IBM Focus on Systems Engineering

Bringing Together Processes, Technology, Methods and People

Chuck Ratigan

IBM Rational Software

cratigan@us.ibm.com

Rational. software

© IBM Corporation

Innovation depends on Systems and Software Integration

Competitive landscape and value creation is changing dramatically for the Systems marketplace…

Competition

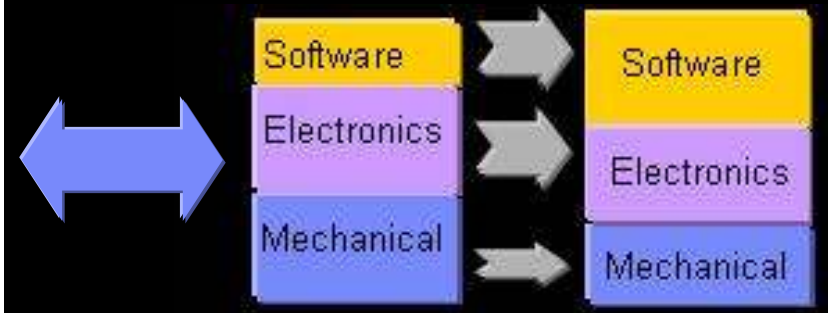
- Drive lifecycle costs down
- Time to market critical
- Cost of failure increasing
- Feature set exploding
- Innovation via SW increasing

Supply Chains increasing in

- Complexity
- Multi-sourcing
- Geographic diversity
- Component count
- Supplier consolidation

