



Enterprise Modernisation

The System Z and Power view to Mobile

The CIO's perspective



Keith Allen

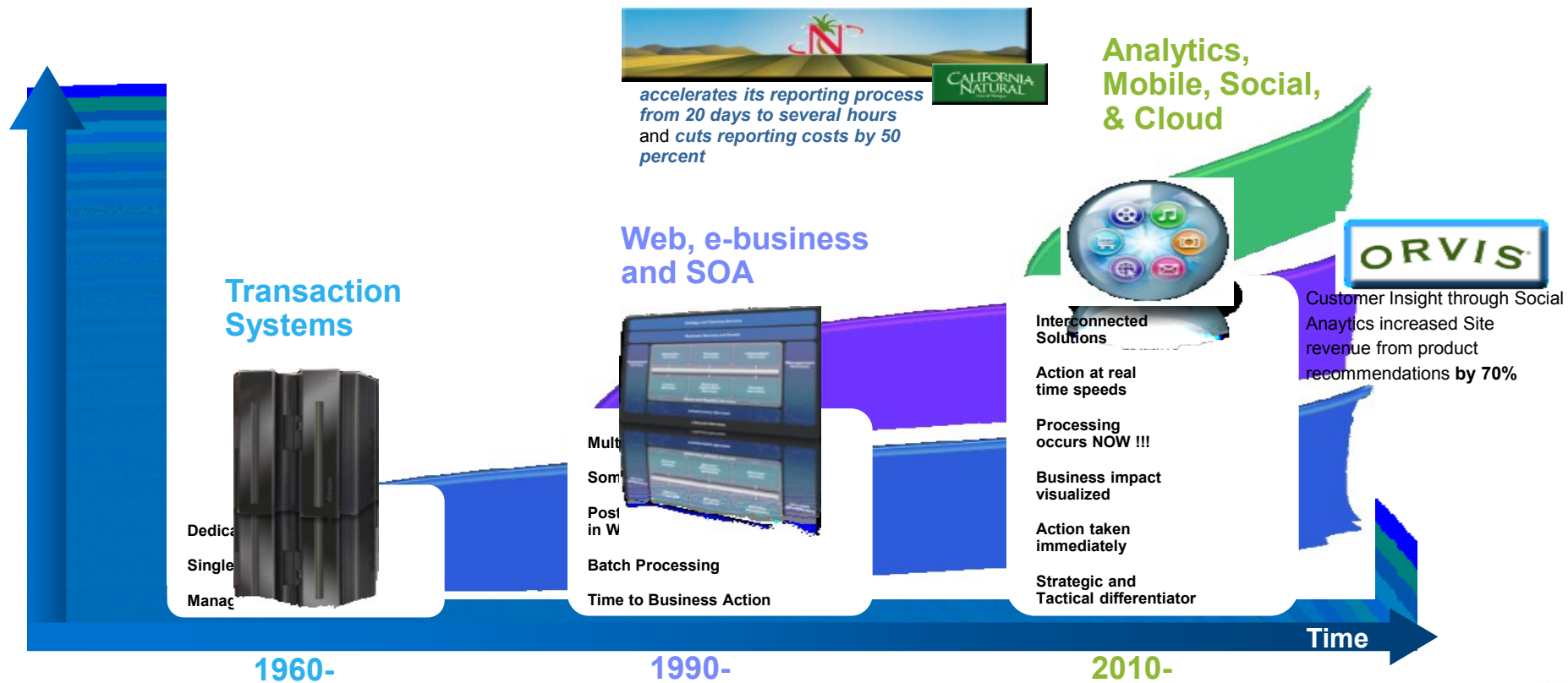
European Domain Lead – Enterprise Modernisation

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Innovate2013

The IBM Technical Summit

A new wave of business opportunities & IT challenges



accelerates its reporting process from 20 days to several hours and cuts reporting costs by 50 percent

New era systems integrate existing systems of record with new client-facing systems of engagement



Software delivery is critical to success



of companies believe software delivery is critical

But only...



leverage software delivery effectively today



And a lack of continuous delivery impacts the entire business

CHALLENGES

Costly, error prone manual processes and efforts to deliver software across an enterprise

Slow deployment to development and test environments leave teams **waiting and unproductive**

Upgrade risk due to managing multiple application configurations and versions across servers

Customers



Business Owners



Development/
Test



Operations/
Production



Software glitch costs major trading firm **\$440 million in 45 minutes**

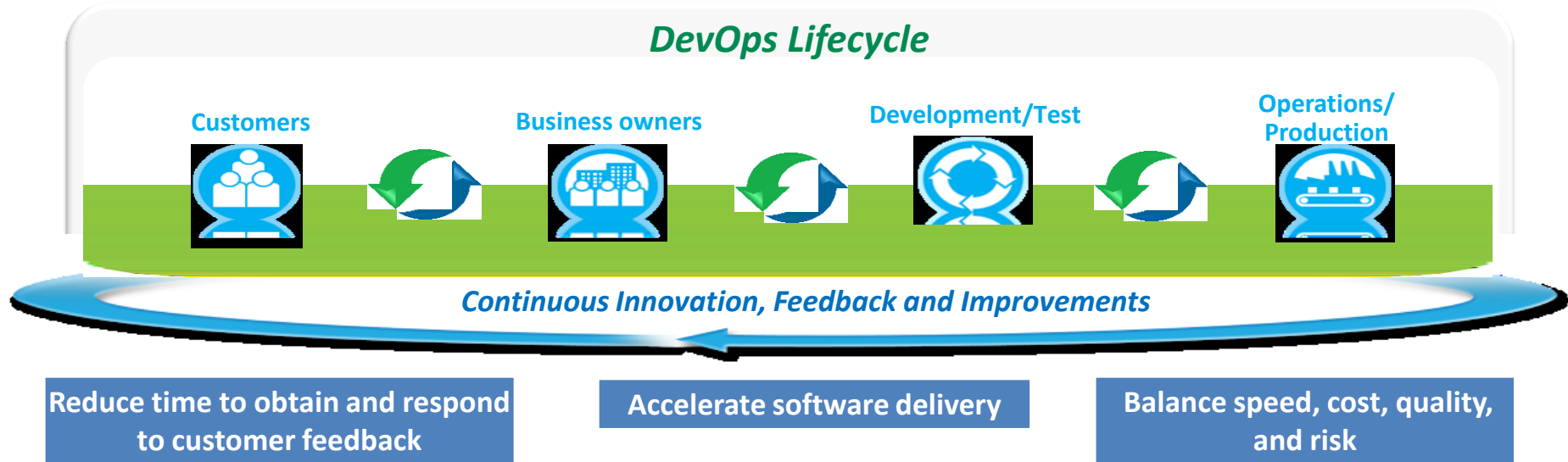
Major telecom provider paid out **\$2.7 million to 47,000 customers** overcharged after a software glitch

A bad software upgrade at a global bank left **millions unable to access money for four days**

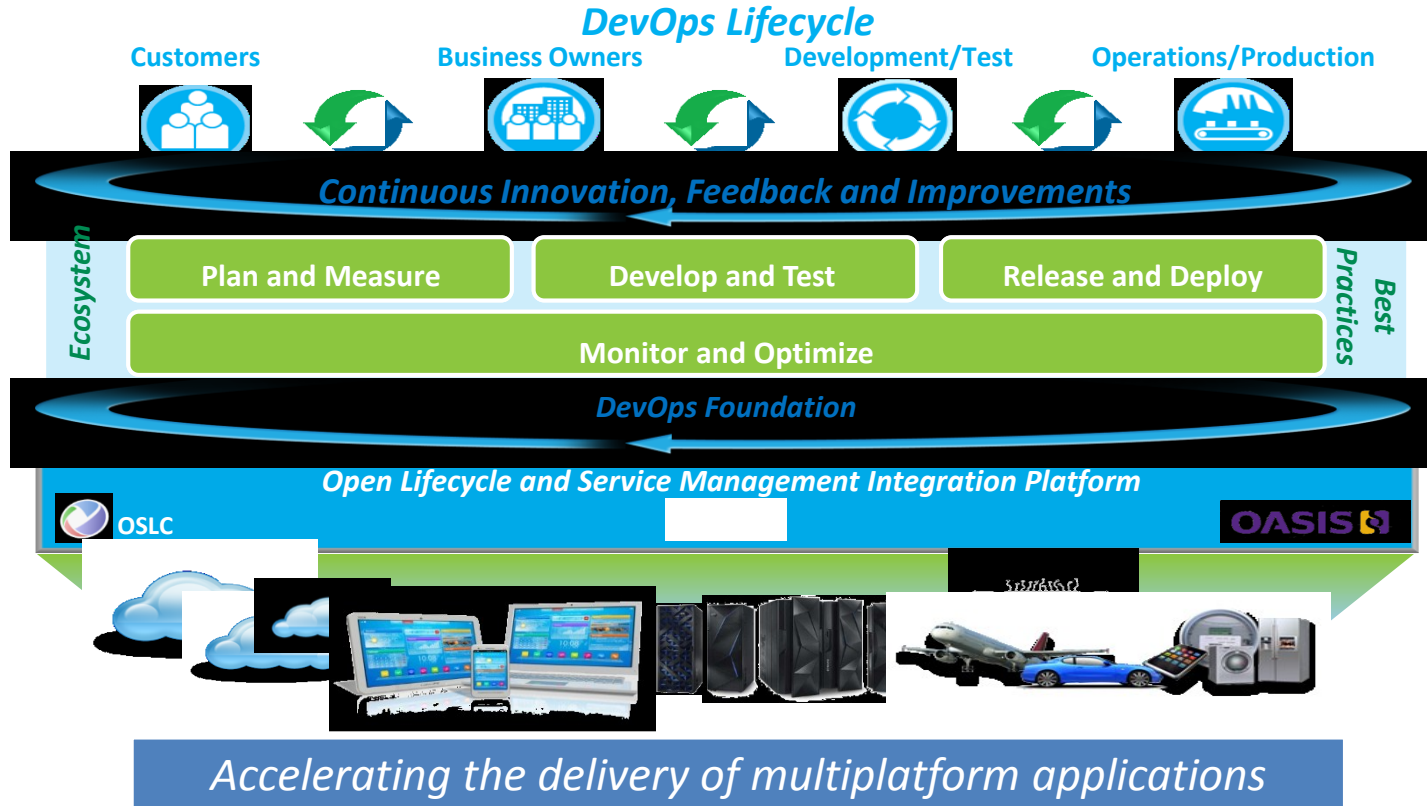
An approach for continuous delivery of software-driven innovation

dev·ops *noun* \ˈdev-äps\

Enterprise capability for continuous software delivery that enables clients to seize market opportunities and reduce time to customer feedback

