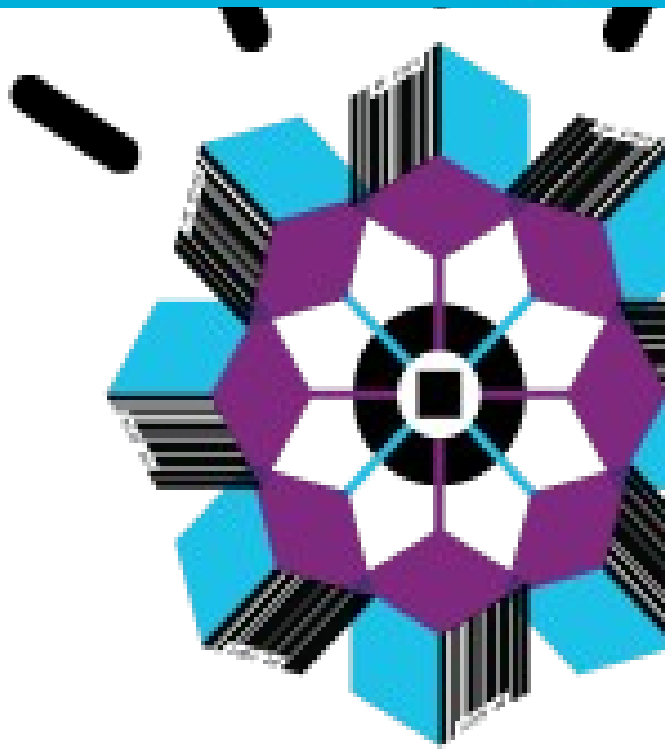
La piattaforma di Collaborative Lifecycle Management per lo sviluppo software per sistemi complessi

Alberto Sardini & Paolo Cravino
Client Technical Professionals

Innovate2010
The Rational Software Conference

Let's build a smarter planet.

Agenda



- A smarter planet and smarter products
- The need for improved systems and software engineering
- Integrated Product Management
- Jazz and OSLC for collaboration and integration across the lifecycle
- The Rational Workbench for Systems and Software Engineering
- In summary

The planet is getting smarter

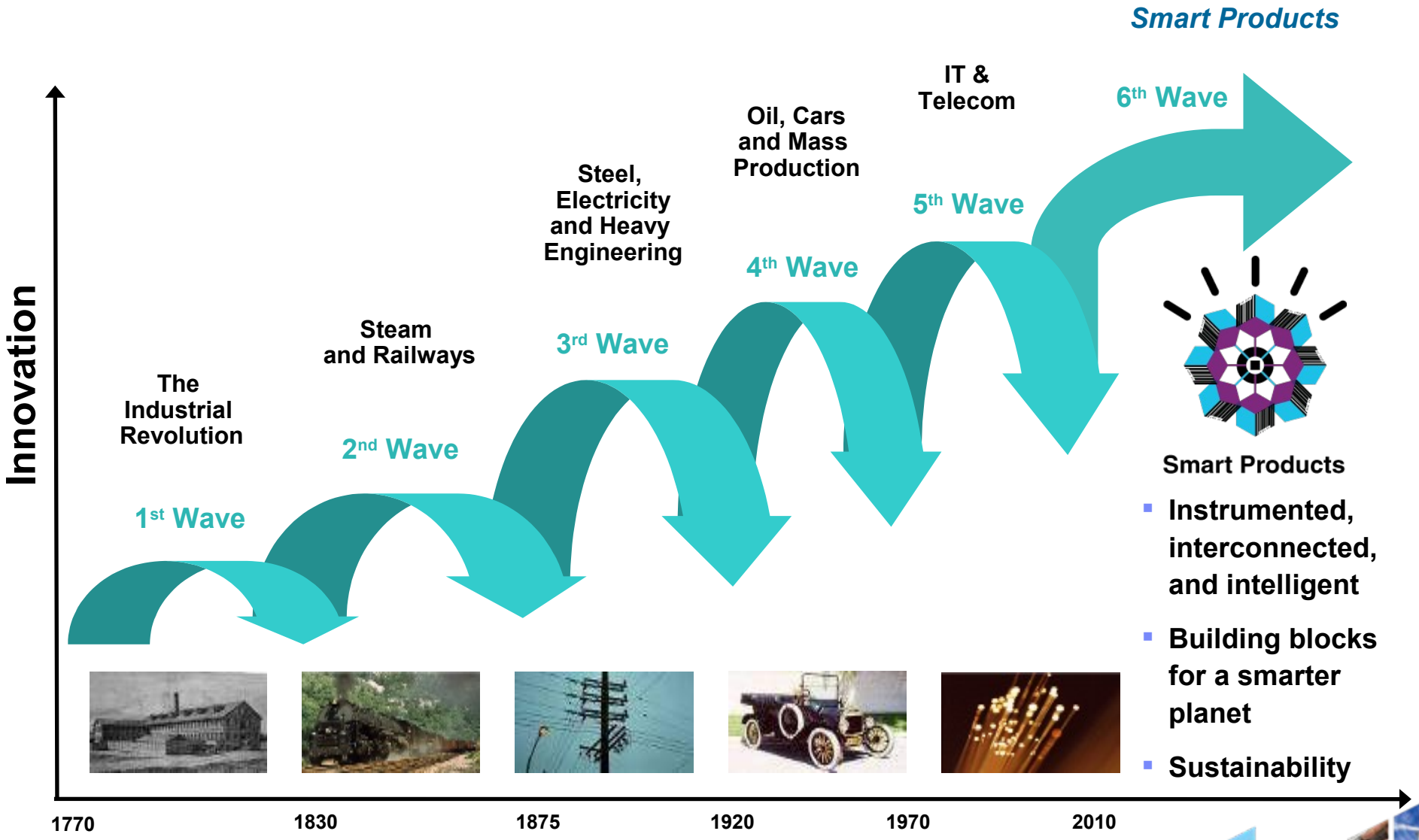
SMALLER. FLATTER. SMARTER.