Field Operation

- Desire for realtime feedback
- More IT systems integration



Product Development Failures Impact the Bottom Line

January 2009

LG's Incite phone recall

- All shipments were recalled due to software issues

March 2007

F22 Fighter

- All systems "dumped" when crossing the intl. date-line

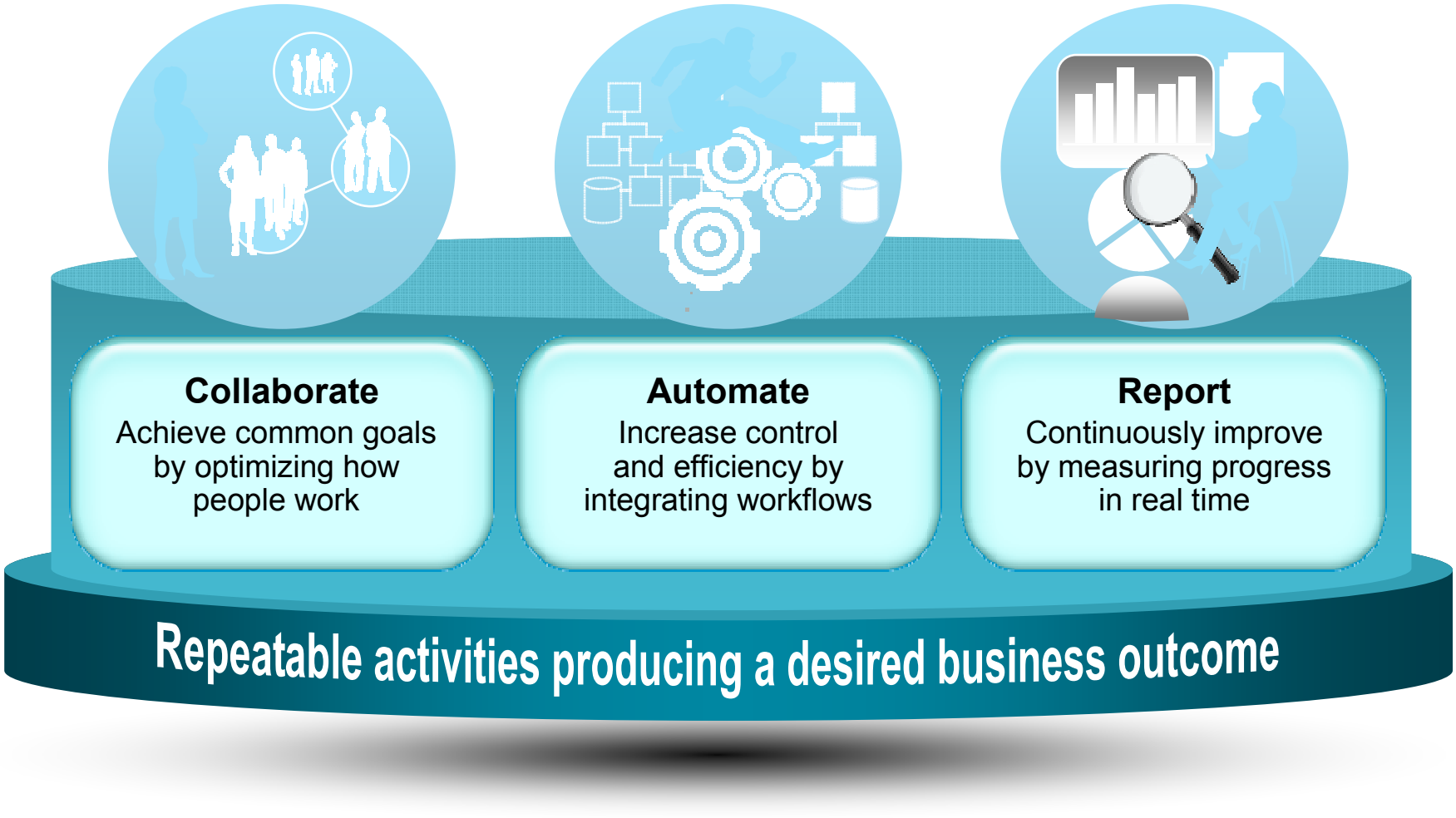
May 2008

24,500 Jeep Commanders recalled

- Faulty Transmission Software

Systems
Software

Business/Program success is dependent upon the ability to manage an adaptable software and systems delivery process