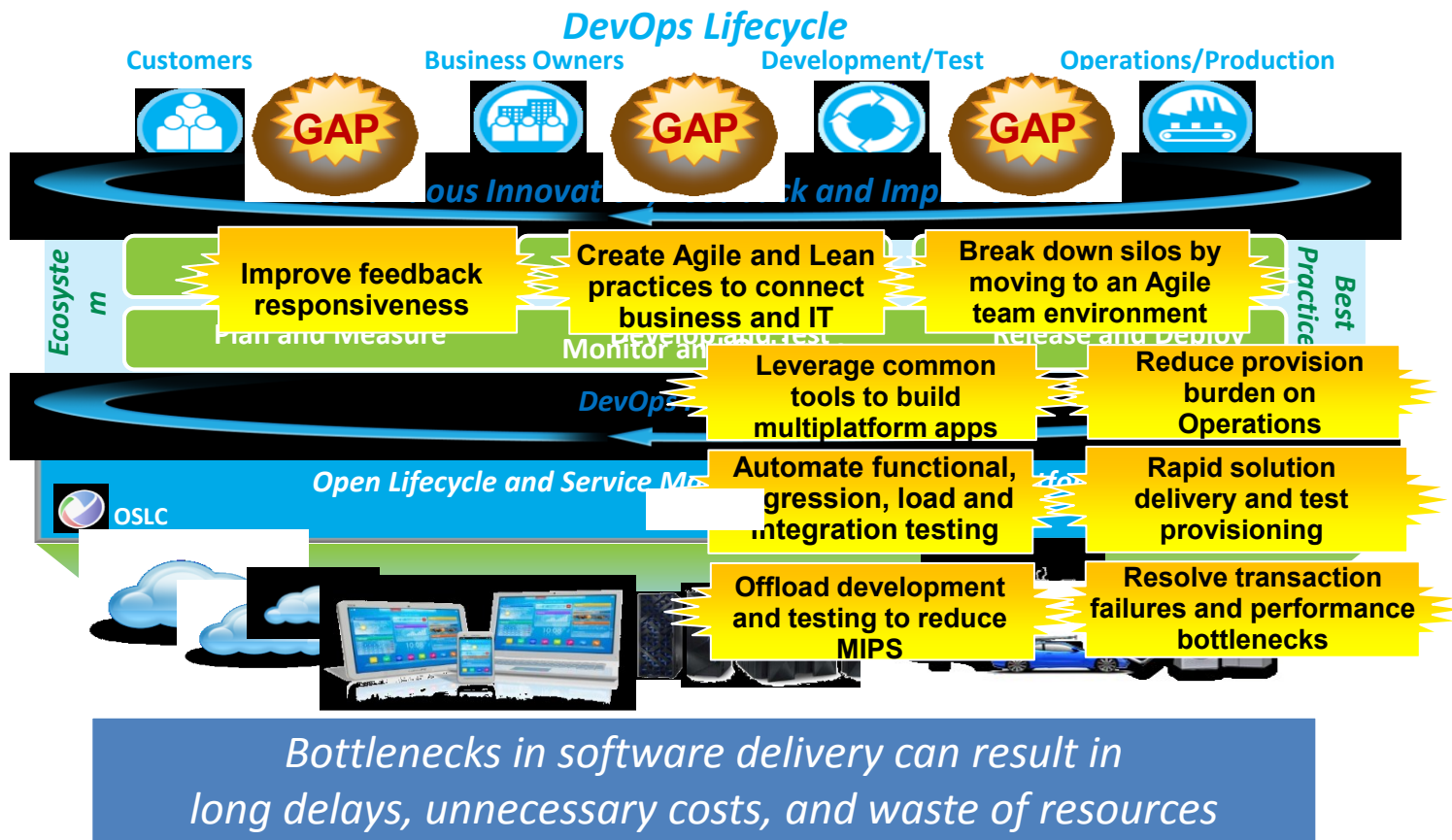


IBM DevOps solution



Accelerating the delivery of multiplatform applications

DevOps in a multiplatform development environment

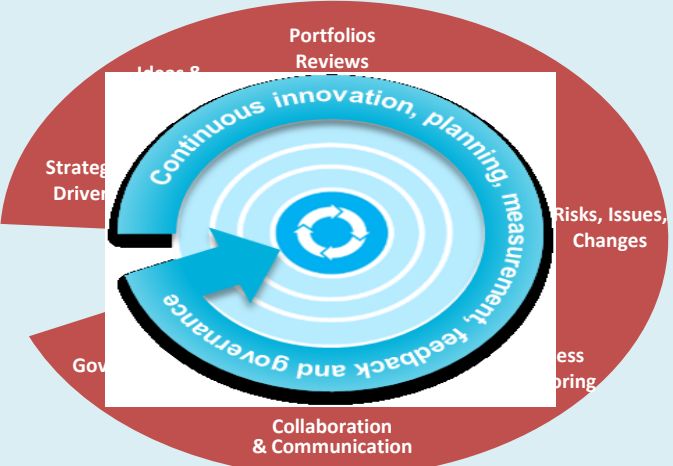




Create Agile and Lean practices to connect business and IT



Improve visibility and transparency



Rational Focal Point

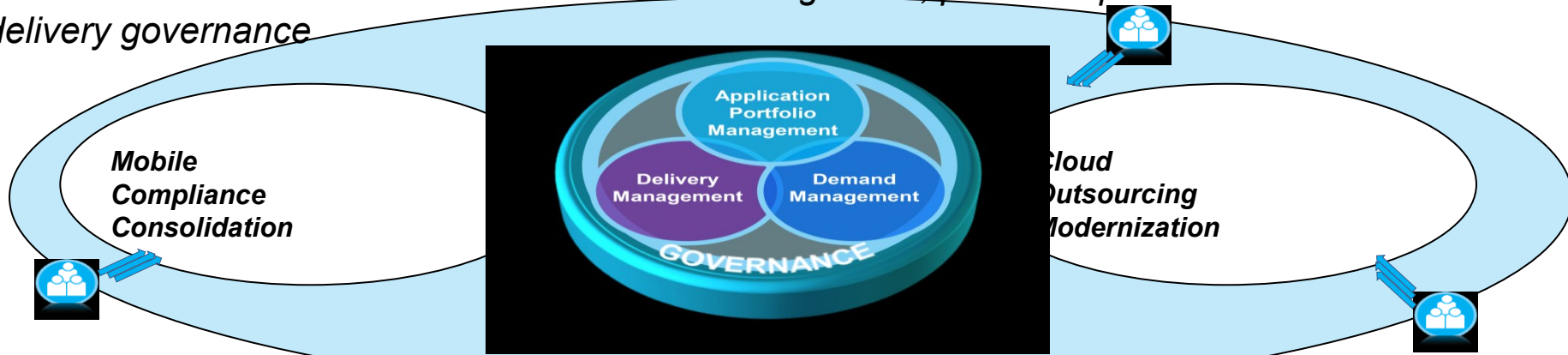
Enabling you to...

- Better align investment decisions with value and organizational strategies and priorities
- Plan releases predictably driven by the needs of the business
- Gain control of development initiatives by improving visibility and transparency
- Provide proactive portfolio evolution and delivery governance



Portfolio Strategy and Management

Increase business value with better LOB and IT alignment, proactive portfolio evolution and delivery governance

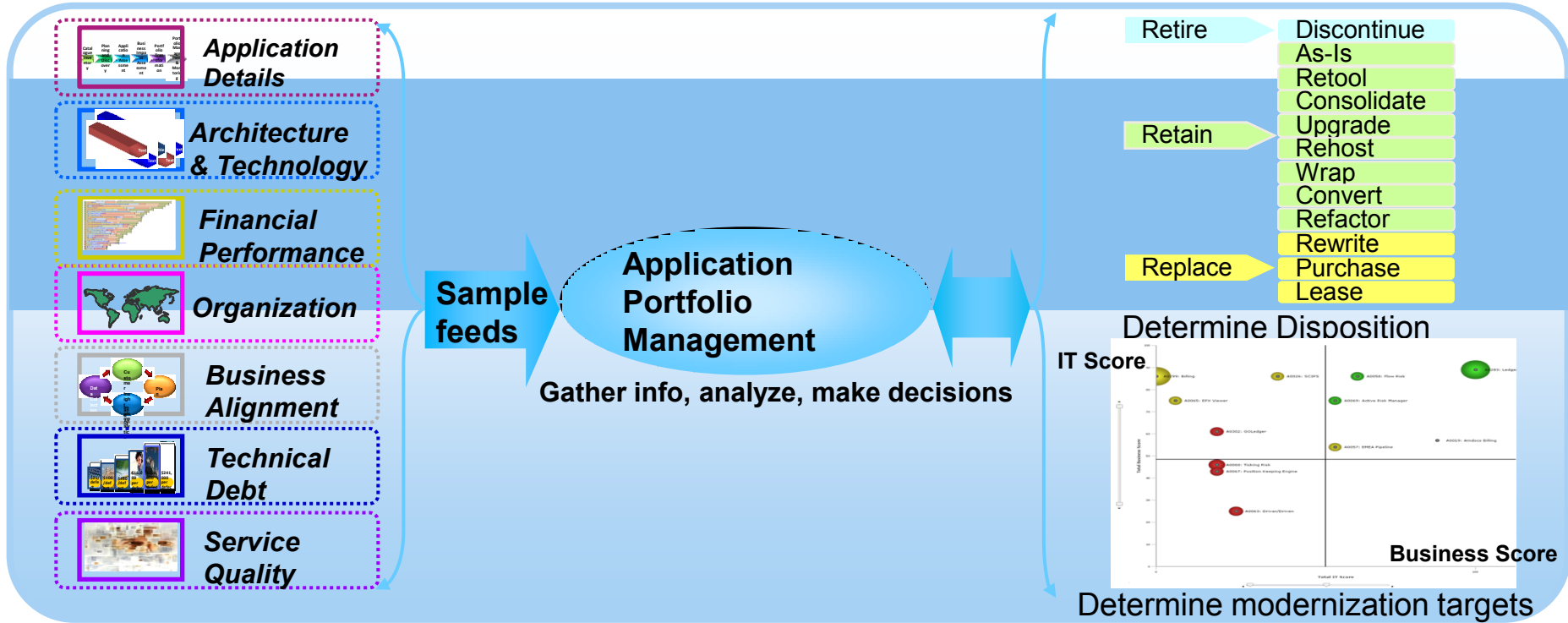


1. **Application Portfolio Management:** Continuous assessment to improve agility and identify savings that can be targeted towards innovation
2. **Demand Management:** Prioritize business needs and proposals, determine sourcing choice, and align with strategy to maximize value
3. **Delivery Management:** Govern project delivery involving the business, development and operations, track status and manage change

- Rational Focal™ Point 6.5.2
- Rational System Architect 11.4.2
- Rational Requirements Composer 4.0.2
- Rational Team Concert™ 4.0.2

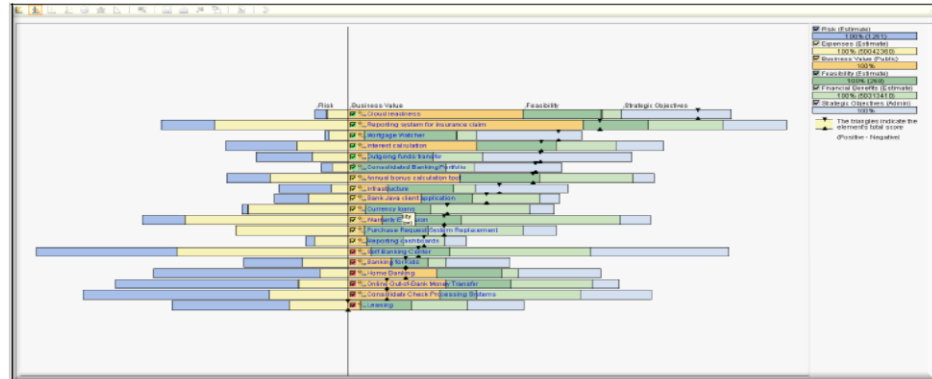
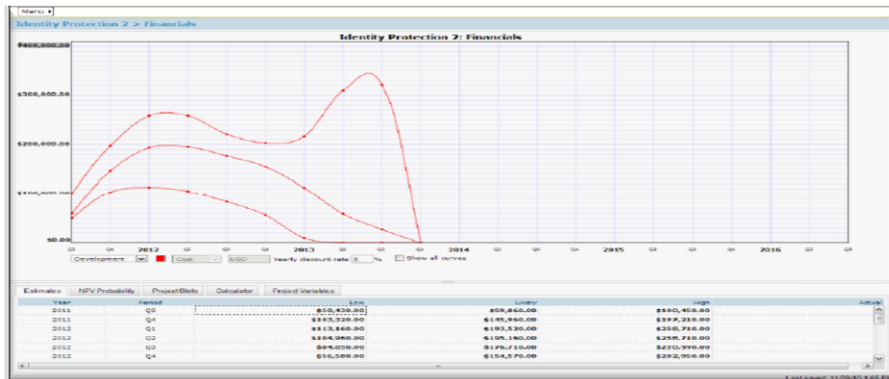
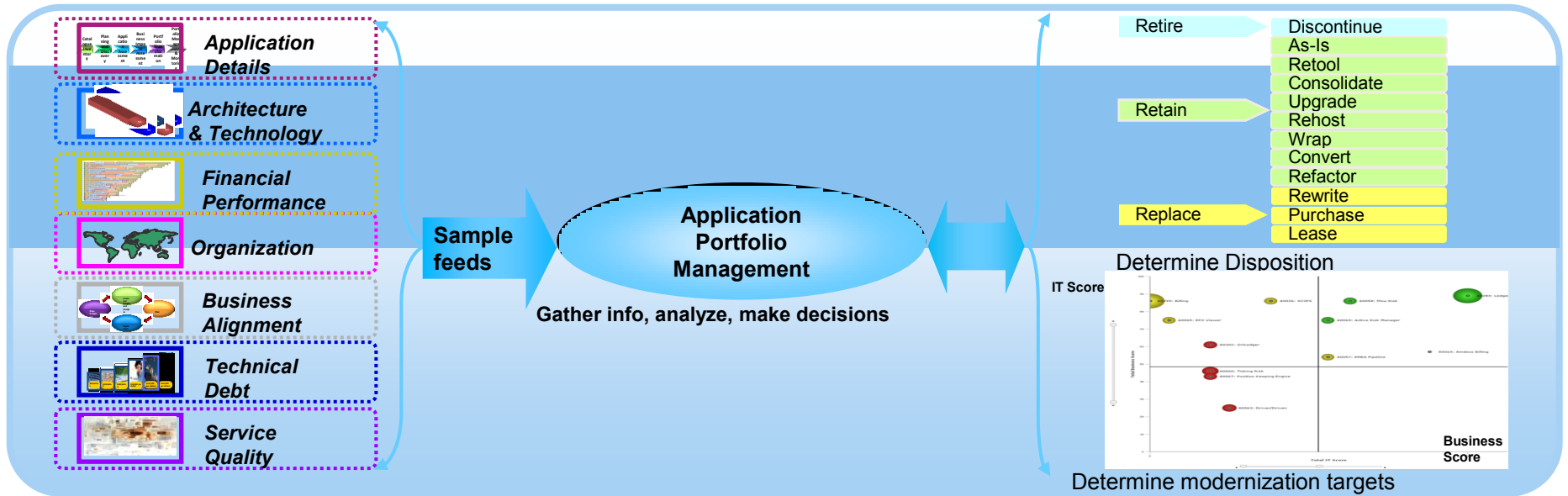
Application Portfolio Management

