delivery technology and methodology leveraging an open community-driven development model

Jazz

Business intelligence for software assets

How do I guarantee performance of my new assets

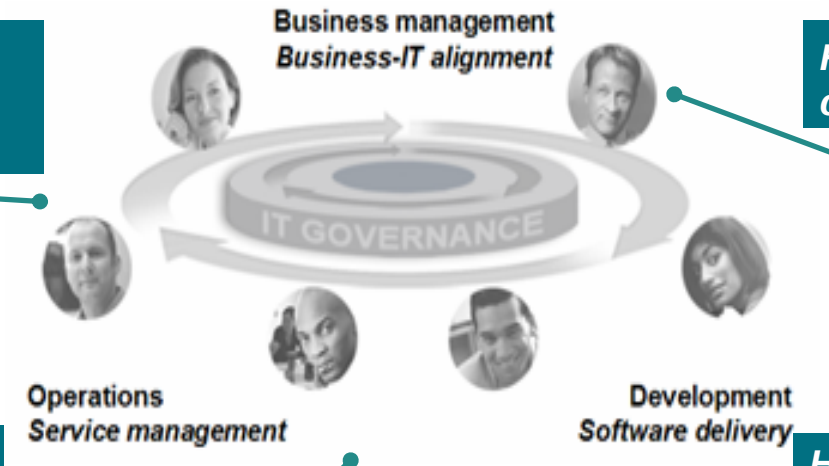
Govern asset utilization with meaningful instrumentation

How do I judge the success of my new assets?

Comprehensive view of software assets utilization across the enterprise

How do I evaluate organizational improvement with SOA?

Promote reuse as a core competency



How do I evaluate asset cost versus value?

Information to prioritize investments; eliminate rework & manage resources

How do I control my new assets? Across development and production

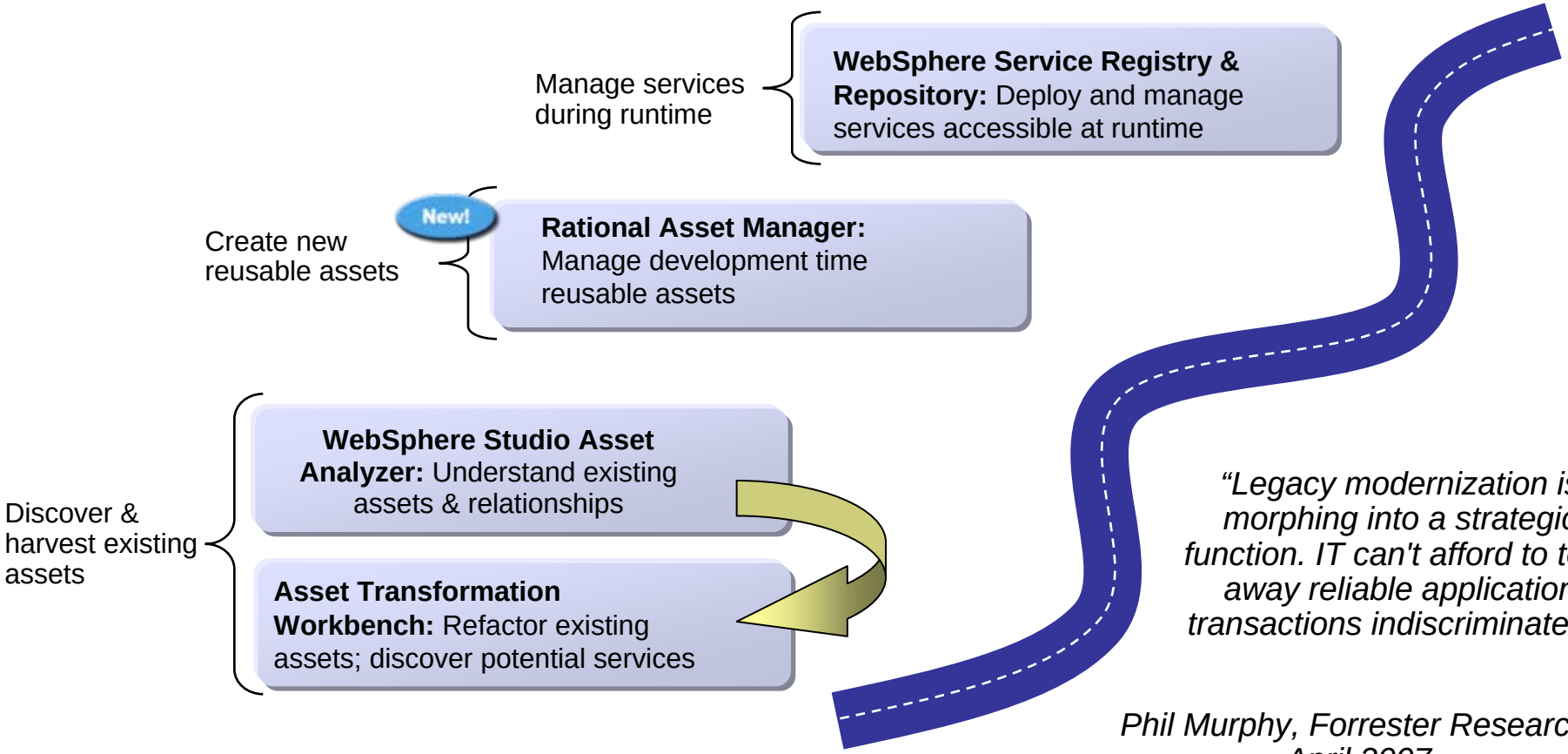
Single view into both development & runtime services ensuring asset traceability & architectural governance

How do I leverage organizational practices forward?

Build an inventory of assets and best practices

Modernize asset management for System z

Asset flexibility – unlocking the value of enterprise assets on System z



"Legacy modernization is morphing into a strategic function. IT can't afford to toss away reliable application transactions indiscriminately."

Phil Murphy, Forrester Research, April 2007

Bridge the gap between services and application processing

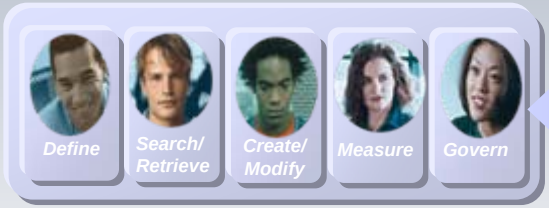
Manages information that is useful for **developing, re-using and managing** all types of ***reusable assets***

Manages information that is useful for the **runtime operation, management and development** use of ***services***

ClearQuest | **ClearCase** | **Software Architect**

CICS/IMS | **Generic Client (.Net or other)** | **ESB, Message Broker** | **Process Server**

Rational Asset Manager



Federated Search And Publish

WebSphere Service Registry and Repository

WebSphere Asset Analyzer/Asset Transformation Workbench

Measure Quality | **Evaluate Standards** | **Validate Architecture** | **Mine Business rules** | **Understand Impact** | **Estimate Change**

- Gain asset clarity with respect to assets, services and relationships
- Combine logical and physical views of service assets and processes
- Discern application impacts of services and underlying processing
- Publish and manage assets across organizations

Modernize asset management

Customer examples

Background:

- Large multi-national auto manufacturer
- Current product accessories system includes IMS transactions, databases, and batch jobs

Challenge:

- Expand existing systems to offer more higher-margin accessories.
- Identify obsolete code within automotive systems, and begin “decommissioning”

Solution: More rapid, high quality deliveries

- Perform impact across massive systems with **WSAA**
- Communicate impacts to potentially affected development teams
- Evaluate, gain approvals and deploy

“We are very pleased with WSAA. It is doing just what we want and need it to do.”
- AD Manager

Background:

- One of country’s largest health insurance providers
- In 5-year program to modernize mainframe-based claims processing software

Challenge:

- Make code more component-based and manageable
- Identify business services to leverage across the enterprise

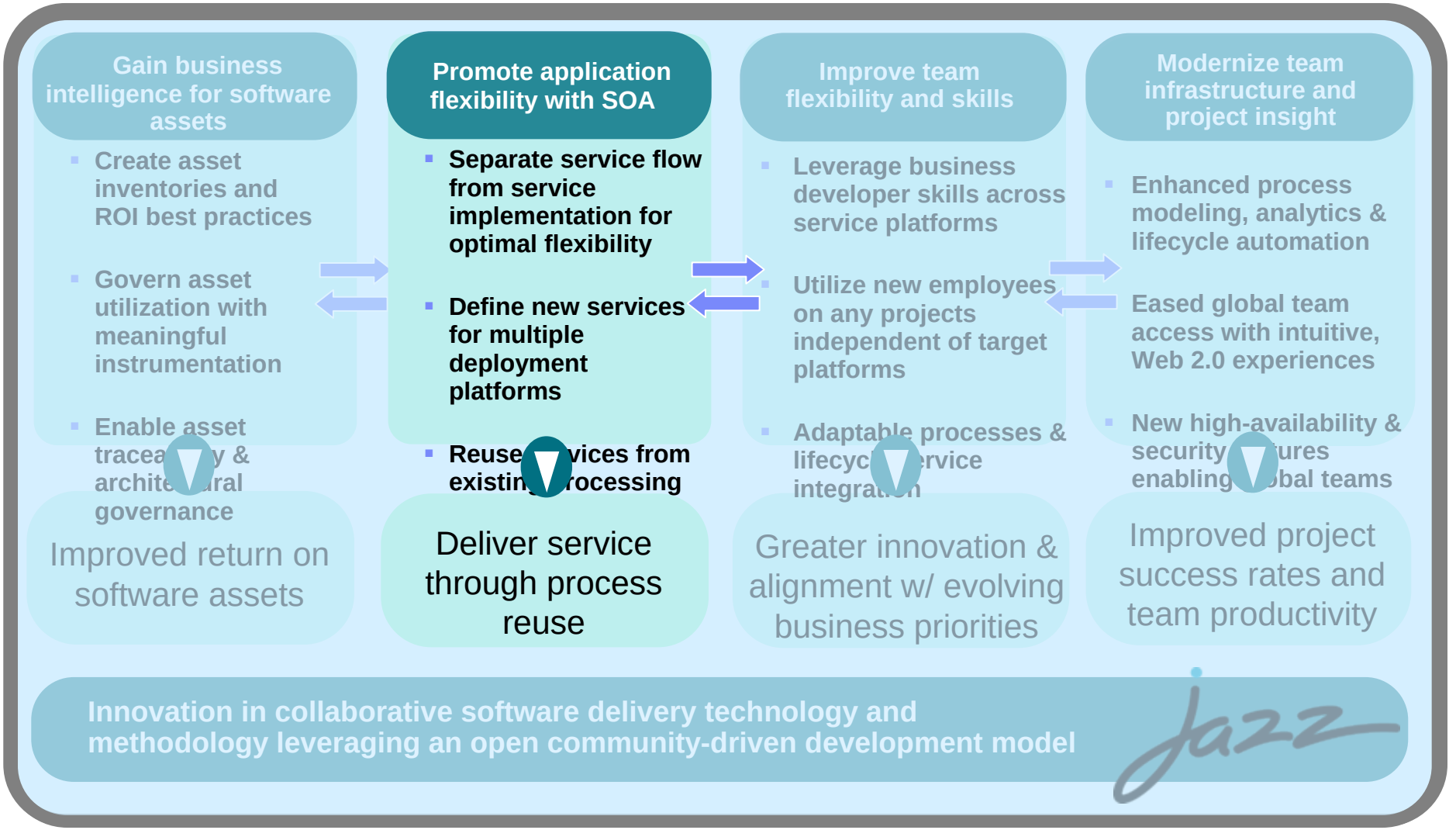
Solution: Lower cost, high QOS reuse

- Use **ATW** to find and extract the complex, valuable business logic buried within legacy applications.
- Publish artifacts so they can be viewed and modified by business analysts

“We’re finding that we can very rapidly go into existing COBOL code and extract the logic around certain business objects”.
- Gary Free, senior systems consultant

Driving visibility & collaboration in software delivery

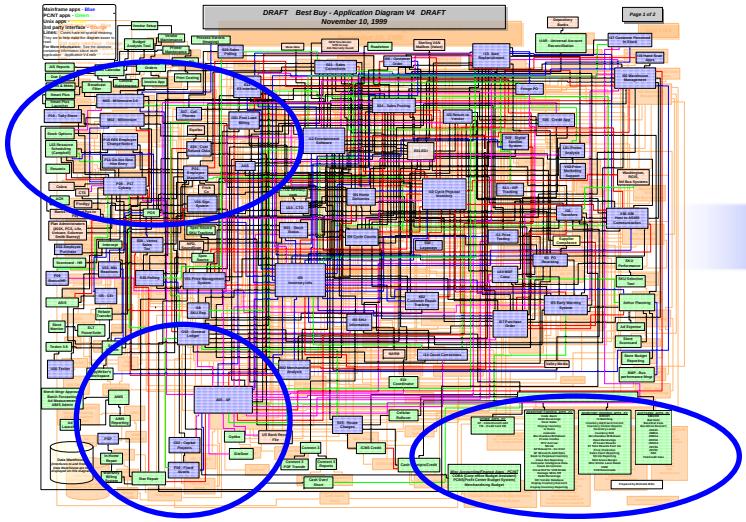
New and Enhanced!