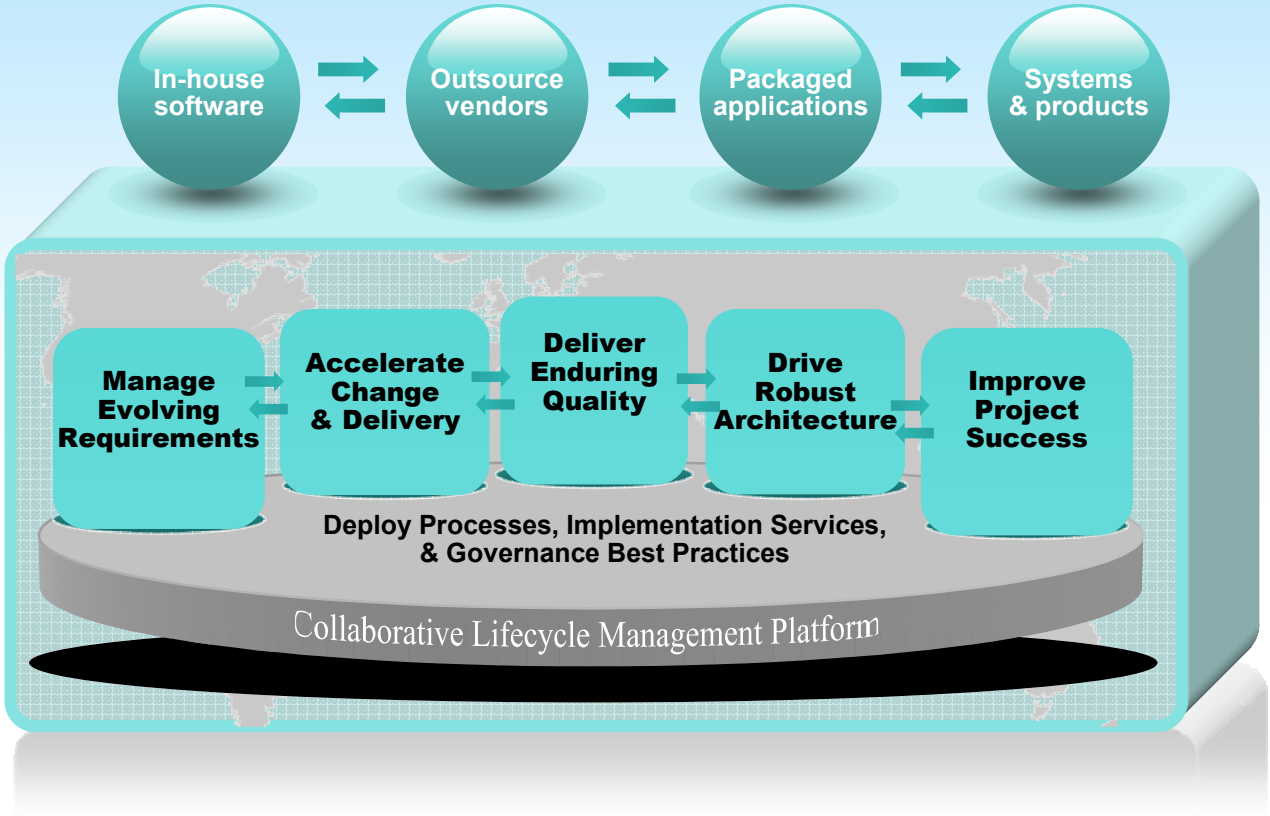


IBM Rational Systems and Software Delivery Platform

*Accelerating systems innovation for the **entire** enterprise*

Rational. software

***Solutions** to help customers achieve greater value and performance from their investments in delivering systems and software*



- ***IT***
- ***Complex Systems***
- ***Enterprise Modernization***

System level requirements management

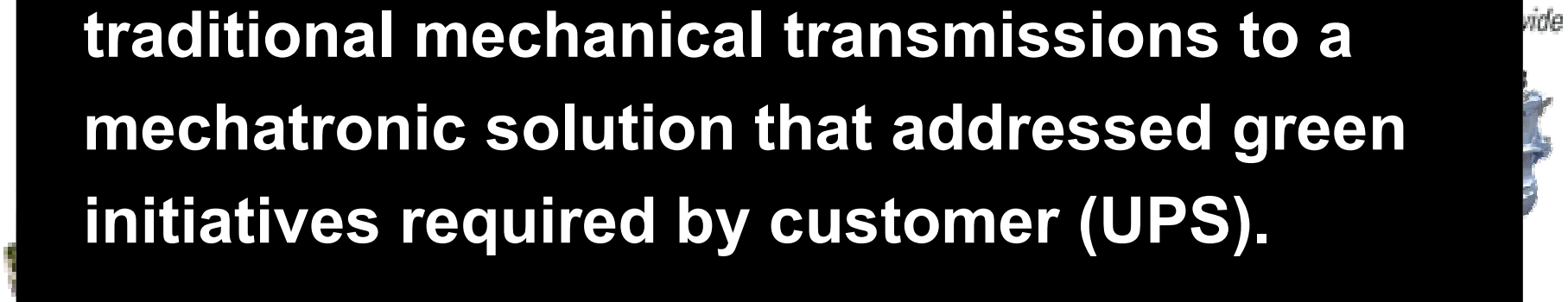
Problem: Supplier disconnected and insufficient requirements resulted in the Rain Sensing Wiper project failures and ultimately a recall.

System level requirements management

Impact: Leveraging requirements solutions provided visual traceability across all domains and suppliers eliminating costly errors.

System level modeling drives innovation

Problem: Eaton's rapidly changing market required them to change from traditional mechanical transmissions to a mechatronic solution that addressed green initiatives required by customer (UPS).



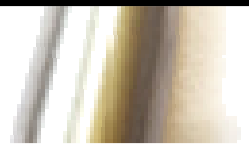
System level modeling drives innovation

Impact: Eaton, IBM and UPS created a solution that allowed them to venture into new market. The software became the brains of the systems and was created and tested by Telelogic.

UPS fuel efficiency improved by 50% and reduced emissions by 33%.

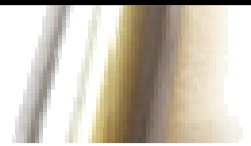
Systems Regulatory Compliance Made Easy

Problem: Medical Device Co couldn't trace requirements for mandatory regulatory safety and standards audits. Manually took 3-4 weeks per audit.



