Innovate2011

The Premier Software and Product Delivery Event

Software. Everyware.

Enabling software-driven innovation with new and enhanced solutions from IBM

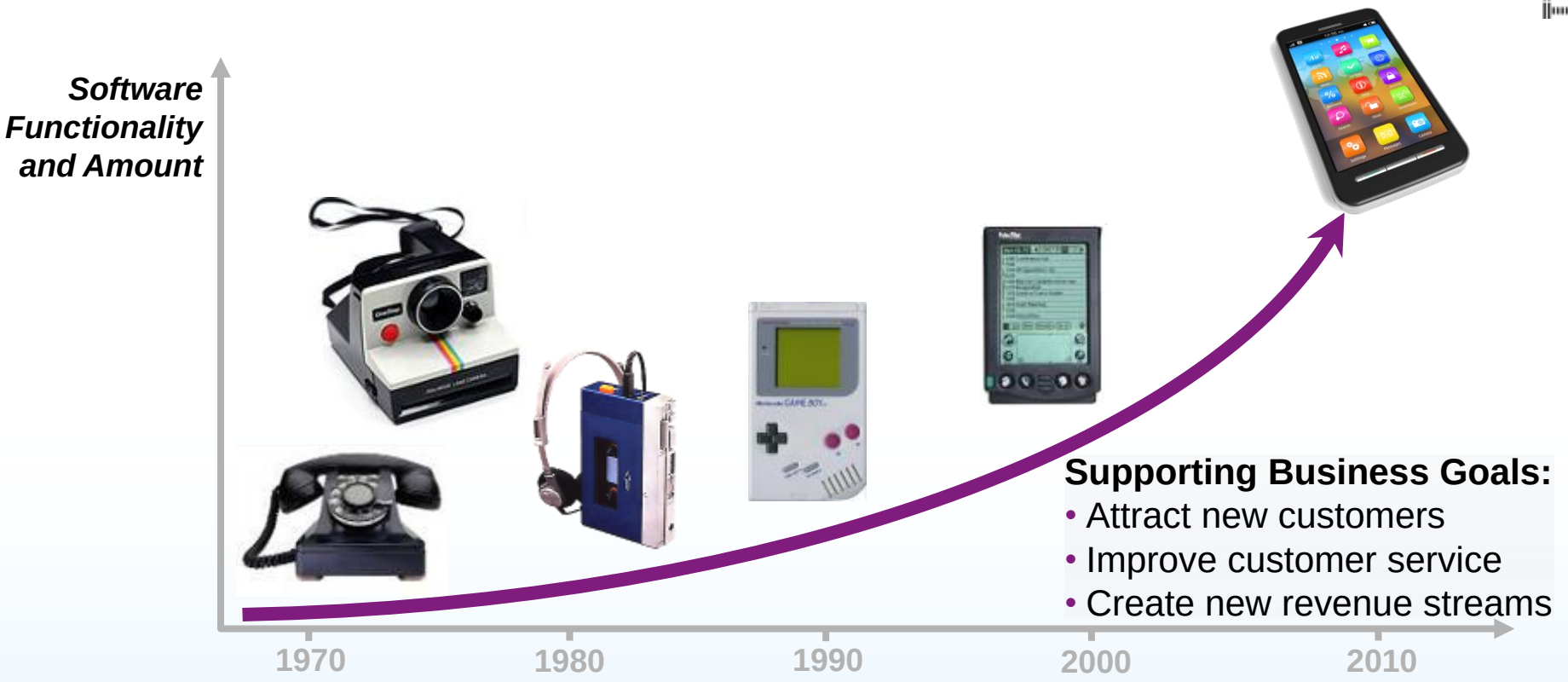
Meg Selfe

Vice President, Complex and Embedded Systems

IBM Software, Rational

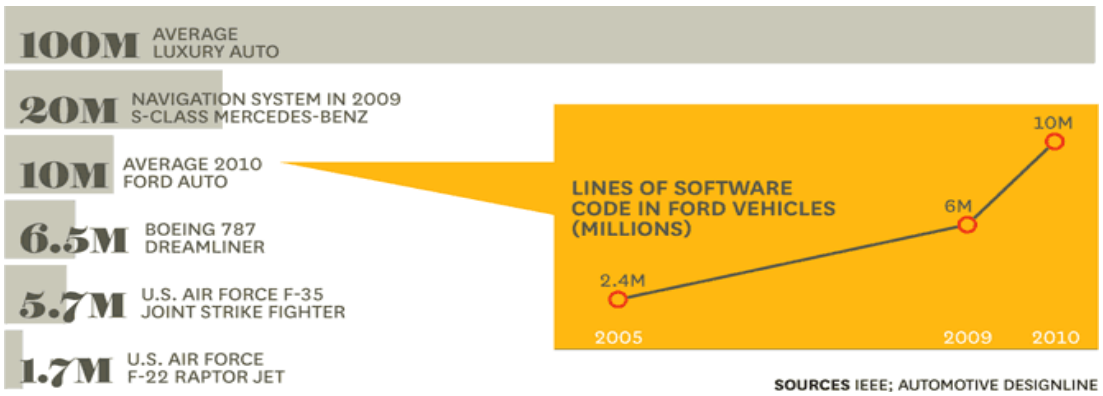
We didn't get here overnight

Uniquely customizable phone, email, music, Web, camera, GPS, games, apps, video recorder... in a single device



