



IBM Software Group

# Take agile to the enterprise

*Rational Developer for System z*

*Rational Team Concert for System z*

**Chris Trobridge**

**Product Line Manager for Rational Team Concert for System z**

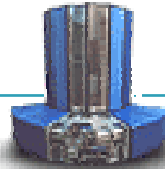
**Rational** software



# Change is the new norm



There are **1 billion** camera phones in use today

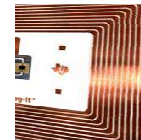


*IBM Sequoia Super Computer...*

It would take the **entire population of the earth**, about six billion, each of us working a handheld calculator at the rate of one second per calculation, **more than 320 years** to do what Sequoia can do in one day.

***“8 of 10 CEOs see significant change ahead”***  
- 2008 IBM CEO Survey

The **internet of people** is over one billion strong. The **internet of things** is almost one trillion.



By 2010, there will be **30 billion RFID tags** in circulation

Soon there will be over **2 billion people** on the web



China sends more text messages **in a week** than the U.S. does in 1 year



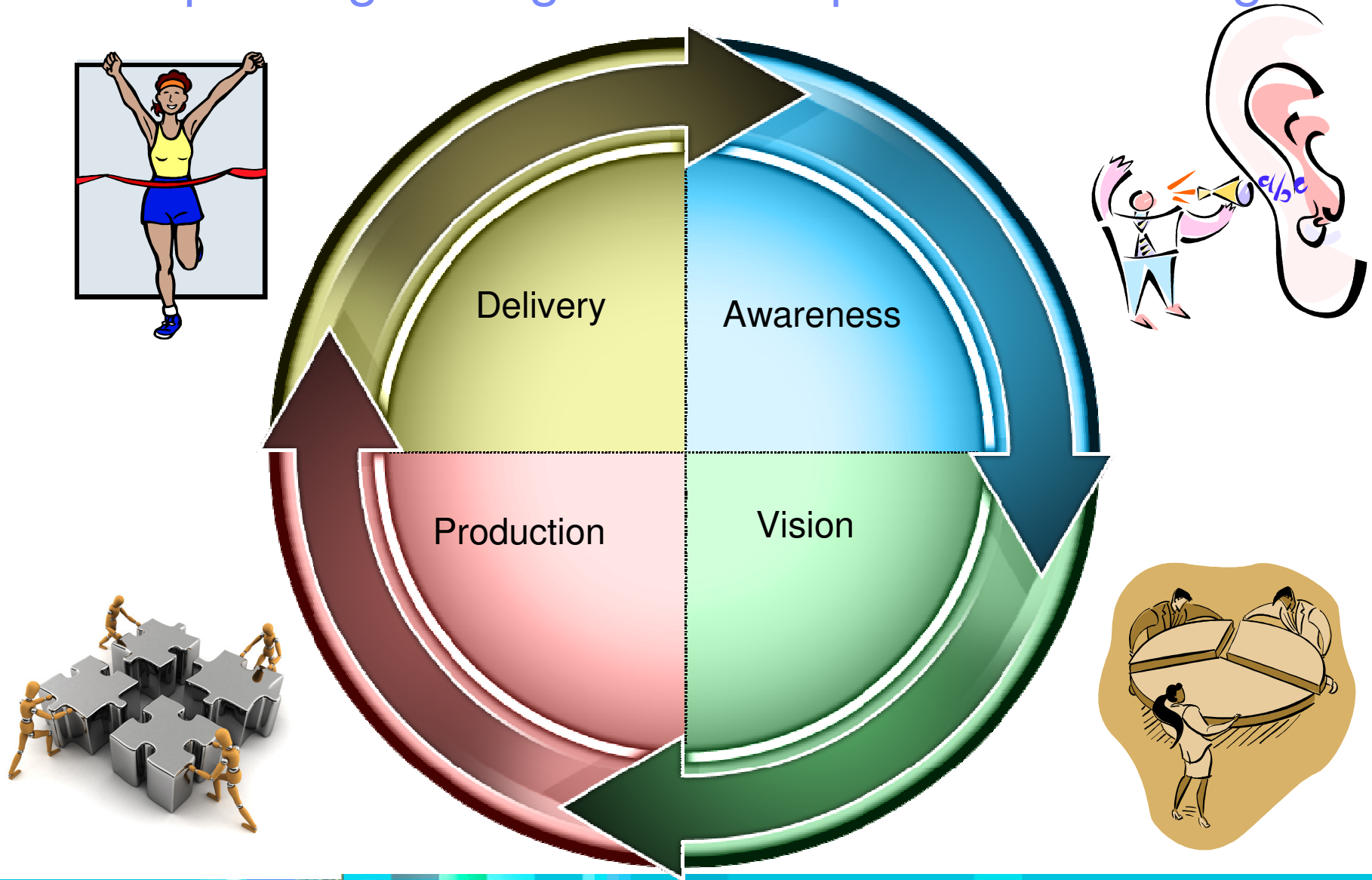
# Is your IT infrastructure flexible enough?



*“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”*

# Encompassing Change is a Competitive Advantage



# Encompassing Change is a Competitive Advantage



## Accommodating Change

In your product allows you to

- Innovate
- Respond to market forces
- Satisfy demand

In your process allows you to

- Improve productivity
- Empower your work force

## agile

An ideology supported by a pool of techniques.