Our world is becoming
INSTRUMENTED

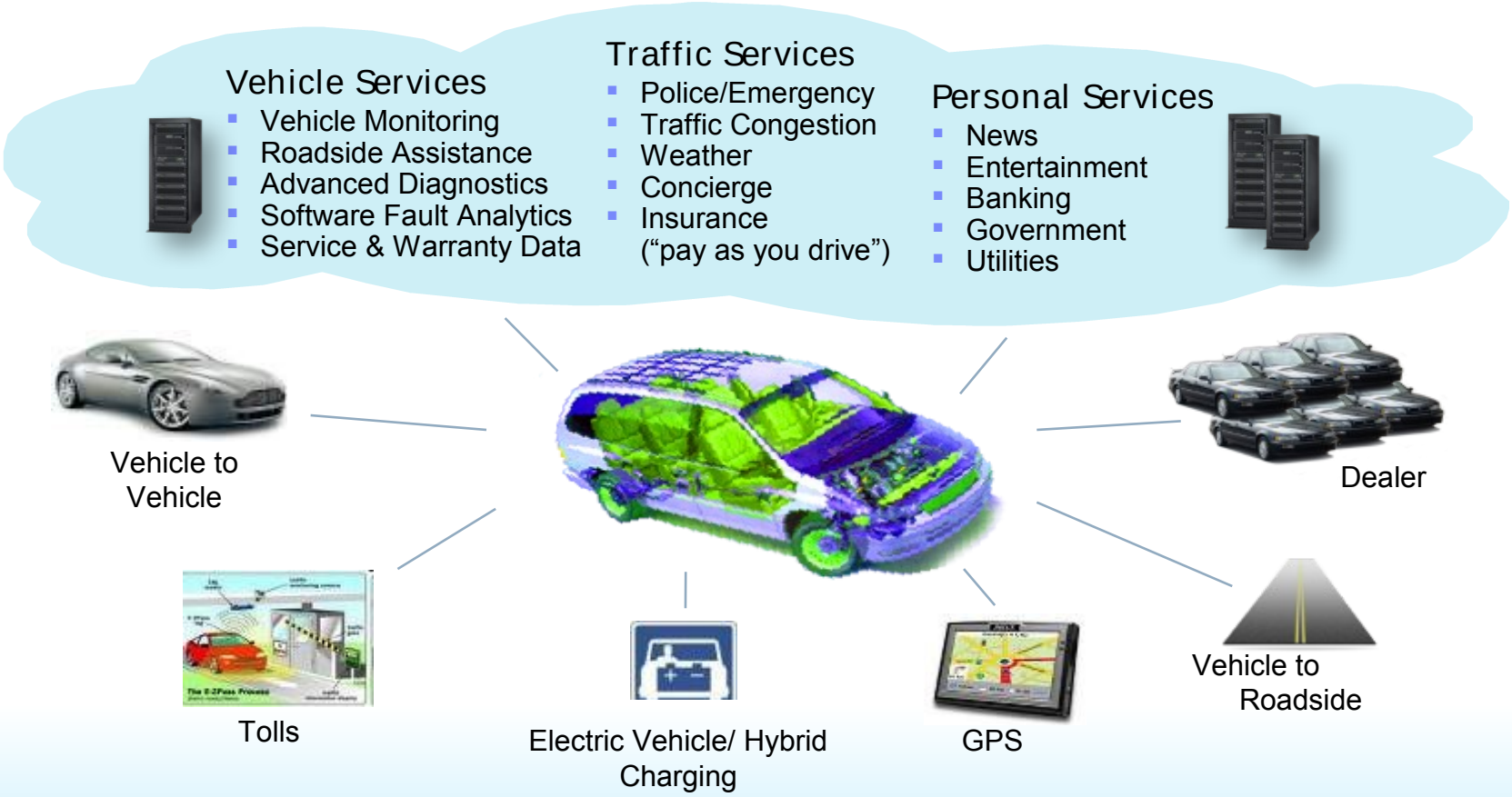
Our world is becoming
INTERCONNECTED

All things are becoming
INTELLIGENT

We have entered into a new wave of innovation

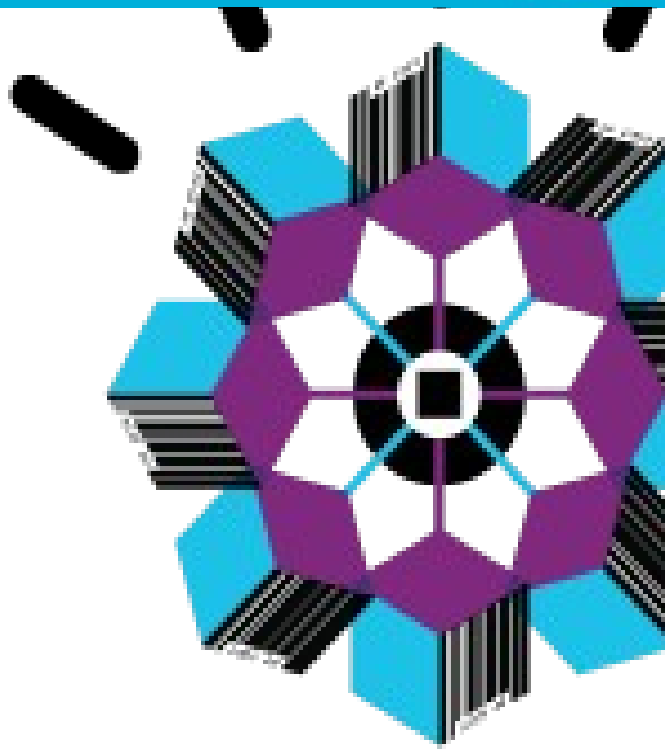


New business models are being created through interconnection across products, systems, applications and the Internet



"The networking of intelligent devices will drive a global economic transformation of a scale that will rival the Internet itself."
"Securing the Internet of Things," ebizQ, Kurt Stammberger, August 7, 2009

Agenda



- A smarter planet and smarter products
- **The need for improved systems and software engineering**
- Integrated Product Management
- Jazz and OSLC for collaboration and integration across the lifecycle
- The Rational Workbench for Systems and Software Engineering
- In summary

Product and service innovation requires a new level of collaboration across multiple borders

Overcoming boundaries between:

- Engineering disciplines
- Development teams
- Geographies
- Languages
- Companies, partners and suppliers
- Multi-vendor tools

"Communication and collaboration between hardware, mechanical and software engineering teams can present a significant hurdle - hampering the overall product delivery process and resulting in too much redundant communication and rework between teams."

"Smarter Product Enablement", MWD Advisors, Bola Rotibi, November 2009

Best-in-class product development companies enjoy significant advantage in the marketplace

B

83%
of products met product launch deadlines

13%
reduction in development time

10%
reduction in product cost

8%
increase in product profit margins

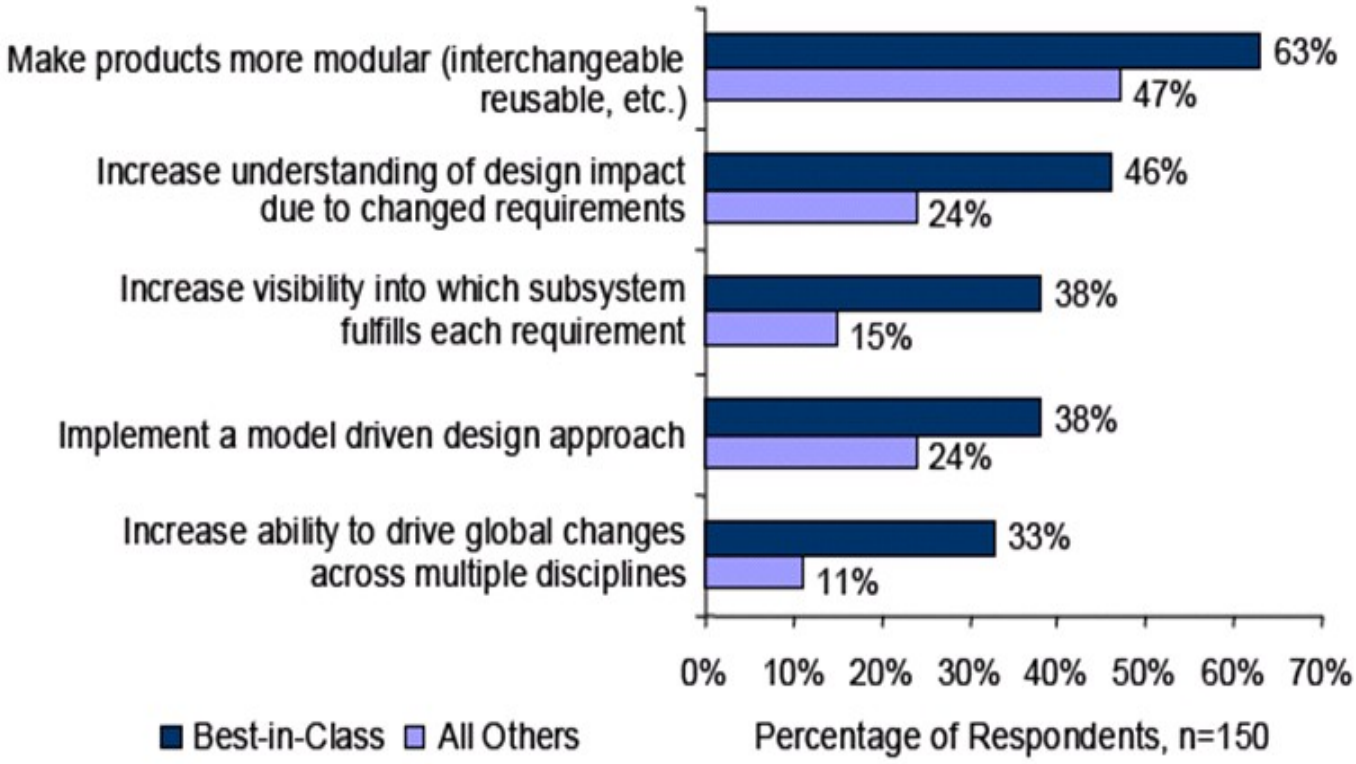
"Good system engineering practices offer a lot of opportunity for greater profitability. However, poor system engineering practices are extremely costly."

Michelle Boucher, Aberdeen Group

Source: *"System Engineering", Aberdeen Group, Michelle Boucher, October 2009*

Product and service innovation will need to leverage systems engineering best practices to be successful

B



IMPROVEMENT
+34%
+92%
+153%
+58%
+200%

Source: *"System Engineering", Aberdeen Group, Michelle Boucher, October 2009*

Delivery of smarter products will require alignment across software, product and service lifecycles