Proactively manage application portfolio evolution



“APM and associated application revitalization has enabled IBM’s IT to cut maintenance costs by 20% and defects by 58%.”

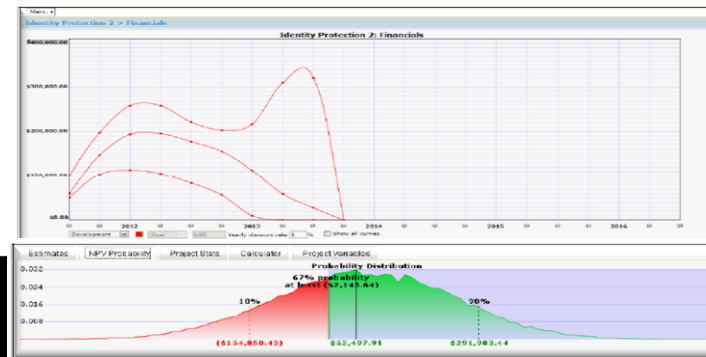
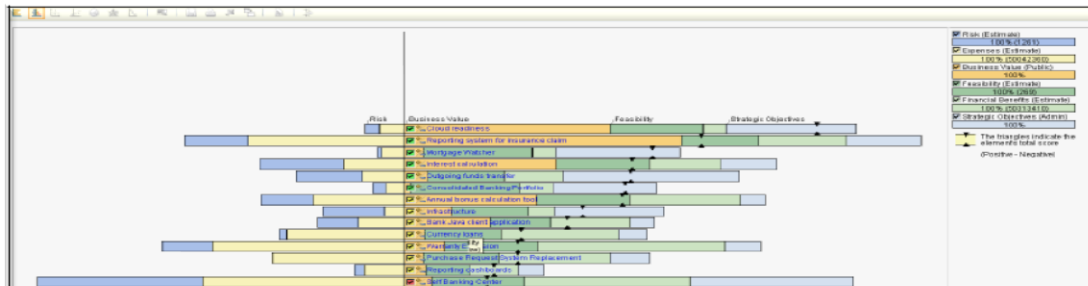




Demand Management

Evaluate and prioritize business needs and projects

Have business drivers determine priorities



Which Project has higher "Priority"?

Migrate applications to EGL/Java		Consolidate Account Management Applications	
ID	010	ID	004
Priority	0	Priority	0
Name	Migrate applications to EGL/Java	Name	Consolidate Account Management Applications
Description	This opportunity covers migrating applications from Natural / Adabas to EGL.	Description	Support arrangements for these applications are unclear - as these have been excluded from the scope of any current / future plans. Tactical Rationalisation is required to resolve support issues as it is unclear whether they have adequate support arrangements given their importance to the business. It is recommended that in the longer term they are strategically Replaced by industry standard applications.
State	Assess	State	Assess
Alternates		Alternates	
Group		Group	
Owner		Owner	
Architect			
Planning Data			
Scorecard			

Completed: 3, Required: 2, Recommended: 3. Number of elements: 3, Comparison: 3

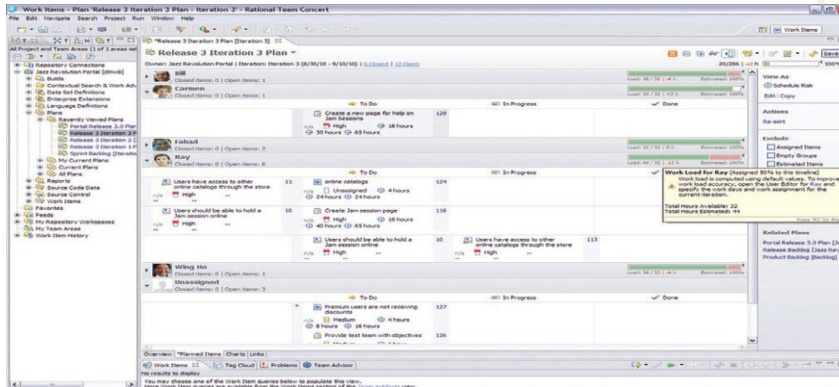
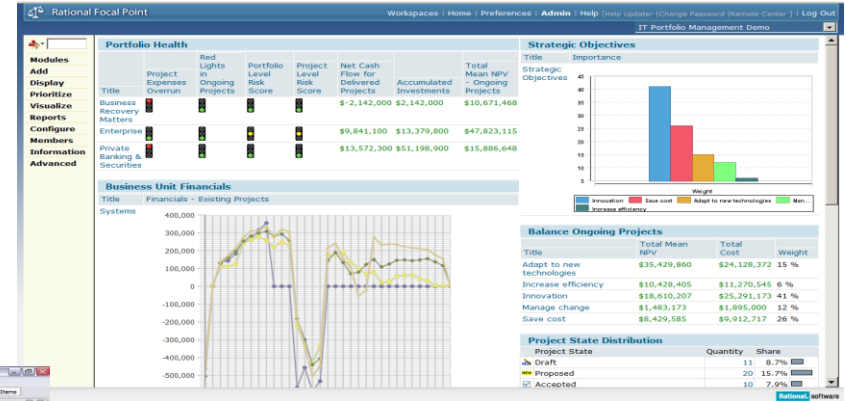
Assess value and uncertainty

Collaborate to choose between competing projects

Delivery Management

Govern project execution and make course corrections

- Define and approve business commitments, and link to Team Collaboration and planning to enable execution and tracking
- Improve project success rates through milestone reviews with stakeholders from the business, IT and operations
- Manage project change and monitor value delivered

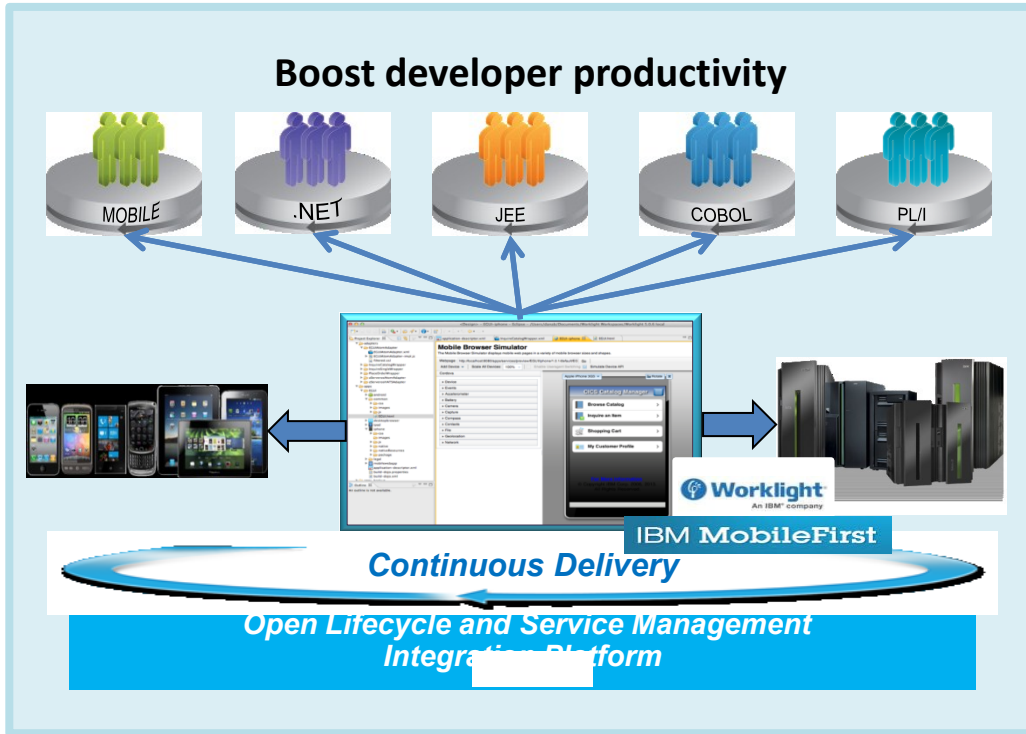


Track project status, and drill down into development artifacts as needed

Drive day-to-day development. Identify and escalate delivery issues



Leverage common tools to build multiplatform apps



Rational Developer for the Enterprise IBM Worklight for MobileFirst platform

Enabling you to...

- Leverage common Eclipse-based IDEs for all types of development
- Access broad coverage of runtimes, languages, compilers, and platforms
- Access via cloud-based environments like SmartCloud Enterprise+ (SCE+)
- Create agile services from existing mainframe assets

Enterprises want to... *extend existing services and information to customers and employees on their smart phones and tablets*



Richness of Mobile Presentation / Services

Portability (cross-device reuse)

Maintenance Cost (TCO)



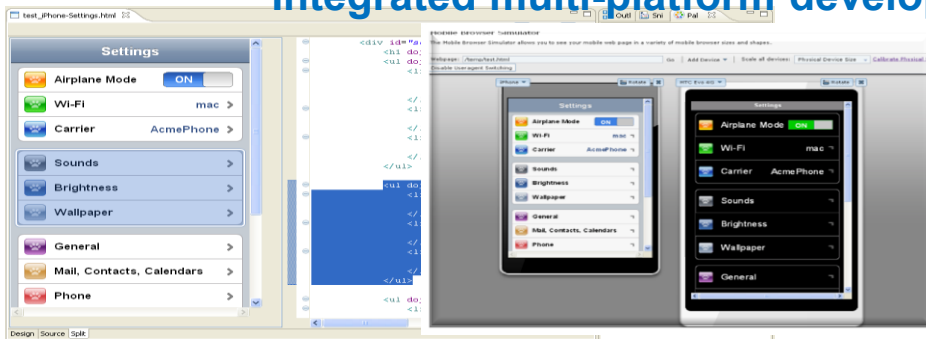
But...