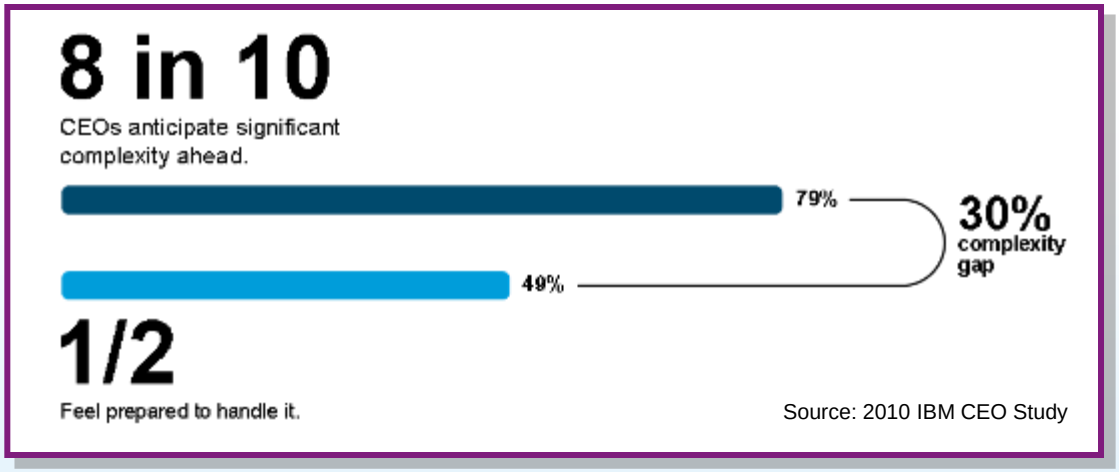
Introduction of software brings complexity

Yet few are prepared to handle it



More Complex Than a Fighter Jet: Safety regulations and consumer demand for performance and convenience have led to an exponential spike in cars' software complexity.

Source, HBR, June 2010



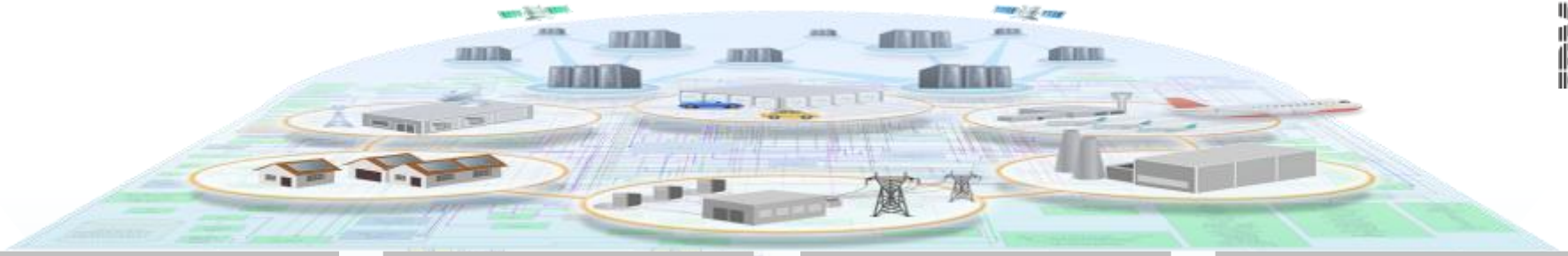
What Hinders Innovation?

In our customer's words

Evolving Business Models	*"I need to transform product development to be more collaborative while removing redundant activities."*
Increasing Product Complexity	*"I need for mechanical, electrical, and software engineering to all be on the same page."*
Extension of the Enterprise	*"I need a way for all my design and supply partners to participate in a unified process for product development."*
Disconnect with Operations	*"I need to ensure that the products I build can be profitably supported and maintained over their lifetime."*

Introduction to IBM Innovation Strategy

Integrated Product Management: Provides an integrated approach to innovation across the product lifecycle



BUSINESS PLANNING & TRANSFORMATION

Product management and global optimization of process & organization

PRODUCT & DESIGN DEVELOPMENT

Designing, delivering and managing product value and differentiation

LIFECYCLE COLLABORATION

Automating processes across the ecosystem of system contributors

PRODUCT IMPLEMENTATION AND IN-SERVICE SUPPORT

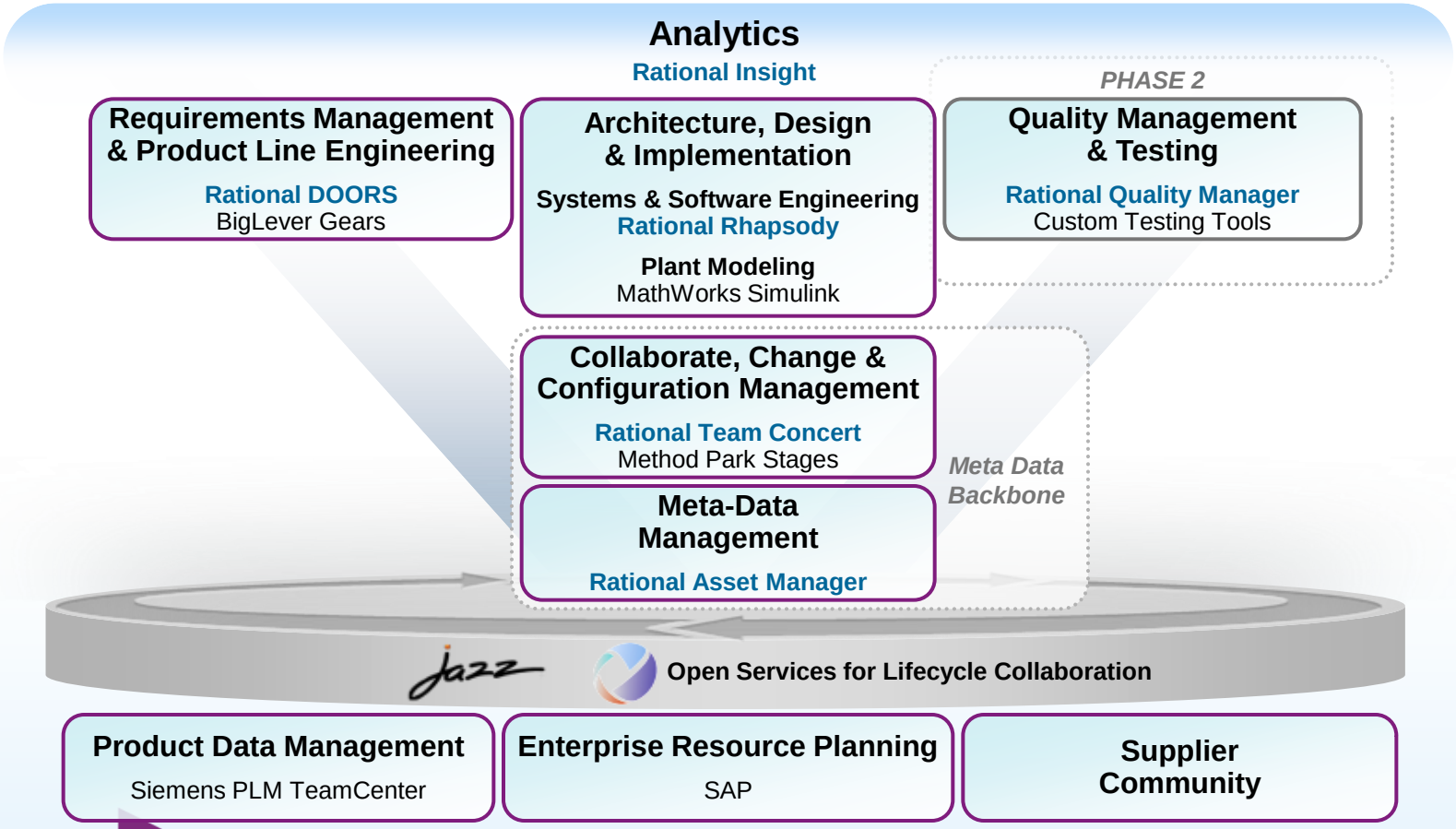
Gain visibility and control over critical assets and improve implementation efficiencies & value