Modern architectures for System z

Flexible architectures enable business agility

- **Create services easily from existing code, including CICS, IMS and terminal applications**
- **Define new services for all deployment platforms from initial design to implementation**
- **Separate service flow from service implementation to attain optimal flexibility**



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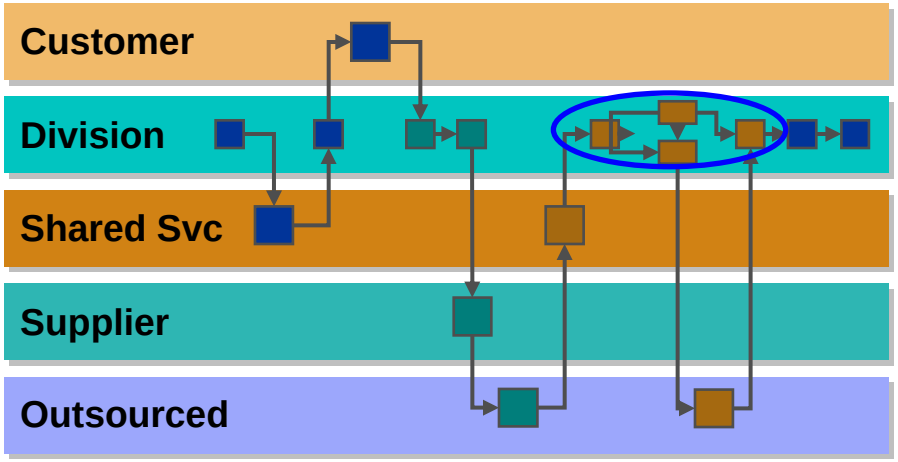


Modernize your architectures

Develop new SOA applications rapidly, reuse existing applications

Rational Software Architect and **Rational Data Architect:** Use Model-Driven Development (MDD) to architect services and data

- Transform UML to EGL, COBOL, Java, WSDL, and C++

New!

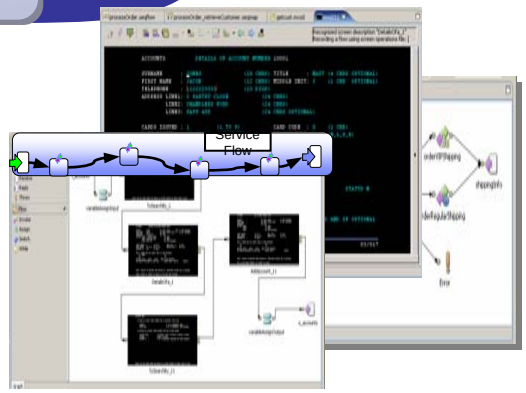
Rational Business Developer Extension: Rapidly build, publish, and consume services

- Leverage *Service* and *Interface* keywords to re-enforce SOA. Supports CICS, J2EE

New and Enhanced!

Rational Developer for System z: Build services and web services from existing CICS applications using XML and Service Flow Modeler

- Also supports full J2EE stack



Announcing: Rational Developer for System z

New and Enhanced!

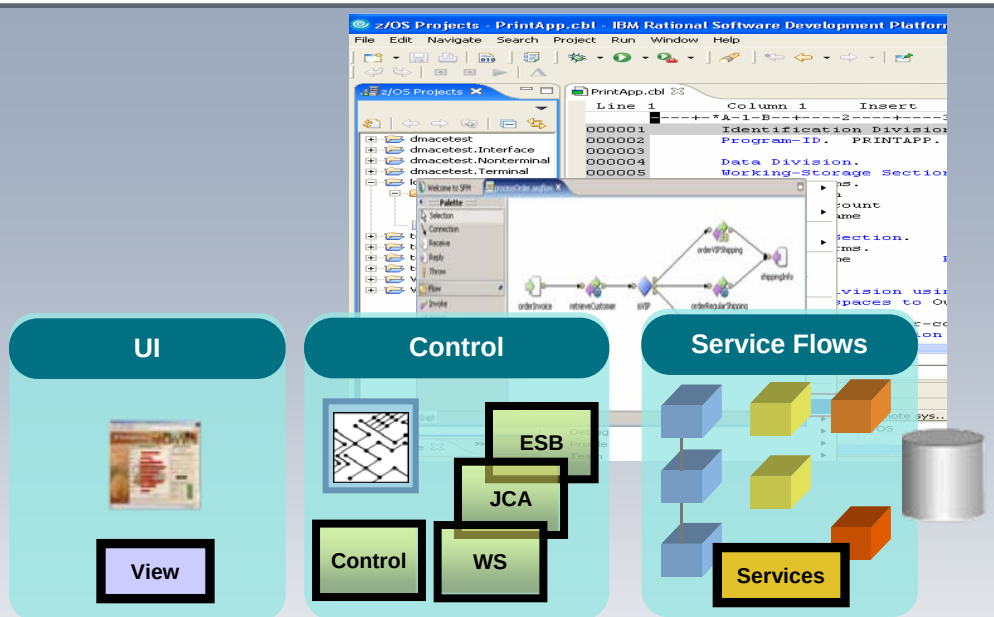
Announcing! V7.1; GA 9/07

Enhance System z developer:

- Productivity addressing modern Service Oriented Architectures
- Skills supporting popular service languages and runtimes

- New - **Rapidly develop services to orchestrate process flows in CICS V3.2**
- New - **Improve lifecycle through integration to IBM File Manager and IBM Fault Analyzer**