They lack the skills and time to re-write their existing applications, and they cannot afford to develop natively for multiple mobile platforms and devices

Solution: End to end mobile development

Design, code, build, test, and deploy mobile apps that run on a wide variety of mobile platforms; Quickly refactor and extend existing back-end services and data to new mobile UIs

Integrated multi-platform development environments



Construct, debug, and test mobile UIs

- Quickly deliver to the most popular mobile platforms (iOS, Android, Windows Phone, Blackberry) by
 - leveraging portable standards like HTML5 & JavaScript
 - supporting native functions like camera and GPS from a single code base with hybrid approaches
- Refactor and extend existing back-end services to provide an optimal mobile experience

Refactor and extend existing logic as mobile-consumable services

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



Mobile application styles

Web

- HTML, JavaScript, CSS
- Accessed from a mobile web browser
- No device-specific capabilities



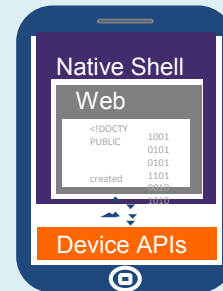
Mobile Web

- HTML, JavaScript, CSS
- Accessed from a mobile web browser; mobile-optimized UI
- Limited access to device capabilities



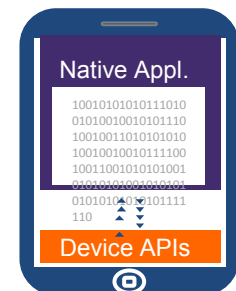
Hybrid Mobile

- HTML, JavaScript, CSS, with optional native code
- Installed and run like a native mobile app; mobile-optimized UI
- Access to most device capabilities



Native

- Native code
- Access to full set of device capabilities



Richness of Mobile Presentation / Services

Portability (cross-device reuse)

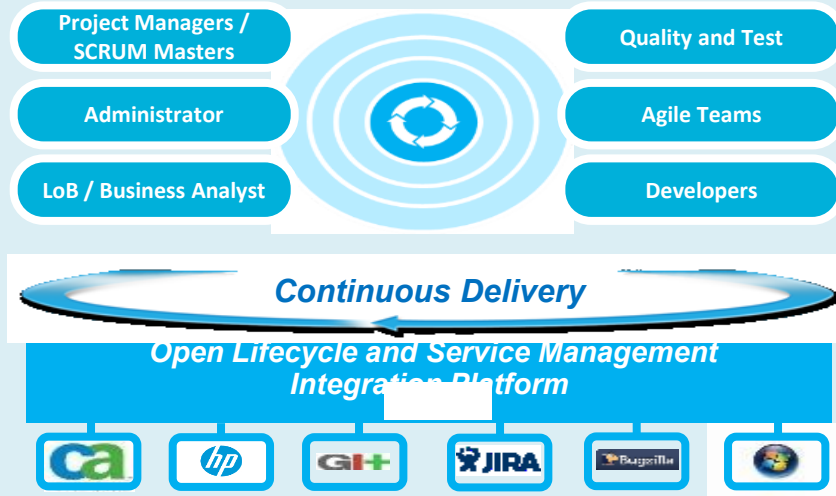
Maintenance Cost (TCO)



Break down silos by moving to an Agile team environment



Maximize team productivity

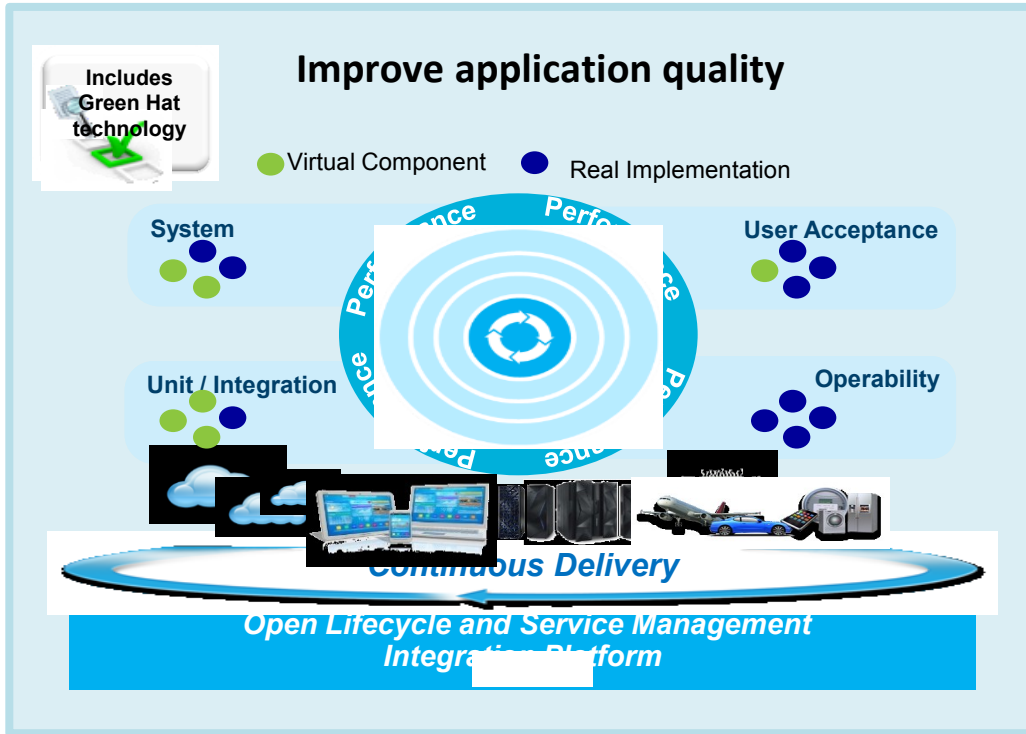


Rational Team Concert
Rational Requirements Composer
Rational Quality Manager

Enabling you to...

- Manage all types of source - JavaScript to COBOL
- Create work items spanning technologies and solutions
- Accelerate agile adoption on the mainframe
- Integrate existing SCMs and deployment tools, e.g. ChangeMan and Endeavor
- Use Lifecycle integration adapters for third-party tools

Automate functional, regression, load, and integration testing



Rational Test Workbench - leveraging Green Hat Technology

Enabling you to...

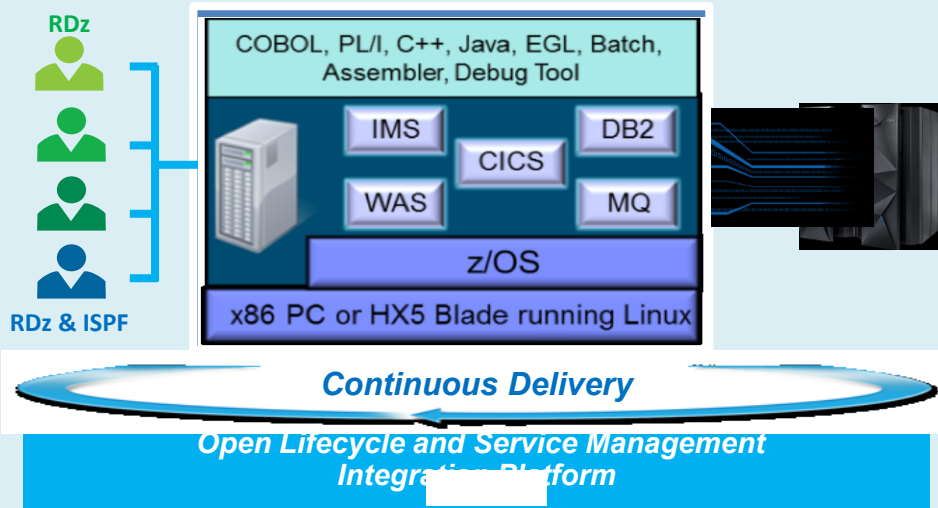
- Fully embrace automated testing
- Create test automaton of native and hybrid mobile and mainframe applications
- Run automated tests to validate builds
- Take advantage of over 70 technologies and protocols out of the box



Offload development and testing to reduce MIPS



Improve development flexibility



Rational Development and Test Environment for System z

Enabling you to...

- Liberate developers to rapidly prototype new applications
- Develop and test System z applications anywhere, anytime
- Free up mainframe development MIPS for production workload
- Eliminate costly delays by reducing dependencies on operations staff

New

Try latest middleware, including CICS 5.1, IMS 12.1, and WebSphere 8.5

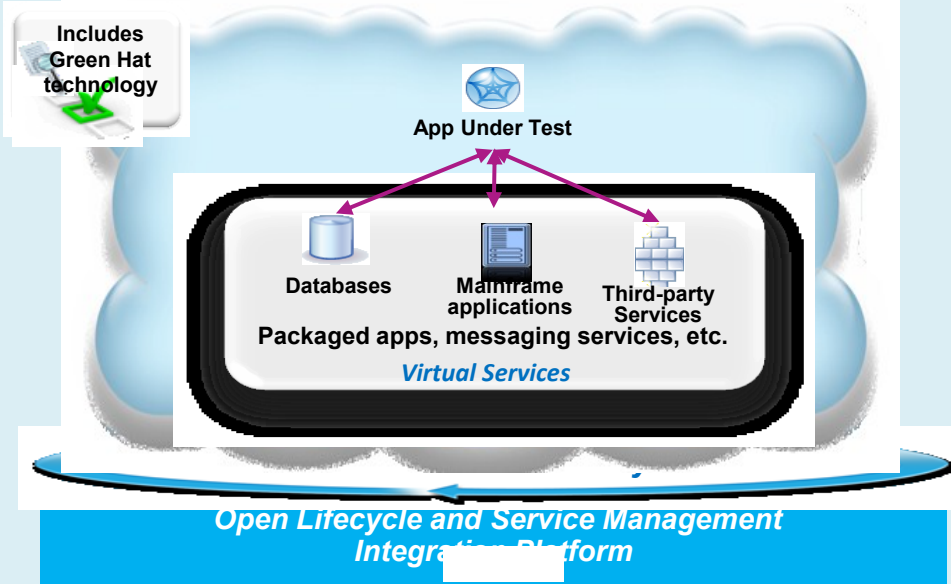
Note: This Program is licensed only for development and test of applications that run on IBM z/OS. The Program may not be used to run production workloads of any kind, nor more robust development workloads including without limitation production module builds, pre-production testing, stress testing, or performance testing.



Reduce provisioning burden on Operations



Maintain test LPARs effectively



Rational Test Virtualization Server
- leveraging Green Hat technology

Enabling you to...

- Test in isolation with 'stubbed' or 'mock' services

New

Virtualize CICS applications inside the mainframe and Java applications in the JVM

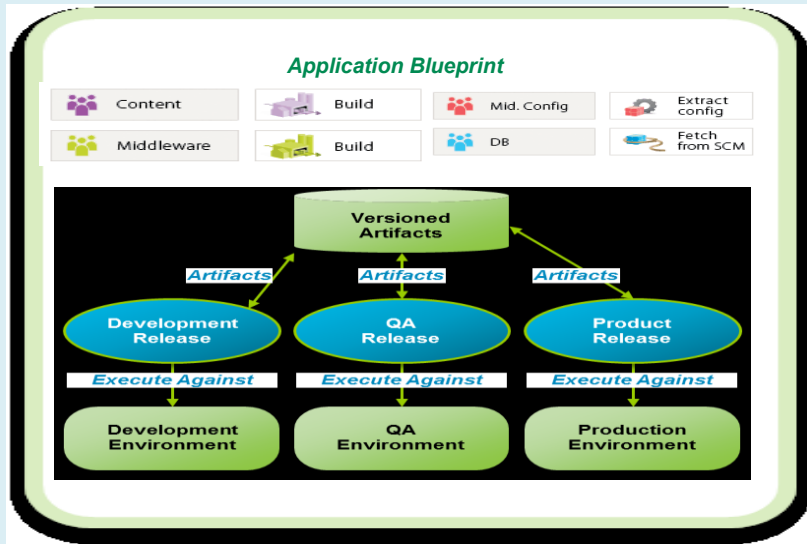
- Reduce development dependency on operations
- Minimize subsystem dependency during testing
- Reduce infrastructure costs and free up MIPS for production use



Rapid solution delivery and test provisioning



Deliver test environments in minutes



urban{code}

An IBM company

IBM UrbanCode Deploy
IBM UrbanCode Release
IBM SmartCloud Orchestrator

Enabling you to...

