Innovate2011
The Rational Software Conference
11th and 12th of October
Let's build a smarter planet.

Rational Collaborative Development Platform for zEnterprise

Keith Allen

Rational Brand Architect – Z Specialist

WELCOME

Bienvenido

velkommen

Välkommen

Bem-vindo

Welkom

ברוך הבא

Bienvenue

Willkommen

Tervetuloa

Benvenuto

Paper Abstract:

This paper explains the Rational collaborative development platform for zEnterprise, showing how, starting with integration to existing mainframe legacy technologies such as CA Endevor / Serena Changeman, the collaborative team and code management views, whist retaining mainframe skills already in use, is providing new added values to developers. Savings in mainframe mips, are one of the many areas, that an organisation see, however the increase in application development time, and increase in application quality, drive new applications through the life cycle faster, and hence enable customers to bring these new applications to market sooner, with reduced cost. So supporting standard mainframe 'waterfall' practices, whilst introducing newer 'Agile' practices help in these improvements. This paper provides the listener to see how they can, via the Rational solution, move forward with knowledge that old and new development structures are retained.

We already have active Customers

Rational Collaborative Development Platform for zEnterprise

Overview

Challenges faced in enterprise software delivery

Decades of application investments

"We don't understand the effort, risk and impact of modernizing our legacy applications."

- **Maintenance costs are high (70%-80% of budget), as are development costs**
- **Assessing the scope and impact of a change is time consuming and error prone**

Poorly integrated teams

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

- **Silos of developers, tooling and processes for different platforms**
- **Processes are often manual and time consuming to enforce**

Islands of skills, languages and platforms

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

- **Low developer productivity from non integrated, green screen tools**
- **80% of mainframe developers are 50+. Green screen tools inhibit younger talent from becoming mainframe developers**

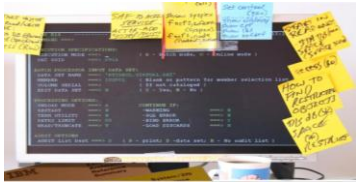
Aging and overloaded infrastructure

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

- **Project delays due to waits on mainframe cycles or operations staff**
- **Pressure to reduce development MIPS costs**

ISPF-based development

- **Multiple screens/sessions and disparate tools**
- **20 x 80 characters of content**



submit compile job → swap to SDSF → select job

edit JCL

find error msg

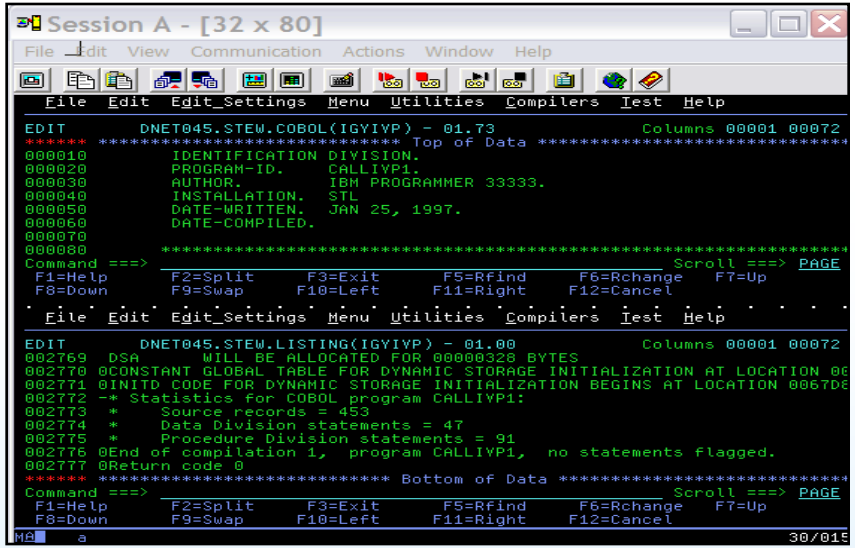
exit source

find code line (remember error)