Delivered Over 150 Modern Application Architecture for COBOL Developer sessions

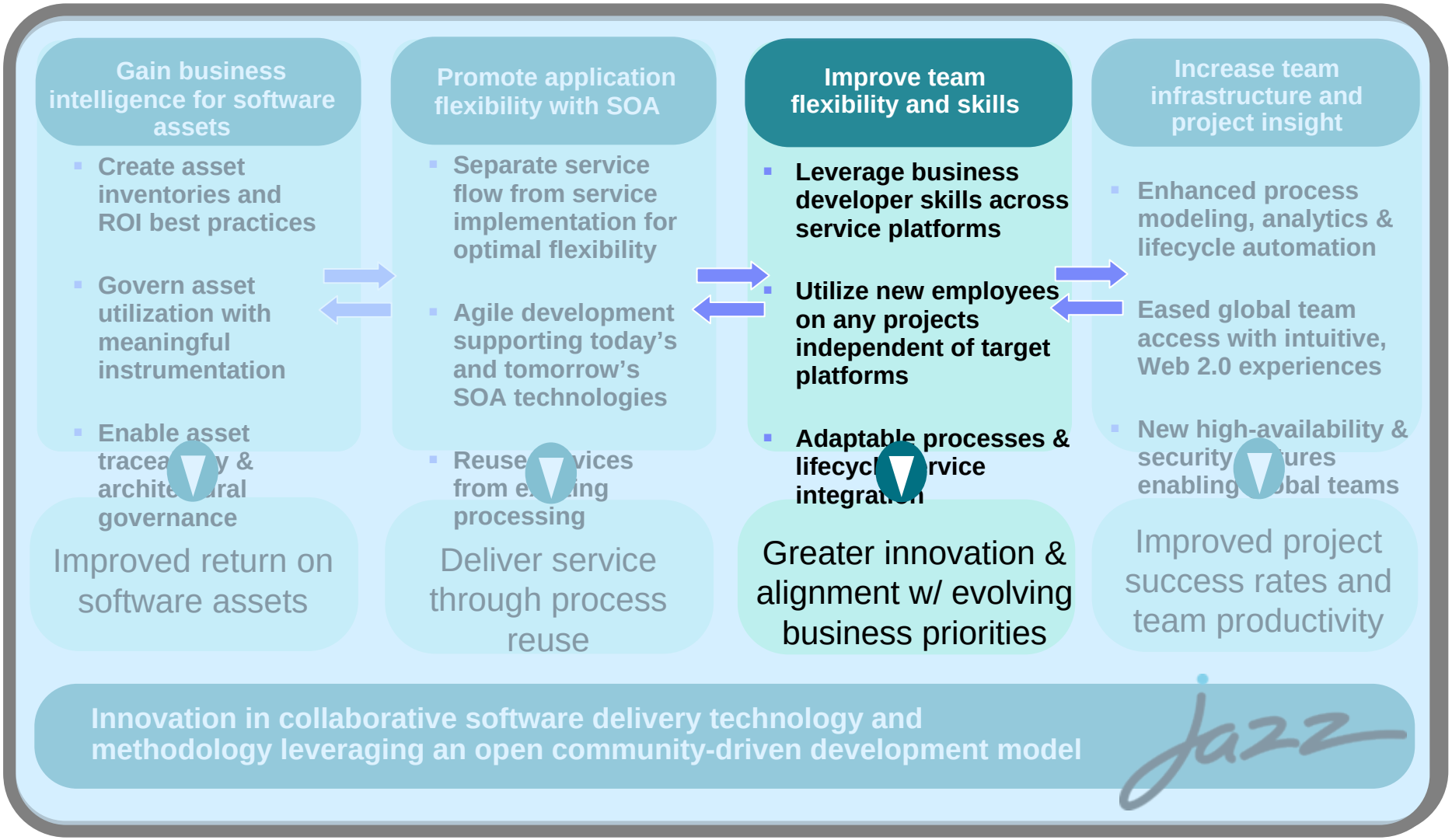


EGL, COBOL, PL/I, C, C++, Java

WebSphere, CICS, IMS, Batch zOS, zLinux

Driving visibility & collaboration in software delivery

New and Enhanced!



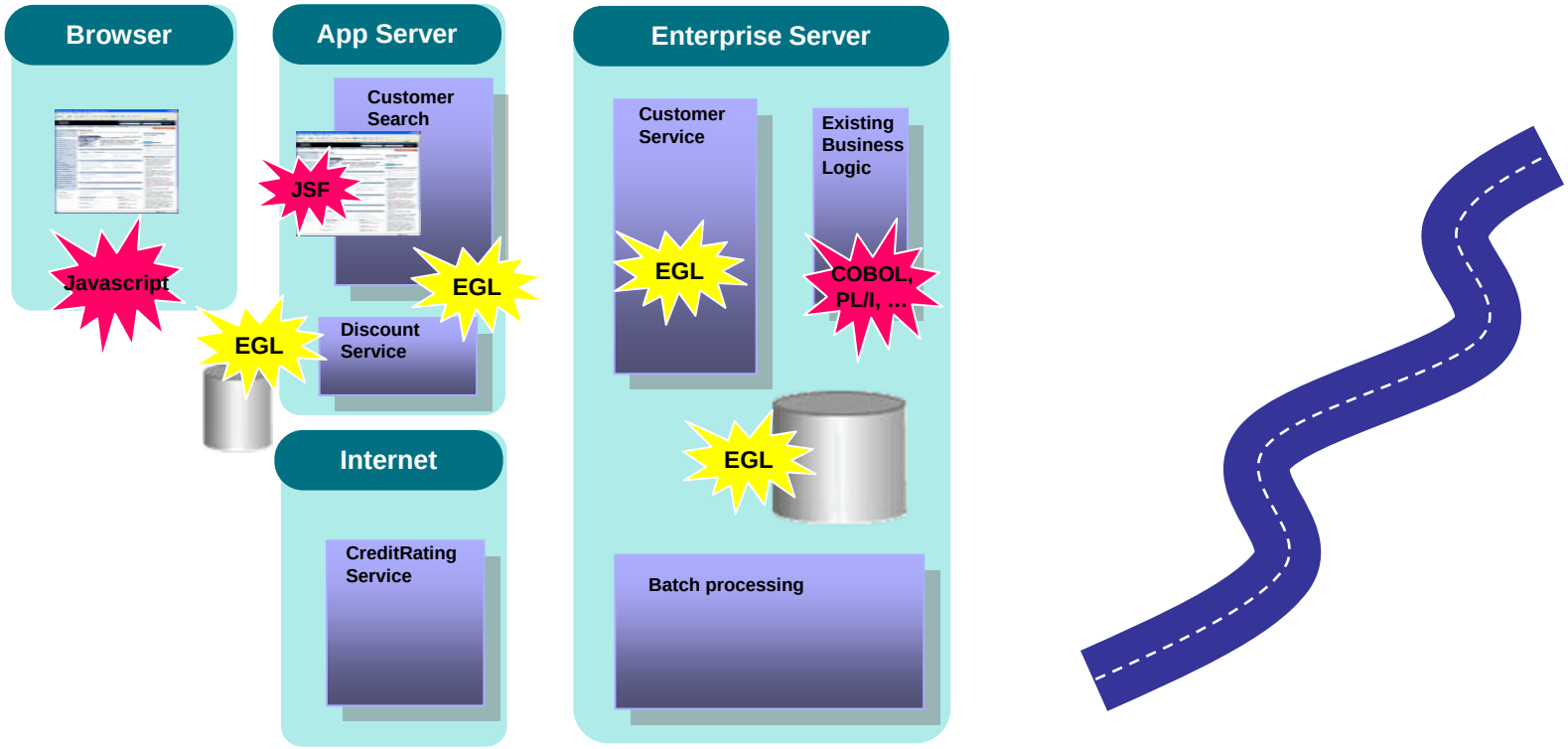
Modernize your skills

Skills flexibility – energizing existing developers; bringing new developers to System z

New!

Use Rational Business Developer extension (RBDe), **supports high productivity delivery of platform independent SOA processing**

- **with Enterprise Generation Language (EGL) – IBM's modern business language**



"Software developers will come from less technical business-oriented backgrounds. And move between various business and IT organizations throughout their careers."