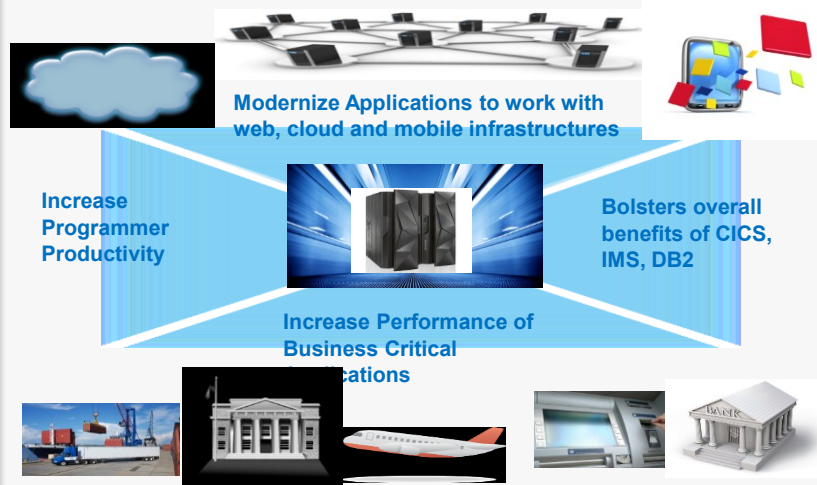
- Provision consistent images for test environments, reduce rework, and speed redeploy of application changes
 - Quickly deploy multiple test instances in minutes versus hours or days
- New** Support mainframes using zLinux
- Orchestrate and automate the deployment and management of applications, middleware configuration, and databases

Enterprise COBOL for z/OS v5.1

The key to supercharging IBM System z Applications

- Advanced technology designed to optimize COBOL programs and fully exploit z hardware
 - Delivers greater than 10% performance improvement over Enterprise COBOL v4 for well structured, CPU-intensive batch applications on System z¹
 - Many numerically intensive programs have shown performance increases greater than 20%¹
 - Maintains compatibility with previous COBOL releases
- New programming and application modernization capabilities
 - Enables users to deliver enhancements to business critical applications quicker with less cost and lower risk
- Allows users, who implement sub-capacity tracking, to reduce administrative overhead
- Supports the ecosystem of COBOL development tools supplied by IBM and ISVs

Where Tradition Meets Innovation...



"Our testing of COBOL V5 shows a significant performance improvement for math. As a financial services company with a continually narrowing batch window, that improvement is very important to us. It will help us meet our Service Level Agreements and reduce cost driven by CPU utilization."

Michael A Todd, Software Architect

DEVELOPER VALUE

¹ Results are based on an internal compute-intensive test suite. Performance results from other applications may vary.

IDEs supporting key trends

Rational Developer for the Enterprise 9.0

Rational Developer for the Enterprise

Rational Application Developer for WebSphere

Rational Application Developer

Rational Developer for System z 9.0

Rational Developer for System z

Rational Business Developer 9.0

Rational Business Developer

Rational Developer for i 9.0

RPG and COBOL Tools

RPG and COBOL + Modernization Tools, Java Edition

RPG and COBOL + Modernization Tools, EGL Edition

Rational Business Developer

Rational Developer for AIX and Linux 9.0

C/C++ Edition

AIX COBOL Edition

An abstract graphic in the top left corner features overlapping geometric shapes in shades of blue, green, and light blue, creating a sense of depth and movement.

Software Development for IBM i

Maximizing Application Productivity on IBM i

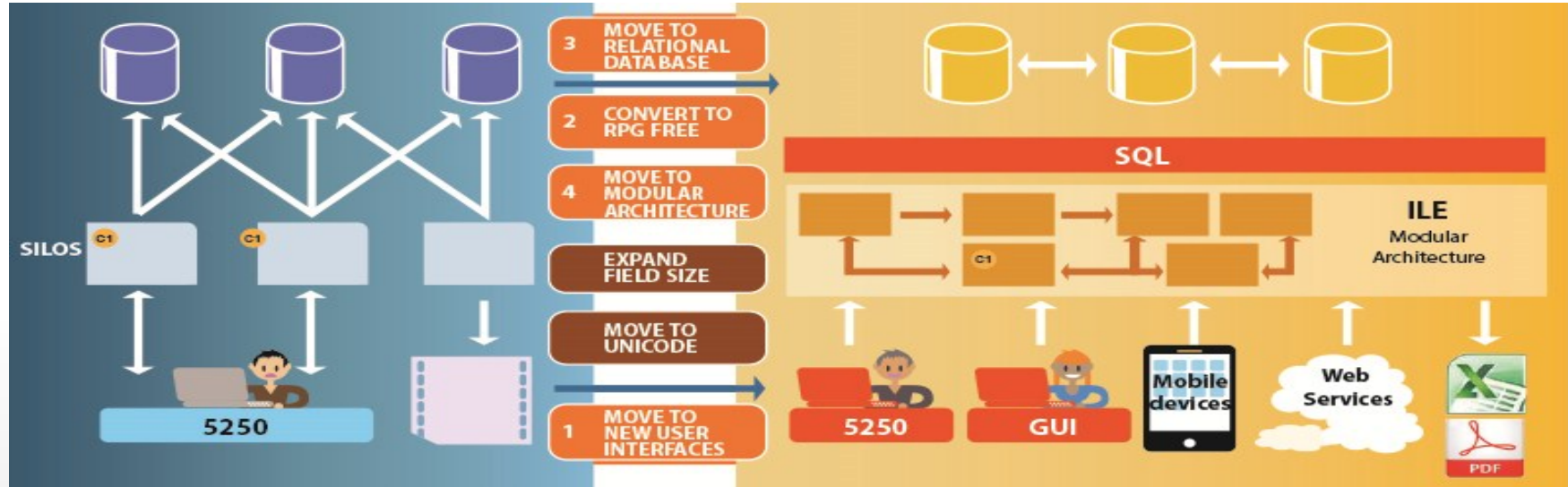
Innovate2013
The IBM Technical Summit

And you are really wanting to...

Build modern, multiplatform applications with existing and new staff

Moving from here....

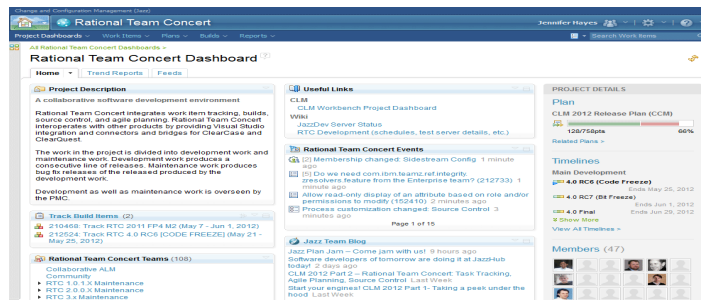
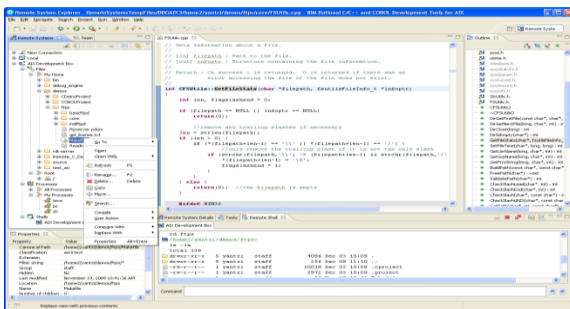
...To there



But...

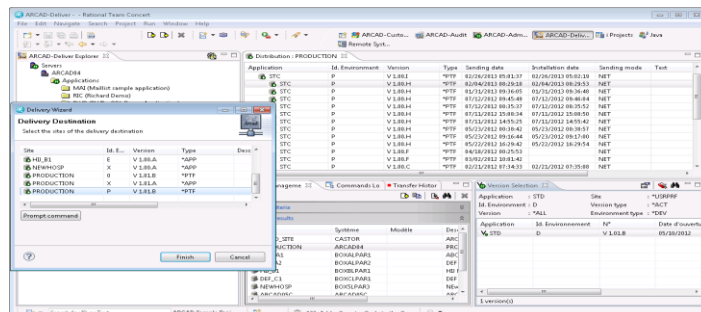
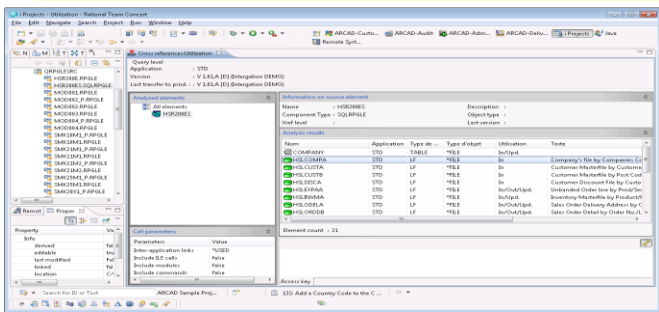
You have different teams of developers for each platform, and re-training them to all the new technologies is costly, time consuming, and often impractical

... that fits with the new World in the IBM i SOLUTIONS Area



A modern efficient IDE. Attractive to new users and empowering for existing users

Break down the silos with an integrated infrastructure managed by a single tool



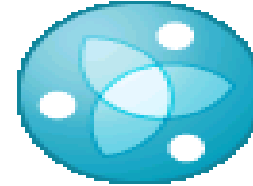
Use tools so that anyone can analyze and visualize the application software

Automate the complex tasks to reduce errors and speed delivery

Build upon a Solid Foundation of Technology



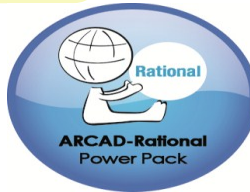
Rational Developer for i



Rational Team Concert

A modern efficient IDE. Attractive to new users and empowering for existing users