change code

swap to edit session

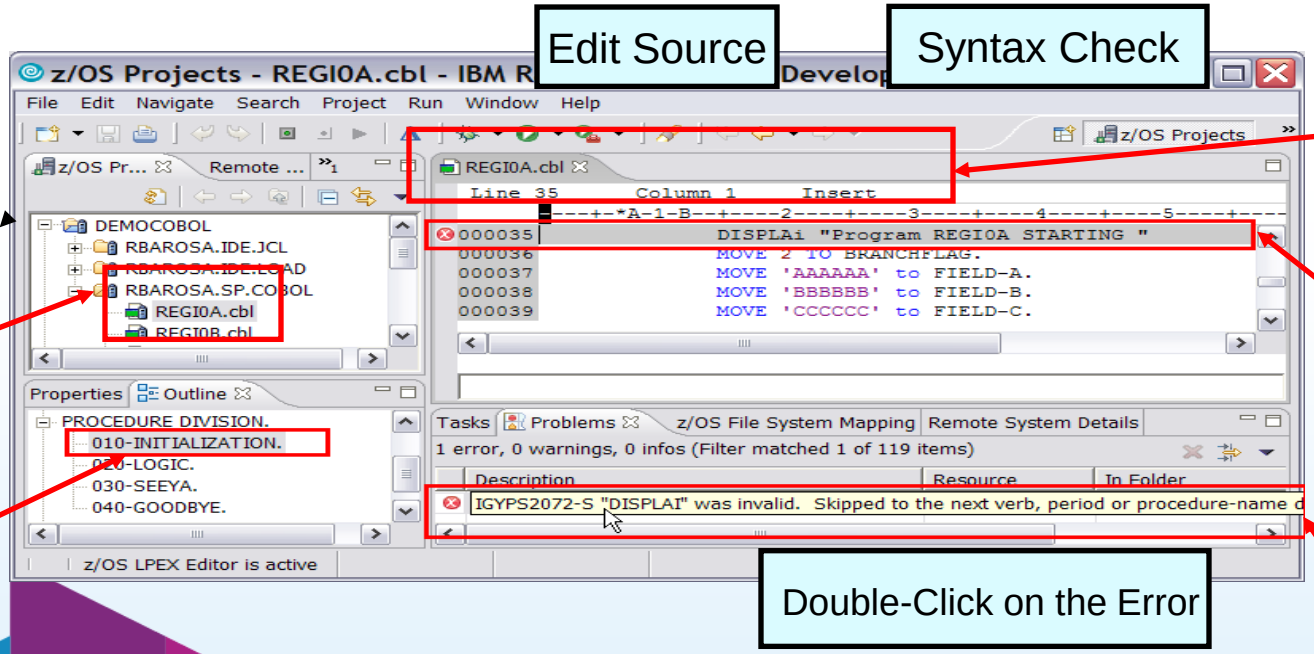
find code line ← edit source ← exit JCL



To This…..

Common development environment for COBOL, PL/I, C/C++, and Java

Simplified development with more information at your fingertips



Submit jobs, access job output, or open source members with a single click

Outline view presents COBOL structure

Open and edit multiple source and JCL members simultaneously

Statement in error indicated in source

Error list in Problems view

And Provide This…..

Rational Executive Dashboard – the end game

REST Open Services / ODBC / XML

Quantitative and Qualitative Data

Cognos Viewer - Executive Dashboard Portal - Microsoft Internet Explorer

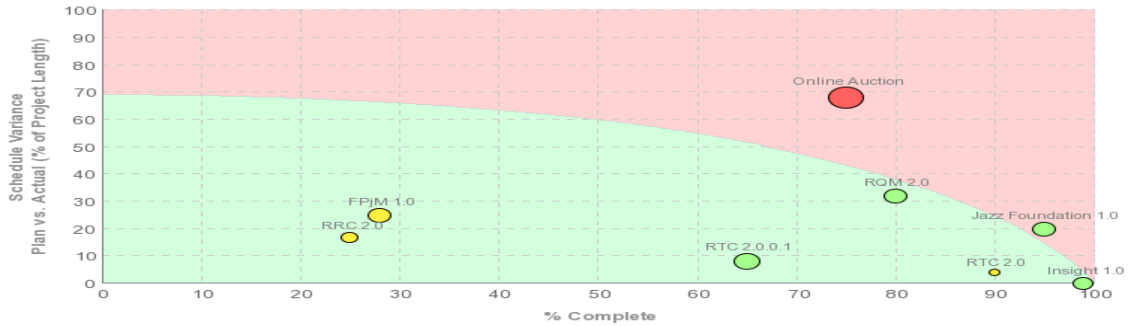
File Edit View Favorites Tools Help

Rational Insight

Rational Executive Dashboard – The end game

- Executive Dashboard
- Headcount
- Improve Project Health
- Achieve Profit Margin Objective
- Improve Market Share