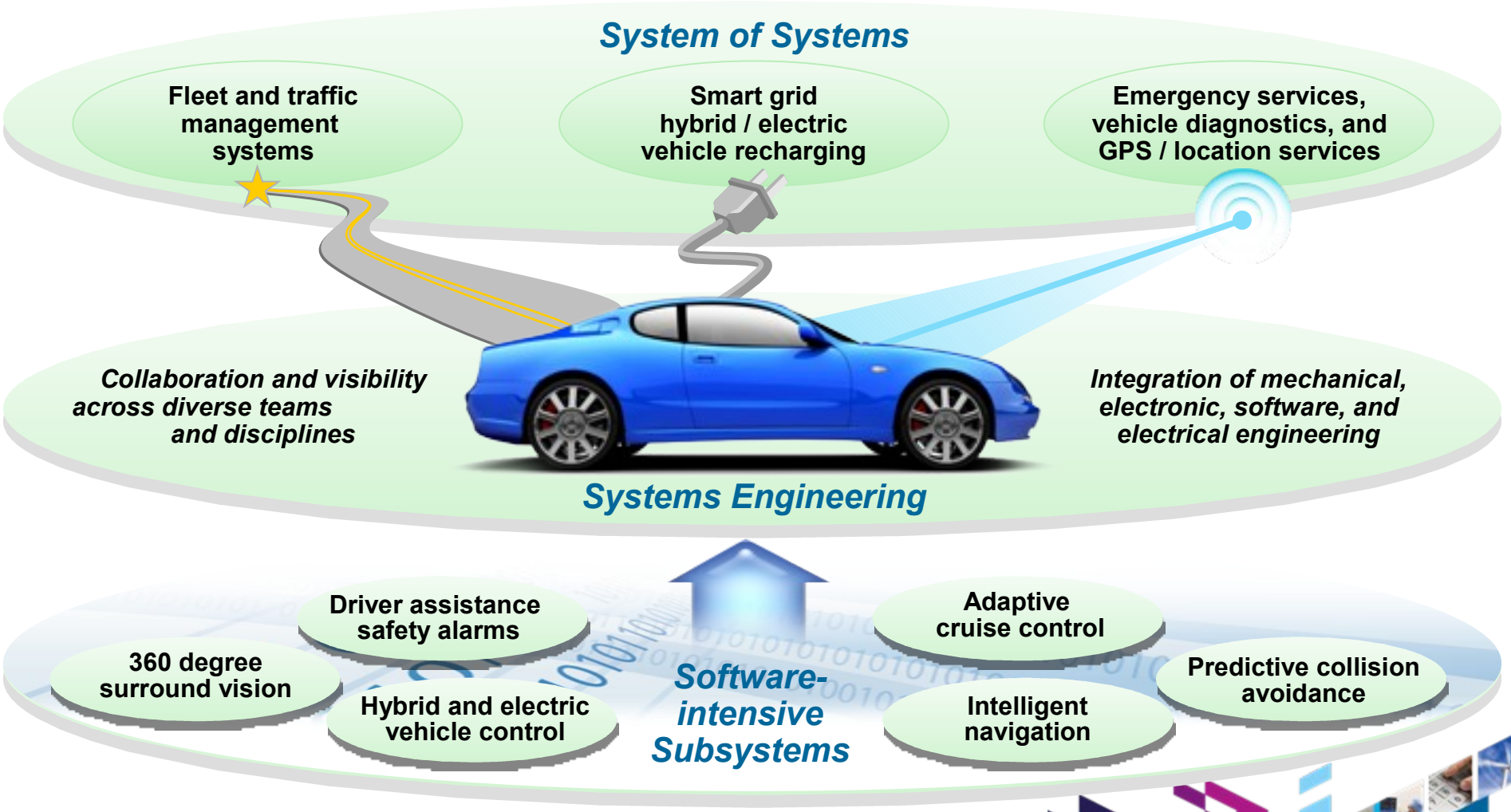
Connect multiple products and services into a *"system of systems"* to deliver unique value

Leverage *systems engineering* to accelerate time to market, improve quality and reduce costs

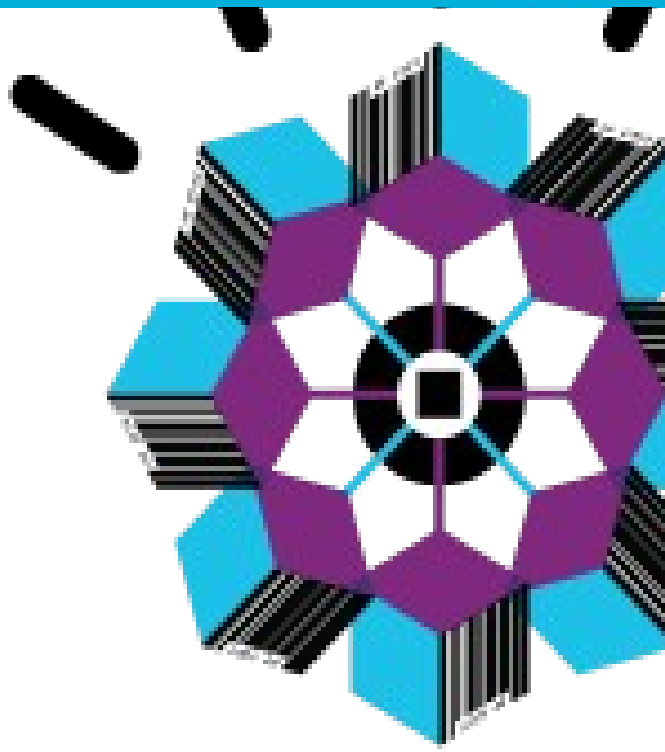
Develop a core competency in *software delivery* to produce products that are differentiated

Smart products example

From sophisticated in-vehicle software, to complex "system of systems" ecosystems, cars are getting smarter every day



Agenda



- A smarter planet and smarter products
- The need for improved systems and software engineering
- **Integrated Product Management**
- Jazz and OSLC for collaboration and integration across the lifecycle
- The Rational Workbench for Systems and Software Engineering
- In summary

The IBM Product and Service Innovation Initiative

IBM is integrating a unique array of capabilities to help clients successfully implement smarter solutions

DESIGN
and build smarter products & services

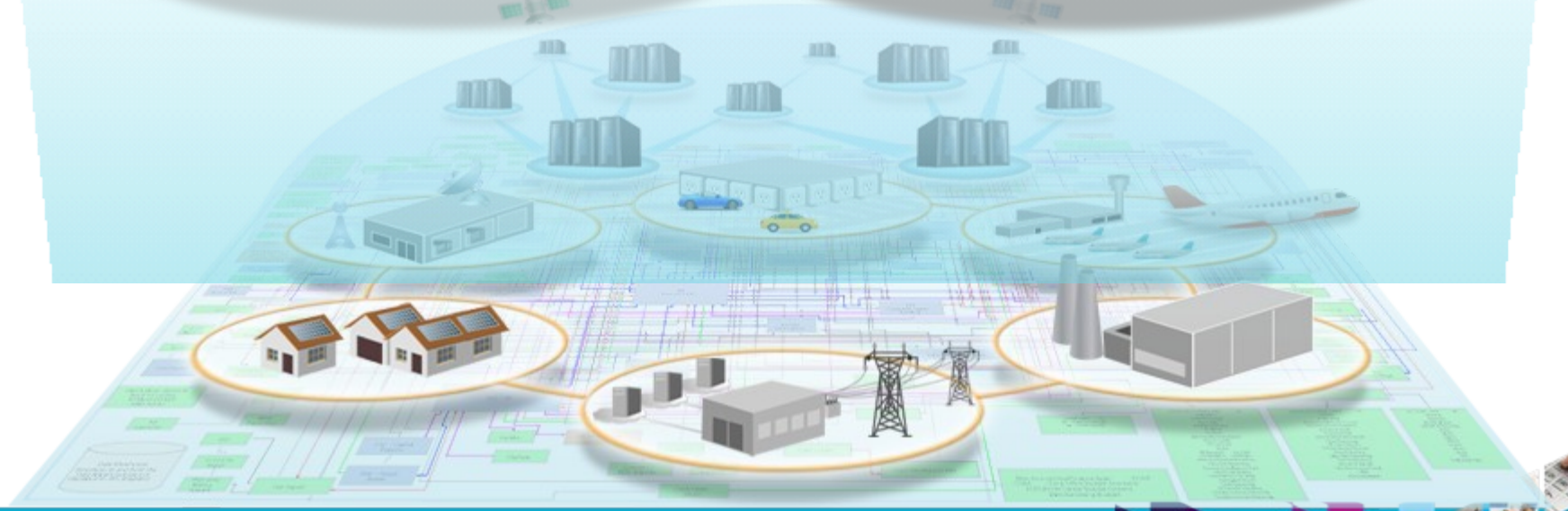
DELIVER
increasingly intelligent "systems of systems"

MANAGE
risk & cost across the solution lifecycle

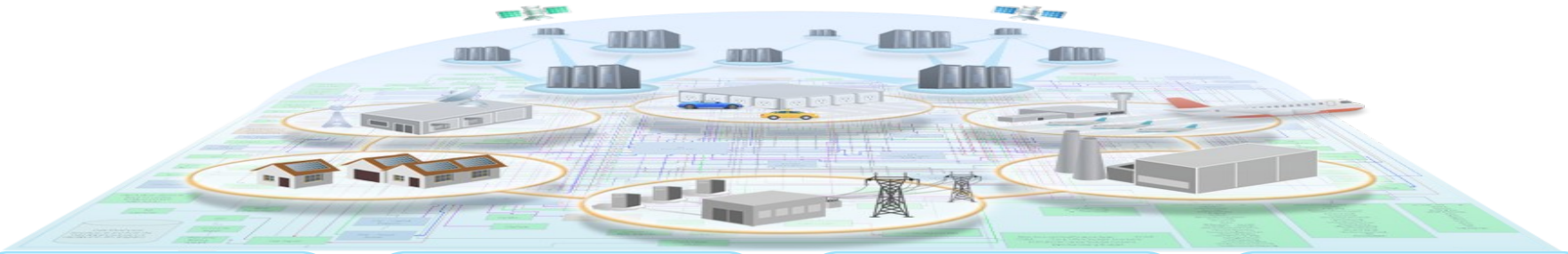
NEW!