Rapid Iteration

Functional

Collaboration

Empowerment

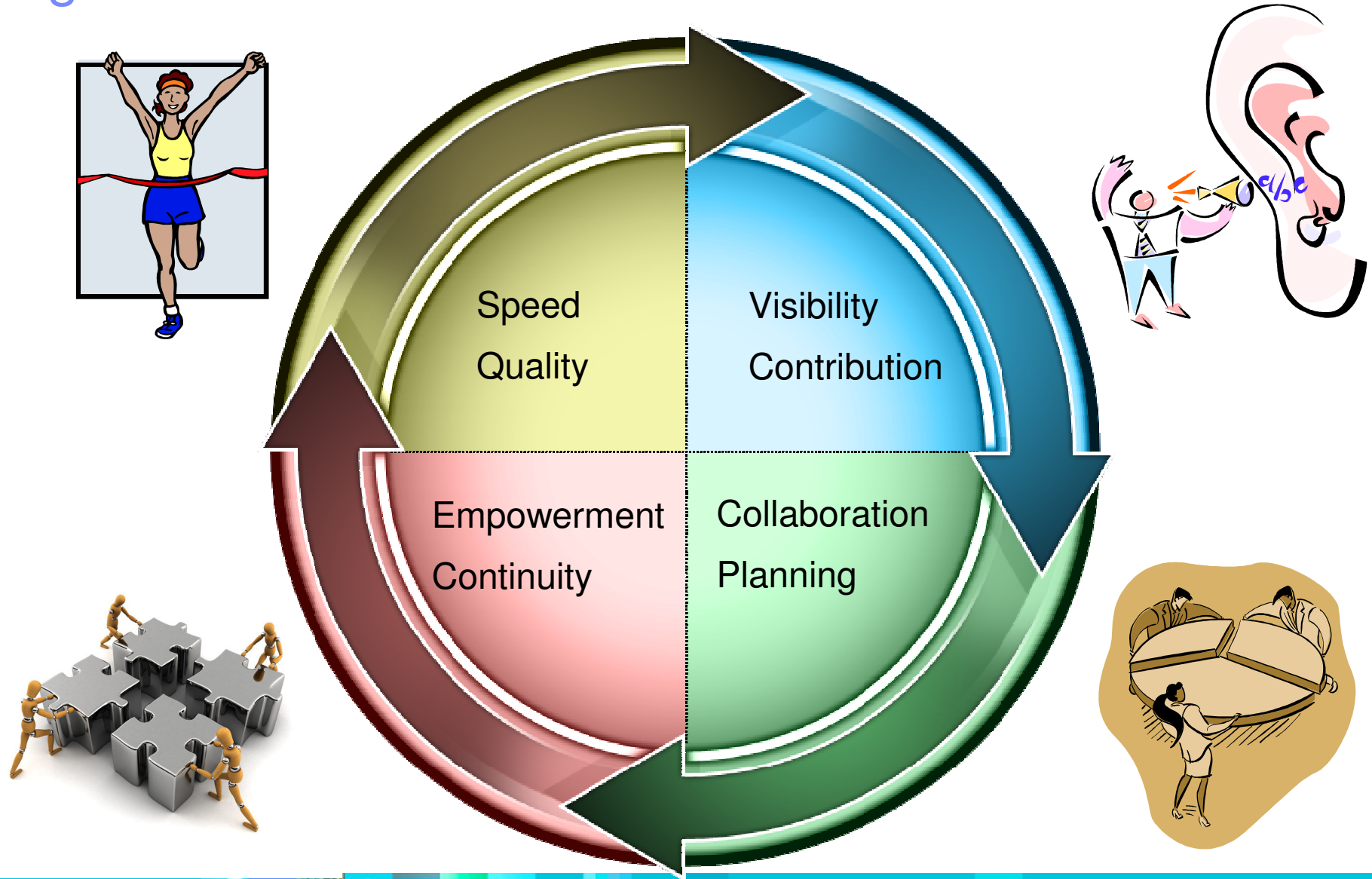
Accommodate Change

.....

Can be applied to **ANYTHING**

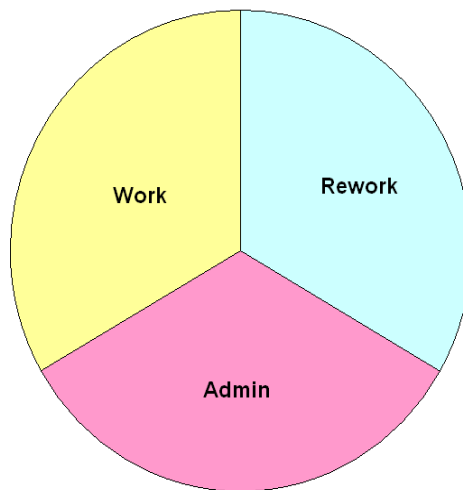


# Agile

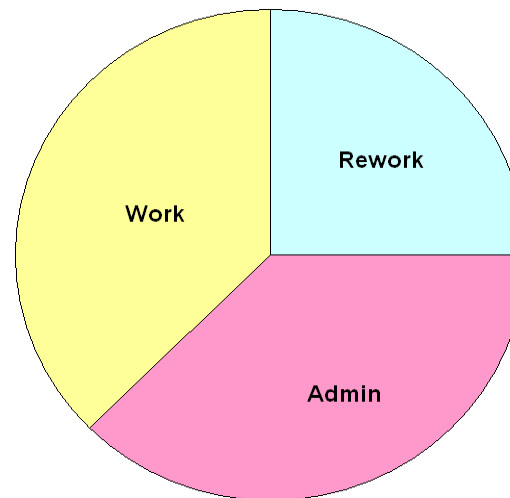


# Process Improvement

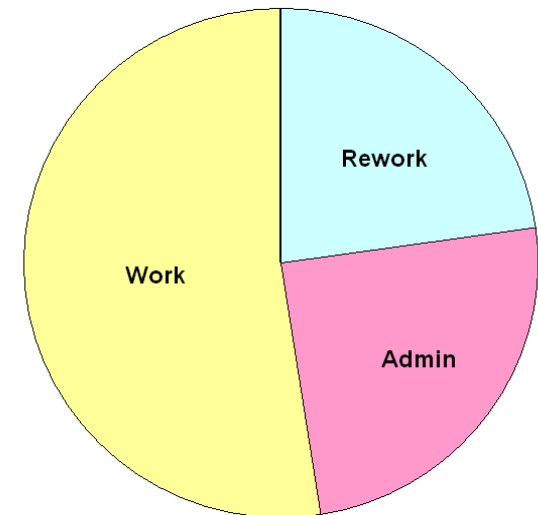
- Use Agile techniques to do iterative Process Improvement
- Use Tools and Automation to maximize the benefit
  - ▶ Enablement
  - ▶ Expert Advice and Empowerment
  - ▶ Compliance, Audit, Enforcement and Reproducibility
  - ▶ Minimize Administration



Before



No Automation



Automation





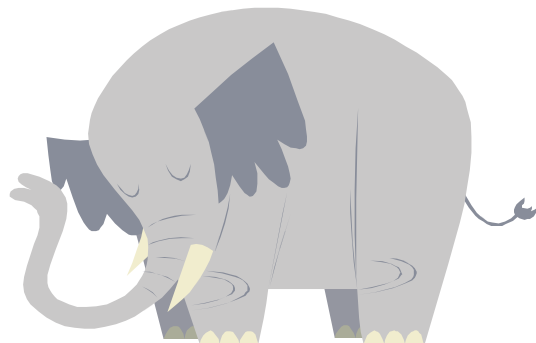
# Product Development

- In an Enterprise Environment
  - ▶ Take Guidance
  - ▶ Select Agile Techniques as appropriate
    - Collaboration
      - Stakeholder involvement
      - Visibility
      - ‘One Room’ or Co-location
      - Communication
    - Rapid Iteration
      - Task identification
      - Planning
    - Empowerment
  - ▶ Use Tooling to overcome challenges
    - Enablement
    - Location Where it is needed
    - Platform
    - Technology



# Enterprise Challenges

Size



Legacy Applications



Cost



Procedures



Separation



## Step 1 Set up the infrastructure

- Put the Automation process tooling in place
  - ▶ Maximize the benefit from process changes
  - ▶ Compliance, Audit and Traceability
  - ▶ Visibility
  - ▶ Use to overcome challenges
    - Size
    - Procedures
    - Separation
    - Cost
  