Segment: All Segments



Hide Table

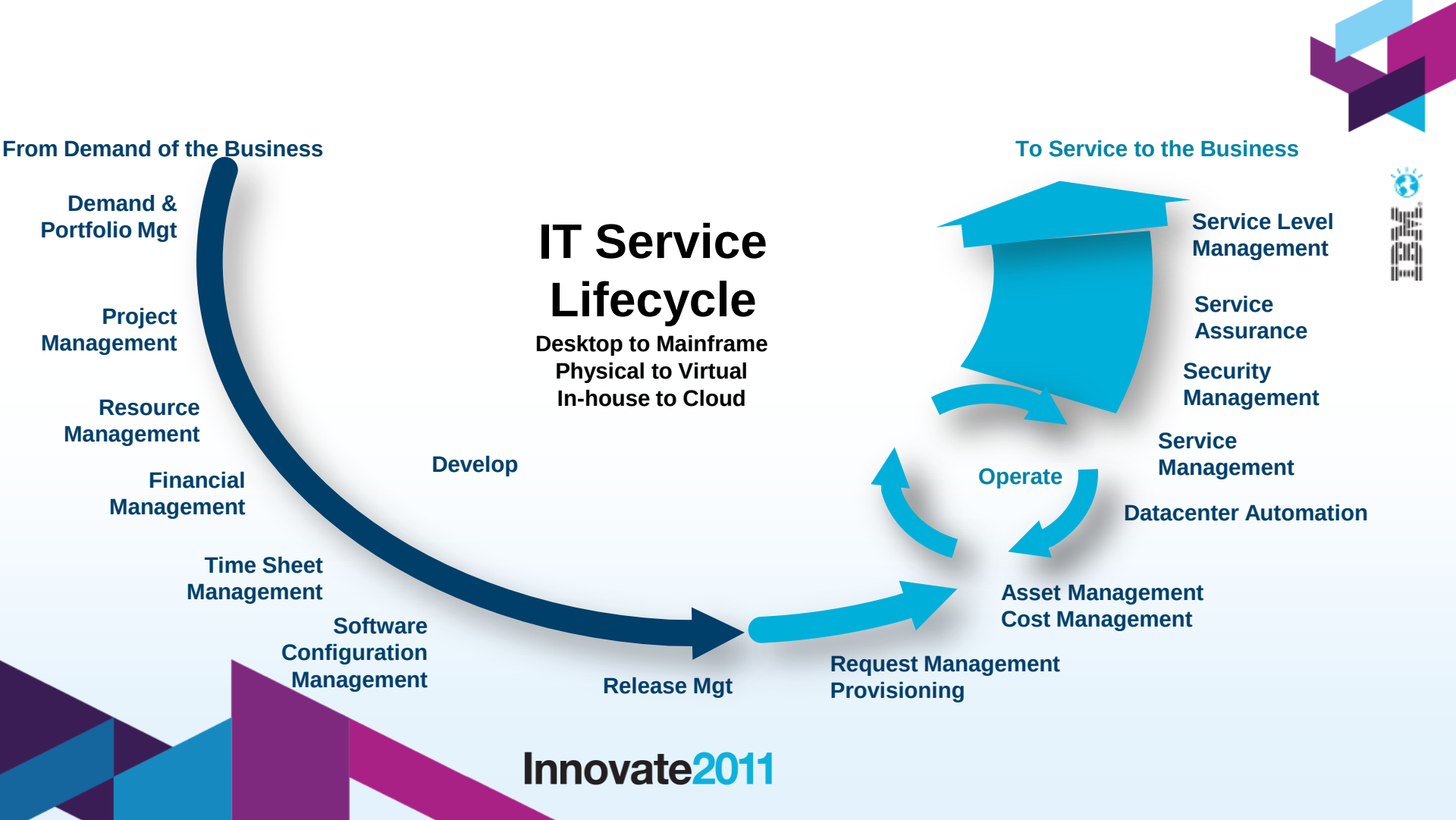
Segment	Product	Revenue Year-To-Date (M)	Revenue % of Plan	Pipeline (M)	Release	eGA Plan	eGA Outlook	eGA Plan-Outlook	Headcount (PY)	Project Health	Overall Profit Margin	Overall Market Share
Application Lifecycle Management (ALM)	Jazz Foundation	75.7 ▼	96% ▼	87.9 ▼	Jazz Foundation 1.0	May 28, 2009	Jun 12, 2009	15 days	52 ◆	71% ◆	◆	▲
					Online Auction	Mar 31, 2009	Jul 7, 2009	98 days	118 ▼	50% ▼	▼	▼
	RTC	115.2 ▲	99% ◆	109.6 ◆	RTC 2.0	Jun 15, 2009	Jun 19, 2009	4 days	12 ◆	90% ◆	◆	▲
					RTC 2.0.0.1	Sep 22, 2009	Sep 30, 2009	8 days	72 ▼	86% ◆	◆	◆
Governance Solution	Focal Point for Project Management	29.1 ◆	93% ◆	84.2 ▲	FPjM 1.0	Oct 15, 2009	Nov 17, 2009	33 days	60 ◆	74% ▲	◆	◆
	Rational Insight	108.7 ▼	98% ▼	162.7 ▼	Insight 1.0	May 26, 2009	May 26, 2009	0 days	40 ◆	83% ▼	▼	◆
Quality Management (QM) Solution	RQM	35.2 ▲	112% ▲	79.6 ▲	RQM 2.0	Jun 15, 2009	Jul 31, 2009	46 days	56 ◆	89% ▲	◆	▲
	RRC	28.1 ◆	83% ▲	45.1 ▼	RRC 2.0	Nov 4, 2009	Nov 24, 2009	20 days	32 ▲	85% ◆	◆	▼

Project Health by Country

Drawbacks – As seen my management:

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

Adopting a ‘Factory IT’ Approach with the Rational Collaborative Development Platform for zEnterprise.

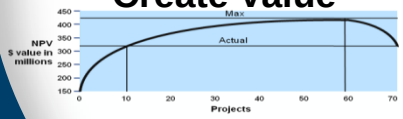

From Demand of the Business
Demand & Portfolio Mgt
Project Management
Resource Management
Financial Management
Time Sheet Management
Software Configuration Management
Release Mgt
Develop
IT Service Lifecycle
Desktop to Mainframe
Physical to Virtual
In-house to Cloud
Request Management
Provisioning
Asset Management
Cost Management
Operate
Service Management
Datacenter Automation
Security Management
Service Assurance
Service Level Management
To Service to the Business