IBM Integrated *Product* Management

IBM Integrated *Service* Management



IBM Integrated Product Management



BUSINESS PLANNING & TRANSFORMATION

Global optimization of business and development processes and organization

PRODUCT & SYSTEMS DEVELOPMENT

Best practice processes, tools and infrastructure to deliver product value and differentiation

DESIGN CHAIN COLLABORATION

Automating processes across the ecosystem of system contributors

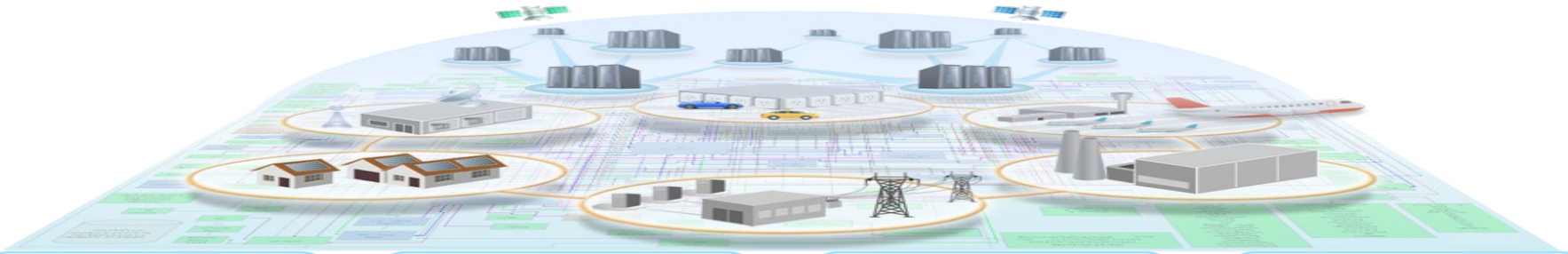
ASSET MANAGEMENT & OPERATIONS

Visibility and control over critical assets to improve development efficiencies and value

Collaborative mechanical, electronic and software lifecycle management

Design, deliver and manage smart products

IBM Integrated Product Management capabilities



BUSINESS PLANNING & TRANSFORMATION

- Business transformation and strategy
- Product portfolio management
- Enterprise architecture

PRODUCT & SYSTEMS DEVELOPMENT

- Requirements management
- Model-driven development
- System and software lifecycle
- Quality, security and compliance management

DESIGN CHAIN COLLABORATION

- Enterprise application integration
- Business process management
- Partner ecosystem management

ASSET MANAGEMENT & OPERATIONS

- Enterprise asset management
- Product Information Management & Re-use
- Application management

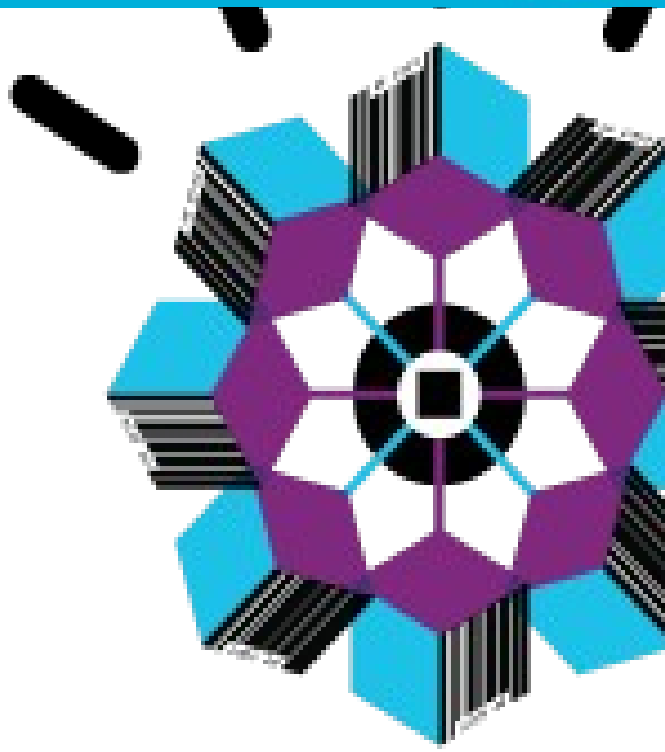
COLLABORATE
Achieve common goals by optimizing how people work

AUTOMATE
Increase efficiency and predictability by integrating workflows

REPORT
Continuously improve by measuring and reporting progress in real time

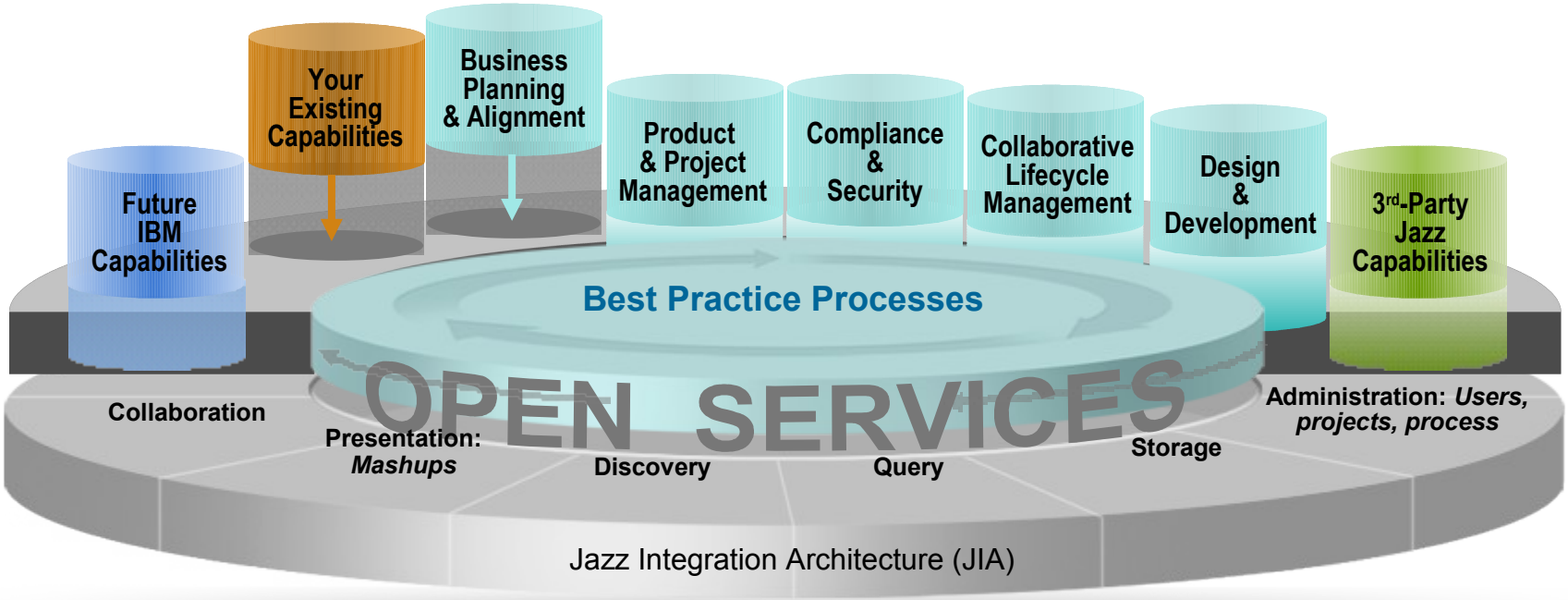
Repeatable activities producing a desired business outcome

Agenda



- A smarter planet and smarter products
- The need for improved systems and software engineering
- Integrated Product Management
- **Jazz and OSLC for collaboration and integration across the lifecycle**
- The Rational Workbench for Systems and Software Engineering
- In summary

Jazz provides an extensible framework built on open standards for systems and software delivery



Jazz is…

- A scalable, extensible team collaboration platform
- A community at Jazz.net where you can see Jazz-based products being built
- An integration architecture enabling mashups and non-Jazz based products to participate
- Built on industry standards

Open Services for Lifecycle Collaboration (OSLC) simplifies collaboration across the software and systems lifecycle

Open Services for Lifecycle Collaboration

Open interfaces. Open possibilities.