Collaborative mechanical, electronic and software lifecycle management

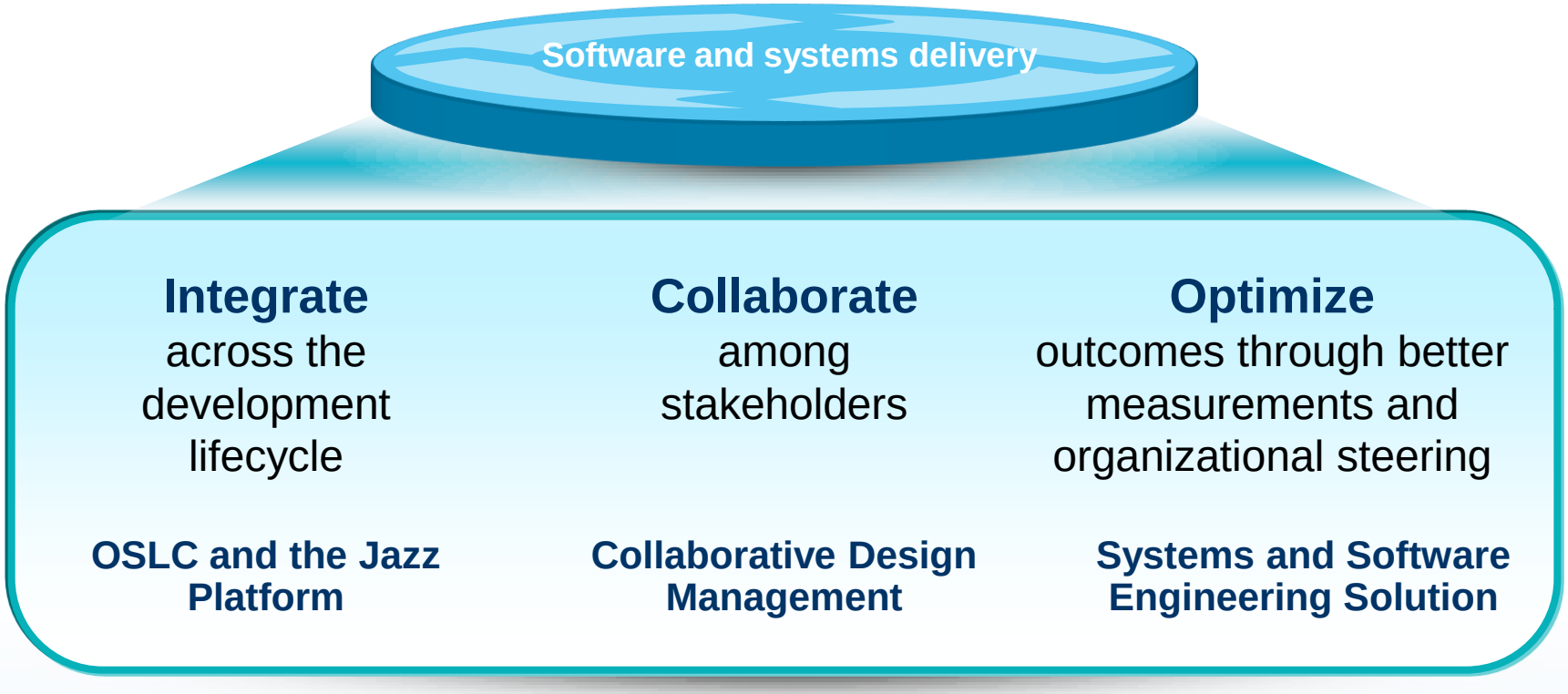
Design, deliver and manage smart products

Customer Success: GM

Chevy Volt designed and engineered in 29 months versus typical 5-10 year cycle for new technology



How IBM is Leading the Innovation Agenda



Innovate2011

The Premier Software and Product Delivery Event

Software. Everyware.