The Five Essential Value Metrics For Managing IT

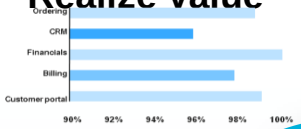
Align to the Business

Stay in Business

Create Value



Realize Value



Remove Waste

Demand & Portfolio Mgt

Project Management

Resource Management

Financial Management

Time Sheet Management

Software Configuration Management

Release Mgt

Request Management Provisioning

Asset Management Cost Management

Datacenter Automation

Service Management

Security Management

Service Assurance

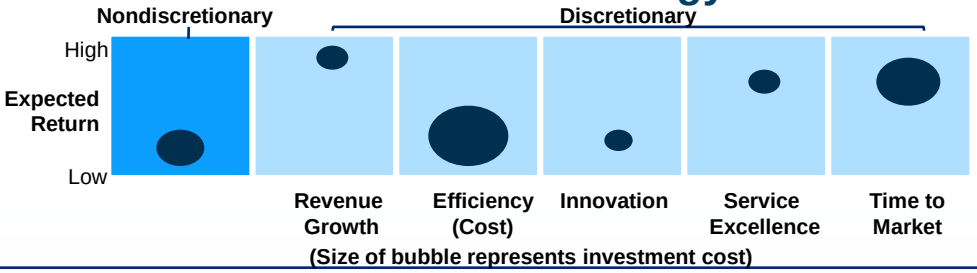
Service Level Management

Innovate2011

Source: Forrester 2008, The Five Essential Metrics For Managing IT

Align to the Business

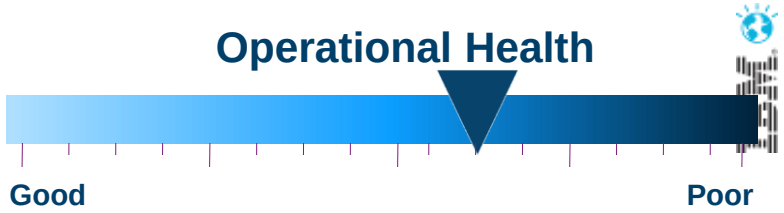
Alignment Of IT Investments to Business Strategy



(Size of bubble represents investment cost)

Stay in Business

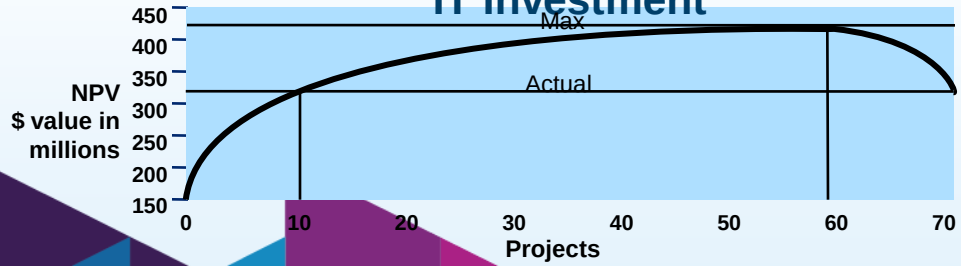
Operational Health



Agility Security
Up-to-date systems Compliance
On-time on-budget project execution

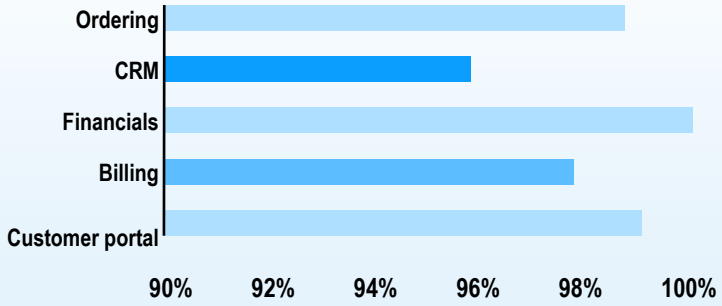
Create Value

Cumulative Business Value of IT Investment



Realize Value

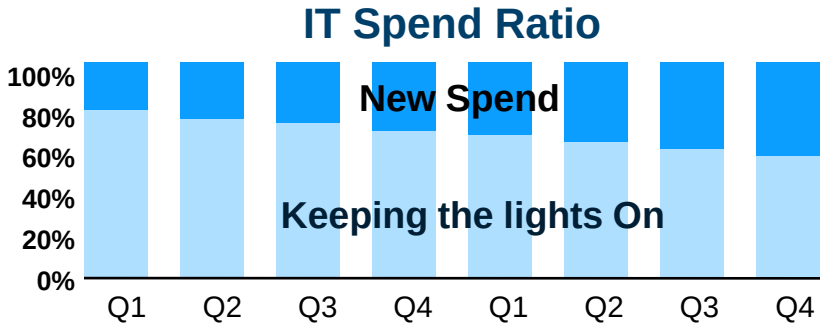
SLA Performance



Innovate2011

Source: Forrester 2008, The Five Essential Metrics For Managing IT

Remove Waste



Examples of the Rational Collaborative Development Platform for zEnterprise Impact.