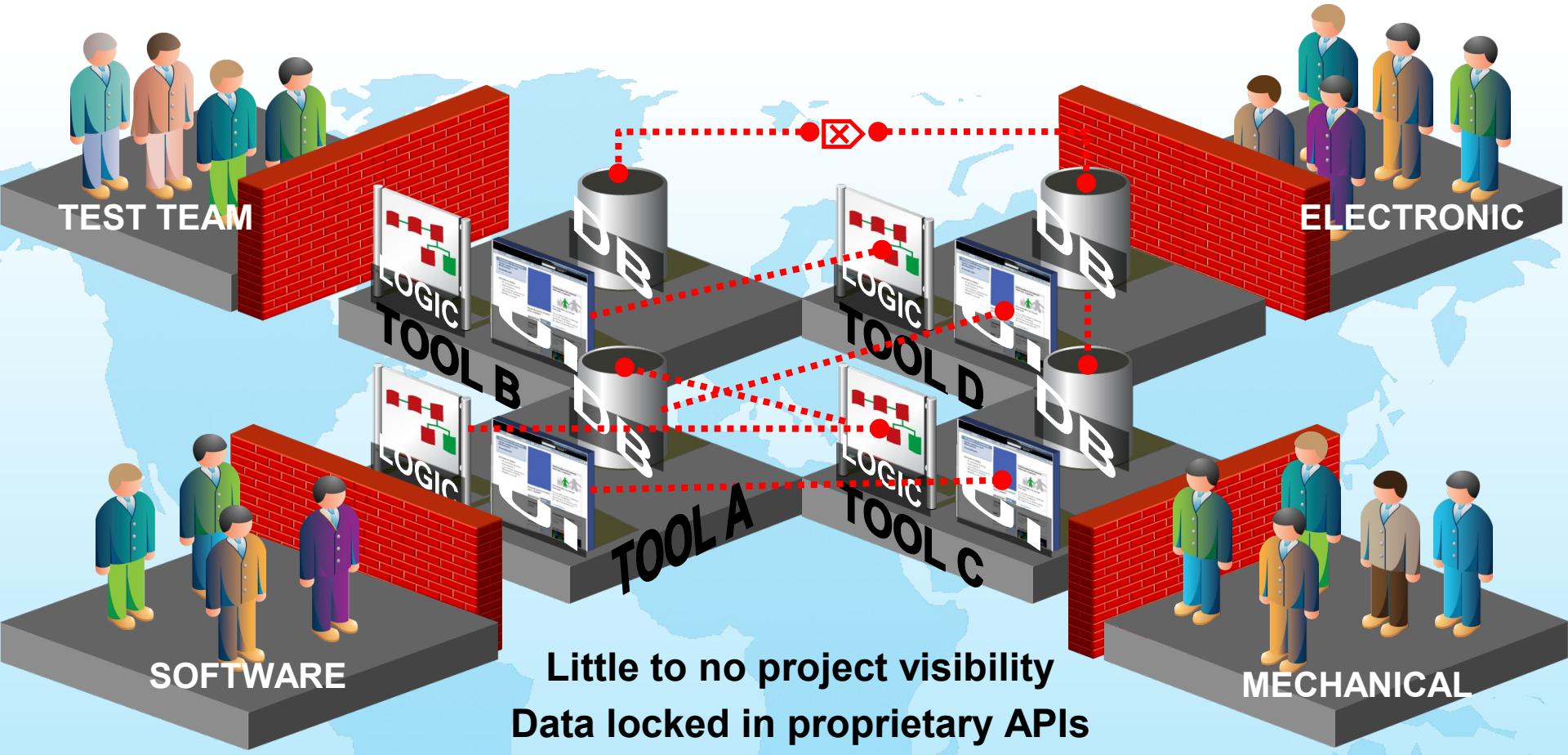
An industry initiative for making it easier to use software and systems delivery tools in combination.

Barriers to sharing resources across the lifecycle

- Multiple vendors, open source projects, and in-house tools
- Private vocabularies, formats and stores
- Entanglement of tools and data

- **The Open Services initiative is**
  - ***Building*** a community of software and systems vendors, open source projects, integrators, and corporate IT teams, operating at **open-services.net**
  - ***Creating*** public specifications of resources and services for sharing the things that teams rely on, like change requests, test cases, defects, requirements and user stories
  - ***Delivering*** loosely coupled resource formats and services with “just enough” standardization

Traditional development environments reinforce barriers



Little to no project visibility

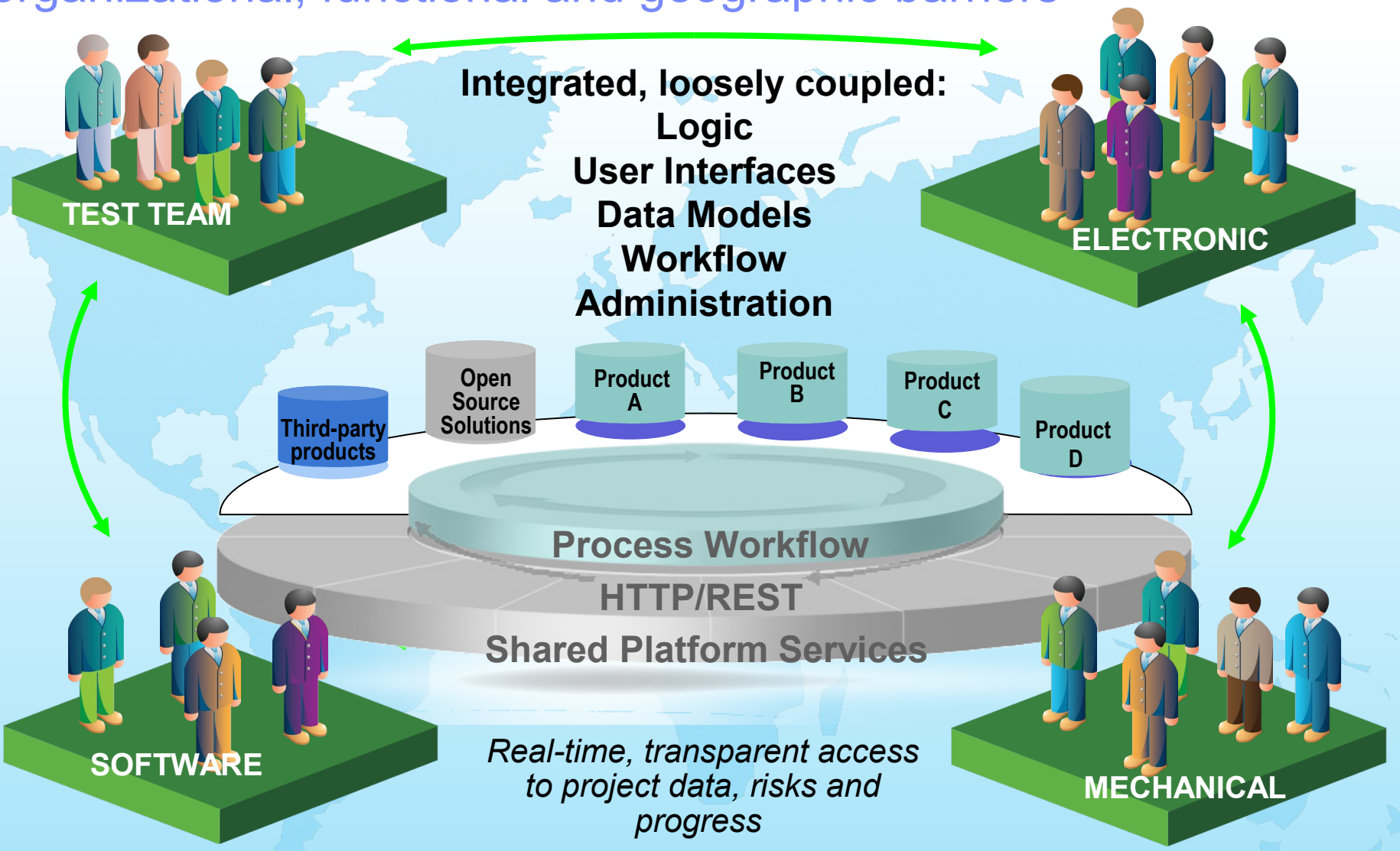
Data locked in proprietary APIs

Poor process and workflow integration

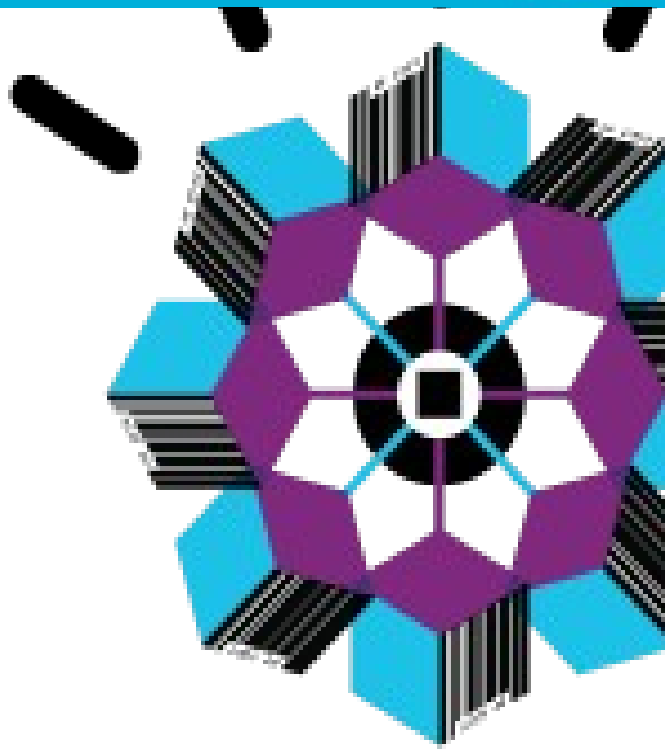
High maintenance and administration costs