- Requirements
  - ▶ Consistent
  - ▶ Integrated
  - ▶ Flexible
  - ▶ Useable




# IBM Rational Team Concert for System z

*Software innovation through collaboration*

- **Collaborate in-context**
  - ▶ Integrated release planning and reporting, source control, document collaboration, work item, build management, chat and process guidance
- **Streamline agile development**
  - ▶ Out-of-the-box agile process configurations
- **Automate governance**
  - ▶ Assess project status and trends in real-time with web-based dashboards, metrics and reporting
- **Scale to the enterprise**
  - ▶ Supports teams ranging from a few to thousands of developers and stakeholders across platforms
- **Unify diverse teams**
  - ▶ Supports Cobol, PL/1, J2EE, .NET ...
  - ▶ Co-existence with popular toolsets

*Open and extensible on*



- ✓ Collaborate
- ✓ Automate
- ✓ Report

**IBM Rational Team Concert for System z**






transparent *integrated presence*  
 wikis OPEN real-time reporting  
 chat documents Web 2.0 *custom*  
*dashboards* automated data gathering  
**EXTENSIBILITY** *Eclipse plug-ins* services  
 architecture **FREEDOM TO CREATE**

**JAZZ TEAM SERVER**



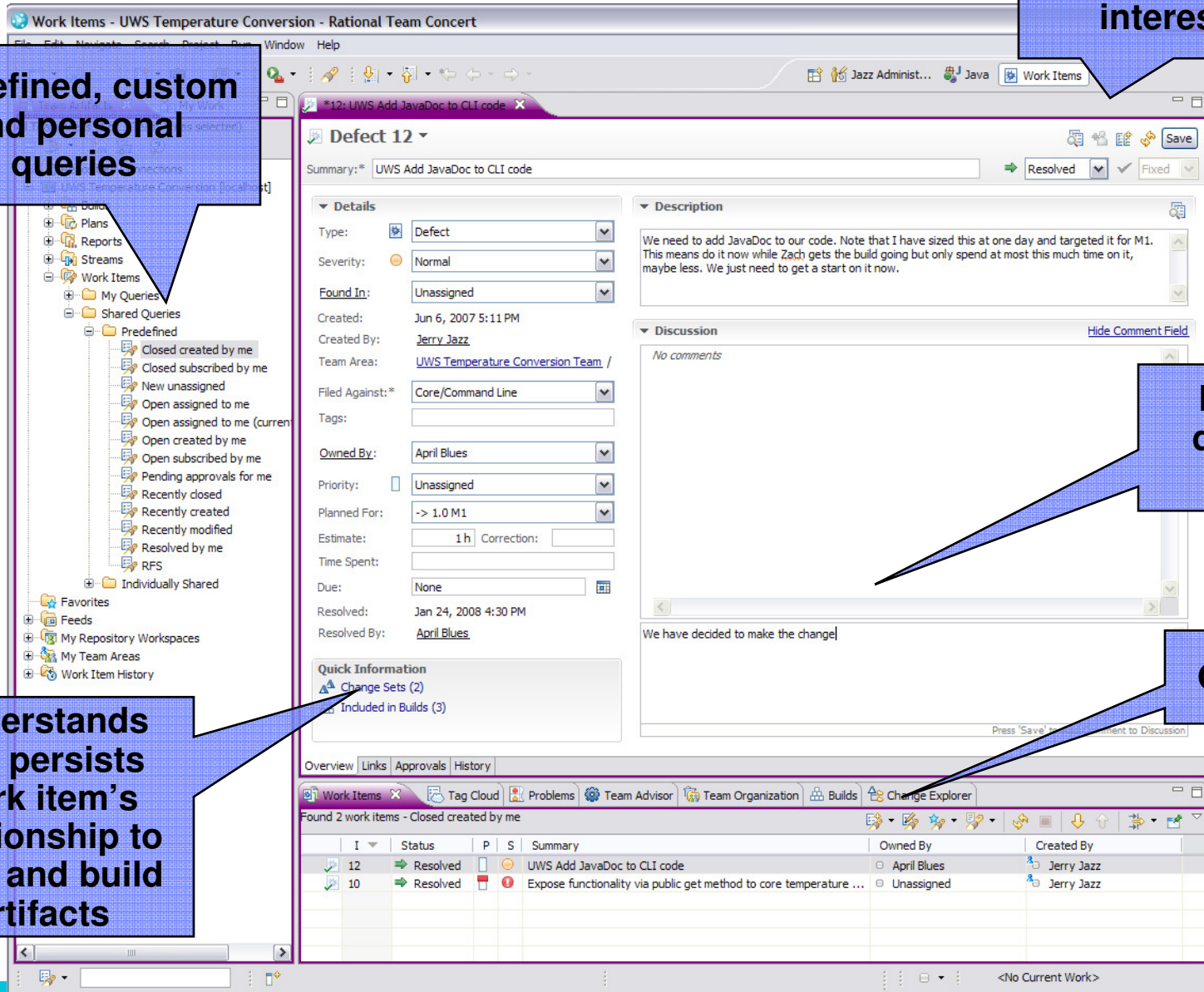
Join in on [jazz.net](http://jazz.net)



# Work items

Subscribe to work items you're interested in

Predefined, custom and personal queries



Integrated discussion threads

Query results

Understands and persists work item's relationship to SCM and build artifacts

# Iteration Planning

Understand how well you are progressing against your targets in real-time

UWS Temperature Conversion M1 Plan [1.0 M1]

UWS Temperature Conversion M1 Plan

Team Area: UWS Temperature Conversion Team | Iteration: 1.0 M1 (12/1/07 - 6/20/08) | 5 Closed | 9 Open

Owner	Task	Progress	Estimated	Time	Status	Count
April Blues	UWS Create the temperature conversion CLI package	1 / 17   -15 h	100%	2 days	Unassigned	9
Derek Holt	UWS Define permissions	0 / 8   -7 h	100%	4 hours	Unassigned	5
Jerry Jazz	UWS Define team members	0 / 4   -3 h	100%	4 hours	Unassigned	6
Zach Builder	UWS Create the core temperature conversion package	25 / 37   -10 h	100%	1 day	Unassigned	7
Zach Builder	UWS Define iterations/milestones			4 hours	Unassigned	3
Zara Intern	UWS Add JavaDoc to core temperature conversion JUnit tests	0 / 17   -16 h	100%	1 hour	Unassigned	8
Zara Intern	UWS Create the core temperature conversion package JUnit tests			2 days	Unassigned	
Unassigned	Expose functionality via public get method to core temperature conversion code	8 / 9 h		1 hour	High	