Break down the silos with an integrated infrastructure managed by a single tool



ARCAD Pack for Rational

Use tools so that anyone can analyze and visualize the application software

Automate the complex tasks to reduce errors and speed delivery

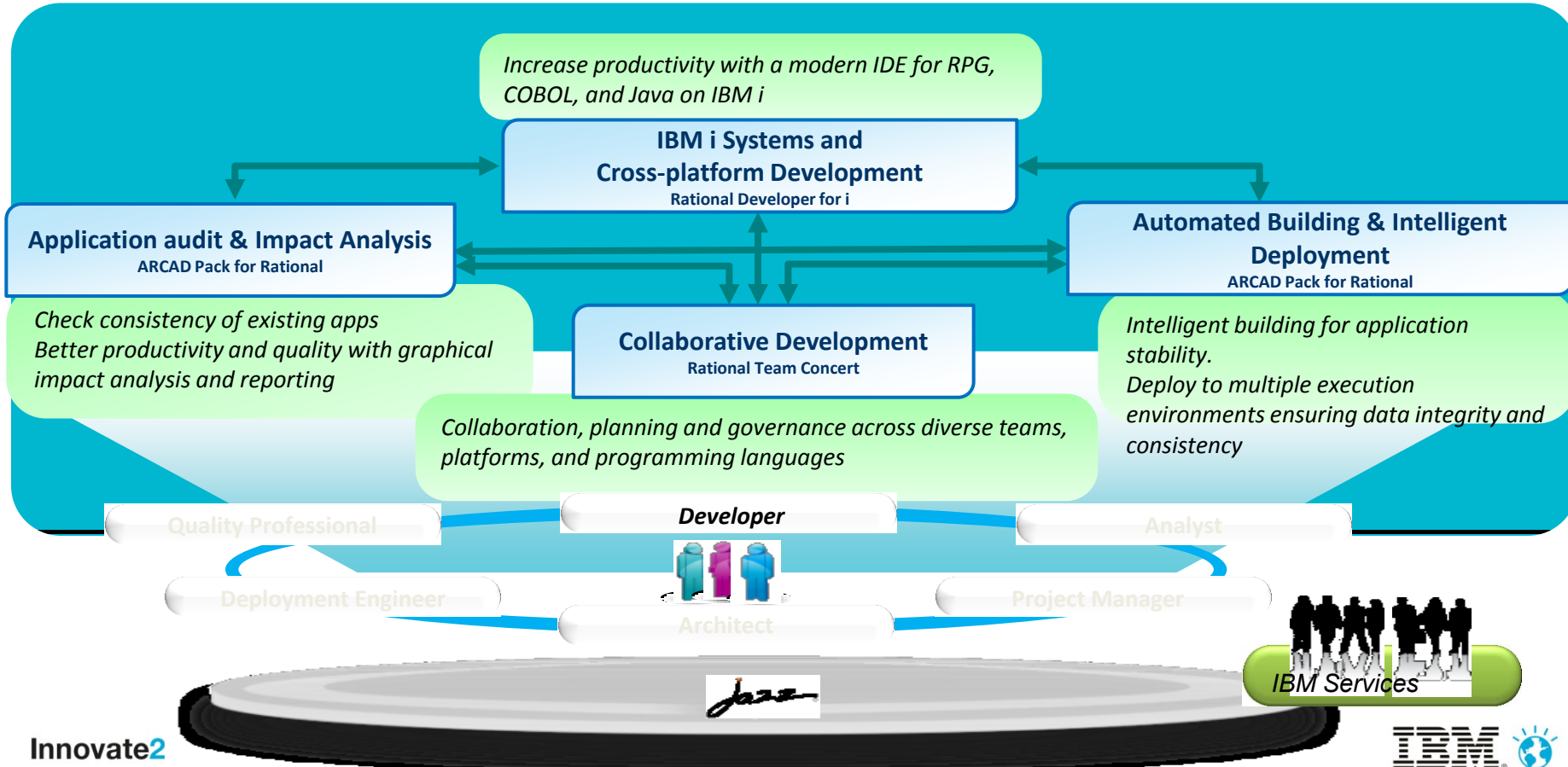
**Together
they
complete**



IBM Business
Partner Award
2013
Rational Software



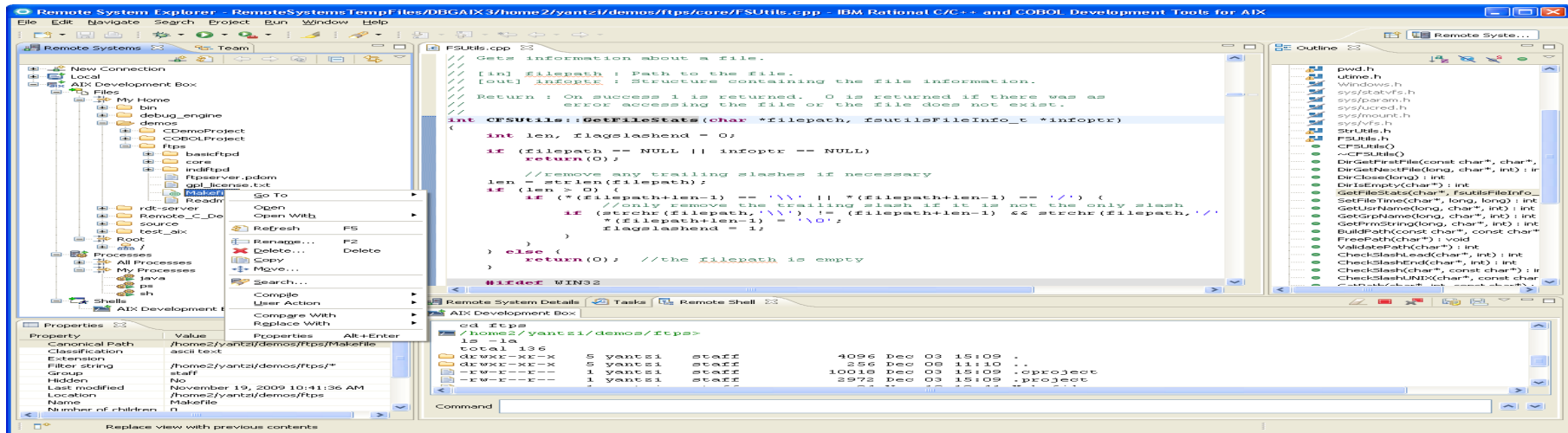
The IBM Integrated Solution for IBM i Development (ISDi)



Start with Rational Developer for i

Optimise essential development tasks

- Modern, Eclipse-based, development tools for IBM i
- Visual editors, outline views, content assist, integrated language help
- Integrated file management, search, edit, compile/build, debug capabilities
- Analysis tools (application diagram, call hierarchies, type hierarchies)
- Easily debug batch, interactive, and Web applications and Web services with a common visual debugger
- Visual design tools: Screen and Report Designer
- Integration with Rational Team Concert , ARCAD Pack for Rational and HATS



Rational Developer for i

Outline View and Content Assist

Code snippet showing array operations:

```

//FREE
a = %SUBARR (array:start-index | numeric-field:number-of-elements | numeric-field)

```

Content assist helps jog your memory (opcodes, BIFs, fields)

Code snippet showing array definition:

```

%SUBARR
( array
start-index | numeric-field
number-of-elements | numeric-field
)

```

Code snippet showing array assignment:

```

a = %SUBARR (D: )

```

Code snippet showing SQL select statement:

```

//Free
select
SELECT_group - The select group conditionally processes
SELECT_OTHER_group - The select group conditionally processes
SELECT_FROM_JOIN_WHERE - The SQL SELECT statement
SELECT_FROM_WHERE - The SQL SELECT statement
SELECT INTO_FROM_WHERE - The

```

EXEC SQL SELECT col1, col2 INTO :var1 :var2 FROM table1 WHERE col2 = 99;

Templates provide a quick way to insert common code patterns (free form and SQL). Predefined or define your own!

Global Definitions Outline View:

- Files
 - CSTMR : DISK (Externally Described)
 - DISTRCT : DISK (Externally Described)
 - ITEM : DISK (Externally Described)
 - ORDENTR : WORKSTN (Externally Described)
 - PROCPT
 - ORDSFL
 - ORDCTL
 - ALTDOR
 - ORDS
- Subroutines
 - ENR
 - ENRSP
 - AddOrd
 - AddOrdLn
 - ChgOrder
 - QNDOTAQ
- Data Structures
 - stock : DISK (Externally Described)
- Constants
- Fields
- Indicators
- Key Lists
 - CurKey : KLIST
 - DistrKey : KLIST
 - ItemKey : KLIST
 - StockKey : KLIST

Cross reference information

Advanced Debugging

Debug View controls the debugger

Work with breakpoints (enable / disable, remove, add, conditional)

Real time monitoring of the field values

Breakpoint (set / remove by double clicking)

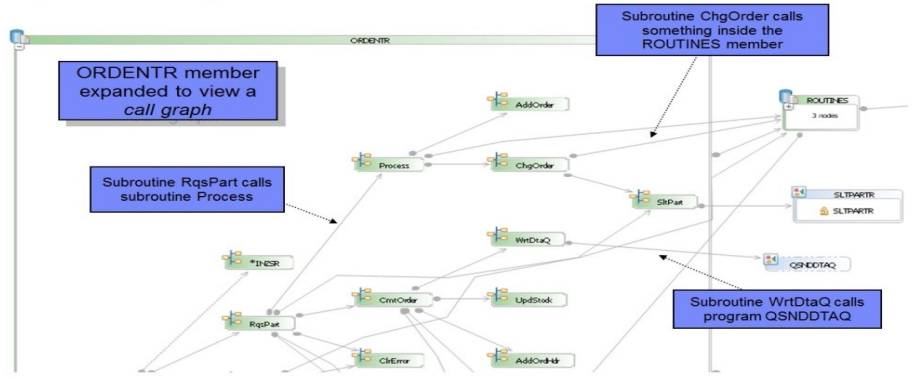
Code snippet showing breakpoint:

```

// Display the panel to user
SELECT;
// prompt for a customer
CSPNM = 1;
// prompt for an order
WHEN DepPnl = #Panel2;

```

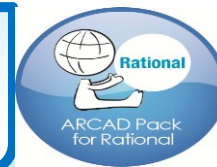
Application Diagram



Expand to full i functionality with the ARCAD Pack for Rational...



Advanced IBM i Development Assistance
ARCAD Pack for Rational



*A Powerful Integrated Toolset for
Rational Developer for Power Systems and Rational Team Concert*

*Audit and restructure applications before loading
into
Rational Team Concert*

**Application Clean-Up
ARCAD-Audit**

*Modernize applications
By converting the to free-format RPG*

**Application Modernization
ARCAD-Converter**

**Application Analysis
ARCAD-Observer**

*Analyse and visualise application
structures and dependencies in
Rational Developer for i*

**Intelligent Deployment
ARCAD-Deliver**

*Deploy to multiple execution environments
ensuring data integrity and consistency with
support for 4GL and Case tools*

**Automated Building
ARCAD-Builder**

*Intelligent building of complex applications
directly from Rational Team Concert*



Full I functionality



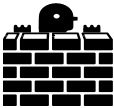
ARCAD Pack for Rational (APR)

Comprehensive suite of solutions which integrate tightly with the **Rational ISDi** environment to provide advanced capabilities for IBM i development organizations :-



- **ARCAD-Observer**

- » application analysis, visualization and reporting.



- **ARCAD-Builder**

- » support for complex integration builds of composite IBM i applications



- **ARCAD-Deliver**

- » deployment automation and synchronization across multiple platforms with automatic rollback on error with support for 4GL and Case tools

- »



- **ARCAD-Audit**

- » IBM i code audit and restructuring used as part of preparation for loading RTC



- **ARCAD-Converter**

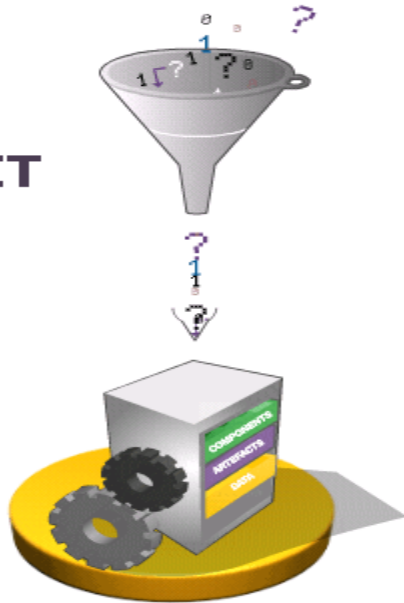
- » Convert legacy RPG to free-format RPG for ease of maintenance by new developers



ARCAD-Audit : Application Clean up

Clean your inventory before loading it into Rational Team Concert

AUDIT

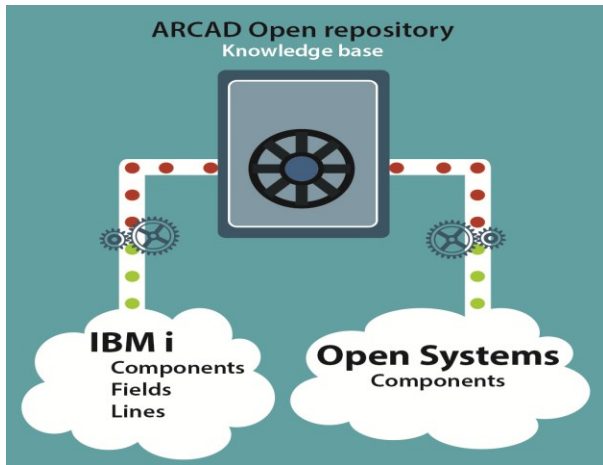


Identify and clean up:

- **Multiple occurrences of the same source,**
- **Which objects are really used in production environments,**
- **Source without objects** - either object losses or unnecessary source,
- **Objects without source** - a problem if you wish to modify a related component,
- **Sources with a date later than the object** - components whose executed object is not at the same level as the source,
- **And, of course, unused objects**

ARCAD-Observer : Application Analysis

Multi-platform cross-referencing, visualisation and reporting



Trace all the inter-relationships between IBM i components (program or file) and other open-system components (Windows, AIX, or Linux) from your IDE

Sources/object fields cross references

Information on source element

Name	Qualificat
HSPFCUST	0
HSPREF	0
HSR200	0
HSR206A	0
HSR206B	0
HSR206C	0
HSR206D	0
HSR206E	0
HSR206F	0
HSR206G	0
HSR206H	0
HSR206I	0
HSR206J	0
HSR206K	0
HSR206L	0
HSR206M	0
HSR206N	0
HSR206O	0
HSR206P	0
HSR206Q	0
HSR206R	0
HSR206S	0
HSR206T	0
HSR206U	0
HSR206V	0
HSR206W	0
HSR206X	0
HSR206Y	0
HSR206Z	0