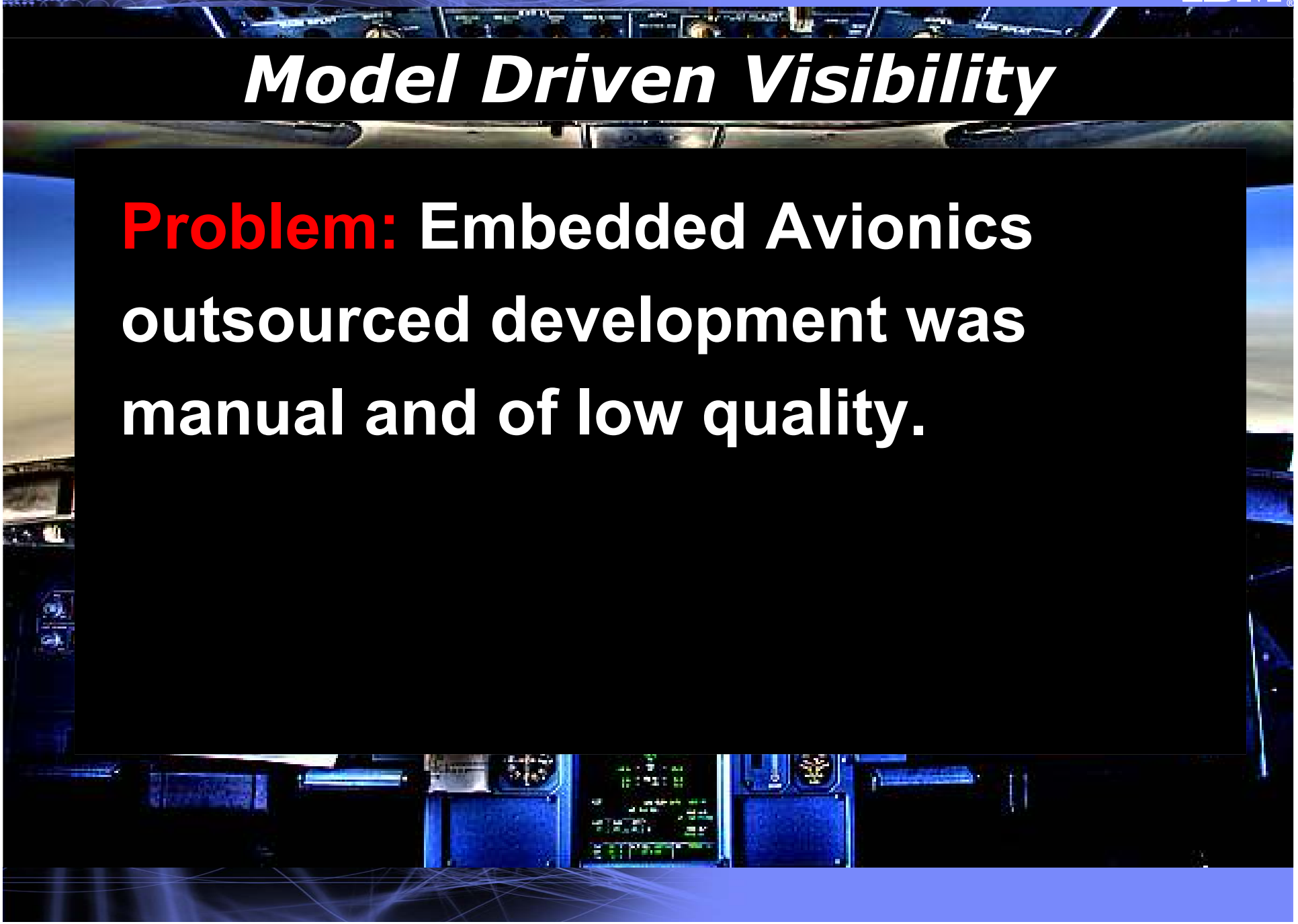
Systems Regulatory Compliance Made Easy

Impact: Now they have automated and centralized documentation that now only takes hours instead of weeks.



Model Driven Visibility

Problem: Embedded Avionics outsourced development was manual and of low quality.