Group by: Owner

Sort By: Priority

Bars: Progress

Exclude:  Future and past items,  Resolved items

Related Work Items: Show Backlog

Drag-and-drop work items to change owners/create child parent relationships

Plan and execute iterations while managing team and individual load

# Source code management

**Integrated stream management solution**

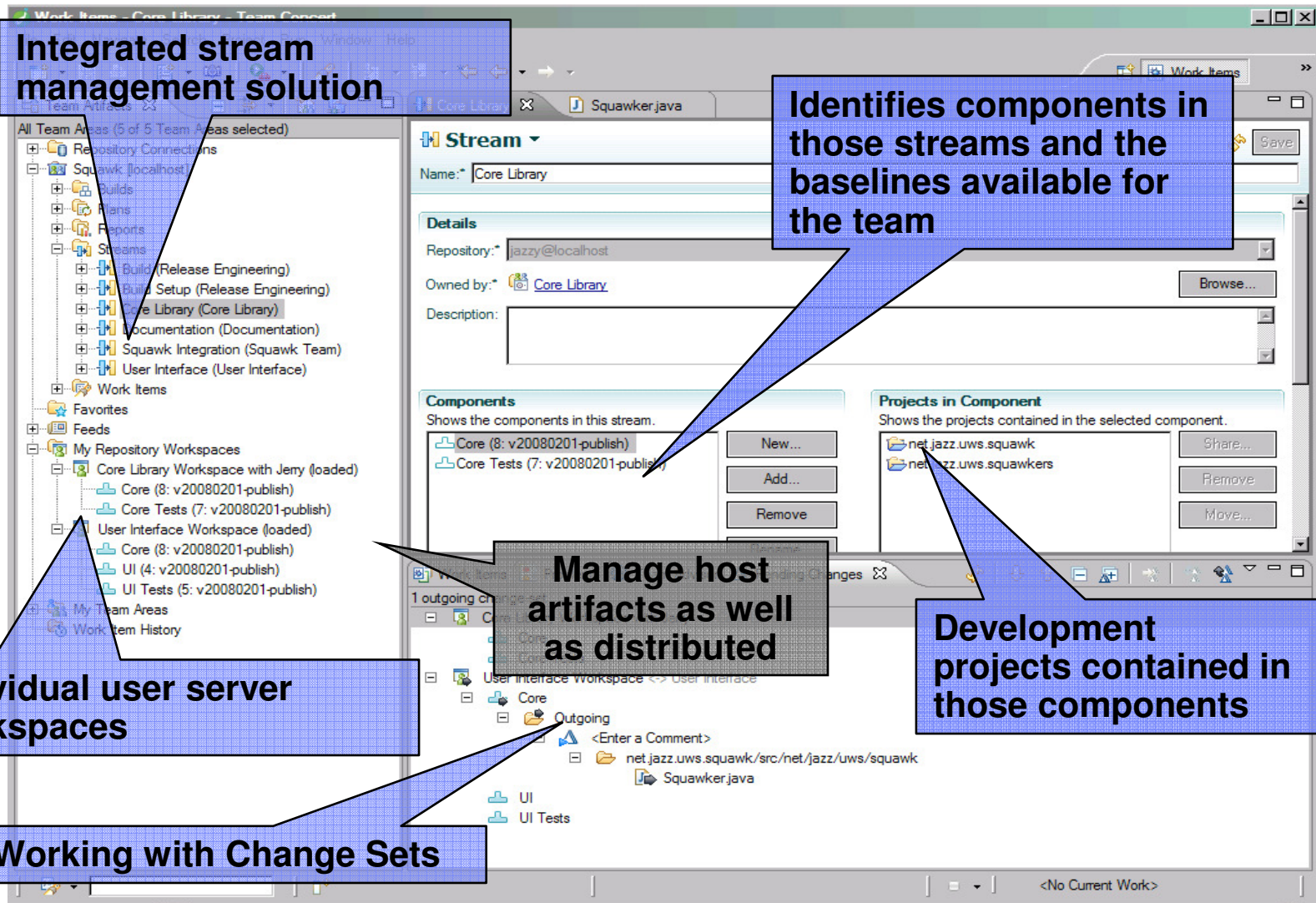
**Identifies components in those streams and the baselines available for the team**

**Individual user server workspaces**

**Manage host artifacts as well as distributed**

**Development projects contained in those components**

**Working with Change Sets**



# In-context collaboration

**Team Awareness**  
Shows team members and their online status  
Shows what they are working on

**Team Central**

- News & events
- Build status
- What's being worked on
- Changes

**Configurable (RSS feeds)**  
can be personalised

**Collaborate in Context**

The screenshot displays the IBM Rational software interface with several key components highlighted by callouts:

- Team Awareness:** A sidebar on the left shows team members (Gorkem Ercan, Litrik De Roy, Nick Boldt) and their online status. Below this, a 'My Open Work Items' section shows a bar chart with 3960 items, categorized by priority (Unassigned, Low, Medium, High).
- Team Central:** A central pane displays news and events, including a discussion thread by Julian Jones. A 'Discussion' section shows a comment from Kevin Haaland regarding a web client issue.
- Collaborate in Context:** A chat window on the right shows a conversation between Kevin Haaland and kartik@ca... regarding a story (45274). The chat window is titled 'Kevin (K.G.) Haaland' and includes a 'Chat...' button in the main interface.

The interface also features a 'Build' section at the bottom, showing build status and event logs. A context menu is visible over the 'Chat...' button, listing options like 'Send File...', 'Send Clipboard...', 'Send Mail...', 'Call...', 'Chat...', 'Subscribe to Events Generated by User', 'Add to Favorites...', 'Show Recent Events', 'Show Recent Work', 'Show Current Work', and 'Invite to Join Team...'.



# Make it Easy

## ■ In-context advice

- ▶ Information
- ▶ Explanation
- ▶ Recommendation or Solution
- ▶ Enforcement
- ▶ Customisable

### Problem






A work item must be associated with the change set or a comment must be set.

### Reason

All change sets should be associated with a work item which is planned for the current iteration.

This makes it easier for the team to track its progress through the iteration and allows other users to understand why your changes were made.

