Stefania Cannone, Mimmo Majello

IBM Software Group

Jazz Adoption@Rome Tivoli Lab

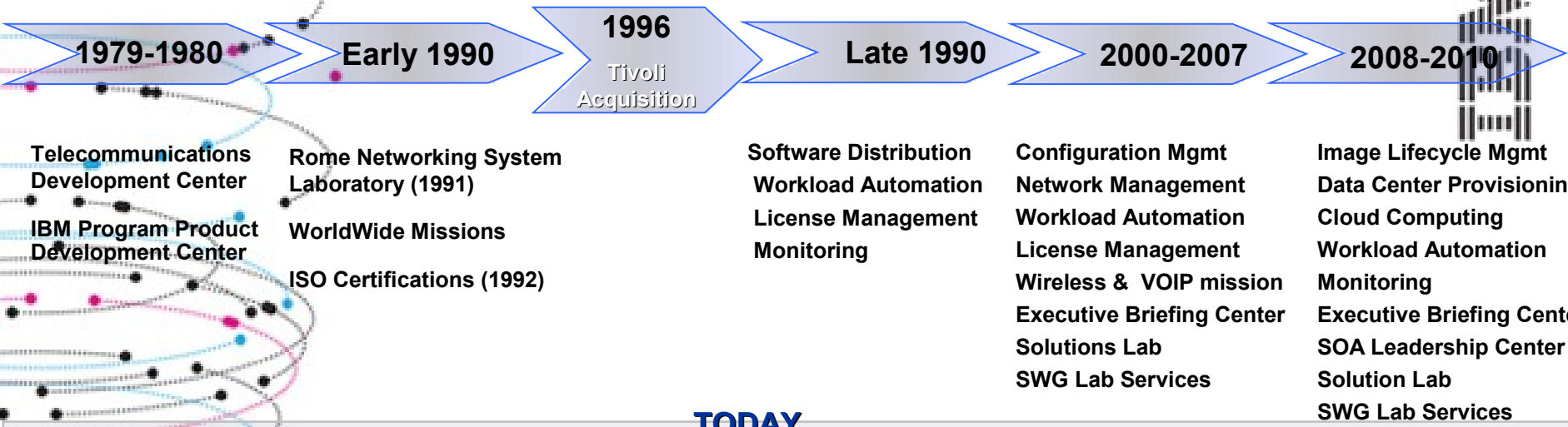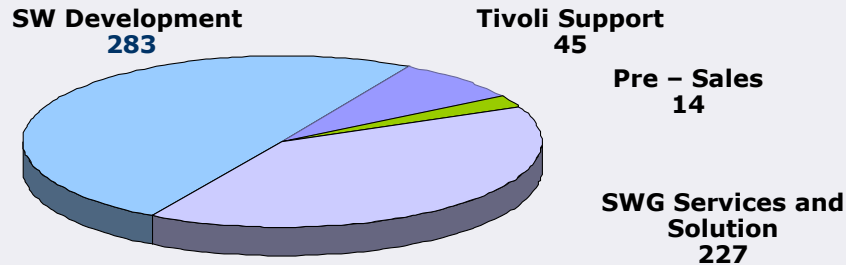Scopri come far lavorare in perfetta sinergia i tuoi team e i tuoi progetti.

Agenda

- Introduction to Rome Lab

- Agile Methodology Adoption

- Rational Team Concert: implementation and results

- Rational Quality Manager: implementation and results

- Getting ready for pilot: Rational Requirement Composer & RTCz

- Adoption Roadmap

Scopri come far lavorare in perfetta sinergia i tuoi team e i tuoi progetti.

Rational Agile Day, 3 Marzo Milano

IBM Rome Lab History

| 1979-1980 | Early 1990 | 1996 Tivoli Acquisition | Late 1990 | 2000-2007 | 2008-2010 |

Telecommunications Development Center

IBM Program Product Development Center

Rome Networking System Laboratory (1991)

WorldWide Missions

ISO Certifications (1992)

Software Distribution
Workload Automation
License Management
Monitoring

Configuration Mgmt
Network Management
Workload Automation
License Management
Wireless & VOIP mission
Executive Briefing Center
Solutions Lab
SWG Lab Services

Image Lifecycle Mgmt
Data Center Provisioning
Cloud Computing
Workload Automation
Monitoring
Executive Briefing Center
SOA Leadership Center
Solution Lab
SWG Lab Services

TODAY

SW Development 283

Tivoli Support 45

Pre – Sales 14

SWG Services and Solution 227

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Rome Lab at a glance

Product Development

Development of Tivoli Products within the following disciplines:

Workload Automation & Scheduling
+2000 WW Customers

Image Lifecycle Management & Data Center Provisioning
+1500 WW Customers

Cloud Computing
+100 WW Customers

Monitoring
+3000 WW Customers

Verification & IDD

Central Architectural Team

PM Competency Center

IBM SWG Solutions Lab

Development of Custom Solutions (Websphere, Tivoli, Lotus)

Development and Services of Networked Interactive Content Access (NICA) Solution

Automated Meter Management (AMM)

SWG Pre-sales

Executive Briefing Center

Tivoli SWAT Team

Operations

Lab Controller

IT Services

SWG Services & Education

Information Management
Lotus
Tivoli
WebSphere
Rational

Tivoli Support

Level 2 support

Global Response Team organizations

Tivoli software

Products developed in Rome are used by 70% of Fortune 100 customers

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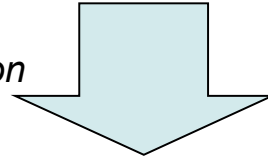Scopri come far lavorare in perfetta sinergia i tuoi team e i tuoi progetti.

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Why Agile?