Innovation in Action

Sky Matthews
CTO, Rational Systems Products
IBM Software, Rational

Systems and Software Engineering Solution

Technology, Best Practices, Services and Industry Solutions

REQUIREMENTS MANAGEMENT
Rational DOORS

QUALITY MANAGEMENT
Rational Quality Manager

ARCHITECTURE & DESIGN
Rational Rhapsody

COLLABORATION, PLANNING & CHANGE MANAGEMENT
Rational Team Concert

DODAF

Open Services for Lifecycle Collaboration

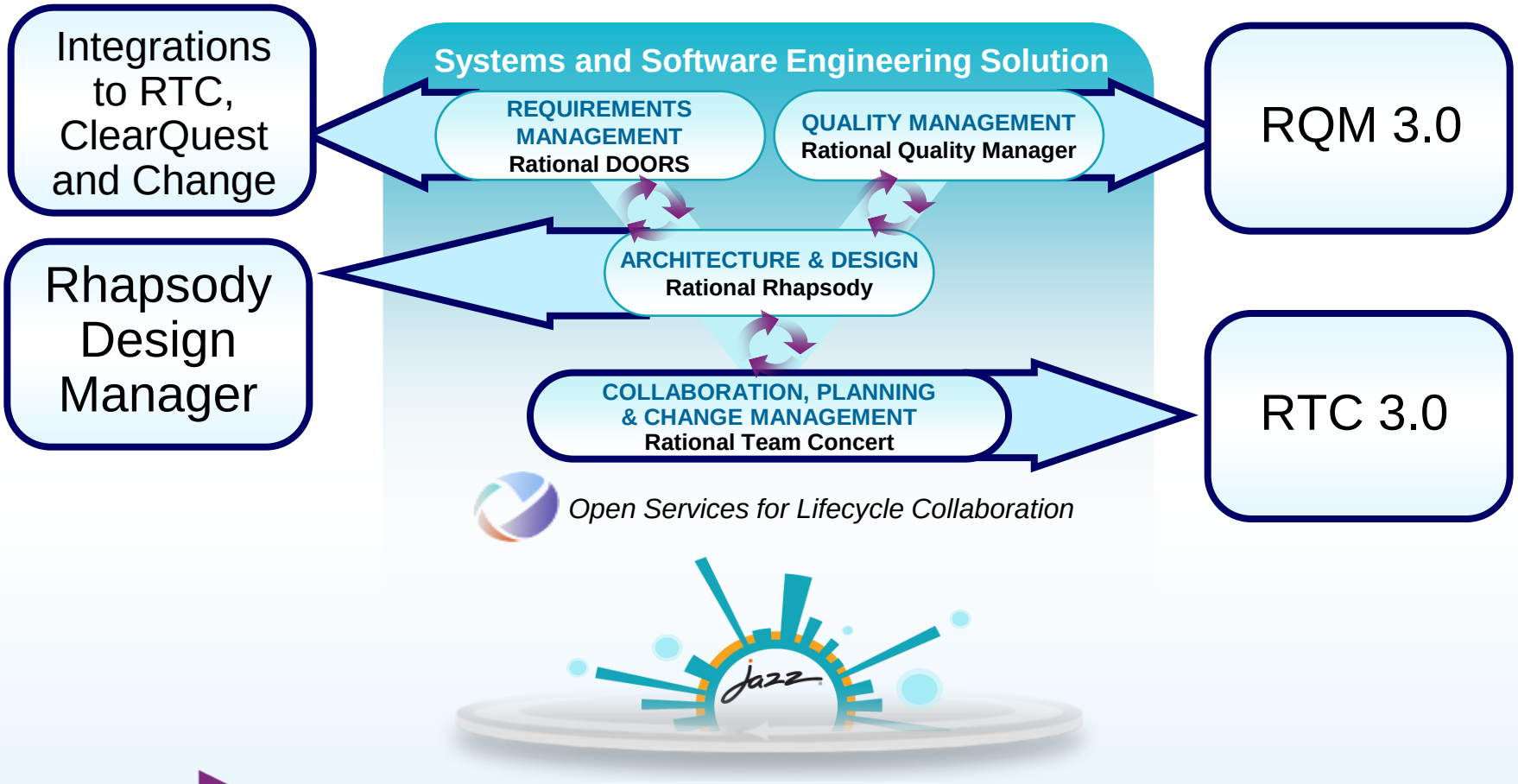
AUTOSAR

ISO 26262

Automotive SPICE©

Systems and Software Engineering Solution

New capabilities for a systems audience

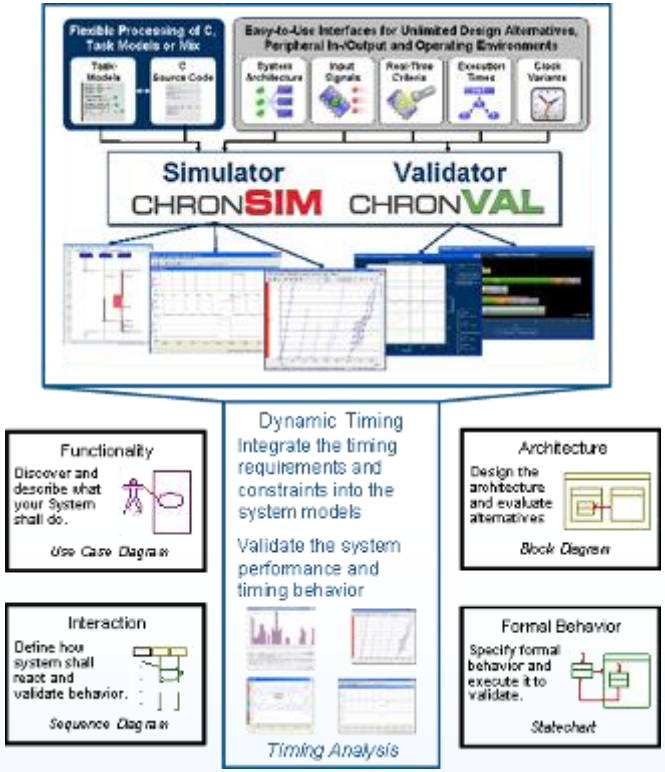


IBM and INCHRON Software

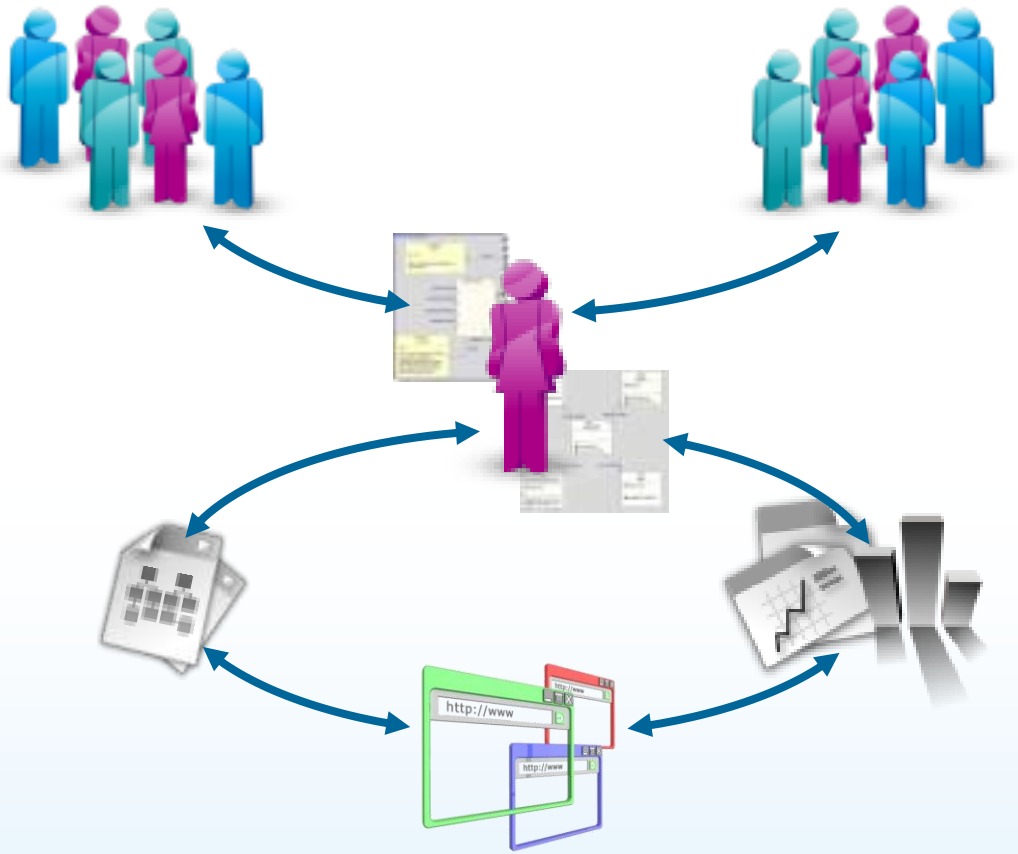
Model-driven solutions for embedded systems timing, analysis and validation

Extending the Rational Systems and Software Engineering Solution