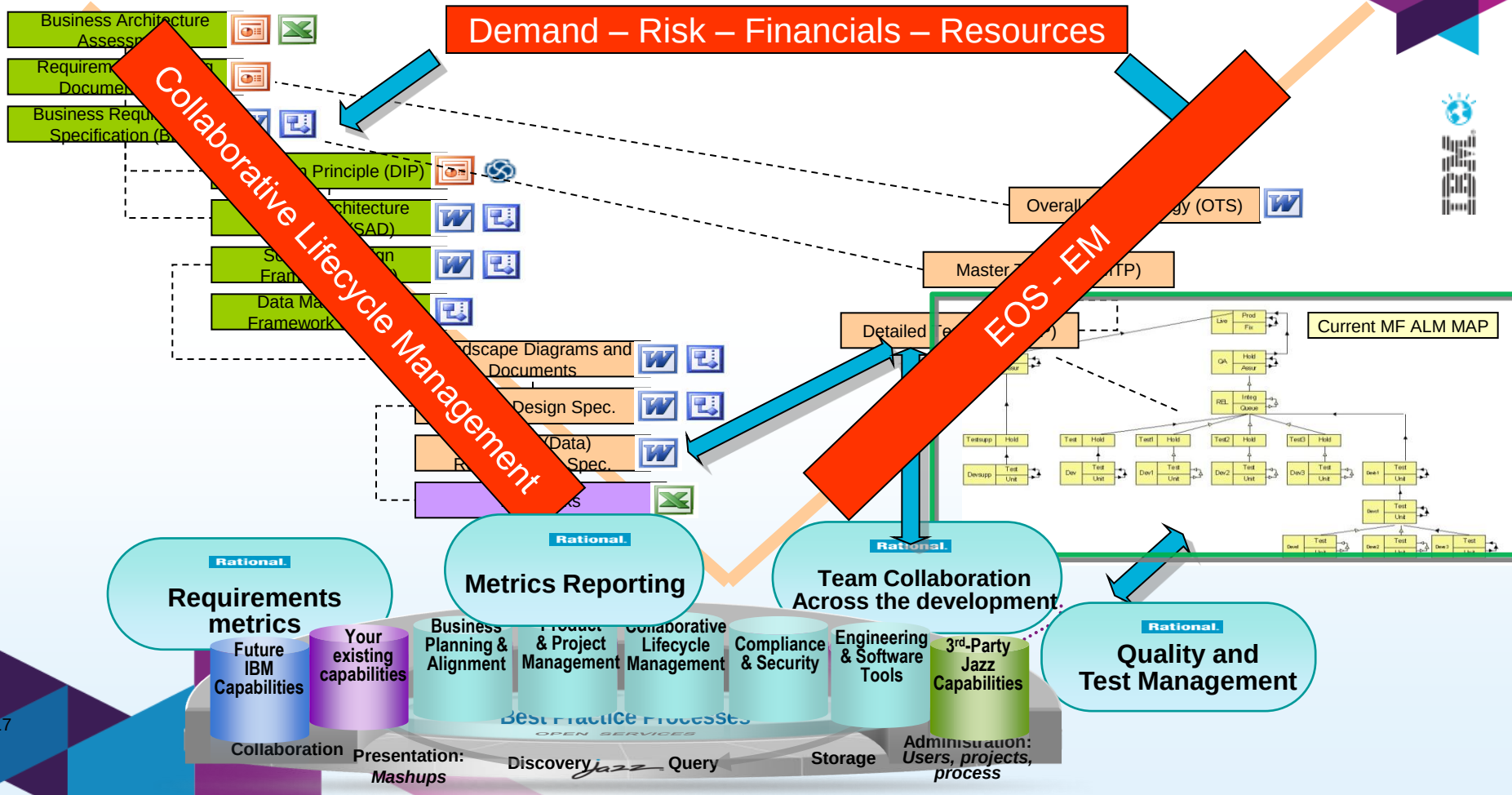
- Reduce service desk calls up to 40%
- Improve MTTR up to 50%
- Reduce downtime up to 70%
- Reduce performance delays up to 71%
- Improve staff productivity up to 25%
- Reduce number of IT tools up to 50%

Elements of Waste

- Incidents
- False alarms
- Server sprawl
- Underutilized resources
- Duplicate licenses
- Manual activities – human error
- Redundant applications
- Slow application response times
- Electricity usage of idle systems

Sources: *An ROI Study* - direct customer data.

Helping the Alignment of IT to Business



A Unified Development Process

Team support for:

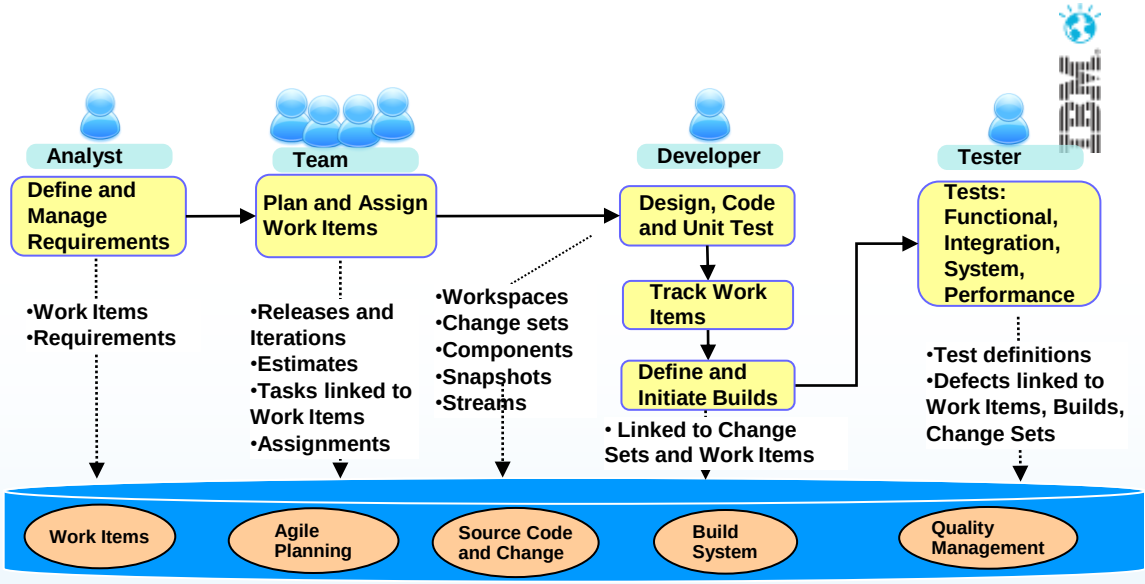
- Repository
- Team Processes
- Collaboration
- Project tracking
- SCM support

Same tool for z/OS, Linux on System z, AIX, and Linux

A single User Interface to manage development for all environments

- Browser or Eclipse client

Coexistence with existing mainframe based SCMs



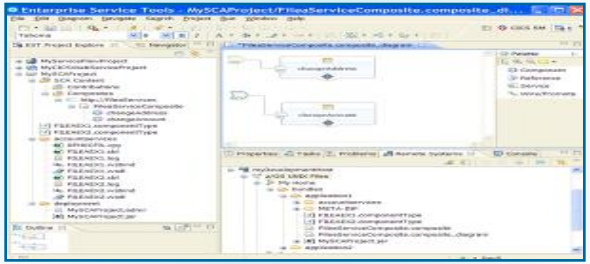
Common repository and data schemas for all environments

Complete set of System z Development and Test capabilities from an integrated development environment

Integration with Rational Team Concert for Lifecycle and Source Management

Access to typical System z sub-system functionality in z/OS, CICS, IMS, DB2, WAS

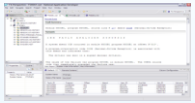
Rational Collaborative Development Platform for zEnterprise



Integration with Rational Asset Analyzer for Application Understanding and Impact Analysis

Integration with IBM Debug Tool for Development and Test

Integration with Fault Analyzer for Dump Analysis

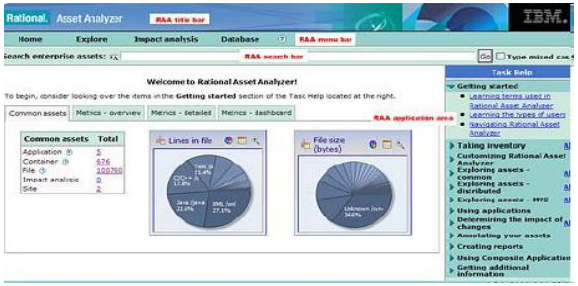


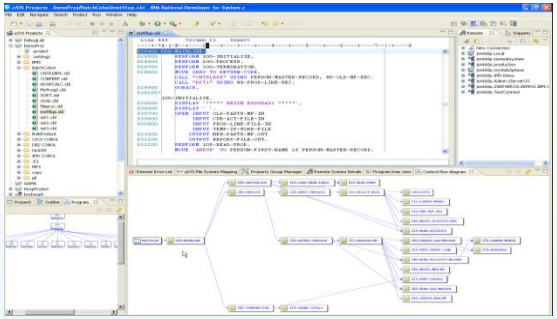
A modern IDE for productive development of cross-platform applications written in COBOL, PL/I, ASM, Java, EGL or C/C++ in System z CICS, IMS, DB2, Batch applications

Integration with IBM File Manager for file and test data handling

Integration with Rational Developer for system z UT for flexible access to System z environment

Analyzing applications





- **Quickly understand flow and relationships across the enterprise even with little or no documentation**
  - Analyze, understand, and navigate complex application source code, including COBOL, PL/I, C/C++, Java, JEE, etc…
- **Reduce time to market & risk of resource shortage by understanding the impact of change, upfront**
  - Understand source code complexity/fragility
  - Analyze impact of potential code changes or database changes
  - Find “dead code” for deletion from source base
- **Choose from two user interfaces for ease of access and use**
  - Integration with Rational Developer for System z for IDE users
  - Browser-based user interface for dashboard and complex query construction
- **Provide business rule identification and capture (implementation not part of solution)**
  - Extend RAA “vocabulary” to map business terms and properties to those used by developers
  - Leverage RAA's capabilities to find where rules are encoded in the COBOL source
  - Export results in formats consistent with ILOG BRMS technologies