The problem to solve

"Rapidly provide customers what they need to compete while mantaining a high-quaility deliverables"

The solution

- Deliver business value early and often in the development cycle
- Validate deliverables with customers and integrate requirements as they emerge
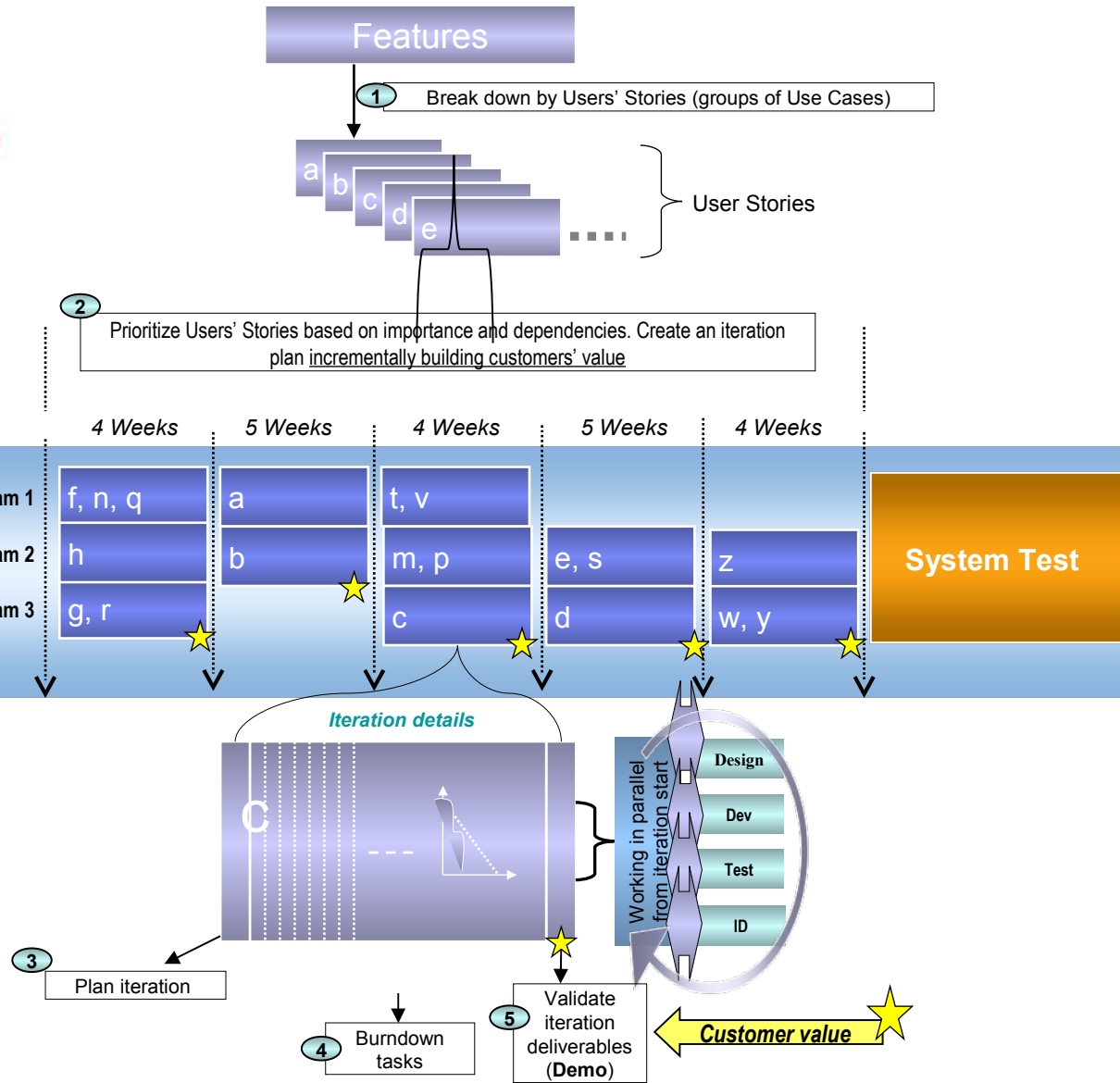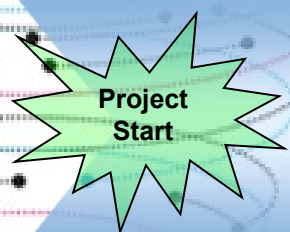- Leverage tight, efficient, self organizing teams

It's implementation
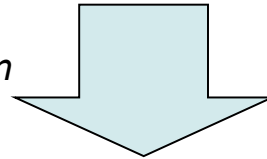
"Disciplined Agile Software Engineering uses...continuous stakeholder feedback to deliver high-quality, consumable code through user stories and a series of short, stable, time-boxed iterations."

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Agile Implementation@RomeLab

Features

① Break down by Users' Stories (groups of Use Cases)

a b c d e .... — User Stories

② Prioritize Users' Stories based on importance and dependencies. Create an iteration plan incrementally building customers' value

	4 Weeks	*5 Weeks*	*4 Weeks*	*5 Weeks*	*4 Weeks*		
Team 1	f, n, q	a	t, v				
Team 2	h	b	m, p	e, s	z	**System Test**	**Shipment**
Team 3	g, r		c	d	w, y		

Project Start

Iteration details

C

Working in parallel from iteration start

Design
Dev
Test
ID

③ Plan iteration

④ Burndown tasks

⑤ Validate iteration deliverables (**Demo**)

Customer value

Jazz as Agile's booster

Jazz is an IBM initiative to transform software delivery
making it more collaborative, productive and transparent
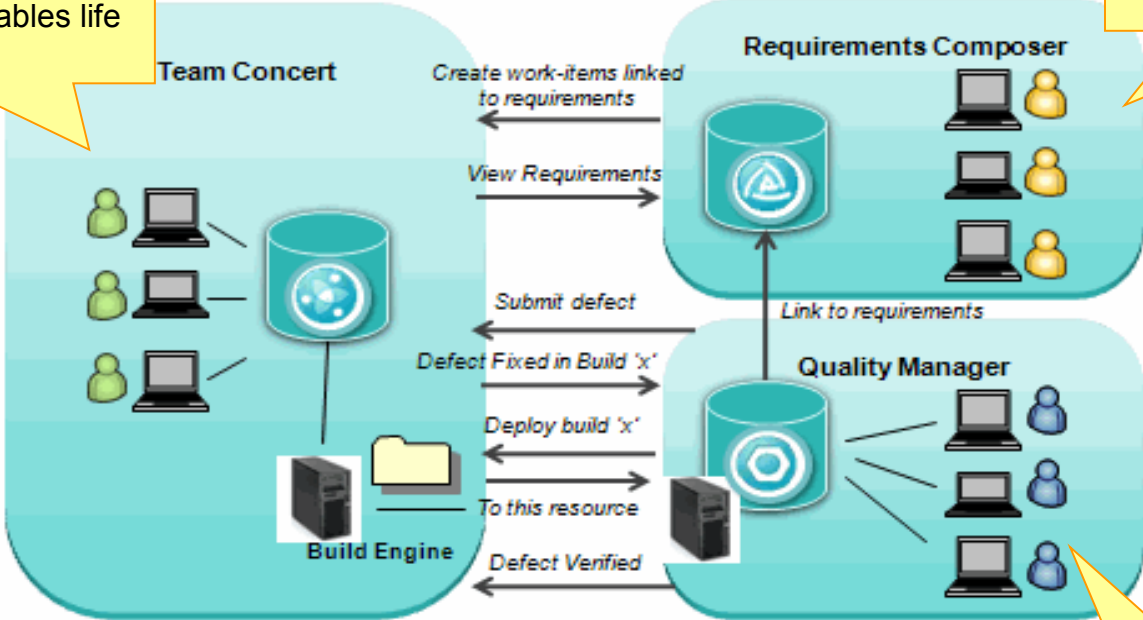thus releasing the common Agile foundations