- Add timing, performance and behavior analysis capabilities to system models
- Simulate, analyze and test the dynamic, real-time behavior of individual subsystems and complex interacting systems



How do you manage increasing complexity across a collaborative lifecycle and a system of systems?



Collaborative Design Management Offerings

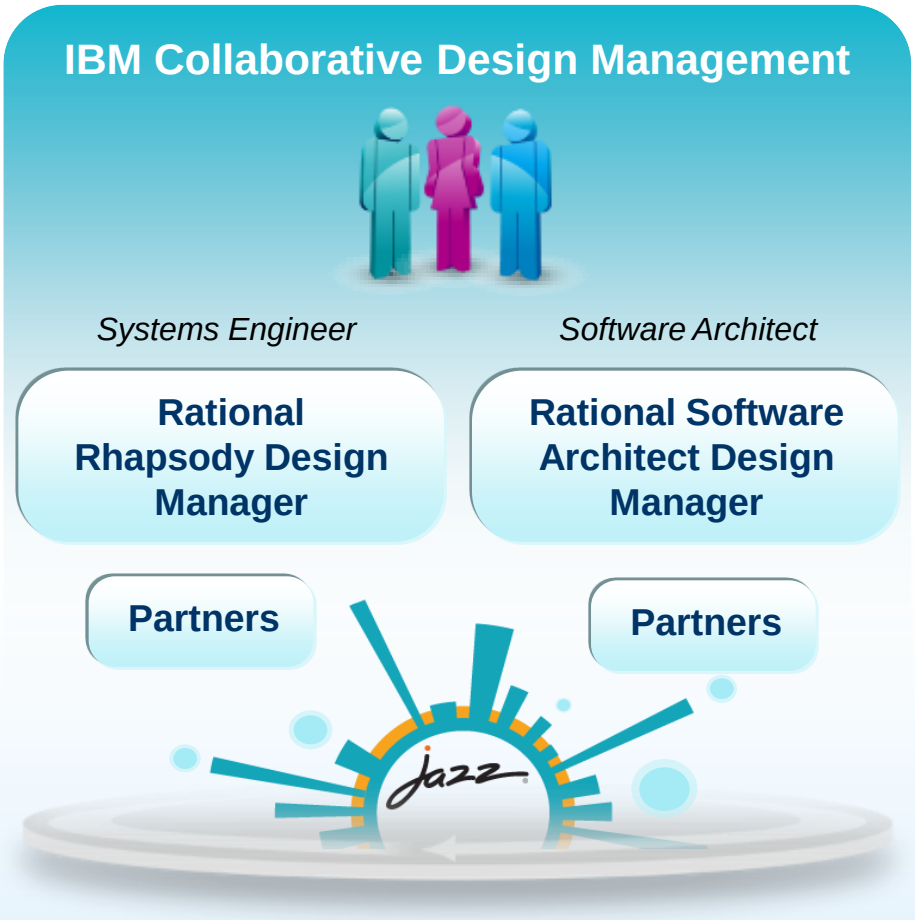
Enable cross-team collaboration on systems and software architecture, across the lifecycle

- Engage all stakeholders
- Unify design across domains and supply chains
- Enable an open, collaborative ecosystem
- For both Rhapsody and Rational Software Architect

"The 'design review' capability is one of the most important capabilities offered and allows us to make designs broadly accessible to the entire organization."