Inconsistency among products (UI, logic, storage)

A collaborative development platform can break down organizational, functional and geographic barriers

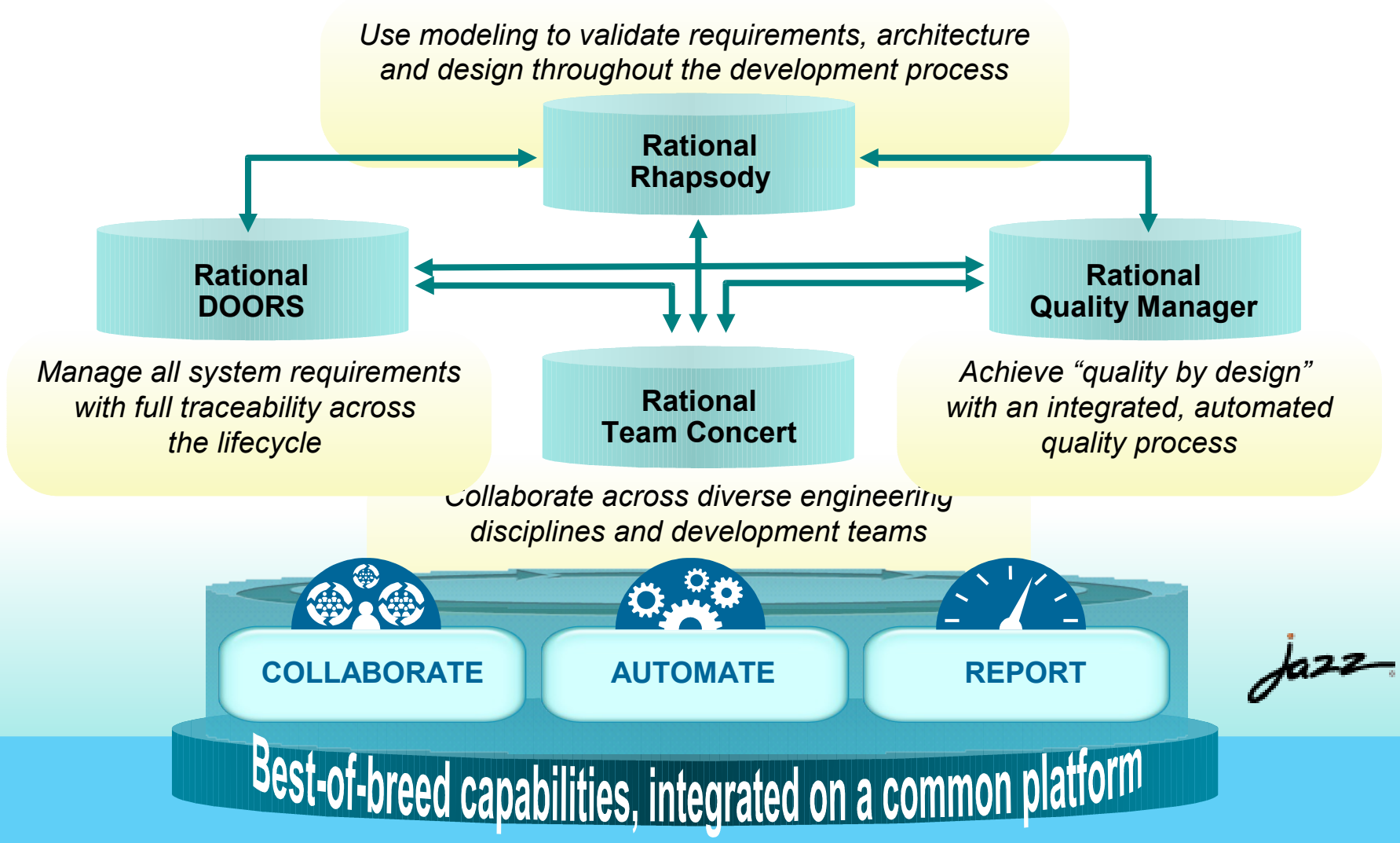


Agenda



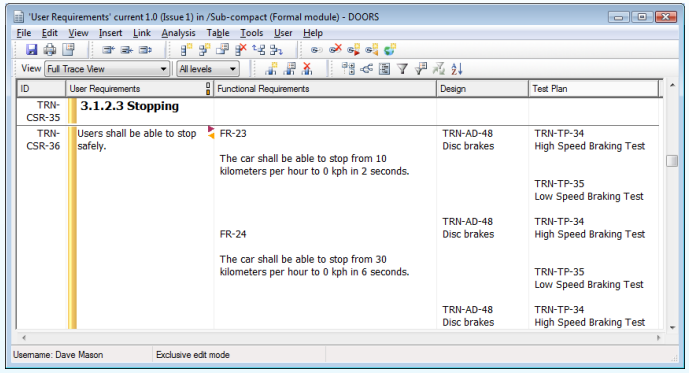
- A smarter planet and smarter products
- The need for improved systems and software engineering
- Integrated Product Management
- Jazz and OSLC for collaboration and integration across the lifecycle
- **The Rational Workbench for Systems and Software Engineering**
- In summary

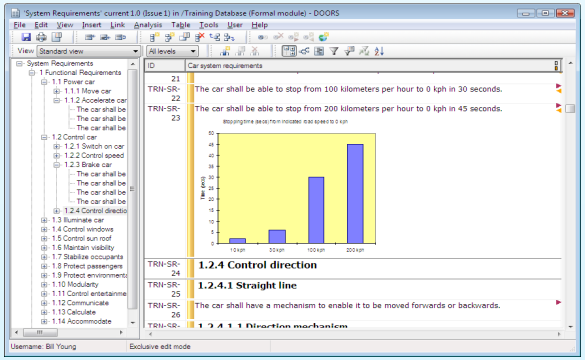
Rational Workbench for Systems and Software Engineering



Rational DOORS – Current Capabilities for Systems

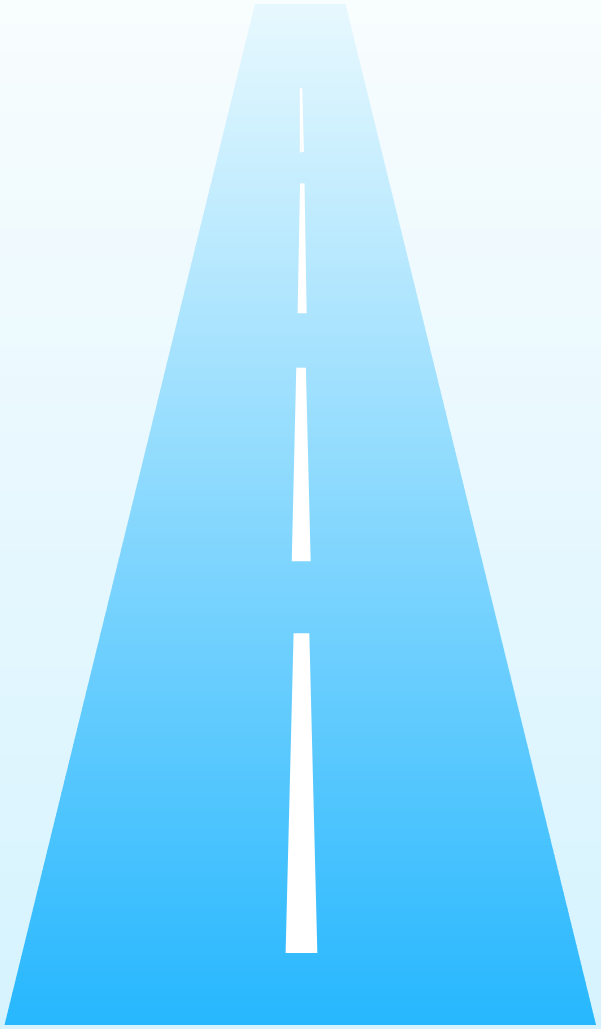
- Comprehensive requirements management
  - Records, structures, manages, and analyzes requirements and their traceability
- Multi-disciplinary capabilities
  - Manages requirements across multiple engineering disciplines - software, electronic, electrical and mechanical
- Compliance and auditability
  - Addresses compliance to regulations and standards using audit trail, electronic signature and traceability
- Desktop and Web clients
  - Provides a rich desktop client for 'power' users, and a Web client for additional stakeholders
- Integrates with many Rational and 3rd party tools