- ➢ Co-located and small teams … is achieved in Jazz by
    - ➢ **Collaboration** - development teams collaborate in real time, in the context of the work they are doing, and in diverse environments

- ➢ Highly skilled people, relying on continuous interaction rather than extensive project documentation
    - ➢ **Productivity** - process followed by design, rather than as a documented imposition

- ➢ All stakeholders part of the team
    - ➢ **Transparency** - continuous feedback loop, improved predictability and accountability

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Collaborative ALM: Aligning reqs, dev & test

Surf the Collaborative ALM web

Team Concert

Requirements Composer

Create work-items linked to requirements

View Requirements

Submit defect

Link to requirements

Defect Fixed in Build 'x'

Quality Manager

Deploy build 'x'

To this resource

Build Engine

Defect Verified

JAZZ TEAM SERVER

Web architecture to retrieve product data in XML (REST)

Rational Insight
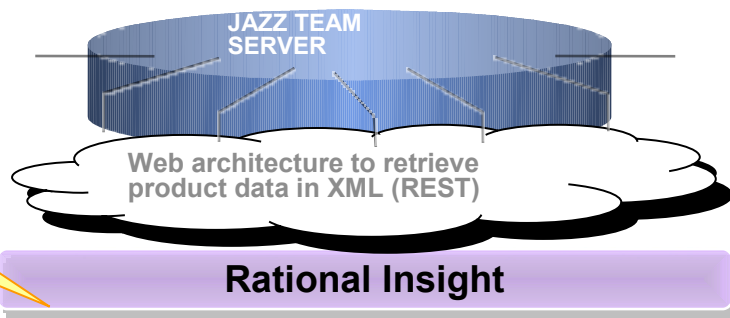
- **RTC** provides complete development deliverables life cycle management

- **RRC** provides the product requirements life cycle management

- **Rational Insight** for enterprise reporting solution of real-time, aggregated and historical project information in multiple repositories

- **RQM** provides the core requirements for test process management

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TWS4Apps – The Rome RTC implementation

- IBM Tivoli Workload Scheduler for Applications 8.5 is one of the products of the Tivoli Workload Automation family

- It has been selected as a **pilot project** for evaluating advantages of adopting the Jazz platform (RTC 1.0) in an Agile development context

- All project activities (plan, development, test and ID) have been performed using the Jazz platform

- Team members located in Rome and Boeblingen (Germany)

- It has been a "continuous integration" task: we daily worked to improve our Jazz adoption level!

- We succeeded in adopting Jazz in a context where legacy infrastructures could not be completely abandoned for several reasons
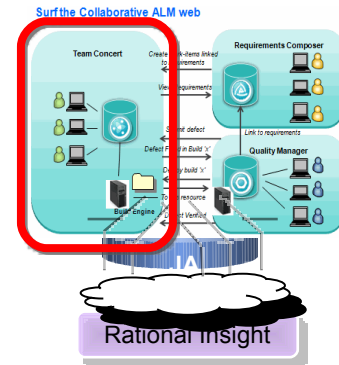
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RTC - Integration Layer

TWS4Apps was not the "easiest project" for RTC tool exploitation due to:
• Complex and not flexible Build environment for security compliance
• Being a legacy product (C language)
• Customer support team using another tool for version control CMVC

However, it is very representative of the majority of the projects currently undergoing in the Lab.

For this reason we built an integration Layer between Jazz and the existing legacy infrastructure.

Jazz Platform   *kernel*
Team Process   Repository

Work Items

Team Build   Source Control   Agile Planning   Team Reports

| Build | BVT / CVT | Code synch | Integration Layer | Proj model |

Build Env — *Daily build*

Autom. BVT CVT — *Daily BVT*

CMVC — *Code mgmt*

Project mgmt — *Project standards*

Project Repository

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Collaboration @ RomeLab – Before Jazz

Release Development Use Cases

Lab Director / Top Management

Goes through hot info list

Hot list CRUD

Updates Hot list

Project Manager

ID Manager

Test Manager

Notes DB

Exceutes manu...

project met...

Development Manager

Upda...

...fects

...ager

Tester

TTT

RSA

Architect

Reviews design

Unit Tests

Reviews doc

...er

RSA

...st

Writes doc

Reviews code

CMVC

Docs Repository

Builds code

Code Management

RSA

ID

Handles doc revi...

Writes code

Collaboration @ RomeLab – After Jazz

Release Development Use Cases

Lab Director / Top Management

Goes through hot info list

Hot list CRUD

Updates Hot list

Project Manager

ID Manager

Test Manager

Reviews project metrics

Metrics CRUD

Monitors plan execution

Exceutes manual test

Collects project metrics

Development Manager

Tester

Manager

Architect

Implements automat...

Reviews design

Designs

ID

Handles doc reviews

Writes code

Builds code

Code Management

Process - Iteration plan JazzAdoption - M1 - Team Concert

File   Edit   Navigate   Search   Project   Run   Window   Help

Team Orga   Process Te   Team Artifa   JazzAdoption [M1]

All Team Areas (3 of 3 Team Areas selected)

- Repository Connections
- JazzAdoption [jazzsrv.romelab.it.ibm.com]
  - Builds
  - Plans
    - M1 [Main Development]
    - 1.0 [Main Development]
    - Main Development
      - M1
        - JazzAdoption [M1]
  - Reports
  - Streams
  - Work Items
- Jutaa [jazzsrv.romelab.it.ibm.com]
- Tivoli Dynamic Workload Broker [jazzsrv.romelab.it.ibm.com]
- Favorites
- Feeds
- My Repository Workspaces
- My Team Areas
- Work Item History

JazzAdoption   Problems detected

Feb 4, 2008   -8 | Mar 5, 2008
55%   45%

Team Area: JazzAdoption Team | Iteration: M1   30 Closed Items   24 Open Items

Development
Open items: 4 | Closed items: 1

Check the RAD 7.5 and Jazz integration problems	1 week	High	Robert Farrugia	37
Automated weekly update of source files within CMVC repository	-	Medium	Umberto Caselli	132
build environment integration	-	Medium	Angelina Ascone	42
Static Analysis	-	Medium	Robert Farrugia	30
Extend Build Report to Include Code Coverage	-	Unassigned	Robert Farrugia	29