Greg Hodgkinson, Prolifics

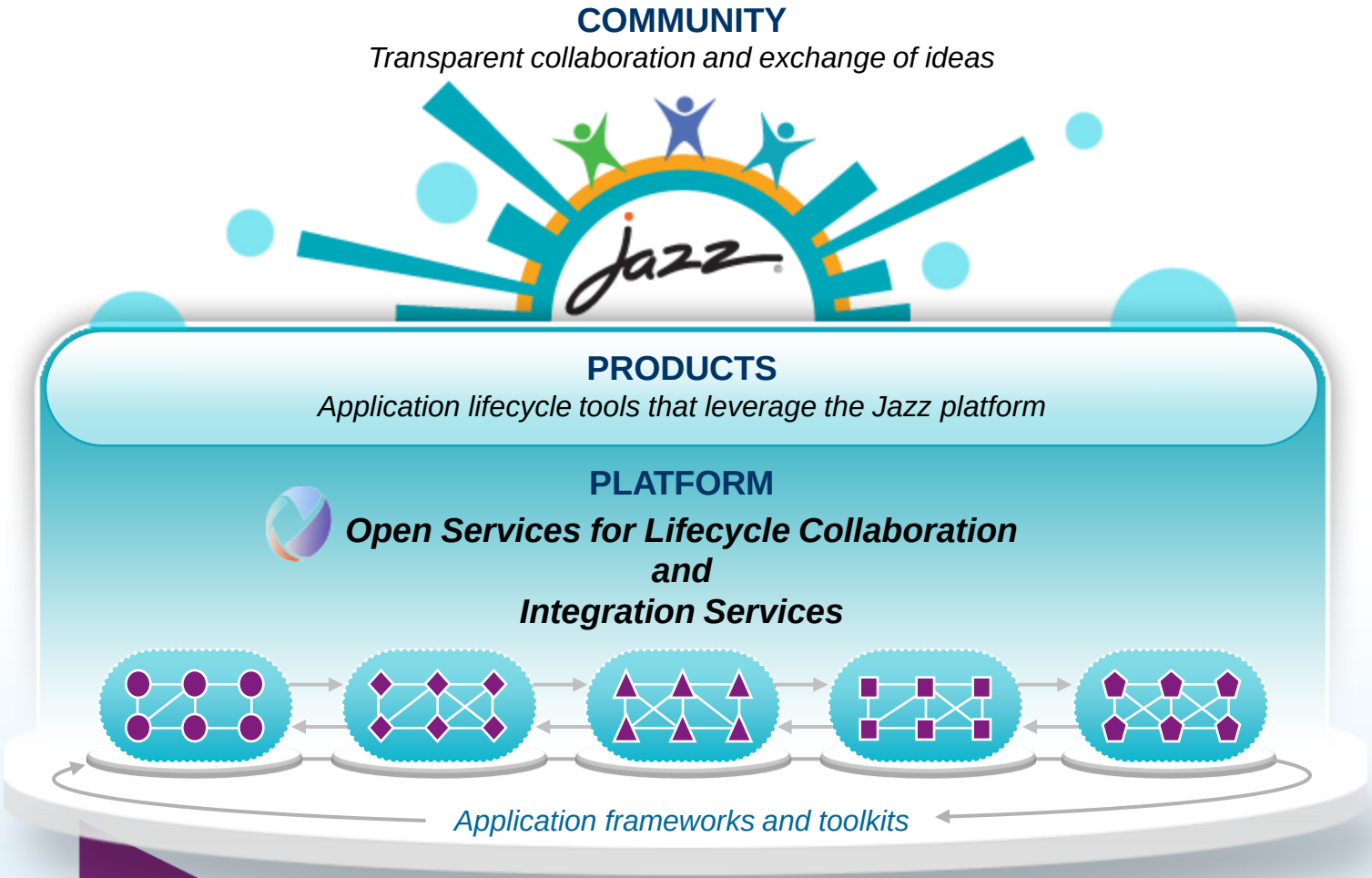
NEW



Collaborative Design Management

OSLC and the Jazz Platform

IBM's Jazz platform leverages OSLC, providing open collaboration across the software and systems lifecycle



OSLC: simplifying lifecycle integration

Cross lifecycle scenarios implemented to open specifications

426 **registered community members from** ***127*** **organizations and growing**

Open Services for Lifecycle Collaboration

Open interfaces. Open possibilities.

Increasing Adoption

- New Eclipse OSLC SDK project proposal
- Open source community projects
- Clients integrating in-house tools
- IBM business partners releasing integrations
- Growing number of published specifications

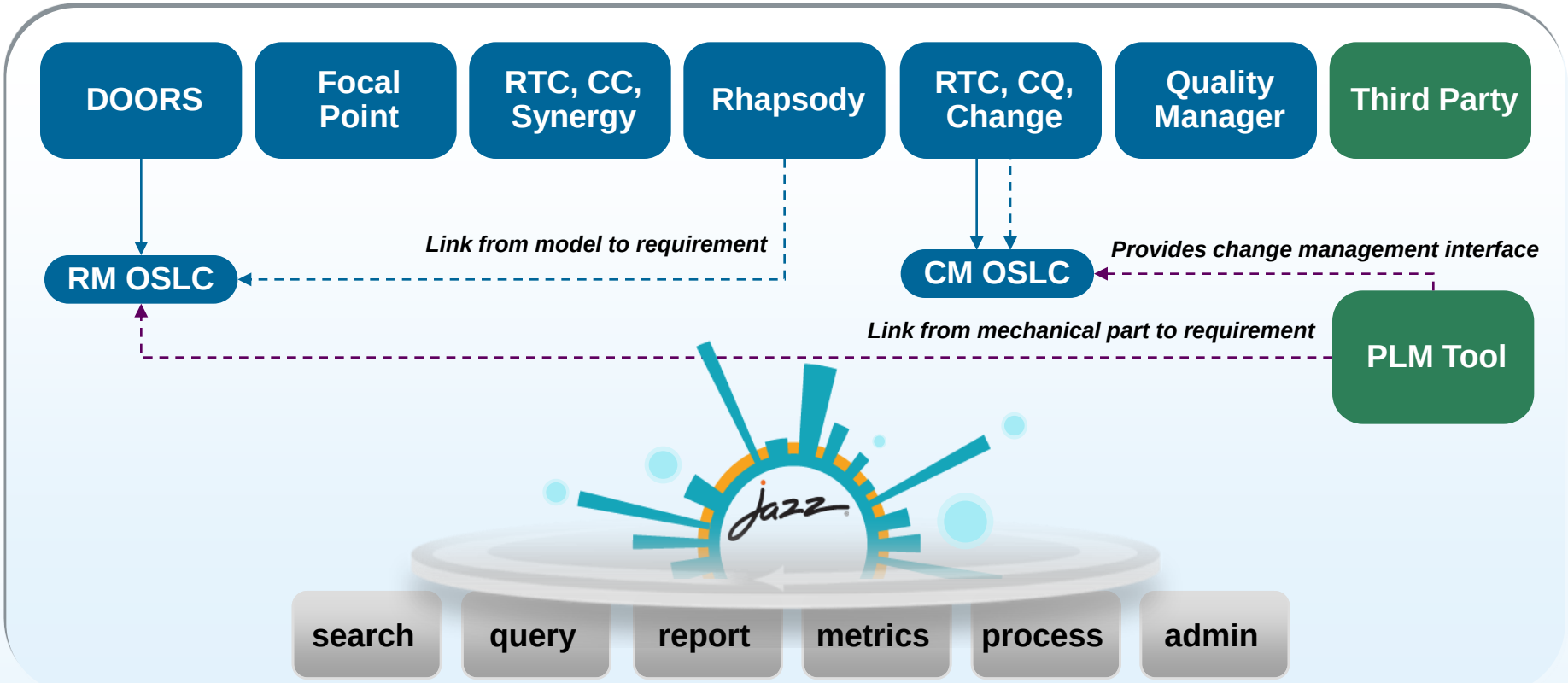
"With OSLC's open and scenario-based approach, ***businesses benefit*** *from the ability to* ***tie disparate tools together****. This collaborative approach gives our consultants the* ***flexibility*** *to make lifecycle tool choices based on* ***specific client project demands****."*