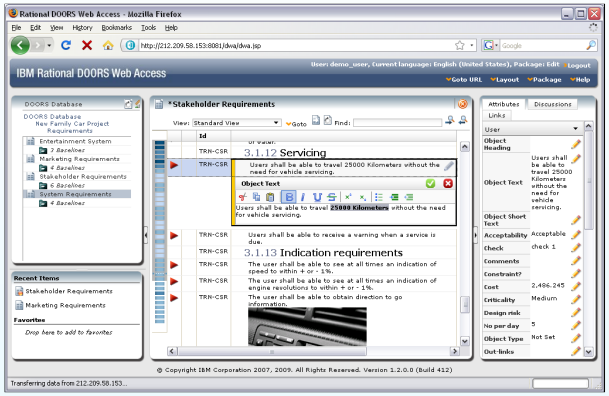
Rational DOORS – The Road Ahead

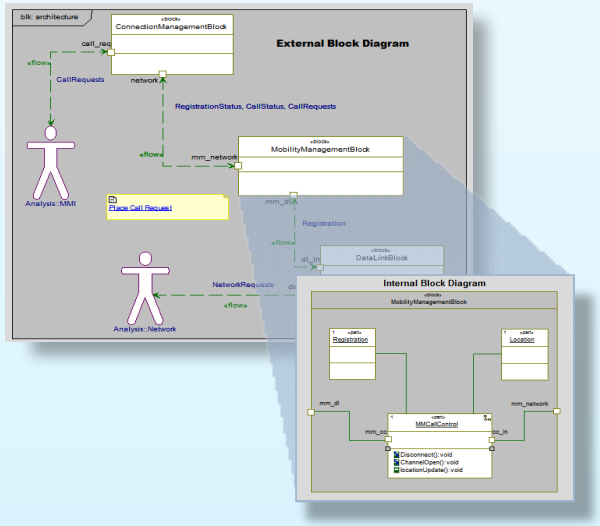
- Support for Open Services for Lifecycle Collaboration (OSLC) Requirements Management (RM) and Change Management (CM) specs
  - Common change management integration with Rational Team Concert, Rational Change and Rational ClearQuest
- Document generation through Rational Publishing Engine capabilities embedded into DOORS
- Will be able to host the DOORS Database Server on the Jazz platform
- Requirements interoperability with other Jazz products



Rational Rhapsody – Current Capabilities for Systems

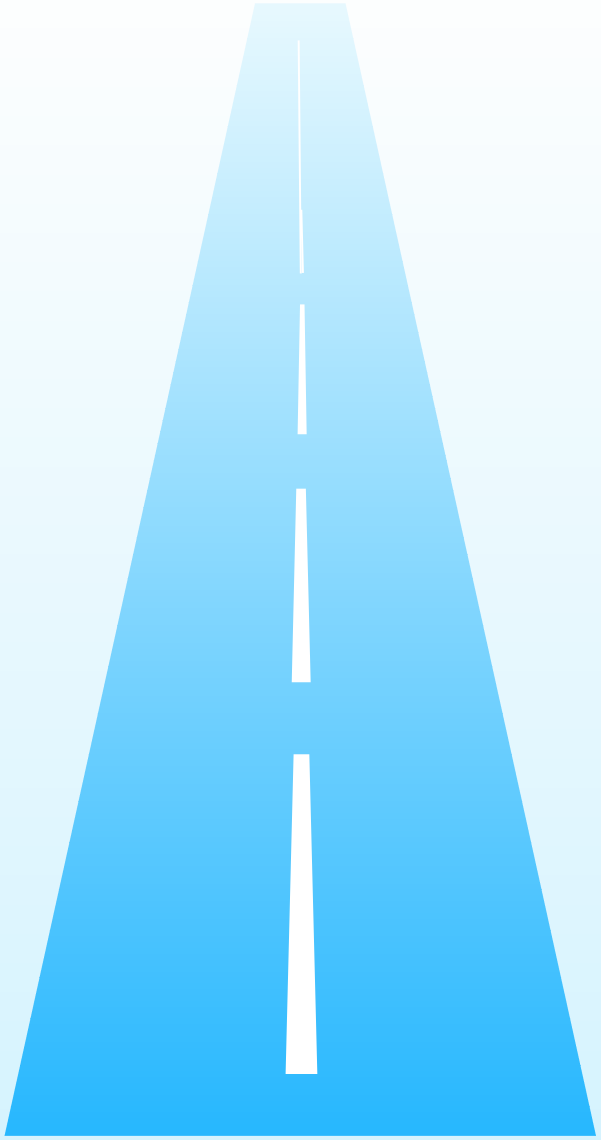
- Model-driven systems development
  - Cross-discipline solution for the development of complex products and systems
- Standards-based development
  - Domain focused modeling in support of industry standards (UML, SysML, Multicore, DoDAF/MODAF/UPDM, AUTOSAR)
- Requirements visualization and validation
  - Demonstrate compliance to requirements information with links to system and software design and development
- Model-driven testing
  - Simulate, create and manage system and software testing from modeled scenarios
- Open integrations to lifecycle tools
  - Integrated with requirements, configuration and change, and quality management tools





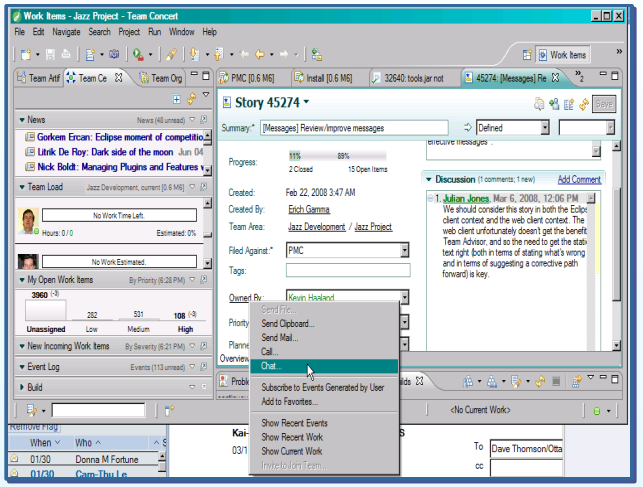
Rational Rhapsody – The Road Ahead

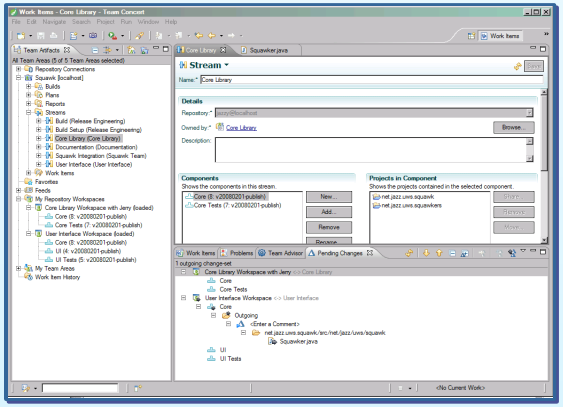
- Manage architecture collaboratively
  - Jazz-based and enabled to simplify cross-discipline stakeholder engagement
  - Simplified review and mark-up
  - Web-based modeling of product and system architectures
- Jazz-based model management
  - Models stored, accessed and managed on the Jazz platform
- Adoption of common reporting technology
  - Shared reporting capabilities across the Rational Workbench for Systems and Software
- Advanced visualization and generation support for new platforms
  - Android, AUTOSAR 4.0, Java/C#



Rational Team Concert - Current Capabilities for Systems

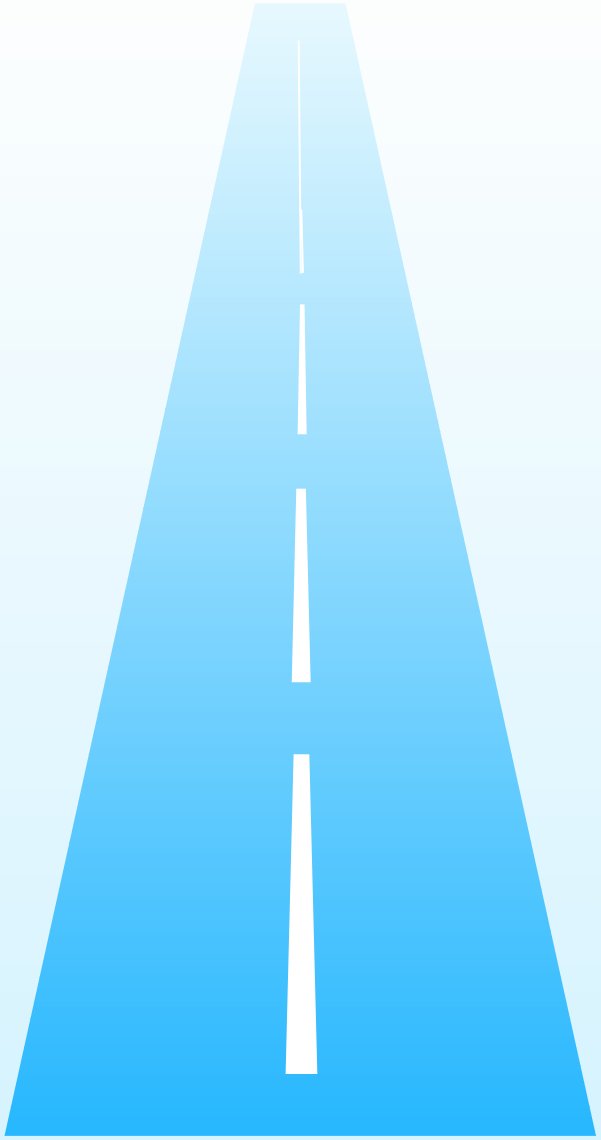
- Collaborate in-context
  - Integrated work items, process guidance, reporting, chat
  - Search, query and link to resources to improve productivity with project transparency
- Streamline change
  - Out-of-the-box, Customizable Workflows
- Quickly view project health
  - Real-time access to project status and trends
  - Web-based dashboards, metrics and reporting
- Unify diverse teams
  - Collaborate across teams and geographies
  - Integrate a broad array of tools and clients
- Automate governance & visibility
- Scale to the enterprise
  - Small teams to 1000's of contributors and stakeholders