Infrastructure
Open items: 7 | Closed items: 7

Report enablement	-	High	Robert Farrugia	226
Setup BUILD machine integrated with Jazz environment	-	Medium	Alessandro Molon	141
E-Mail notification	-	Medium	Massimiliano Celli	126
WAS Integration	-	Medium	Alessandro Molon	125
BluePages Integration	-	Medium	Alessandro Molon	124
Security roles and separation duties	-	Medium	Angelina Ascone	47
Jazz Server	0 hours	Unassigned	Robert Farrugia	28
Jazz Users	0 hours	Unassigned	Robert Farrugia	23

JazzAdoption
Open items: 7 | Closed items: 2

Add combo box on new added ODC fields	-	High	Robert Farrugia	162
Setup an Education plan	-	High	Luca Romagnoli	130
prova difetto 7	-	Medium	Annalisa Pizza	274
prova difetto 6		Medium	Annalisa Pizza	264

Overview   Planned Items   Charts

Show
- Parent Summary
- Description
- Status

Exclude
- Empty groups
- Future and past items
- Resolved items

More filters...
Tags...

Group By
Categories

Sort by
Priority

Plan Work Items
Open Items
Closed Items

Related Work Items
Show Backlog
Unplanned Closed Items

Next Plans

Process

Save

Team Advisor

Simple Files   Work Items
- ADMIN@jazzsrv.romelab.it.ibm.com

Report Administration
- JazzAdoption [jazzsrv.romelab.it.ibm.com]
- Jutaa [jazzsrv.romelab.it.ibm.com]
- Tivoli Dynamic Workload Broker [jazzsrv.romelab.it.ibm.com]

RTC - Project Dashboard Customization

- All project data directly available via web

- All reports **automatically** updated daily (no manual intervention is more needed)

- **Customized our project Dashboard** in order to easily have access to:

  - General Project info tab: project description, team, recent events)

  - Release Overview Status tab (with all related reports, such as the product backlog chart and the team velocity)

  - Current Sprint Status tab (with all related reports, such as current sprint stories and current sprint burnup chart)

  - We customized several reports (for example to have defect trend data)
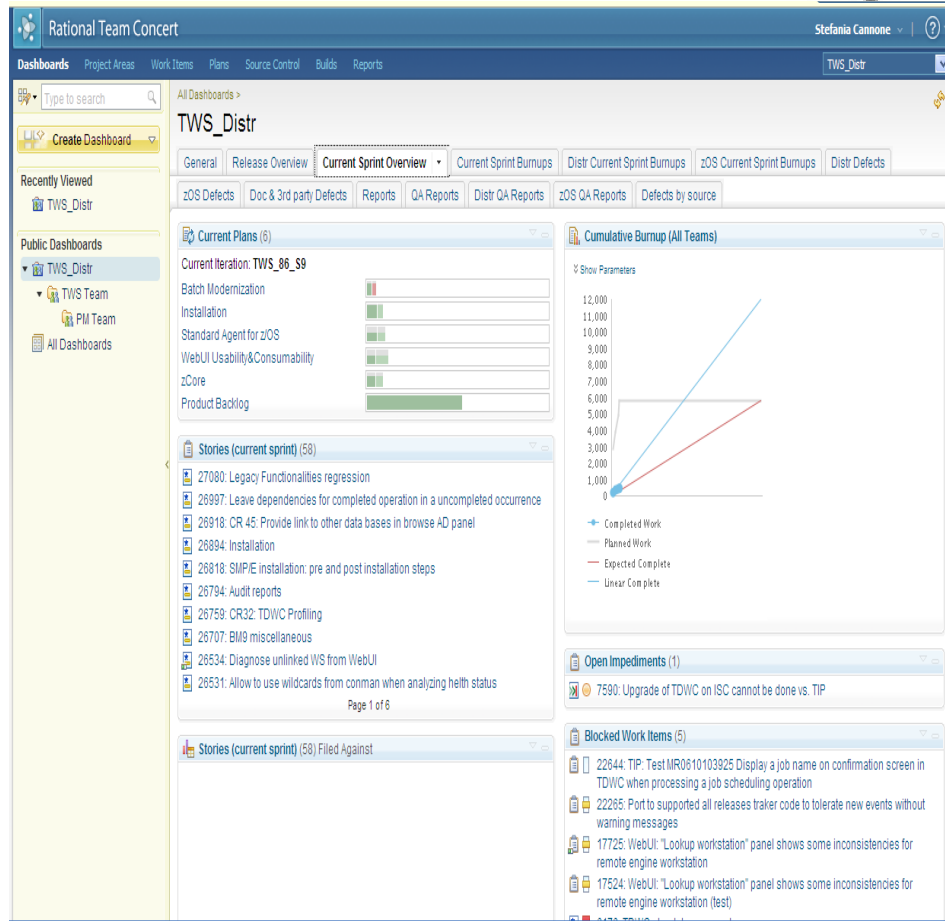
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Release Overview tab
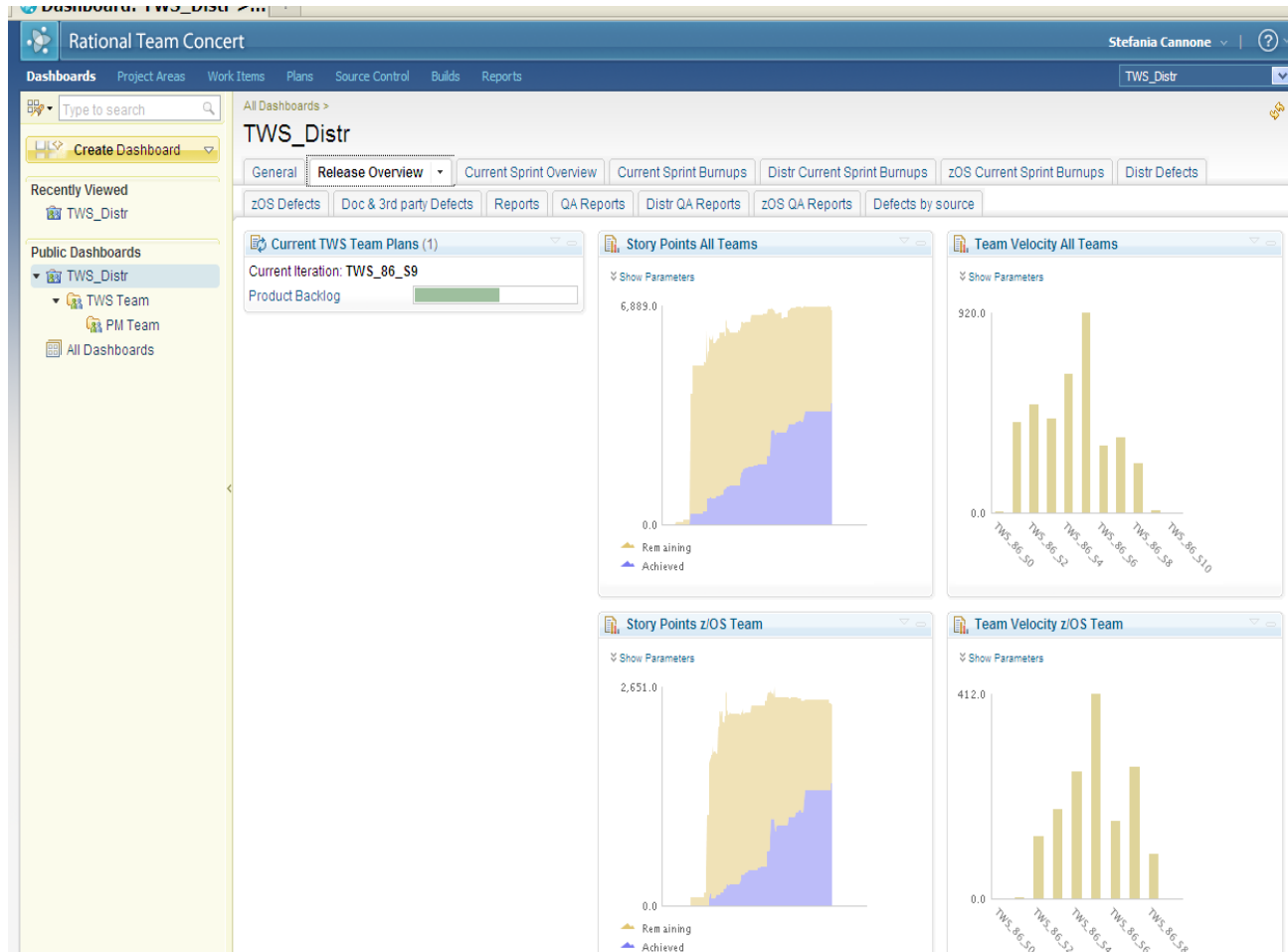
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RTC - Main strengths identified