### Solutions

-  [Associate Existing Work Item](#)
-  [Associate New Work Item](#)
-  [Associate and Try Again \(experimental\)](#)
-  [Overrule 'Descriptive Change Sets' Precondition](#)
-  [Why did this happen?](#)

# Potential ROI using Team Concert for System z\*

- Team productivity increases of up to 50%
  - ✓ Improved project management
  - ✓ Leveraging remote staff
  - ✓ Improved team utilization
- Team collaboration performance up 25%
  - ✓ Transparent knowledge sharing
  - ✓ Improved task coordination between team members
  - ✓ Seamless transfer of work
- Quality of releases improves 12%
  - ✓ Reduced customer issues
  - ✓ Reduced build issues
  - ✓ Reduced risk of project failures
- Project governance improvements of 12%
  - ✓ Automated process management
  - ✓ Enforcement of best practices
  - ✓ Alignment of quality/risk with lifecycle stages

\* Based on IBM customer surveys



## Step 2 Process Improvement

- Identify and Implement Incremental Process Changes
- Enable with Integrated Development Tooling
  - ▶ In-context functionality
  - ▶ Rapid Development
  - ▶ Expert Assistance
  - ▶ Flexible
  - ▶ Extendible
  - ▶ Use to overcome Challenges
    - Cost
    - Skill Shortage
    - Size
    - Legacy Applications
    - Procedures



# Rational Developer for System z (RDz)

## ▶ What is RDz

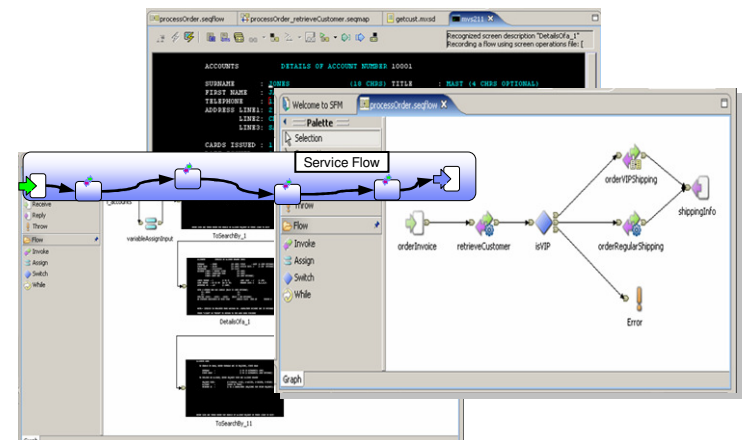
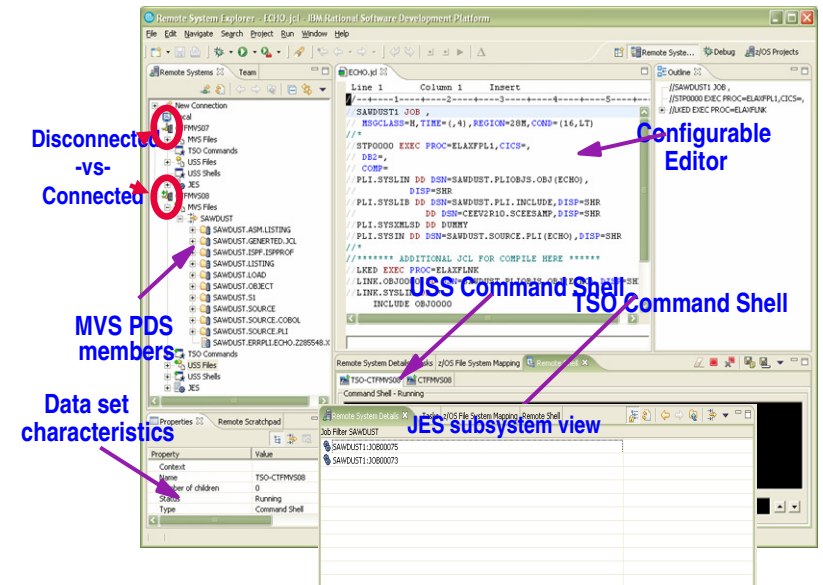
- Eclipse-based IDE speeding modern composite (SOA) application development

## ▶ RDz supports Enterprise Modernization

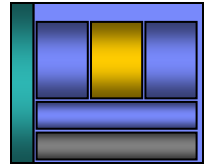
- Links WAS and core system z processing
- Supports common IDE for COBOL, PL/I, C, C++, HLASM, Java, EGL and web services
- Transforms UML to COBOL source code
- Provides interactive access to z/OS for development, debug, job generation, submission, monitoring, command execution
- Supports new and existing runtimes (CICS, IMS, Batch, USS, DB2 SP, WAS)

## ▶ RDz supports SOA

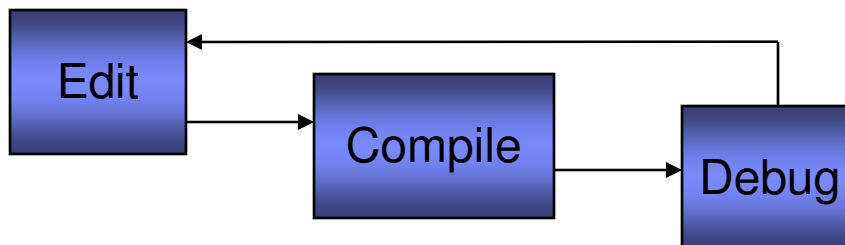
- Enables CICS and IMS applications for web services and SOA
- Supports for J2EE, JCA, XML, web services



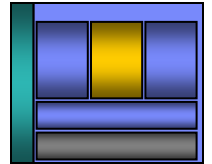
## Reduce application maintenance time and cost...



- Work with existing host resources in a workstation environment
- Integrate development with change management
- Experience productivity gains with modern development tools
  - ▶ Quickly perform daily tasks with embedded code insight
  - ▶ Generate code for faster application development
  - ▶ Automatically identify code quality problems
- Ensure proper governance of application development



## RDz improves z/OS application development



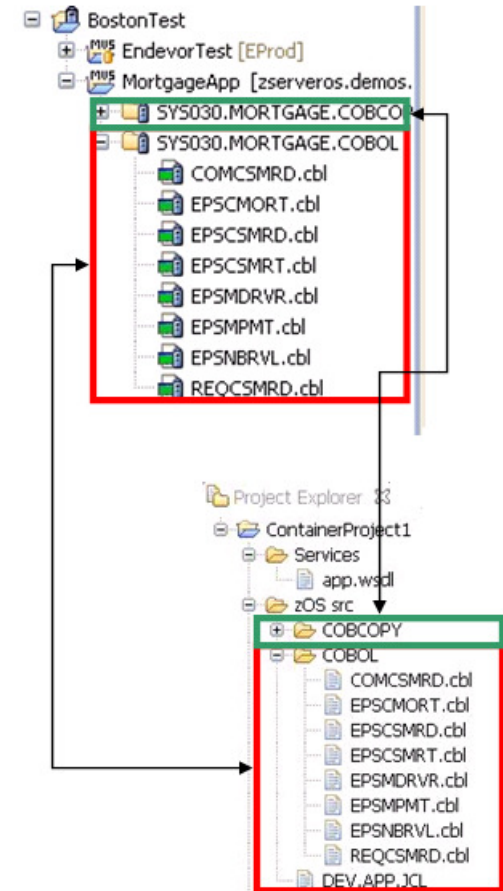
- Modern UI for z/OS developers **reduces training costs**, more attractive to younger developers
  - ▶ Windows Explorer-like feel simplifies interaction with z/OS
    - Point and click to allocate, copy, move z/OS files and datasets
- Eclipse-based open source IDE **increases productivity**
  - ▶ Enables more relevant information to be readily available
  - ▶ Specialized editors and code generation wizards speed development
    - Code assist for COBOL, PL/I, C/C++, Visual editors for BMS and MFS maps
    - Generate code from UML
- Workstation syntax checking **reduces host CPU usage**
  - ▶ Fewer COBOL and PL/I program compiles required on z/OS
- Integrated business development language **reduces training costs** and **increases productivity**
  - ▶ EGL lowers skill requirements for Web 2.0 development and multiplatform development