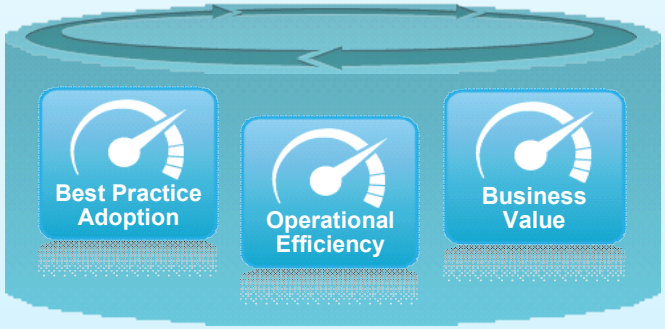
Rational Team Concert – The Road Ahead

- Integrated requirements change management
  - Leverage OSLC Change Management and Requirements Management specs
- Additional security support
  - New, more granular read access controls
  - Smart card authentication
- Continued, stronger Jazz / OSLC integrations
- More customizability
- Added planning support
  - Agile planning, Common planning
- Support of Agile Development process with customers' preferred SCM
- Enhanced Change Management (RCM)
  - Mail importer: create and comment on work items via email
  - Cross repository query



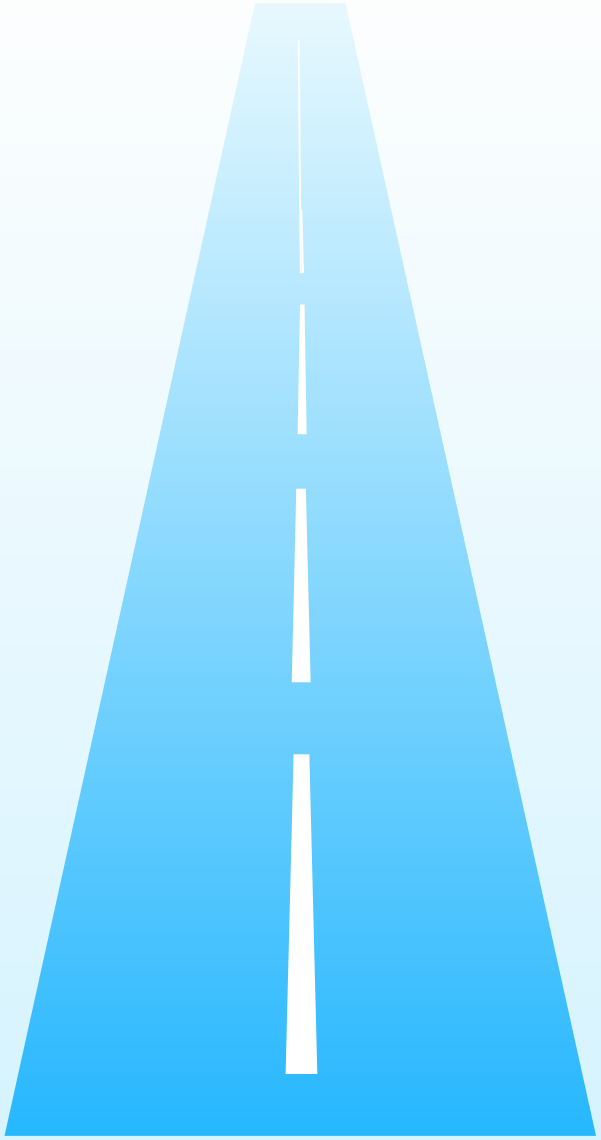
Rational Quality Manager - Current Capabilities for Systems

- Collaborative test planning
  - Real-time access to the right information and tools to keep all stakeholders on the same page
- Requirements-driven testing
  - Link testing to requirements to ensure the right capabilities are developed to the right quality
- Risk-based testing
  - Reduce project risk effectively and efficiently by prioritizing high-risk functionality
- Model-driven testing
  - Keep testing up to speed with model-driven development by integrating model-based testing capabilities to the quality management workflow
- Open integrations to the testing eco-system
  - Integrate the full range of systems testing tools and technologies into the quality management workflow

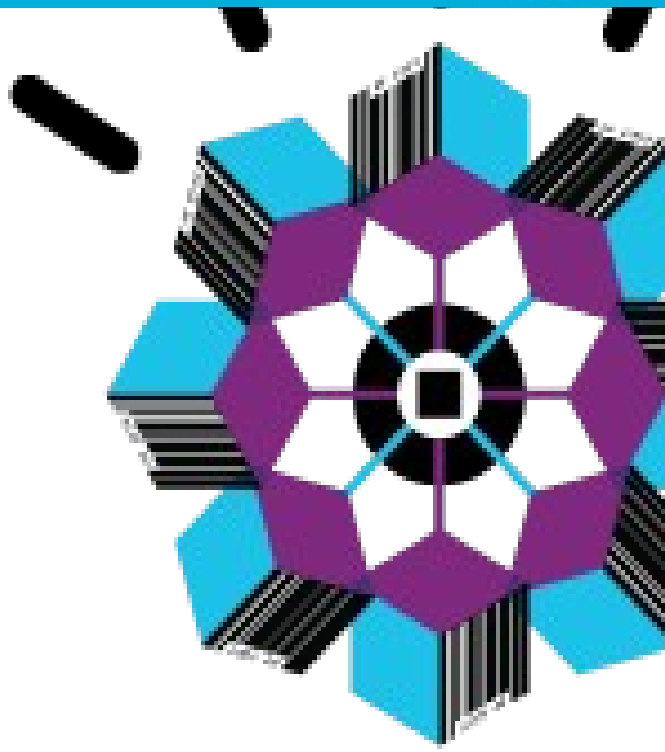


Rational Quality Manager – The Road Ahead

- Simplified role-based product packaging
  - Ensure ‘right-sized’ solutions for users’ needs
- Improved governance of assets
  - Better meet regulatory and compliance requirements
  - Includes e-signatures for test assets
- Management of systems-specific hardware in testing activities
  - Ensure system testing technologies are integrated into the quality management workflow
- Simplified test scripting
  - Advance storyboard testing to provide flexibility without programming
- Adoption of common reporting technology
  - Shared reporting capabilities across the Rational Workbench for Systems and Software Engineering



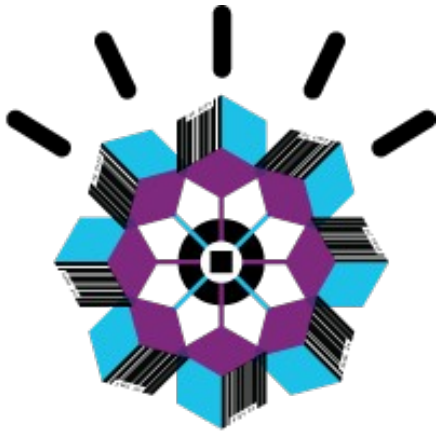
Agenda



- A smarter planet and smarter products
- The need for improved systems and software engineering
- Integrated Product Management
- Jazz and OSLC for collaboration and integration across the lifecycle
- The Rational Workbench for Systems and Software Engineering
- **In summary**

Summary: The delivery of smart products requires significant expertise in systems and software engineering

- Products and services of all types are becoming increasingly ***instrumented, interconnected and intelligent***
- Best-in-class companies will benefit from **increased profitability and market share**
- The interconnection of multiple products and services into a ***"system of systems"*** delivers unique value and benefits
- The Rational Jazz platform can help companies **design, deliver and manage smarter products**



Smart Products

Questions

Learn more at:

- IBM Rational software
- Rational launch announcements
- Rational Software Delivery Platform
- Accelerate change & delivery
- Deliver enduring quality
- Enable enterprise modernization
- Ensure Web security & compliance
- Improve project success
- Manage architecture
- Manage evolving requirements
- Small & midsized business
- Targeted solutions
- Rational trial downloads
- developerWorks Rational
- Leading Innovation
- IBM Rational TV
- IBM Business Partners
- IBM Rational Case Studies

© Copyright IBM Corporation 2010. 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.