1. **Collaboration: One tool for entire team**
    - Foster collaboration
    - Easy sharing of info among team
    - Quicker and more efficient cooperation
    - Easy to get new people on board
    - Easy collaboration w/ distributed teams

1. **Productivity: Navigation of project data**
    - All project related data (iteration plans, code, docs, test, defects) are linked together
    - Can be easily accessed and navigated
    - Any drill down is feasible and easy

1. **Transparency: Real time info and data sharing**
    - Automatic project data collection
    - More transparency and more efficiency
    - Reduced effort for Project Governance

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Results of Implementation

- **Savings**
  - Development activities: 25%
  - For metrics collection: 25%
  - Information Development: 15%

- **12-months Post-GA Quality Assessment in plan (July 2010)**
  - Projected improvement: 19% reduction in APAR average per customer
  - Actual improvement: 57% reduction in APAR avg per customer, confirming good code stability

- **RTC 2.0 is the result of the project**
  - RTC 2.0 includes most of the enhancement requests submitted during the TWS4Apps project where RTC 1.0 was used

- **Rome Lab now formal reference for Rational!**
    - Scopri come far lavorare in perfetta sinergia i tuoi team e i tuoi progetti.

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ISDE 6.x – The Rome RQM adoption

- IBM Systems Director Editions (ISDE) is a simplified packaging solution of individual Tivoli and STG products

- Pilot started off on ISDE 6.1.2 with RQM 1.0 where initial assessment was made and feedback were circled back to the RQM team

- All test activities (plan, test cases design, review) have been perfomed using RQM, while defects and code management have continued with traditional infrastractures

- With ISDE 6.2.1 currently exploiting RQM 2.0.1 together with RTC 2.0.1 (on going)

- Team members located in Rome, Ireland and US
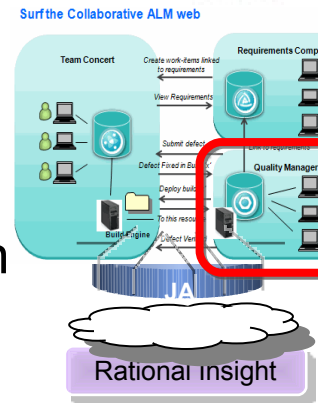
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RQM - Project Dashboard Customization

- All test project data directly available via web

- **Customized Dashboard in order to:**

  - organize a high-level overview of the status of your project, team, or workload for an on demand reporting

  - drill down to get information on specific test assets or updated reports

  - customize reports

  - create cross repository dashboards
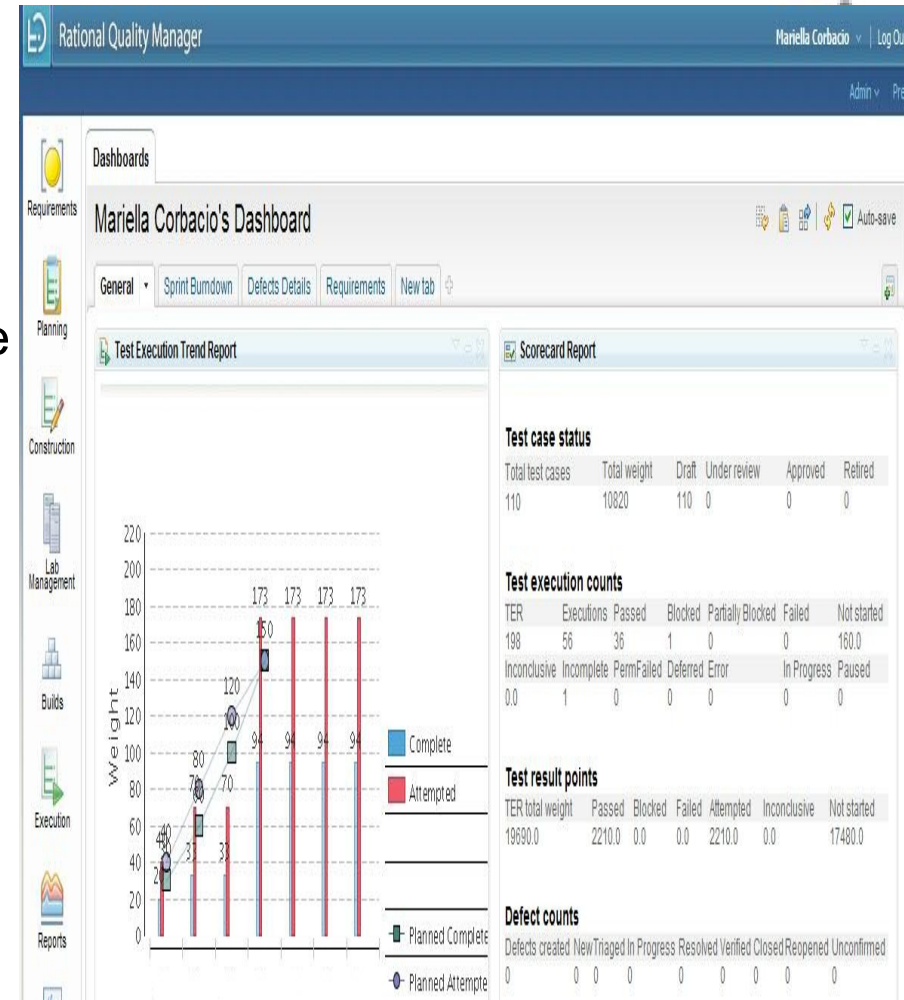
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RQM - Main strengths identified