Element count : 13

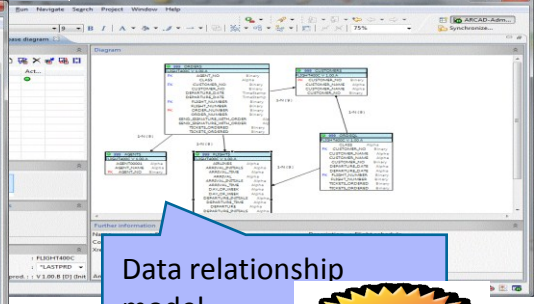
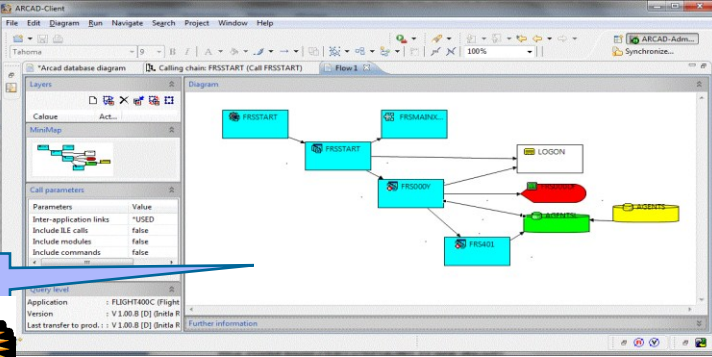
Seq...	T.	Source code	Member	Source file
30889	M	C	HSR200	HSR200
30900	M	C	HSR206A	HSR206A
31200	M	C	HSR206B	HSR206B
32600	M	C	HSR206C	HSR206C
32700	M	C	HSR206D	HSR206D

i Project access view

Sources/objects (multi-platform) cross references files

Name	Applica...	Comp...	Object...	Text
HSR200	STD	CLP	*P0M	Sales Order Processing
HSR206A	STD	RPQ	*P0M	Sales Order Entry / Ma
HSR206B	STD	CLP	*P0M	Sales Order Processing
HSR206C	STD	RPQ	*P0M	Invoice Print Processing
HSR206D	STD	CLP	*P0M	Delivery Note Print Pr
HSR206E	STD	RPQ	*P0M	F4 Search Window
HSR206F	STD	RPQ	*P0M	Window for Allocation
HSR206G	STD	CLP	*P0M	Remove message() fr
HSR206H	STD	CLP	*P0M	Send message to prog

RPG program calling chain



ARCAD-Builder : Build Automation

reduces the effort required for application compilation

- Full automation of compilation processes
- Handling of database upgrade processes
- Management of compilation specifics
- Management of rights/ownership/attributes
- Automatic compilation ordering of dependent components
- Invoke directly from Rational Team Concert

Single access point:
the build result

Build result:
activities

Build result: dependency
recompilation

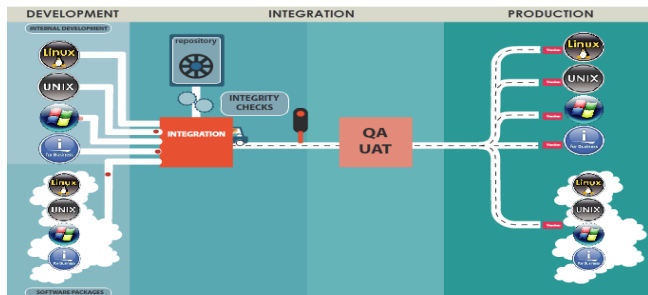
The screenshot displays the Rational Team Concert interface with two overlapping windows. The top window shows a 'Build Activities' table with columns for Activity Label, Start Time, and Activity Duration. The bottom window shows a 'Published ARCAD Lists' table with columns for Library, Name, Description, Name, Library, Type, St..., Text, Or..., and Additional Text. A blue callout box points to the 'Published ARCAD Lists' table, and another blue callout box points to the 'Build Activities' table.

Library	Name	Description	Name	Library	Type	St...	Text	Or...	Additional Text
STDD1_01_B	LSTOBJ		HSLCOMPA	ARCTC_STDL	LF	X	Company's file by Co...	6.0	Recompile
STDD1_01_B	LSTRCPL		HSPCOMP	STDD1_01_B	PF	X	Company Codes	4.0	Modified
			HSR200	ARCTC_STDL	RPG	X	Sales Order Entry / Mai...	8.0	Recompile
			HSR200E	ARCTC_STDL	RPSE	X		14.0	Recompile
			HSR200ES	ARCTC_STDL	SQLRPGLE	X		14.0	Recompile

Activity Label	Start Time	Activity Duration
ARCAD-Integration Post Build Process-v4	00:01:45	5 m 55 s
Check Properties Activity	00:01:45	0 s
IBM Integration Process Activity	00:01:45	1 m 09 s
IBM Integration Log Publishing Activity	00:01:45	0 s
IF Integration Process Activity	00:04:46	1 m 17 s
IF Integration Log Publishing Activity	00:05:24	0 s
ARCAD-Builder Execution Activity	00:05:04	2 m 35 s
ARCAD-Builder Execution Log Publishing Activity	00:05:00	0 s
List Publishing Process Activity	00:05:00	40 s

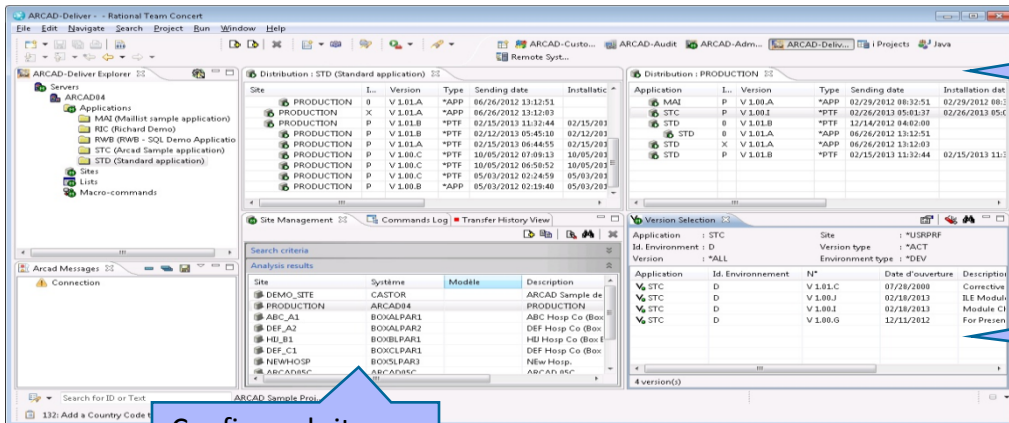
ARCAD-Deliver : Release Management

Flexible deployment for IBM i and distributed systems



Increase the quality and reliability of your systems with

- Automated transfers to production,
- Synchronized deployments to diverse platforms
- Full Logging and Traceability
- Rollback



Application Sites/Environment installation

Use the same methods, the same rules and the same product to deploy all your applications whatever the target system,

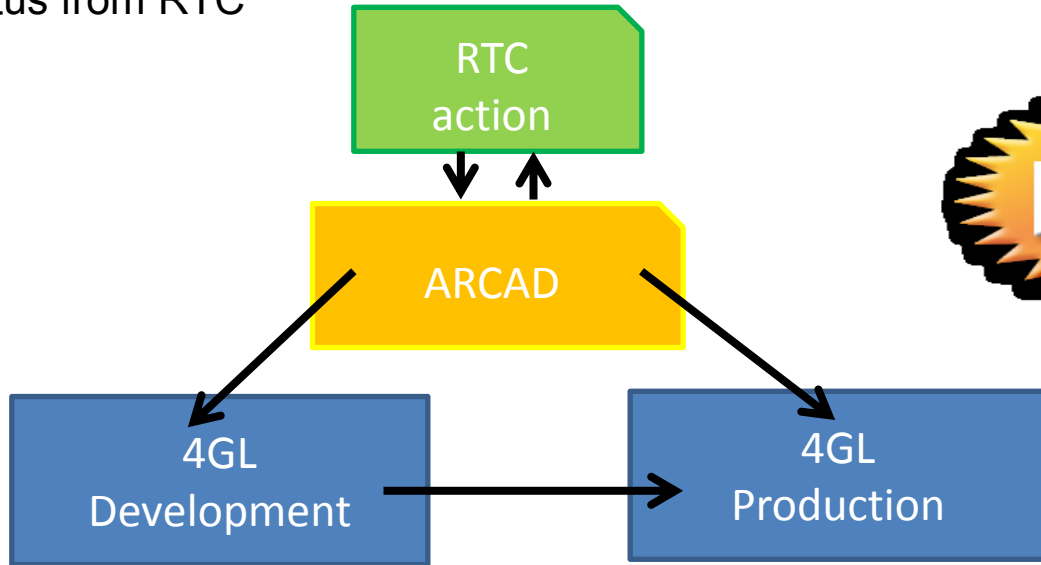
Ready to be deployed releases

Configured sites

ARCAD Pack for Rational CASE and 4GL support

Manage CASE and 4GL environments along side other applications

- Initial Support : CA2E (SYNON), LANSAs, JDE and ADELIA
- Code stays in 4GL/Case repositories and is linked to Work Items
- Allows movement/deployment to be synchronised with 3GL apps
- View status from RTC



Free Format RPG Converter



Converts RPG to Free format RPG

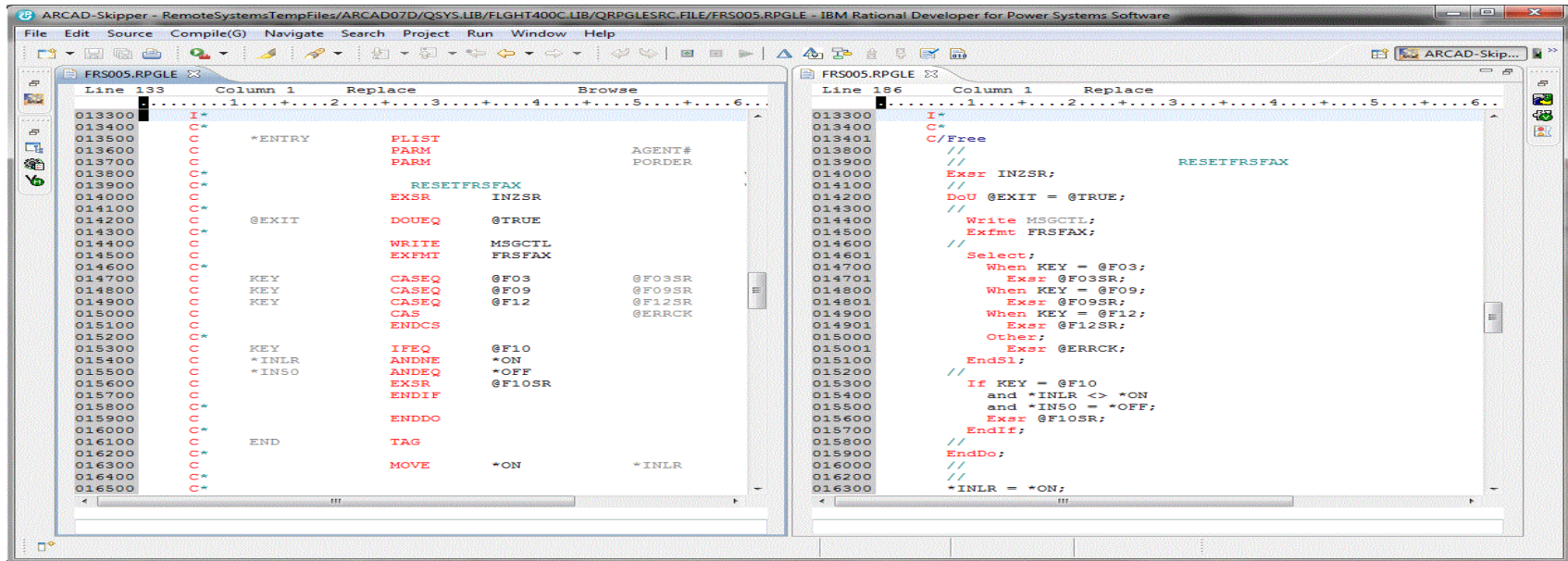
- Plug-in for RDi for one-off conversions
- Bulk conversions
- Same program may be converted multiple times without penalty
- Reinstall does not reset counter
- User can query number of conversions done/left
- Warning when nearing end of entitlement
- Multiple licenses may be installed on a single machine and will accumulate
- 10 free conversion for trials
- Currently supports C Specs
- ARCAD in RPG Compiler Beta programme
- Support for all new Specs will be available at launch