Introducing: Rational Business Developer extension

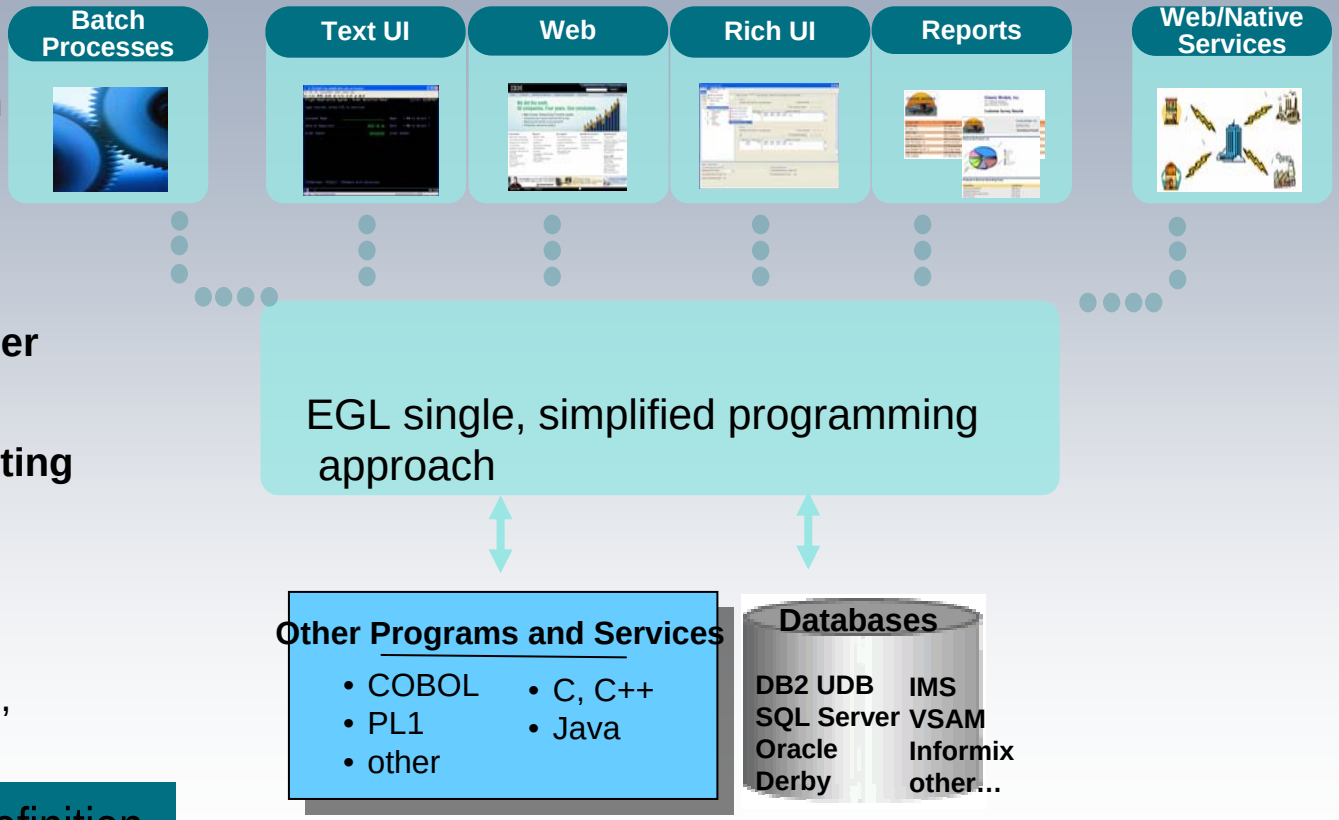
New and Enhanced!

Introducing V7; GA 4/07

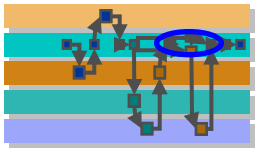
Support Business Developer communities:

- **Simplify delivery of modern UI's**
- **Modern syntax appeals to today's developers**
- **Leverage business developer skills**
- **Enhance integration to existing processing and services**
- **Improve application QOS**
  - deploying to key runtimes including System z - WAS, CICS, IMS

Standard Language Definition
Open Source



Modernize your architectures and skills
Customer examples



Background:
- Belgian Bank & Insurance company. 50000 employees, 12 million clients across Central Europe
- Numerous acquisitions, expect to continue.

Challenge: **Striving for cost reduction, synergy and integration**

Solution: Increased skills, staff flexibility
- Standardize on **RBDe** and **RAD** to unify application development across all platforms and transaction managers (e.g. WAS, IMS)

"…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

Background:
- German Bank providing financial services to private companies and small/medium businesses across Europe
- Leading provider of online banking services.

Challenge: **upgrade teller workstations and ensure they continue to work with existing 3rd-party customer COBOL runtime environment.**

Solution: Improve change cycles
- New application framework based on **IBM COBOL standard**
- **WDz** to design new COBOL/other code

"In one tool, we have a single development environment for multiple environments. I don't have to jump between different tools to do different tasks. The tool is very complete."
— Armin Schiller, Transaction Banking Payments and Cash Transactions, Commerzbank AG

Driving visibility & collaboration in software delivery

New and Enhanced!

Gain business intelligence for software assets

- Create asset inventories and ROI best practices
- Govern asset utilization with meaningful instrumentation
- Enable asset traceability & architectural governance

Improved return on software assets

Promote application flexibility with SOA

- Separate service flow from service implementation for optimal flexibility
- Agile development supporting today's and tomorrow's SOA technologies
- Reuse services from existing processing

Deliver service through process reuse

Improve team flexibility and skills

- Leverage business developer skills across service platforms
- Utilize new employees on any projects independent of target platforms
- Adaptable processes & lifecycle service integration

Greater innovation & alignment w/ evolving business priorities

Modernize team infrastructure and project insight

- **Enhanced process modeling, analytics & lifecycle automation**
- **Eased global team access with intuitive, Web 2.0 experiences**
- **New high-availability & security features enabling global teams**

Improved project success rates and team productivity

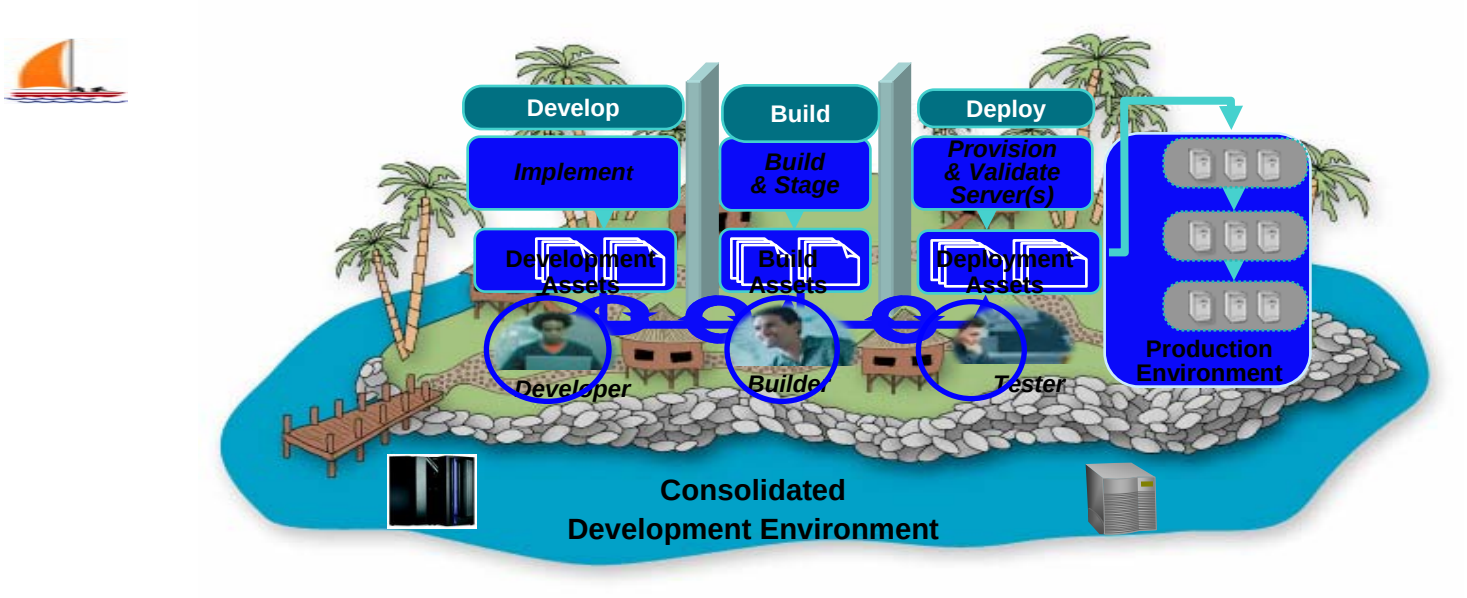
Innovation in collaborative software delivery technology and methodology leveraging an open community-driven development model

Jazz

Modernize your processes, infrastructure & IDEs

Team Flexibility - shared environments for enterprise and distributed

- **Lower costs due to elimination of duplicate tools and processes**
- **Improve IT flexibility because employee skills can be leveraged across organization**
- **Exploit single infrastructure for enterprise and distributed development environments**
- **Realize improved end-to-end communication and traceability across the entire lifecycle**



Your governance solution needs to cover the entire topology as well as the entire lifecycle and all roles.