1. *Project lifecycle management with a test plan centric approach*

Integrated test management with a WEB interface across all the test aspects (business objectives, test strategy, test cases, resources, environments, entry/exit criteria, risk assessment, plan and test cases review and approval, test tracking ...).
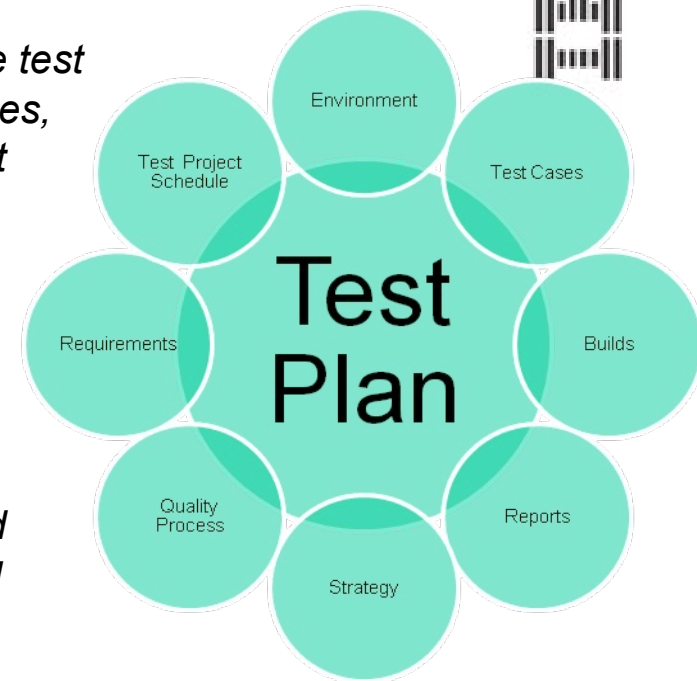
All project related data (iteration plans, test, defects) are linked together

2. *Collaborative and adaptive test plan management*

Structured and customizable test plan with multiple user defined sections, possibility to assign different ownership for specified sections, team collaboration improvements

3. *Collaborative and adaptive test cases design*

Test cases easy to create, maintain and evolve, test cases re-use, possibility to assign different ownership for specified sections, ...

Test Plan

Environment · Test Cases · Builds · Reports · Strategy · Quality Process · Requirements · Test Project Schedule

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RQM - Main strengths identified

4. ***Easy link between RTC epics-stories and requirements and test cases on RQM***
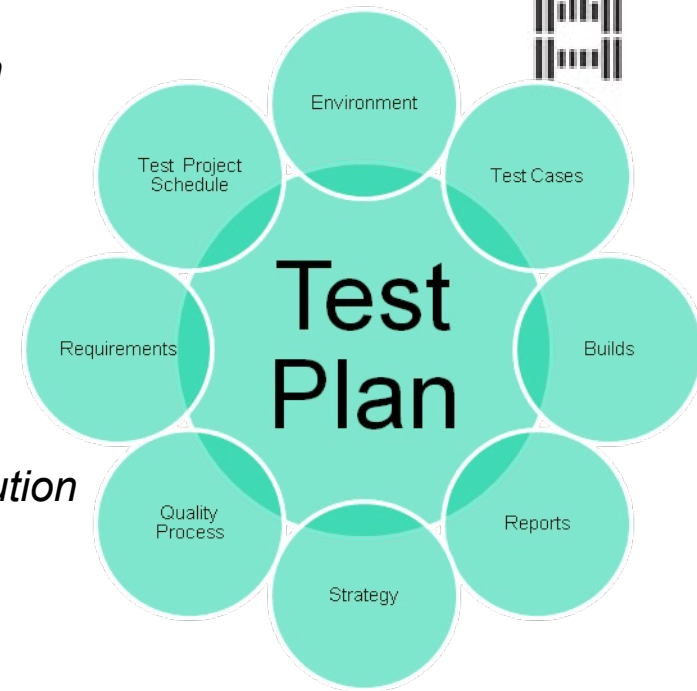   *For example, it is possible to link test scenarios defined in RQM with related user stories entered in RTC. Increased requirement traceability and direct linking with test cases identified for a specific requirement*

5. ***Execution paths optimization***
   Easy determination of the most efficient configuration coverage patterns and execution paths and related execution record generation

6. ***Extensible and open architecture***
   Leverage test automation feature provided by RQM integrating automated test suites developed internally

Test Plan

- Environment
- Test Cases
- Builds
- Reports
- Strategy
- Quality Process
- Requirements
- Test Project Schedule