ARCAD-Converter : Application Modernization

Convert to Free Format RPG



Allow modern developers to manage and maintain your applications by converting to Free Format RPG



The screenshot shows two side-by-side windows of the IBM Rational Developer for Power Systems Software. The left window displays the original RPGLE code for file FRS005.RPGLE, starting at line 133. The code includes comments like '*ENTRY', '*INLR', and '*IN50', and uses traditional RPG syntax with keywords like PLIST, PARM, AGENT#, PORDER, RESETPFRSFAX, EXSR, INZSR, @EXIT, DOUEQ, @TRUE, WRITE, MSGCTL, EXFMT, FRSFAX, KEY, CASEQ, @F03, @F03SR, @F09, @F09SR, @F12, @F12SR, @ERRCK, IFEQ, ANDEQ, *ON, *OFF, *IN50, EXSR, @F10SR, ENDDO, TAG, and MOVE. The right window shows the converted Free Format RPG code, starting at line 186. The converted code uses modern Free Format syntax, including comments like 'I=', 'C=', 'C/Free', 'Exsr INZSR;', 'DOU @EXIT = @TRUE;', 'Write MSGCTL;', 'Exfmt FRSFAX;', 'Select;', 'When KEY = @F03;', 'Exsr @F03SR;', 'When KEY = @F09;', 'Exsr @F09SR;', 'When KEY = @F12;', 'Exsr @F12SR;', 'Other;', 'Exsr @ERRCK;', 'EndS1;', 'If KEY = @F10 and *INLR <> *ON and *IN50 = *OFF; Exsr @F10SR;', 'EndIf;', 'EndDo;', and '*INLR = *ON;'. The conversion process is shown as a 'Replace' operation in the software interface.

- Rational Developer for i plug-in
- Support for the latest compiler specs (C, H, F, D and P)

- On-demand or bulk conversion

ARCAD 5250 Emulator



The screenshot shows the ARCAD 5250 Emulator interface. The main window is titled "ARCAD05.S250 Powered by Arcad Software". It features a terminal window on the left and a code editor on the right.

Terminal Window:

```
Work with Binding Directory Entries

Binding Directory:  ALLMOD          Library:  ARCTC_SVCP

Type options, press Enter.
  1=Add   4=Remove

-----Creation-----
Opt   Object      Type      Library      Date      Time
---   -
  1   MOD001      *MODULE  *LIBL        09/24/13  10:16:29
  -   MOD002      *MODULE  *LIBL        09/24/13  10:16:29
  -   MOD003      *MODULE  *LIBL        09/24/13  10:16:29
  -   MOD004      *MODULE  *LIBL        09/24/13  10:16:30
  -   SMK18M1     *MODULE  *LIBL        09/24/13  10:16:30
  -   SMK21M1     *MODULE  *LIBL        09/24/13  10:16:30
  -   SMK21M2     *MODULE  *LIBL        09/24/13  10:16:30
  -   SMK25M1     *MODULE  *LIBL        09/24/13  10:16:31

Parameters or command
====>
F3=Exit  F4=Prompt  F9=Retrieve  F5=Refresh  F12=Cancel  F17=Top
F18=Bottom
(C) COPYRIGHT IBM CORP. 1980, 2005.

10/3
```

Code Editor Window:

```
EMPLOYEE.TABLE
000001130430-- %ATTR DATFMT(*ISO)
000002130528
003200081007/* %EXECA ADPPFTRG FILE (
003300081007/* %EXECA PGM(*LIBL/TRIG
003400081007/* %EXECA ALWREPCHG(*NO)
003500081007/* %EXECA MLTTHDACN(*SYS
003600130530/* %EXECA TRG('QSYS_TRIG
003700130603
004200130604
004300080807CREATE TABLE EMPLOYEE (
004400080807 EMPNO DECIMAL(5, 0) NC
004500080807 EMPLNM CHAR(25) CCSID
004600080807 EMPFNM CHAR(25) CCSID
004700080807 EMPMIN CHAR(1) CCSID 3
004800080807 EMPTYP CHAR(1) CCSID 3
004900080807 CONSTRAINT Q_DEMO_SQL_
005000080807 NOT VOLATILE ;
005100080807
005200080807ALTER TABLE EMPLOYEE
005300080807 ADD CONSTRAINT Q_DEMO_
005400080807 FOREIGN KEY( EMPTYP )
005500080807 REFERENCES EMPTYP ( 1
005600080807 ON DELETE NO ACTION
005700080807 ON UPDATE NO ACTION ;
005701130430
005800080807
```

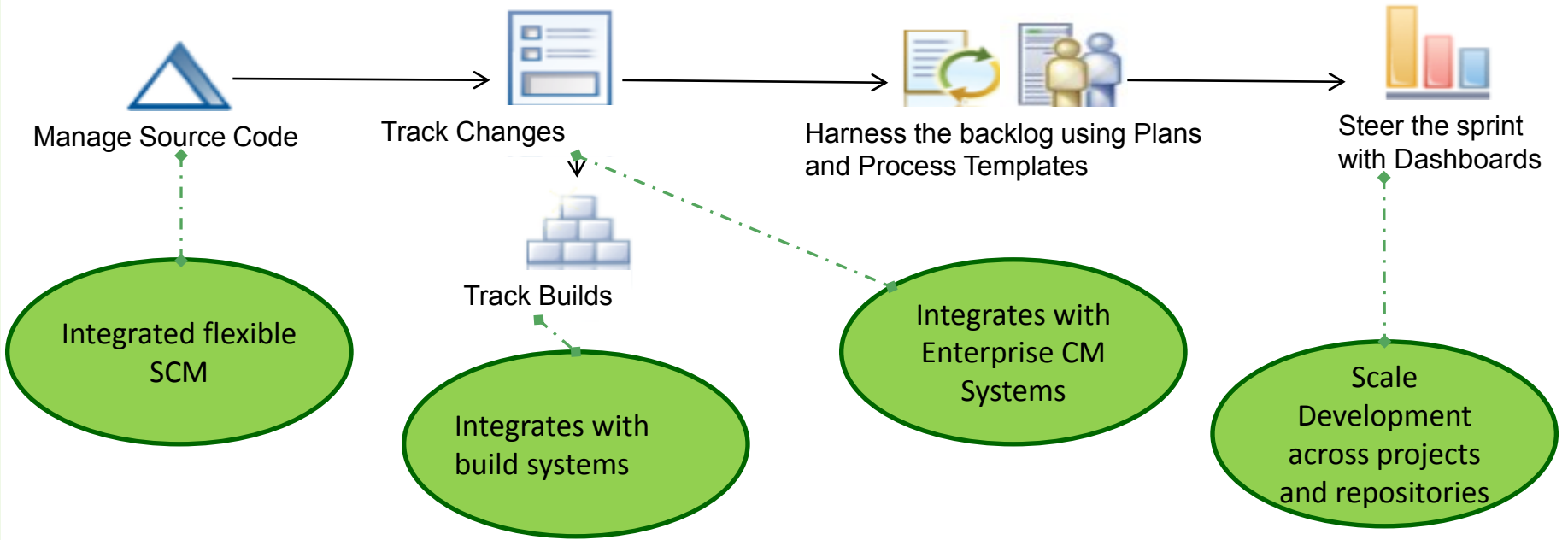
The interface includes a top toolbar with various icons, a left sidebar with project navigation, and a bottom status bar showing "Found 15 work items - Open assigned to me" and a table of work items.

The ARCAD 5250 Emulator allows you to start 5250 emulation sessions from within an Rdi session. Allows the user to have full 5250 and Rdi Eclipse functionality from the same IDE.

Tie it all together: Automate and Accelerate the administration of your lifecycle with Rational Team Concert

- Quality of releases improves 12%*
- Project governance improvements of 12%

- Team productivity increases of up to 50%
- Team collaboration performance up 25%*



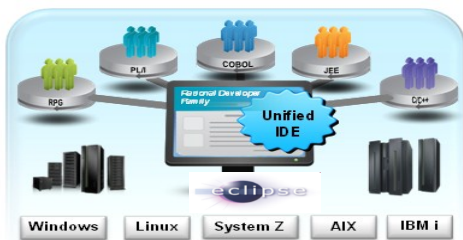


AIX and Linuz (IBM Power)

Innovate2013
The IBM Technical Summit

AIX and Linux (IBM Power)

- AIX and Linux
 - Rational Developer for AIX and Linux
 - XL Compilers
 - Distributed Transaction Processing with WXTR



Rational's Tools for AIX

A complete, integrated solution that no other vendor can provide

Power Tools for AIX

(part of Rational's Unified Family of IDEs)

Unmatched individual developer productivity



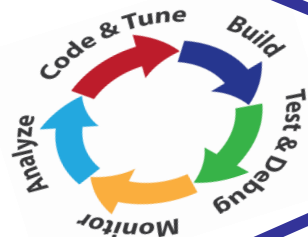
Rational Compilers for AIX

Unmatched leverage of AIX and Power architecture



AIX on Power and PureSystems platforms

Unmatched price-performance profile and QoS



Rational's Multi-Platform Collaborative Lifecycle Management Solution

Unmatched team collaboration and productivity

The IBM Rational Solution for AIX and LINUX on Power

A solution to help customers quickly establish a modern highly productive development environment that that will shorten development times, accelerate time to market and improve project quality and visibility, while exploiting Power hardware.

Increase productivity with a modern IDE for C/C++, COBOL, and Java on AIX and Linux on Power

AIX and Linux and Cross-platform Development
Rational Developer for AIX and Linux

Compilers C/C++ and COBOL

•Deliver higher performing applications, with IBM optimizing compilers that exploit features of the Power processors.

Collaborative Development
Rational Team Concert

Collaboration, planning and governance across diverse teams, platforms, and programming languages

Quality Professional

Developer

Analyst

Deployment Engineer

Architect

Project Manager

IBM Services

Jazz

Why IBM Compilers on Power ?

- **Designed to unleash full power of IBM POWER processors**
 - POWER 4, POWER 5, POWER 6, POWER 7, POWER 7+ and future POWER processors
- **Equipped with leading edge optimization technology**
 - Provide dramatic increase to the performance of an application.
 - No expert knowledge required; allows programmers to focus on business logic and produce high performing code
- **Designed to support IBM Middleware**
 - CICS TX, WXTR, DB2 on AIX
- **Support Application Development, Maintenance and Deployment**
 - Business Applications
 - Compute extensive Analytics and HPC applications
- **Maximize return on your IBM System hardware and Middleware investments**



Not purchasing new hardware?

You can still benefit from latest compilers!

- Innovations in optimization technology improves application performance on both new and existing hardware
 - ▶ Over 100 new optimizations introduced over the last 5 years
 - ▶ Can provide significant performance boost to applications without the need for source changes

- New compiler features improves programmer productivity on both new and existing hardware
 - ▶ Take advantage of new usability, problem determination, and performance tuning features
 - ▶ Can provide significant productivity and quality improvements



IBM Power Systems

Rational Developer for AIX and Linux



- Two editions
 - C/C++ Edition
 - AIX COBOL Edition
- Key capabilities provided by V9.0 and previous versions:
 - Code coverage tools
 - Performance Advisor
 - Porting and Migration Advisor
 - Remote System Explorer for connecting to Power servers, searching and managing server-side files, and running server scripts
 - Language-aware editors and refactoring agents
 - Debuggers (including server-side agents) that support multi-threaded application debugging and debugging of solutions that span multiple languages and platforms

Summary



Innovate2013 The IBM Technical Summit

- There are challenges to delivering software-driven innovation
- Disruptive technologies are driving greater need to innovate
- DevOps is critical to your success
- IBM has first class DevOps solutions and is continuing to invest and improve upon these solutions
- DevOps is just as relevant, if not more so, for System z as it is for distributed environments



Questions



Thank You

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2013



An abstract graphic in the top-left corner composed of overlapping, semi-transparent geometric shapes in shades of blue, green, and light blue, creating a sense of depth and movement.

Innovate2013

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