Randy Vogel, Accenture

[1] Open-services.net

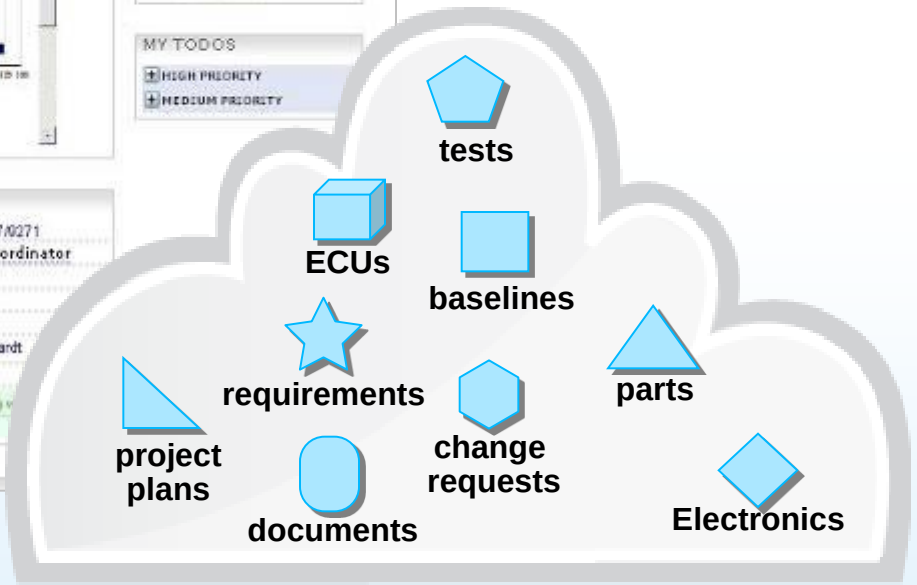
Not ALM versus PLM… but ALM *with* PLM

OSLC enables an open integration platform between key disciplines



Jazz: An open platform approach

Enables loosely coupled "web" of linked engineering data



Engineering Lifecycle Management

Innovate2011

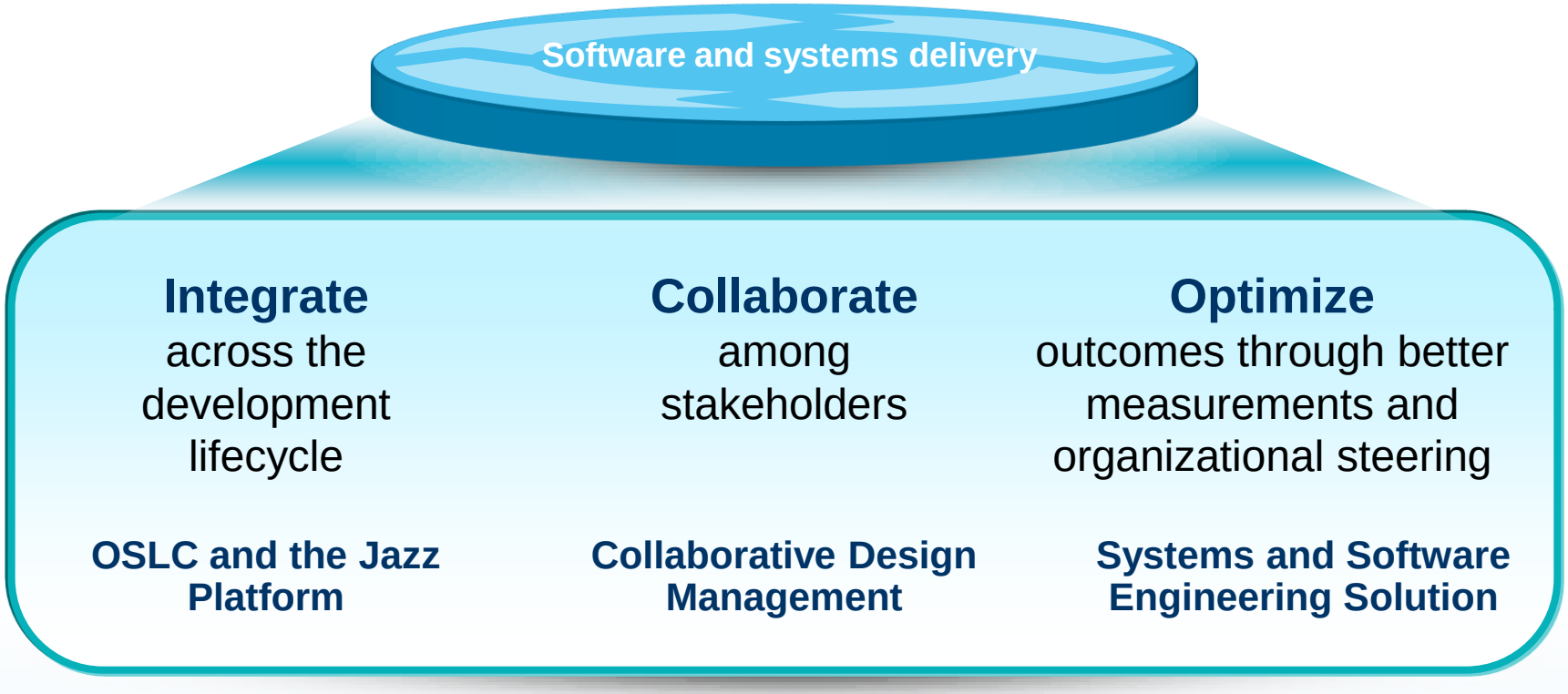
The Premier Software and Product Delivery Event

Software. Everyware.