Develop applications more productively…

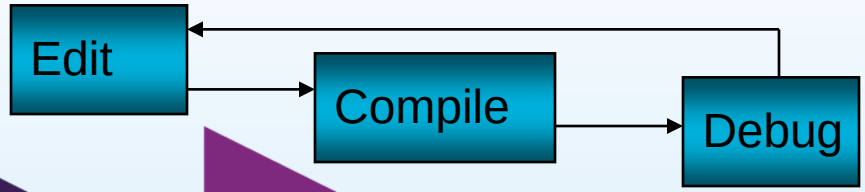
Work with existing host resources in a workstation environment

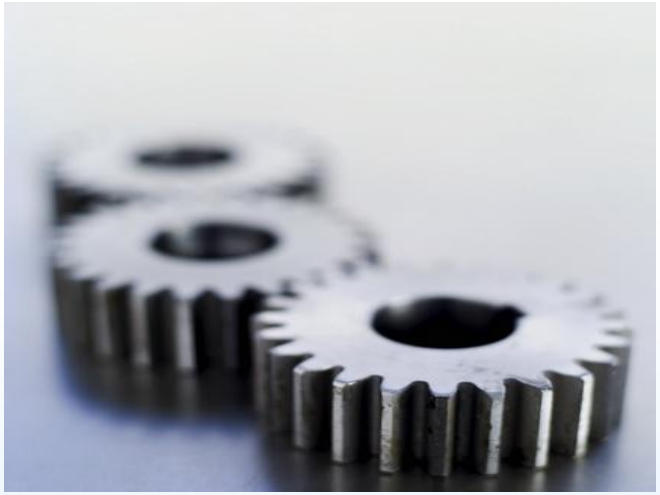
Integrate development with change management

Experience productivity gains with modern development tools

- Quickly perform mundane tasks
- Generate code
- Code assistance and templates

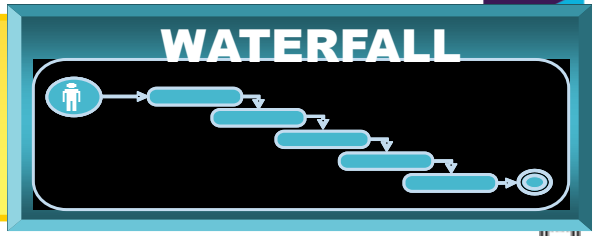
Ensure proper governance of application development



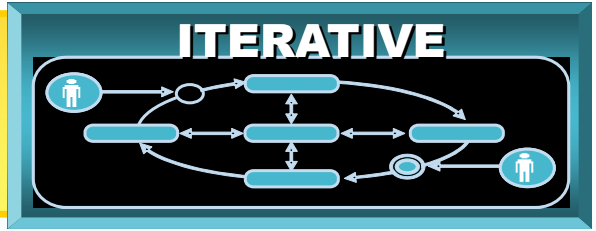


Helps select the right approach for the Mainframe

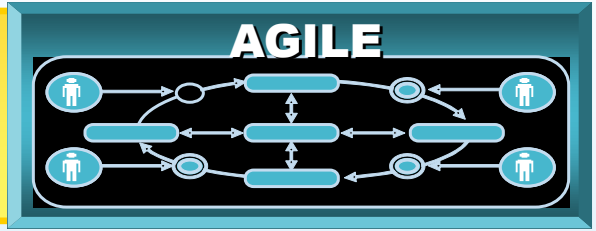
- **Waterfall development**
  When *stability* is the primary driver
  –



- **Iterative development**
  When *stability and change* are equal players



- **Agile development**
  When *change* is the primary driver
  –



How does the Rational Collaborative Development Platform for zEnterprise address pains/challenges?

Challenge	Offering	Business Benefit
Low developer productivity with green screen tools	EM Solution for Developers, with integrated collaboration, change management, SCM, analysis, development, and UT	• RDz can improve mainframe developer productivity 15%-44% when analyzing, coding, compiling, testing and debugging • Addition of RAA cuts change analysis time- sometimes from months to days
High MIPS consumption	RDz and RDz UT, harnessing the processing power of distributed systems	• RDz brings a 50%-80% reduction in host CPU usage with workstation syntax checking • RDz UT further reduces MIPS consumption, including 15% less compile cost and 10% less cost for TSO sessions • Free up MIPS for production work
Long waits for mainframe test cycles • Mainframe running near to or at capacity causes short test windows • Dependent on the operations team development/test environment set up	RDz UT installed on a developer's workstation or a shared server	• Test cycles available when they are needed for as long as necessary • No waiting on the operations team for support
• Manual, error prone analysis- typical estimate is that a developers spends 45% of their time on analysis • Long regression test	• RDz • RAA with RDz Integration	• RDz improves analysis time by 40% • The addition of RAA with RDz Integration for analysis automates this and cuts change analysis time- sometimes from months to days • Test cases pinpointed by automated analysis
Difficult to enforce, manual processes	RTC	Built in process enforcement by RTC helps customers meet audit and compliance mandates
Isolated developers, tooling, and processes for different platforms and programming languages	Common, Jazz-based team infrastructure	Up to 50%* increase in team productivity (*based on IBM Customer surveys)
• Difficulty in attracting new developers; 80% of mainframe developers are 50+ and considering retirement • Billions of dollars of investments in 20+ year old applications	EM Solution for Developers, with integrated collaboration, change management, SCM, analysis, development, and UT	A highly productive environment that meets the needs of developers accustomed to an integrated, visual, automated development platform

The Base integrated set of Rational technologies that make up the Rational Collaborative Development Platform for zEnterprise.