Model Driven Visibility

Impact: Transformed into Agile, CMMI 5 development team.

- 40% increase in productivity
- 75% reduction in defects
- Consistently meets targets

Smarter decisions to innovation

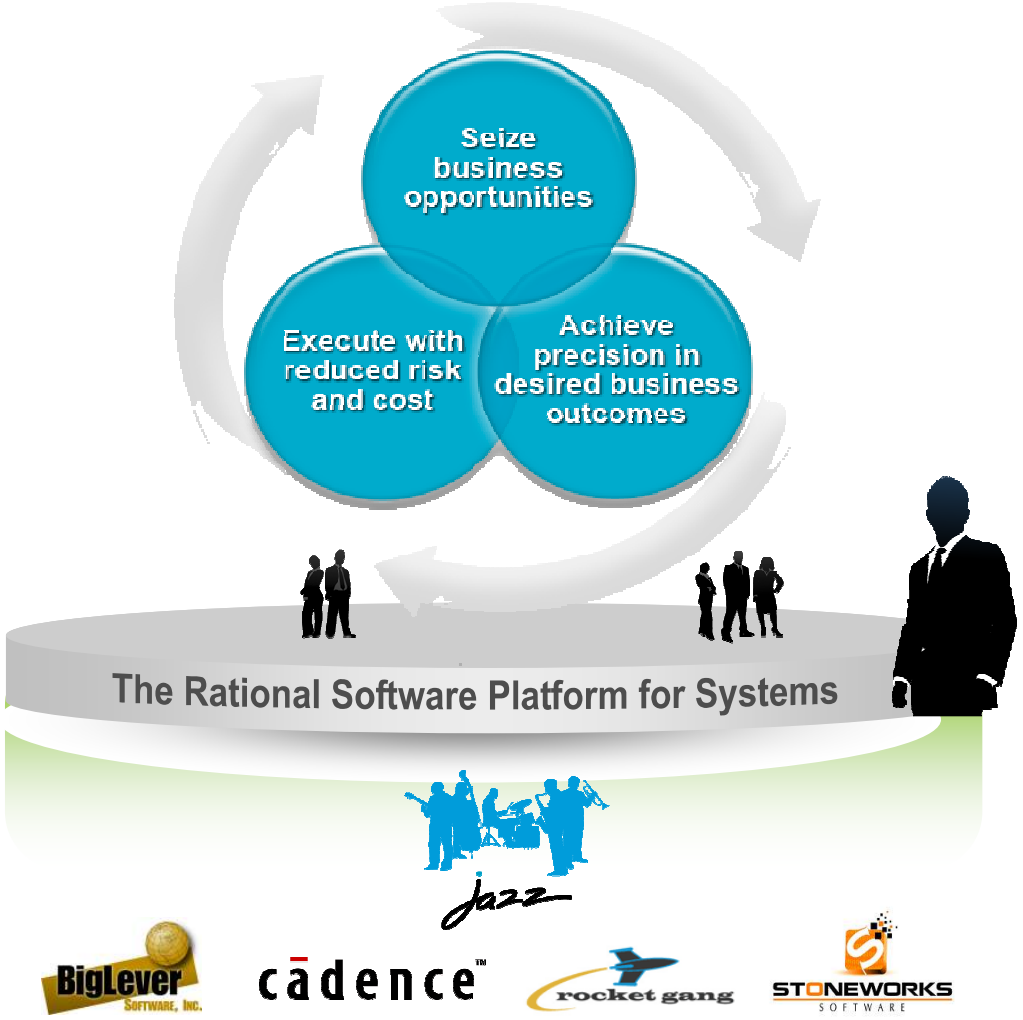
Problem: Sony Ericsson wanted to make better and faster decisions on future innovations