Benefits: Productivity, higher quality code, reduced training, MIPS offload

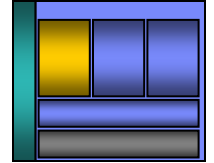


# RTCz integration with RDz

- In-Context
  - ▶ Power where you need it
- Collaboration with Distributed Development teams
  - ▶ Breaks location, platform and technology barriers
- Common appearance



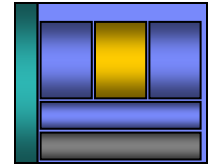
# Tooling integration using the Eclipse IDE



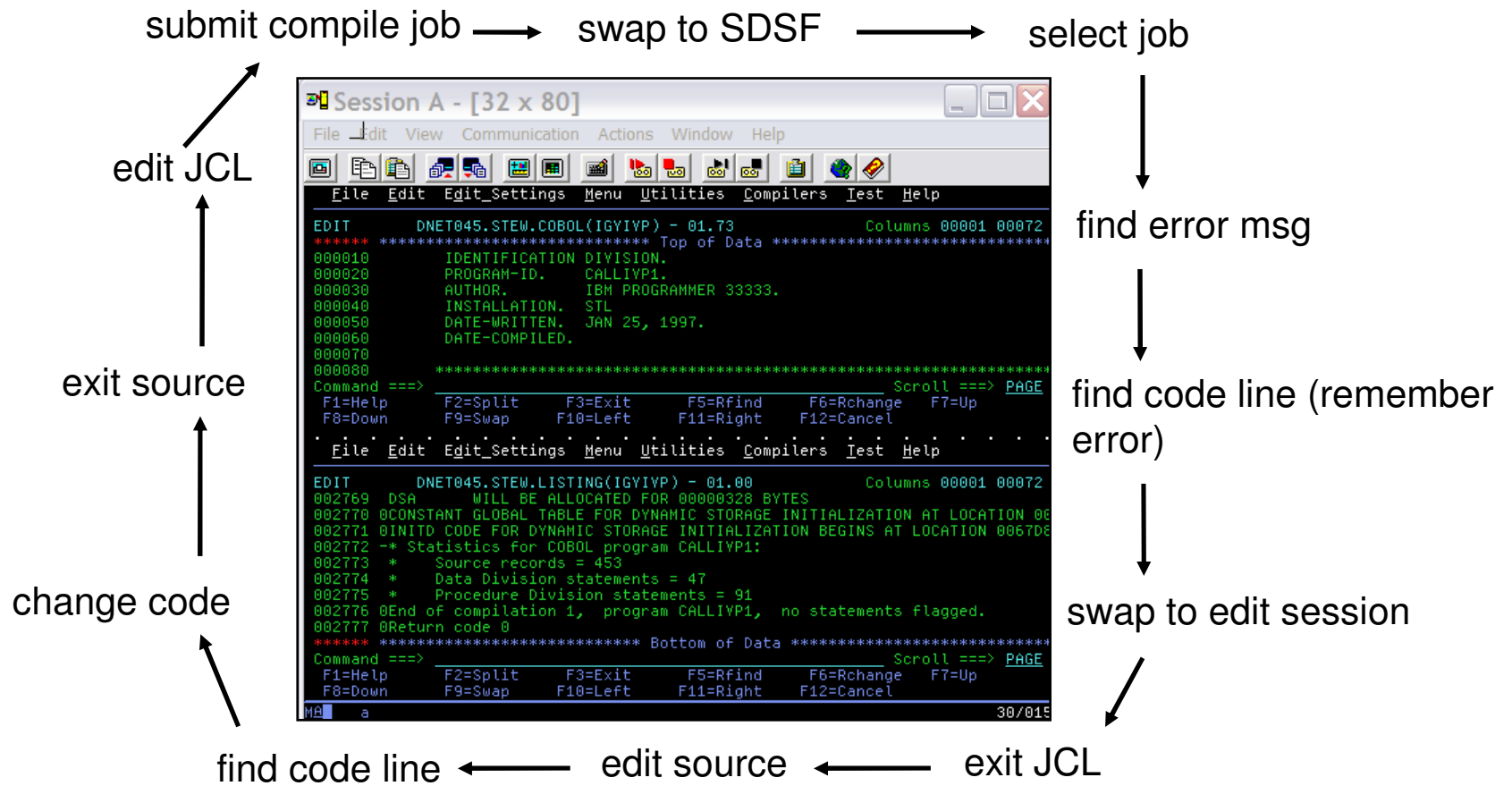
- Increased productivity and higher code quality using:
  - ▶ WebSphere Test Environment
  - ▶ Web Services Explorer
  - ▶ Data Explorer
  
- Extend and specialize the development experience for additional productivity, code quality, and risk reduction with:
  - ▶ Rational Asset Analyzer
  - ▶ CICS Interdependency Analyzer, Performance Analyzer, Configuration Manager
  - ▶ Build Forge
  - ▶ IBM Problem Determination Tool Suite for z/OS



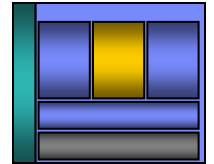
# ISPF 3270-based development



- Limited screen content requires multiple screen switching
- Lack of productivity aids requires more developer effort



# RDz Eclipse-based development



- More information readily available to the developer
- Productivity aids simplify and eliminate developer tasks
- Local syntax checking eliminates host compile MIPS

Open and edit multiple source and JCL members simultaneously

The screenshot shows the IBM Rational IDE interface. The main editor window displays a COBOL source file named REGIOA.cbl. The code includes a DISPLAY statement with a typo: "DISPLAI". A red box highlights this line, and an arrow points to it from the text "Statement in error indicated in source". Another red box highlights the editor title bar, with an arrow pointing to "Edit Source". A third red box highlights the project browser on the left, with an arrow pointing to "Syntax Check".