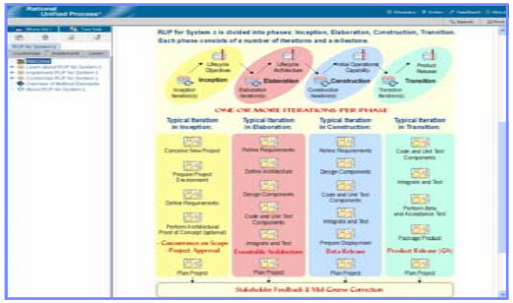
Modernize your System z processes

Centrally manage requirements, activities, best practices, projects

Rational RequisitePro: to manage requirements for both distributed and enterprise projects

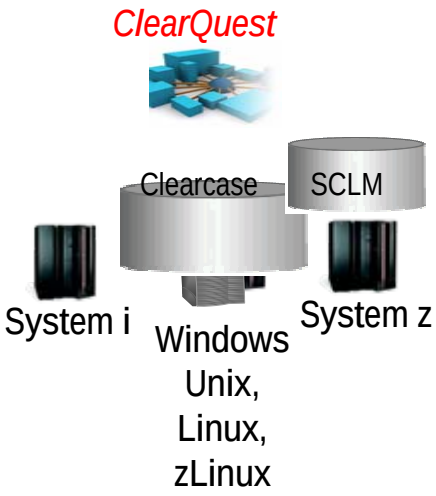
Provide a unified dashboard for your organization with **Rational Portfolio Manager**

Take advantage of best practices in collaborative development using **Rational Method Composer** and **Rational Unified Process for z**



Modernize your System z team infrastructure

Leverage modern infrastructure independent of deployment platform



Orchestrate all problem tracking and configuration management with **Rational ClearQuest**

Manage enterprise assets with **Rational ClearCase** and/or **Source Configuration Library Manager**

Produce traceable, automated, and cross-platform builds with **Rational Build Forge**

Modernize your team processes and infrastructure
Customer example

Background:

- Third largest European insurance provider
- Worldwide operations and clients

Challenge:

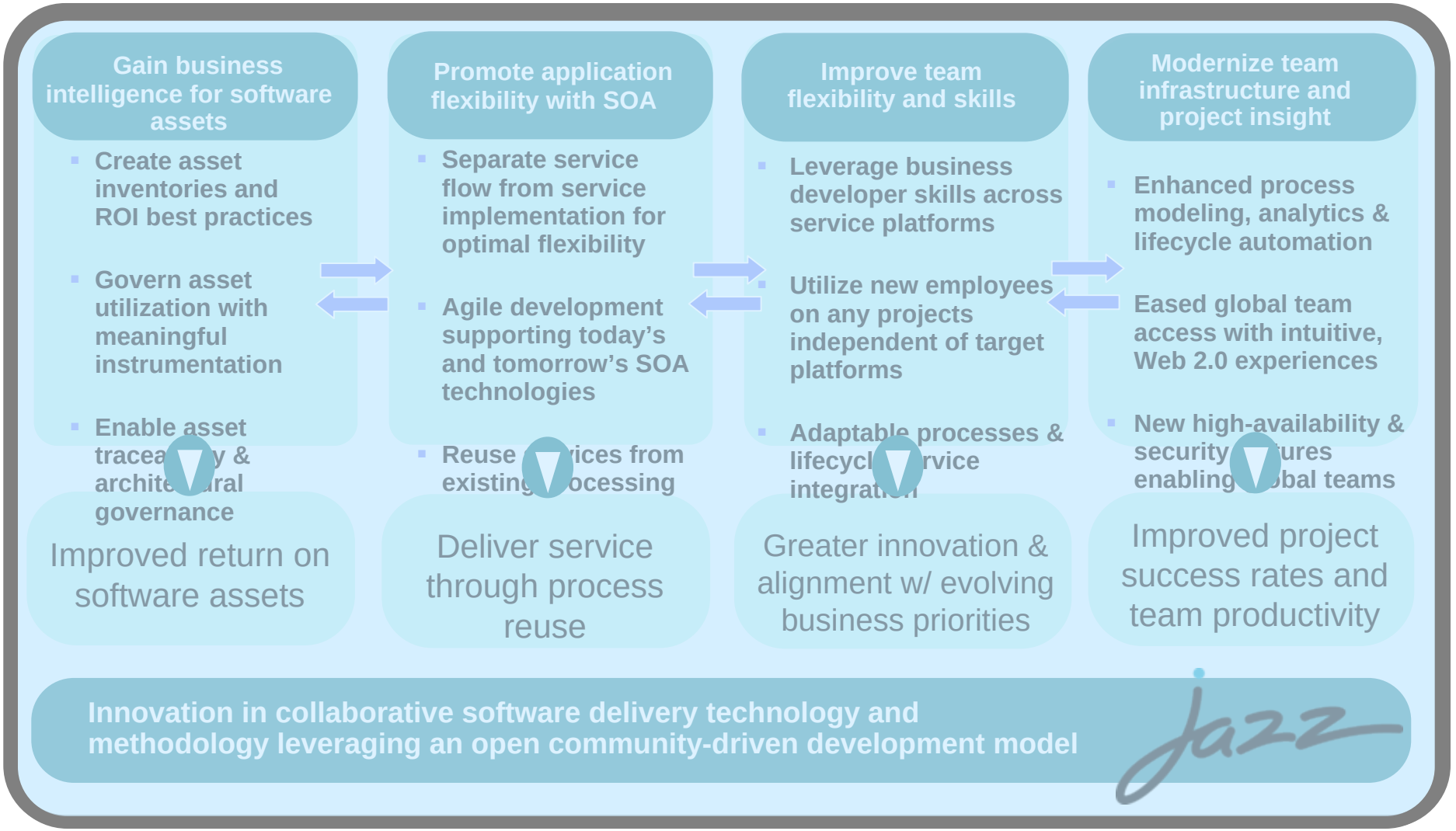
- Spiralling maintenance and resource costs constrained the development organization
- Move to a standardized solution to improve developer productivity and flexibility for delivering software solutions

Solution:

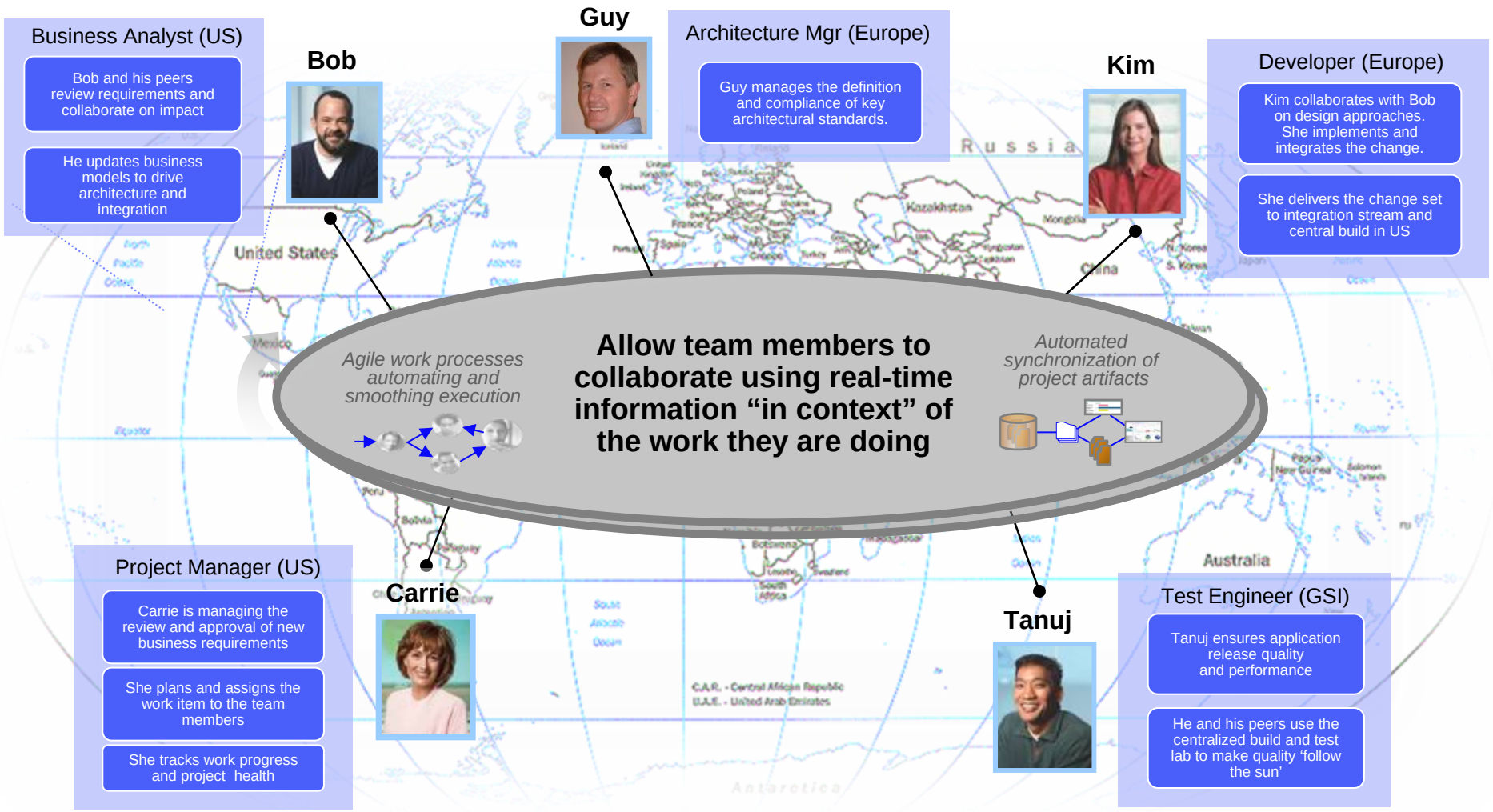
- Highly automated cross-platform solution using **ClearCase** to manage and support the software lifecycle for COBOL and Java development, from start to finish

Driving visibility & collaboration in software delivery

New and Enhanced!



Improving team agility and collaboration



Jazz for System z

We are implementing the Jazz technology “on” and “for” System z

- **People / Teams – large enterprise teams will benefit from enhanced collaboration just like small teams**
- **Artifacts - huge number of artifacts need enterprise scalability**
- **Process – enterprise and distributed teams should work together using coordinated development process**
- **Project insight – most enterprise projects span both distributed and enterprise, so project insight should encompass all aspects**

Preview in late 2007 for System z

IBM Rational Team Concert (beta)

Extending the value of Clearcase and ClearQuest

New!

Secure Eclipse & Web 2.0 clients

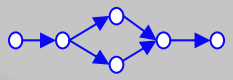
Globally distributed projects

Rational. software

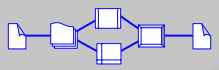
LIFECYCLE SERVICE INTEGRATION MIDDLEWARE

Real-time collaboration and project information "*in context*"

Adaptive process enactment



Dynamic artifact relationships



Powered by jazz

Rational. software
Method Composer

Rational. software
Asset Manager
Portfolio Manager
Performance Tester
...

Rational. software
ClearCase
SCLM

Rational. software
ClearQuest

Rational. software
Story Author for Agile Development
New!
Agile Process Enactment

WebSphere
IBM Business Partner
Lotus
Tivoli
etc ...

✶ *Tech Previews*

Summary

New Rational offerings driving greater visibility and collaboration in software delivery by ….

- **Gaining intelligence on software asset usage and best practices to improve ROI**
- **Supporting corporate "business" developer communities delivery of modern application architectures**
- **Increasing skill sets for System z development**
- **Enabling agile deployment across composite application architectures**
- **Delivering a more open, configurable ALM platform and participation in IBM R&D in collaborative ALM technology**

Helping customers optimize their investments in software delivery across organizationally diverse environments

Go to IBM

Backup Detail

- **Modernize your assets**
- **Modernize your architectures**
- **Modernize your skills**
- **Modernize project efficiency and insight**
- **Optimize development investments**

Helping customers optimize their investments in software delivery across organizationally diverse environments

Business and architectural intelligence for your software assets

Business intelligence for software assets

- **Promote reuse as a core competency**
- **Govern asset utilization with meaningful instrumentation**
- **Ensure asset traceability and architectural governance**

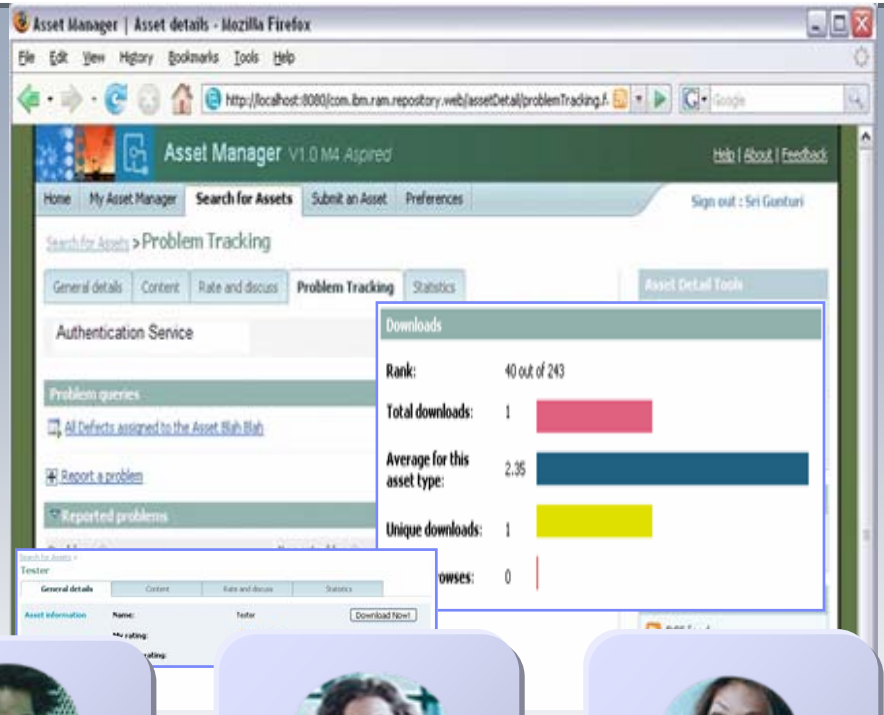
Maximize business impact with improved return on software assets