Smarter decisions to innovation

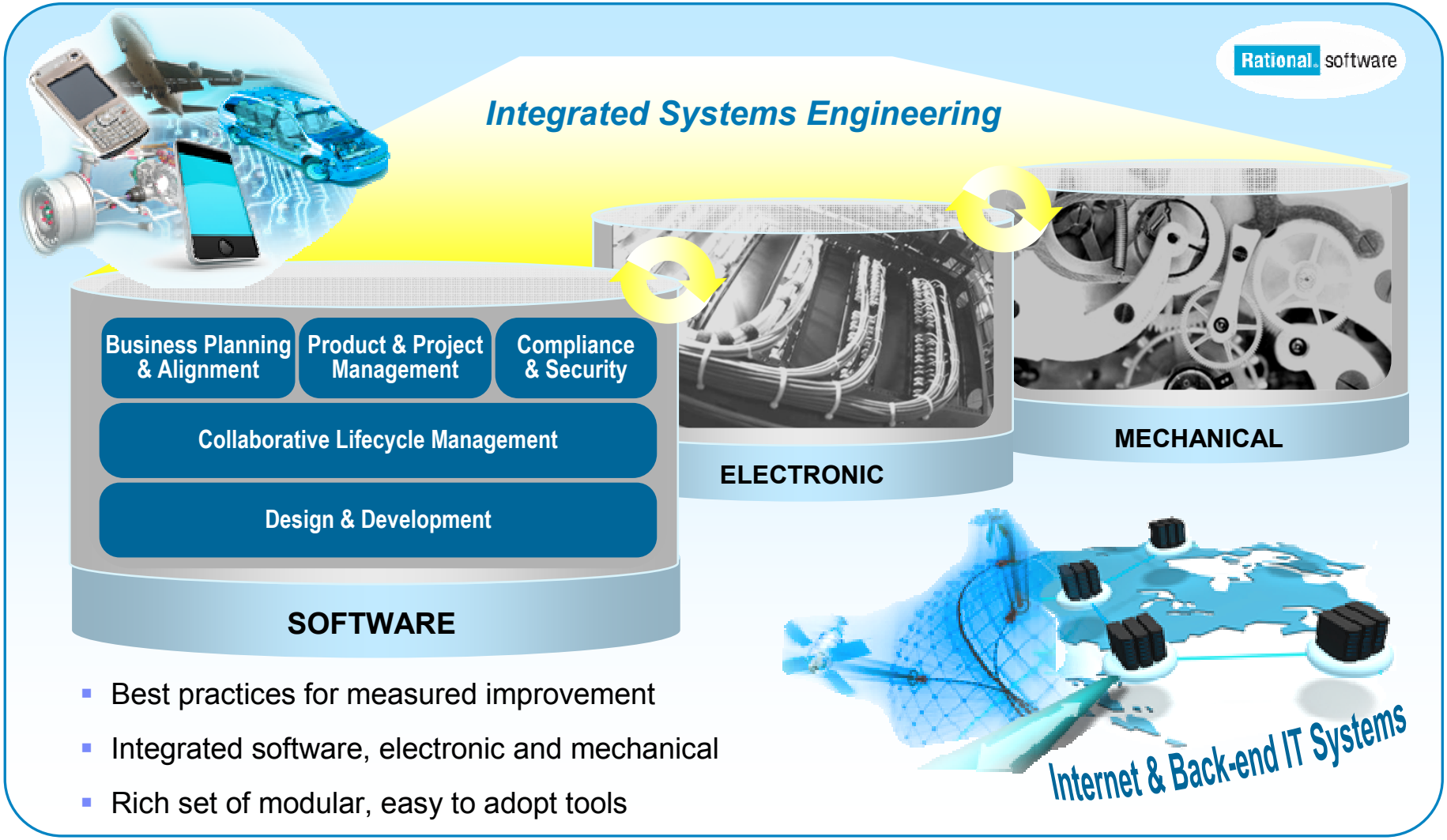
Impact: Decision making is better and more efficient than before. They are saving time and impacting the bottom line.