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

Outline view presents COBOL structure

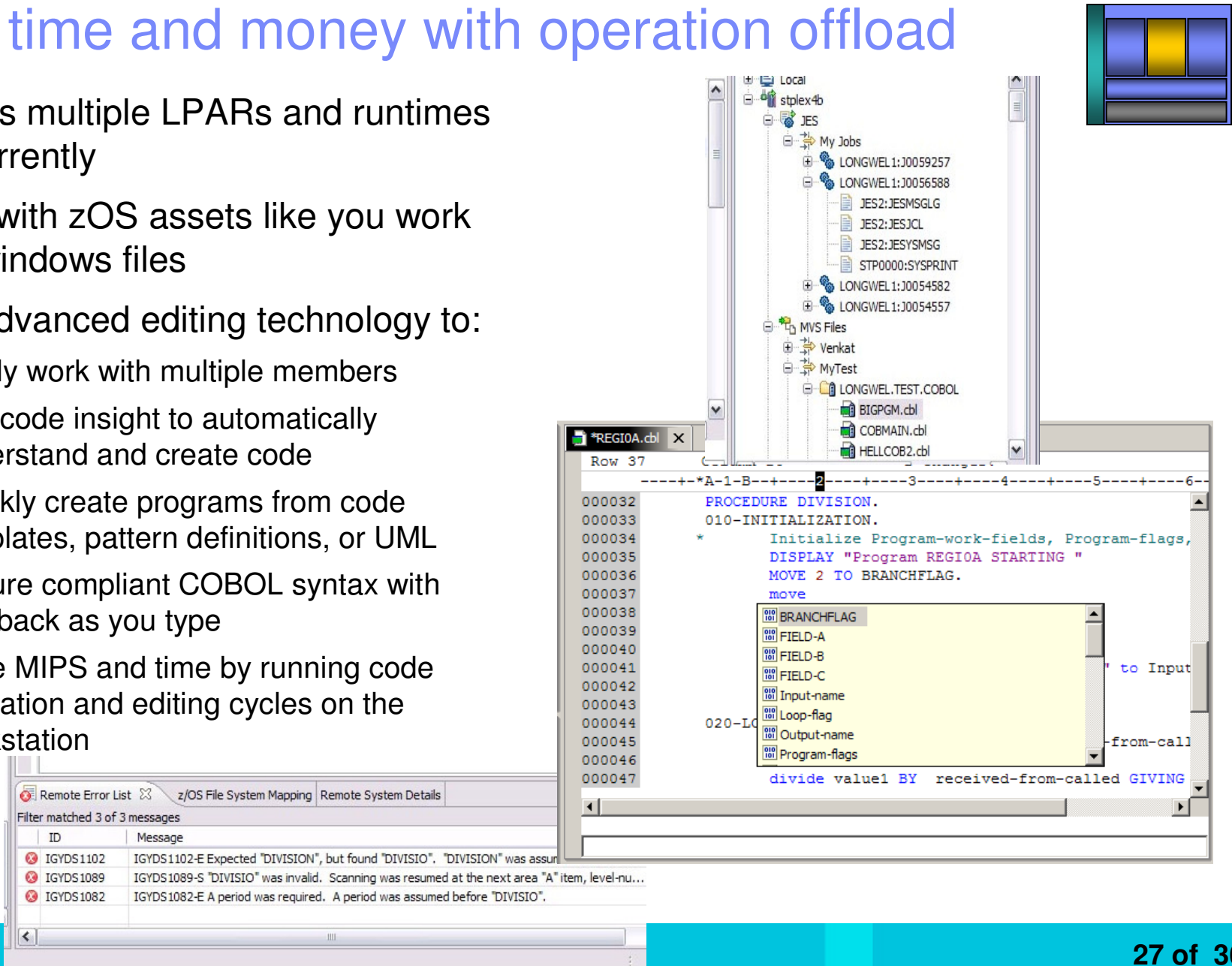
Double-Click on the Error

Error list in Problems view

Statement in error indicated in source

# Save time and money with operation offload

- Access multiple LPARs and runtimes concurrently
- Work with zOS assets like you work with windows files
- Use advanced editing technology to:
  - ▶ Easily work with multiple members
  - ▶ Use code insight to automatically understand and create code
  - ▶ Quickly create programs from code templates, pattern definitions, or UML
  - ▶ Ensure compliant COBOL syntax with feedback as you type
  - ▶ Save MIPS and time by running code validation and editing cycles on the workstation



The screenshot displays the IBM Rational software interface. At the top right, there is a small icon representing a window or application. The main interface is divided into several panes:

- Project Tree (Top Left):** Shows a hierarchical view of the project structure, including folders like 'Local', 'stplex4b', 'JES', 'My Jobs', 'MVS Files', and 'Venkat'. It lists various files and subfolders, such as 'LONGWEL 1:J0059257', 'JES2:JESMSG', 'JES2:JESJCL', 'JES2:JESYSMSG', 'STP0000:SYSPRINT', 'LONGWEL 1:J0054582', 'LONGWEL 1:J0054557', 'MyTest', 'LONGWEL.TEST.COBOL', 'BIGPGM.cbl', 'COBMAIN.cbl', and 'HELLCOB2.cbl'.
- Code Editor (Center):** Displays the source code for a COBOL program named '\*REGIOA.cbl'. The code is shown in a monospaced font with syntax highlighting. The visible code includes:
 

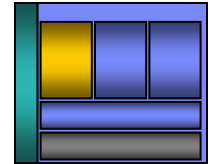
```

000032      PROCEDURE DIVISION.
000033          010-INITIALIZATION.
000034              *      Initialize Program-work-fields, Program-flags,
000035                  DISPLAY "Program REGIOA STARTING "
000036                  MOVE 2 TO BRANCHFLAG.
000037              move
000038          020-LOCAL-DECLARATIONS.
000039              BRANCHFLAG
000040              FIELD-A
000041              FIELD-B
000042              FIELD-C
000043              Input-name
000044              Loop-flag
000045              Output-name
000046              Program-flags
000047
000048              divide value1 BY received-from-called GIVING
      
```

 A yellow tooltip is visible over the 'FIELD-A' entry, showing its data type as '010' and '010'.
- Remote Error List (Bottom Left):** A table showing error messages from a remote system. The table has columns for 'ID' and 'Message'.
 

ID	Message
IGYDS1102	IGYDS1102-E Expected "DIVISION", but found "DIVISIO". "DIVISION" was assumed.
IGYDS1089	IGYDS1089-S "DIVISIO" was invalid. Scanning was resumed at the next area "A" item, level-number...
IGYDS1082	IGYDS1082-E A period was required. A period was assumed before "DIVISIO".

## Save time with integrated tools ...



- Take advantage of the Eclipse environment to gain access to a wider variety of data and functionality
- Create or install third-party Eclipse plug-ins to extend and specialize the development experience
- Work with the IBM Problem Determination tools from the RDz environment
  - ▶ Debug Tool
  - ▶ File Manager
  - ▶ Fault Analyzer





# Innovative Debugging using Collaboration

- Collaborative debug with RDz and IBM Debug Tool via the Rational Team Concert Server!
  - ▶ Share breakpoints and monitors with other team members
  - ▶ Transfer debug session control to other users
  - ▶ Save debugging sessions for later retrieval in the team environment
  - ▶ Works for WAS (JEE) and System z applications

The screenshot displays the Rational Team Concert (RTC) interface. At the top, an "Incoming Debug Session" dialog box asks, "Do you want to accept debug session, TransferDemo, from Jack B?". Below the question are two options: "Import breakpoints" and "Overwrite breakpoints", both with unchecked checkboxes. "Yes" and "No" buttons are at the bottom right of the dialog.