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Results of Implementation

- **Savings**
  - Test Planning : 10%

  - Test Design: 20%

  - Test Execution : 20% *(projected)*

  - Test tracking and results consolidation : 70% *(projected)*

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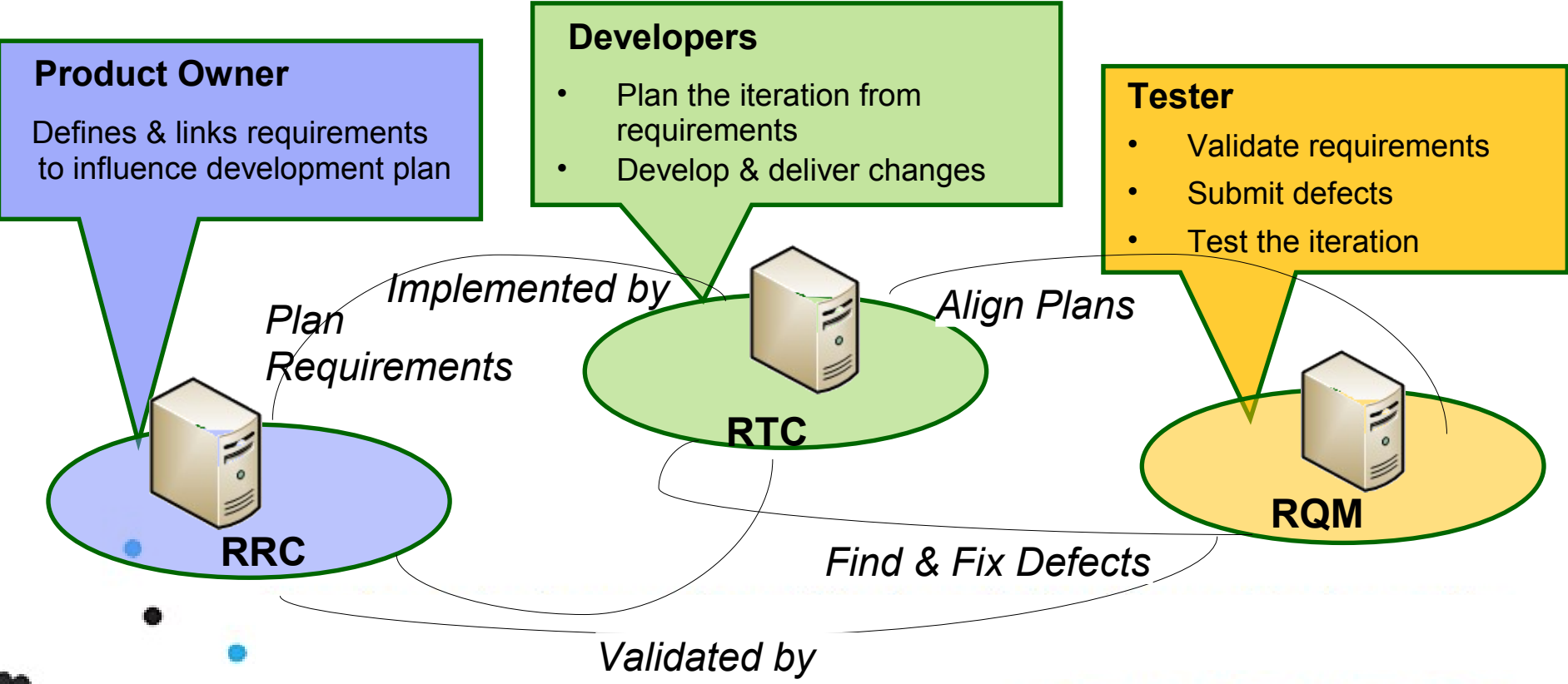
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RRC Pilot scenario

1. Define methodology's Best Practice

2. Customize RRC to support methodology:
- Template Creation
- How to use RRC
- Organize artifacts to reflect methodology
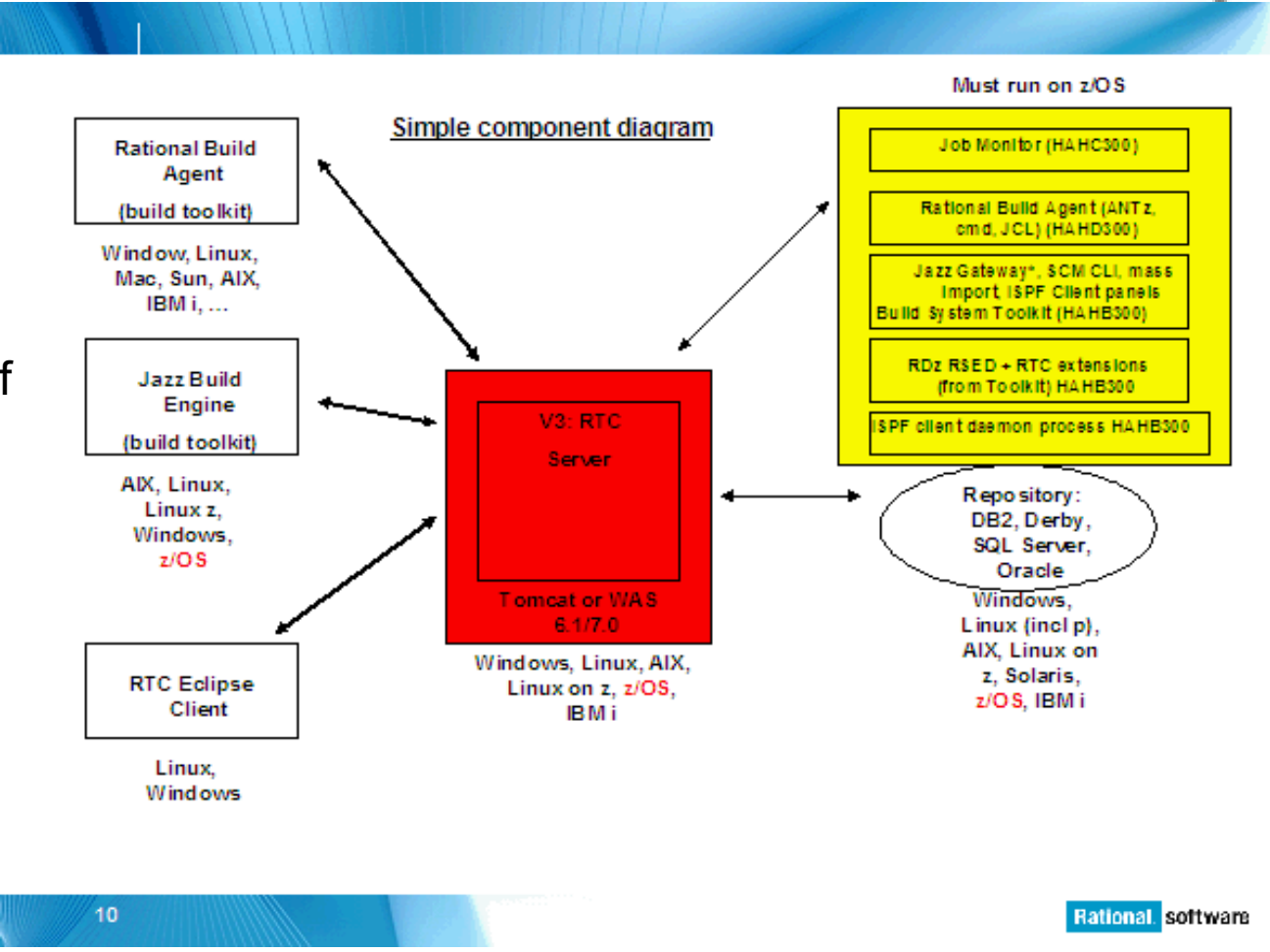- Validate link with RQM and RTC