Introducing the first integrated software platform optimized for designing and delivering smarter products

- Complete set of offerings spanning the entire systems and software lifecycle
- Consistent views, reporting and metrics integrated on a real-time collaborative platform
- Integrates with PLM solutions and leverages best practices methodologies
- Enriched by an ecosystem of IBM and business partner solutions and services

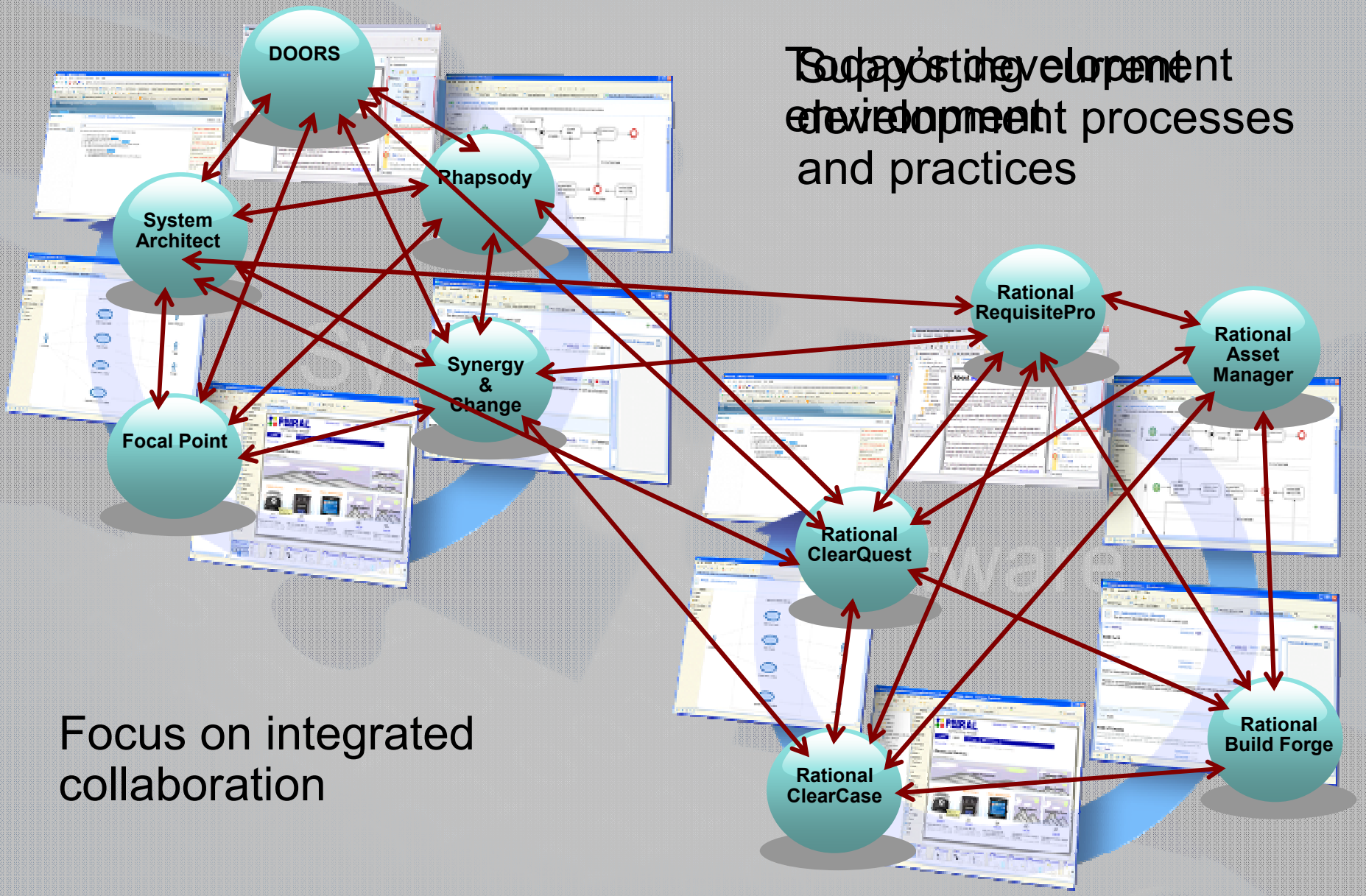


Delivered through a rich set of product delivery capabilities



- Best practices for measured improvement
- Integrated software, electronic and mechanical
- Rich set of modular, easy to adopt tools