Below the dialog is a tree view of "All Team Areas (No Project Areas connected)". The tree shows a "Repository Connections" folder containing "jackb@bungee". Underneath is a "Debug" folder containing "Search Team Debug Sessions", "Started by Me...", "My Current Debug Sessions...", and "Parked Debug Sessions...". Other folders include "Favorites", "Feeds", and "My Repository".

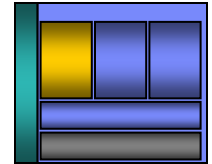
On the right side, a chat window is open. It shows a header for "Jack B" with the status "I am @ work" and the IBM logo. A message from "Kelly C" is visible: "I debugged the session up until the XSL transformation, please continue..." with a timestamp of 6:35:21 PM. Below it is a message from "[Team]" with a timestamp of 6:35:57 PM, containing a link: "[WebSphere Application Server v7.0 at localhost](#)".

At the bottom, a "Team Debug" window shows a table of debug sessions. The table has columns: "Debug Session", "Host", "Debug Target", "Team Repository", "Started by", "Debugged by", and "Started at". One session is listed: "TransferDemo" on host "justinko.torolab.ibm.com", debug target "VM [justinko.torolab.ibm....", repository "https://bungee:9443/jazz/", started by "jackb", and debugged by "kellyc".

Debug Session	Host	Debug Target	Team Repository	Started by	Debugged by	Started at
TransferDemo	justinko.torolab.ibm.com	VM [justinko.torolab.ibm....	https://bungee:9443/jazz/	jackb	kellyc	Mon Sep 22 16:59:21 ED...

## Access host-resident data

- Allows for a formatted edit session of many dataset types. Among the options are:
  - ▶ VSAM - KSDS, ESDS, RRDS, VRRDS
  - ▶ QSAM – PDS, SDS
- Multiple views of the data within the formatted edit session:
  - ▶ Table
  - ▶ Single Character
- Browse and alter VSAM data easily without having to leave your development environment
- Apply different views of data using copybooks as a template
- Issue utility commands for copying, sub-setting, and searching data from right-click menus
- Requires IBM File Manager



Process Options Help

Edit SKOONCE.FMI.DATA (DATA) Rec 0 of 46

Command ==> Col 1 Insert length 80 Scroll PAGE Format CHAR

```

000000 **** Top of data ****
=LGTH 1Grant Smith 771235 75000 6
=LGTH 1Andrew Apple 664553 78500 30
=LGTH 1Graham Prescott558328 48000 7
-----1-----2-----3-----4-----5-----6-----7-----
=LGTH 1Bill Somers 441833 68000 5
-----
SUPRECORD ----- 15 Line(s) excluded
-----
=LGTH 1Ted Dexter 332752 60250 14
-----
000047 **** End of data ****
  
```

Template Associated: SKOONCE.FMI.TEMPLATE(CRA390) HEX On

Name	Employee Number	Age	Salary	Month
Grant Smith	771235	7	5000	6
Andrew Apple	664553	7	8500	30
Graham Prescott	558328	4	8000	7
15 records excluded				
Bill Somers	441833	6	8000	5
24 records not selected				
2 records suppressed				
Ted Dexter	332752	6	0250	14

Single Mode  
Record 4 of 10, Top Line is 1 of 2

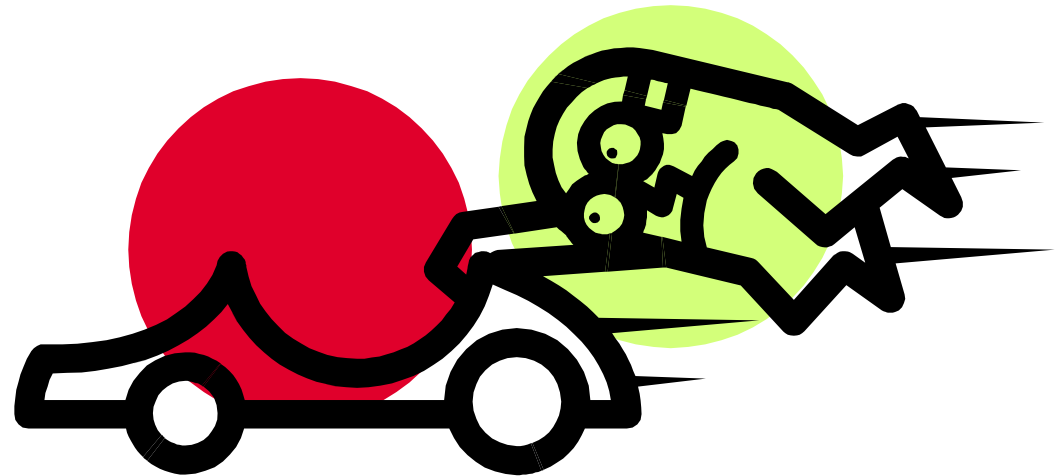
Field	Data
Name	Bill Somers
Employee Num...	441833
Age	6
Salary	8000
Month	5

Single Mode allows you to edit a particular record that is selected from the Table above. You can also move up and down records in the Table by selecting each arrow button to the right.

Table / Single Character

# Make Agile work for you in your Enterprise

- Take Control
- Be selective
- Empowerment



- Iterative Improvement
- Embrace CHANGE
- Collaborate & Communicate



# Enterprise Modernization solutions

*Lowering the total cost of application development and delivery*



**Modernize Applications**



**Empower People**



**Unify Teams**



**Optimize Infrastructure**

- Increase flexibility by revitalizing existing application portfolio
- Boost productivity and accelerate innovation with modern skills
- Maximize organizational agility by bridging development silos
- Defer capital expense by optimizing application infrastructure



**Rational Software Delivery Platform**



## Find out more

- To learn more about Rational Developer for System z visit [ibm.com](http://www.ibm.com) at
  - ▶ <http://www-01.ibm.com/software/awdtools/rdz>
  
- To learn more about Rational Team Concert for System z visit [jazz.net](http://jazz.net) at
  - ▶ <https://jazz.net/projects/rational-team-concert-z>
  
- Articles on IBM developerWorks
  - ▶ <http://www.ibm.com/developerworks/rational/library/09/rationalteamconcertsystemzjazz1>
  - ▶ <http://www.ibm.com/developerworks/rational/library/09/rationalteamconcertsystemzjazz2>
  - ▶ <http://www.ibm.com/developerworks/rational/library/09/rationalteamconcertforsystemz>





# QUESTIONS



THANK YOU