The Collaborative Development Platform for zEnterprise.

Rational Developer for System z

- ✔ IDE for COBOL, PL/1 & HLASM and C/C++, Java
- ✔ Increase productivity
- ✔ Reduce MIPS

Rational Asset Analyzer

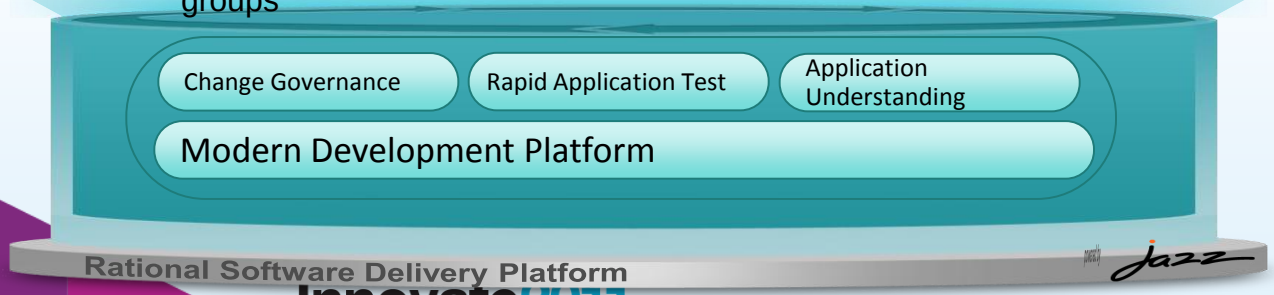
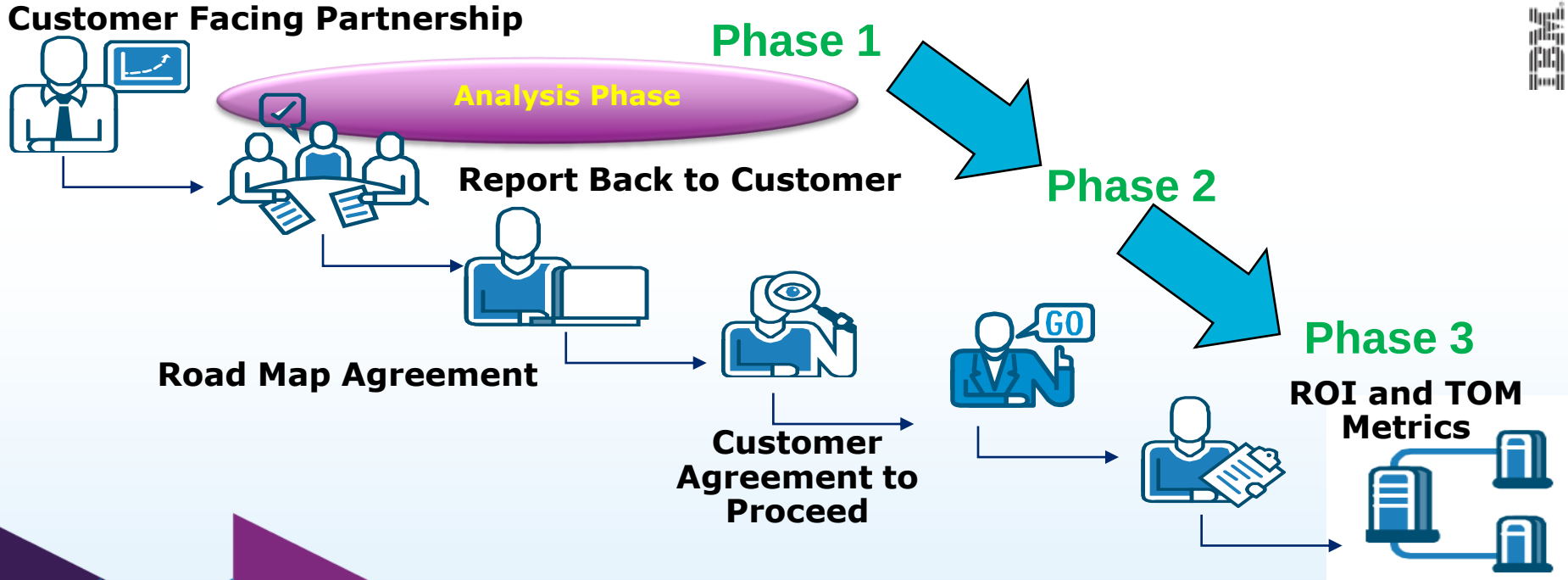
- ✔ Increase developer productivity with quick analysis that shows application structure and relationships
- ✔ Reduce risk and improve quality

RDz Unit Test feature

- ✔ Unit test freeing valuable MIPS for production use

Rational Team Concert for System z

- ✔ Common repository across multiple platforms & languages
- ✔ Different processes by developer type
- ✔ Integrated or loosely federated processes across all development groups



Rational Collaborative Development Platform for zEnterprise – The Way Forward