Customer Success

Neeraj Chandra
V.P. Worldwide Strategy
IBM Software, Rational

Helping you combat complexity and lead the innovation agenda



Brockwell Technologies, Inc.

Improving national defense by analyzing weapons prior to build

The Challenge

- Error-free integrated weapons systems
- Allows for integrated and iterative lifecycle management of embedded weapon systems applications and embedded diagnostics for military vehicles across engineering teams

The Solution

- Predictive modeling and simulation to visualize applications and systems to identify and fix design flaws prior to mass production
- IBM Rational Rhapsody

The Result

- Improved reliability, safety and function
- 40% improvement in time-to-market

"Because weapon systems are so interconnected, we often face the challenge of how to change one system without affecting the integrity of another. With our new modeling tool, we can prototype systems to see how they function and whether they impact others, before going on to production."

Tim Brockwell, Founder
Brockwell Technologies, Inc.

St. Jude Medical

Interconnected life sustaining technology

The Challenge

- Reduce cost, time to market in highly regulated industry
- Plan growth & sustainability of complex System of Systems

The Solution

- Systems of Systems approach both inward and external focused
- Common and/or reusable components
- Technical governance, Integration of work streams
- IBM Rational DOORS, Rational Team Concert, ClearQuest, ClearCase, BuildForge

The Result

- Streamlined regulatory reporting
- Improved margins, lower product costs
- 30% increase in product deliveries to market
- Development costs reduced by up to 25%

ST. JUDE MEDICAL
MORE CONTROL. LESS RISK.

"Creating a Systems of Systems approach that strategically fits together both internally and externally has enabled us to reduce our costs and increase our output"

Cyndi McHenry, Director, Product Development Strategic Planning, Tools & Logistics, Cardiac Rhythm Management Division

St. Jude Medical

Tieto

IBM Development Platform as a Service

The Challenge

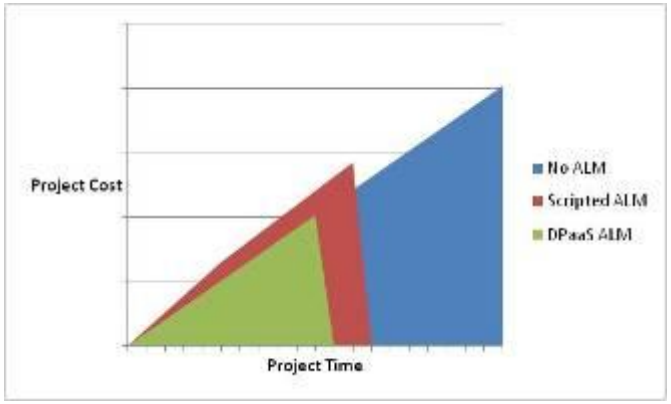
- Developing applications for defense company, project split between customer and Tieto
- Development organization spread over several sites
- Security requirements implied development on customer specific production network
- Need for better collaboration and process support

The Solution

- Setup of RTC environment as private Cloud-service
- Project setup with adaptation of Rational Team Concert pre-packaged Scrum template
- Development platform as a service

The Result

- Code delivery time down by 97%
- Full migration within 2 months
- Tool migrated with no negative effect on running release
- 80% lower overhead costs
- Zero “Tool down” time reported since migration



100% very satisfied users!

Learn more during session ALM 1157

“Implementing Agile and Application Lifecycle Management Solutions at Tieto - from Scripting to the Cloud”

[LOCATION, DATE & TIME]

Ericsson

Leveraging Rational for Worldwide Agile development

The Challenge

- Project for real-time software with 2,000 software modules and 30M lines of code
- Distributed cross-functional teams with needs for coordination and collaboration

The Solution

- Backlog and team planning using RTC
- Test planning and execution using RQM
- Feature requirement collaboration using RRC
- OSLC to integrate Ericsson proprietary systems

The Result

- Integrated development platform for lean and agile development
- Option for connection to proprietary SCM systems
- Smoothly integrated test management solution
- Dashboard for real-time reporting
- Make information transparent, unique and valuable

A journey from "me" to "us"

Learn more during session CCM 2244
"The Way We Walk" by
Alexander Heyers & Markus Schiller
Dolphin - Southern I - Tue, 7/Jun, 10:45 AM

We're not content to sit still…

INCOSE
International Council on Systems Engineering

IBM Academic Initiative

FIRST Robotics

Business Partner Ecosystem

GRUG
Global Rational
User Group Community

Customers

© Copyright IBM Corporation 2011. All rights reserved. The information contained in these materials is provided for informational purposes only, and is provided AS IS without warranty of any kind, express or implied. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, these materials. Nothing contained in these materials is intended to, nor shall have the effect of, creating any warranties or representations from IBM or its suppliers or licensors, or altering the terms and conditions of the applicable license agreement governing the use of IBM software. References in these materials to IBM products, programs, or services do not imply that they will be available in all countries in which IBM operates. Product release dates and/or capabilities referenced in these materials may change at any time at IBM's sole discretion based on market opportunities or other factors, and are not intended to be a commitment to future product or feature availability in any way. IBM, the IBM logo, Rational, the Rational logo, Telelogic, the Telelogic logo, and other IBM products and services are trademarks of the International Business Machines Corporation, in the United States, other countries or both. Other company, product, or service names may be trademarks or service marks of others.