- Rational Asset Manager V 7.0
  - **New** - Asset management solution that gives organizations the ability to identify, manage and govern the design, development and consumption of assets and services as part of a Service-Oriented Architecture
  - **New** - Integration with Rational ClearCase and ClearQuest
  - **New** – Integration with WebSphere Services Repository & Registry
  - **New** – System z repository and COBOL
- WebSphere Asset Analyzer V 5.1
  - **New** – Improved composite (WAS -> CICS) analysis
  - **New** – Web Services artifact support

Introducing: IBM Rational Asset Manager

New!

- Collaborative asset management to identify and manage assets & ROI best practices
- Manages assets across their lifecycle from design/creation to consumption/change
- Manages service creation & reuse across service oriented architectures (SOA) projects
- Leverages an extensive library of process best practices for asset creation & reuse in Rational Method Composer (ABS, SOA, GDD, etc.)



Analyst, Developer, Architect Tester

Search & Retrieve Assets

Asset Administrator

Define

Analyst, Developer, Architect Tester

Create & Modify Assets

Project Manager Reviewer Approver

Measure

Project Manager CIO/CTO

Govern

Asset Management Lifecycle

Modernize your Asset Management

Business intelligence for software assets

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Modernize your Architecture

Promote application flexibility with SOA

- **Separate service flow from service implementation for optimal flexibility**
- **Agile development supporting today's and tomorrow's SOA technologies**
- **Reuse services from existing processing**

Deliver service through process reuse

- Rational Developer for System z V7.1; GA 9/07

  Enhance System z developer productivity and skills supporting:

  - Modern Service Oriented Architectures
  - Popular Business Languages and Runtimes
  - Cross platform development and debugging
  - **New-** Rapidly develop services to orchestrate process flows in CICS V3.2
  - **New-** Improve lifecycle by leveraging integration to IBM File Manager and IBM Fault Analyzer

Modernize your skills

New!

Improve team flexibility and skills

- **Leverage business developer skills across service platforms**
- **Utilize new employees on any projects independent of target platforms**
- **Adaptable processes & lifecycle service integration**

Greater innovation & alignment w/ evolving business priorities

Introducing Rational Business Developer Extension V7; GA 4/07

Support Business Developer delivery of application processing including:

- **Robust web support simplifies delivery of modern UI's**
- **Abstractions improve access to middleware and data**
- **Enhance integration to existing processing and services**
- **Improve QOS by deploying to key runtimes including System z - WAS, CICS, IMS**

Modernize your project efficiency & insight

Modernize team infrastructure and project insight

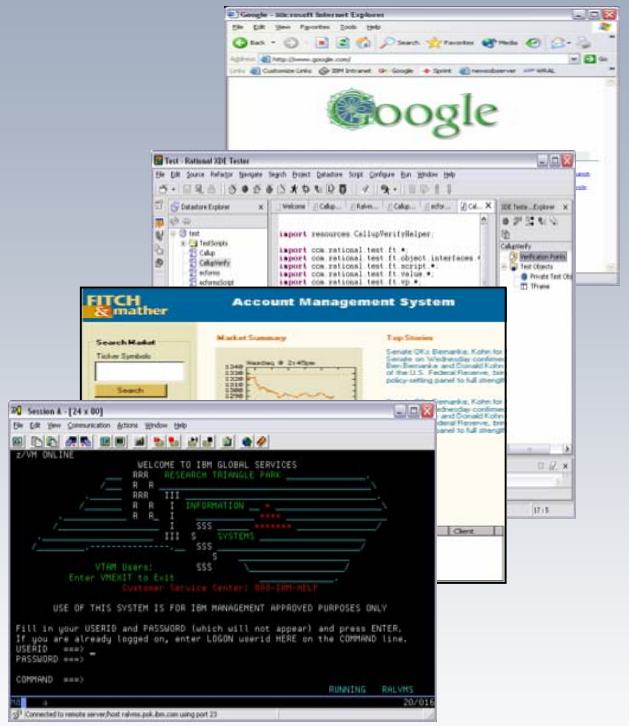
- **Enhanced process modeling, analytics & lifecycle automation**
- **Eased global team access with intuitive, Web 2.0 experiences**
- **New high-availability & security features enabling global teams**

Improved project success rates and team productivity

- **Rational Method Composer V 7.2**
  - **New -** System z support in Rational Unified Process
  - **New** - WebSphere Business Modeler integration to simulate & analyze processes
  - **New** - Integrated Tivoli Unified Process and Rational Unified Process
  - **New** - reporting capabilities to support compliance, customized publishing
  - **New** - simplified enterprise deployment and process management
  - **New** - RMC plug-ins extending a rich process library to over 100 content packages
    - GDD, ITUP, SOMA, CMMI, Asset Management, zSeries/ Modernization, etc
- **Rational BuildForge V7.0**
  - **Enhanced -** Coordinate and execute software production processes across platforms
    - from a centralized location
    - with complete visibility
    - and real-time status
  - **New -** Support coordinated mainframe builds via System z agent
  - **Enhanced -** Improved integration with ClearCase, ClearQuest
- **SDP Team V 7.0.1 Platform Enhancements**
  - **Reqpro** – Improved GDD admin, Web client, and WBM & RSA/RSM integrations
  - **ClearCase**: - New high availability & security enhancements
  - **ClearQuest** – Enhancements to security and scalability
- **Rational Portfolio Manager V 7.1**
  - **New** - Zero-footprint Web client for team members
  - **New** - Bi-directional Rational ClearQuest for automated task management
  - **New** - Rational Requisite Pro integrations
  - **Enhanced** – Decision support with data warehouse and improved reporting
  - **Enhanced** - Validate business controls & provide audit trails of compliance results

Optimize your development investments

Improve productivity, save money, get "modern"



Save money

New!

- Engage **IBM Rational Software Services and IBM business partners** to transform outdated and unsupported legacy applications
- Catch scalability problems prior to deployment with **Rational Performance Tester**

Save time

- Attain highest productivity with **Rational Business Developer Extension**
- Use 21st century IDEs with **WebSphere Developer for System z**
- Provide modern UI's with **Host Access Transformation Services (HATS)**
- Identify dead code with **Asset Transformation Workbench**

Improve quality

- Enforce best practices with **Rational Software Architect**, **Rational Developer for System z**
- Document test scenarios with **Rational Manual Tester**
- Test services with **Rational Tester for SOA**