Product Owner

Defines & links requirements to influence development plan

Developers
- Plan the iteration from requirements
- Develop & deliver changes

Tester
- Validate requirements
- Submit defects
- Test the iteration

Implemented by

Align Plans

Plan Requirements

RTC

RRC

RQM

Find & Fix Defects

Validated by

RTCz Pilot for TWSz & NetView for z/OS

• Server with RTC v3 installed

Next steps:
• RTC zOS add-on install
• Configuration & setup of Build Toolkit, BuildForge agent, RDz client and RDz.

The pilot will be done in parallel for TWSz and NetView for zOS (in Raleigh) sharing the same RTC v3 server

Simple component diagram

Must run on z/OS

Rational Build Agent
(build toolkit)
Window, Linux, Mac, Sun, AIX, IBM i, …

Jazz Build Engine
(build toolkit)
AIX, Linux, Linux z, Windows, z/OS

RTC Eclipse Client
Linux, Windows

V3: RTC Server
Tomcat or WAS 6.1/7.0
Windows, Linux, AIX, Linux on z, z/OS, IBM i

Job Monitor (HAHC300)
Rational Build Agent (ANTz, cmd, JCL) (HAHD300)
Jazz Gateway*, SCM CLI, mass import ISPF Client panels Build System Toolkit (HAHB300)
RDz RSED + RTC extensions (from Toolkit) HAHB300
ISPF client daemon process HAHB300

Repository: DB2, Derby, SQL Server, Oracle
Windows, Linux (incl p), AIX, Linux on z, Solaris, z/OS, IBM i

10

Rational. software

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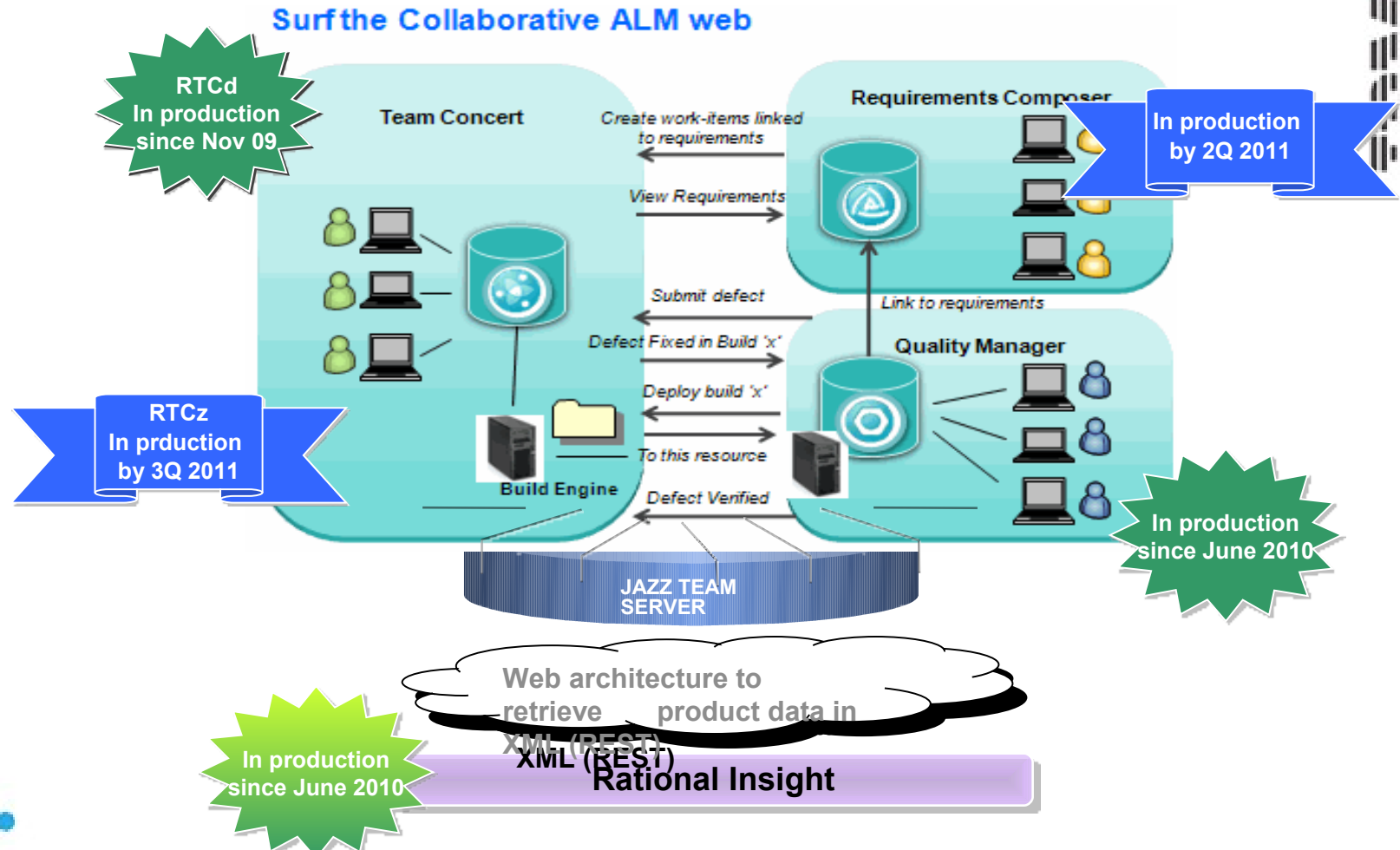
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Jazz Collaborative ALM (C/ALM) Adoption Roadmap

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RTCd In production since Nov 09

Team Concert

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Create work-items linked to requirements

View Requirements

In production by 2Q 2011

RTCz In prduction by 3Q 2011

Submit defect

Defect Fixed in Build 'x'

Deploy build 'x'

To this resource

Link to requirements

Quality Manager

Build Engine

Defect Verified

In production since June 2010

JAZZ TEAM SERVER

Web architecture to retrieve product data in XML (REST)

XML (REST)

Rational Insight

In production since June 2010

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www.ibm/software/rational

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