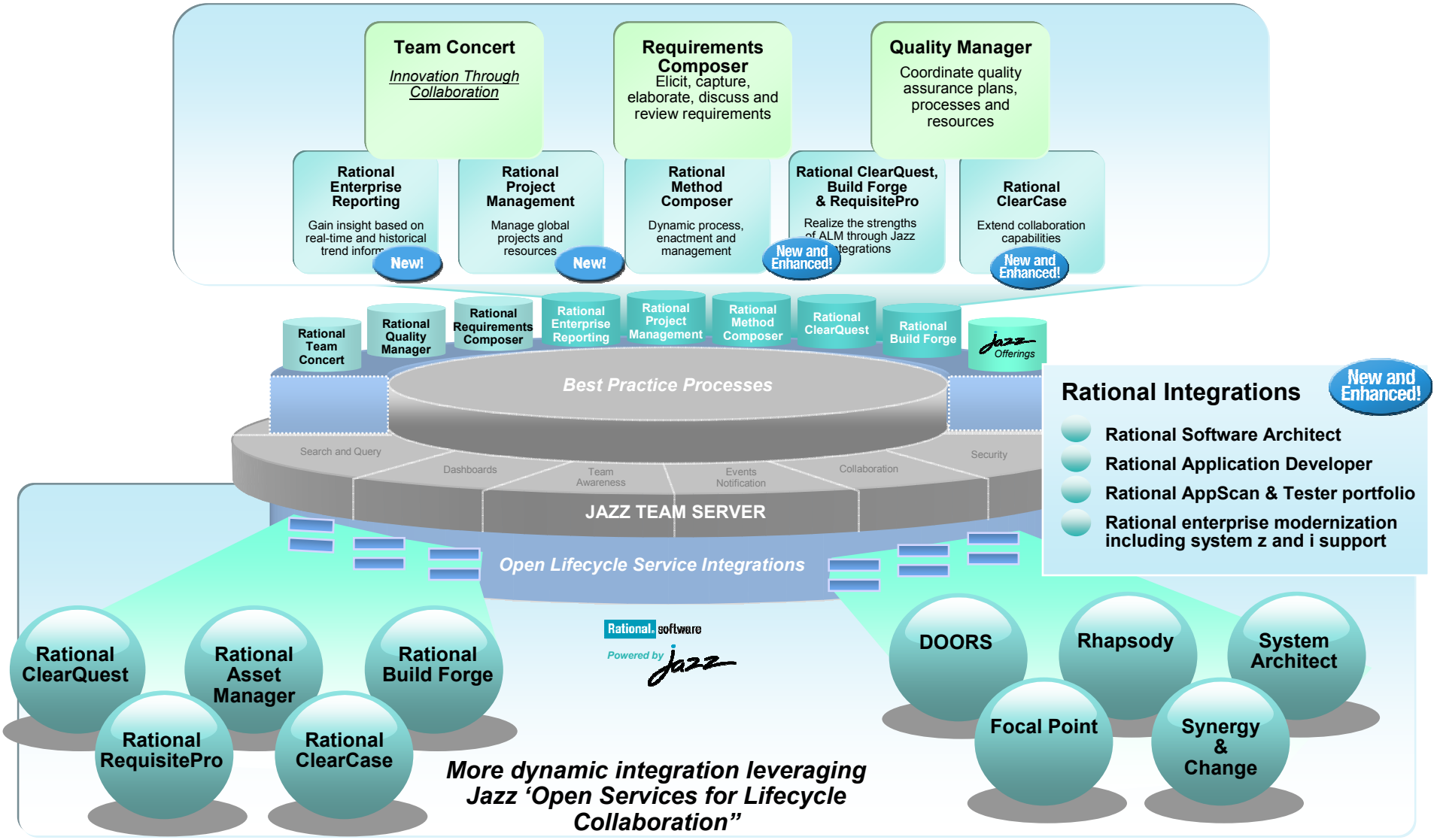
Today's development environment supports the development processes and practices



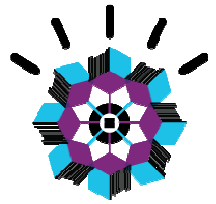
Focus on integrated collaboration

IBM Systems and Software Foundation

Powered by Jazz



IBM Rational enables companies to lead the market demand

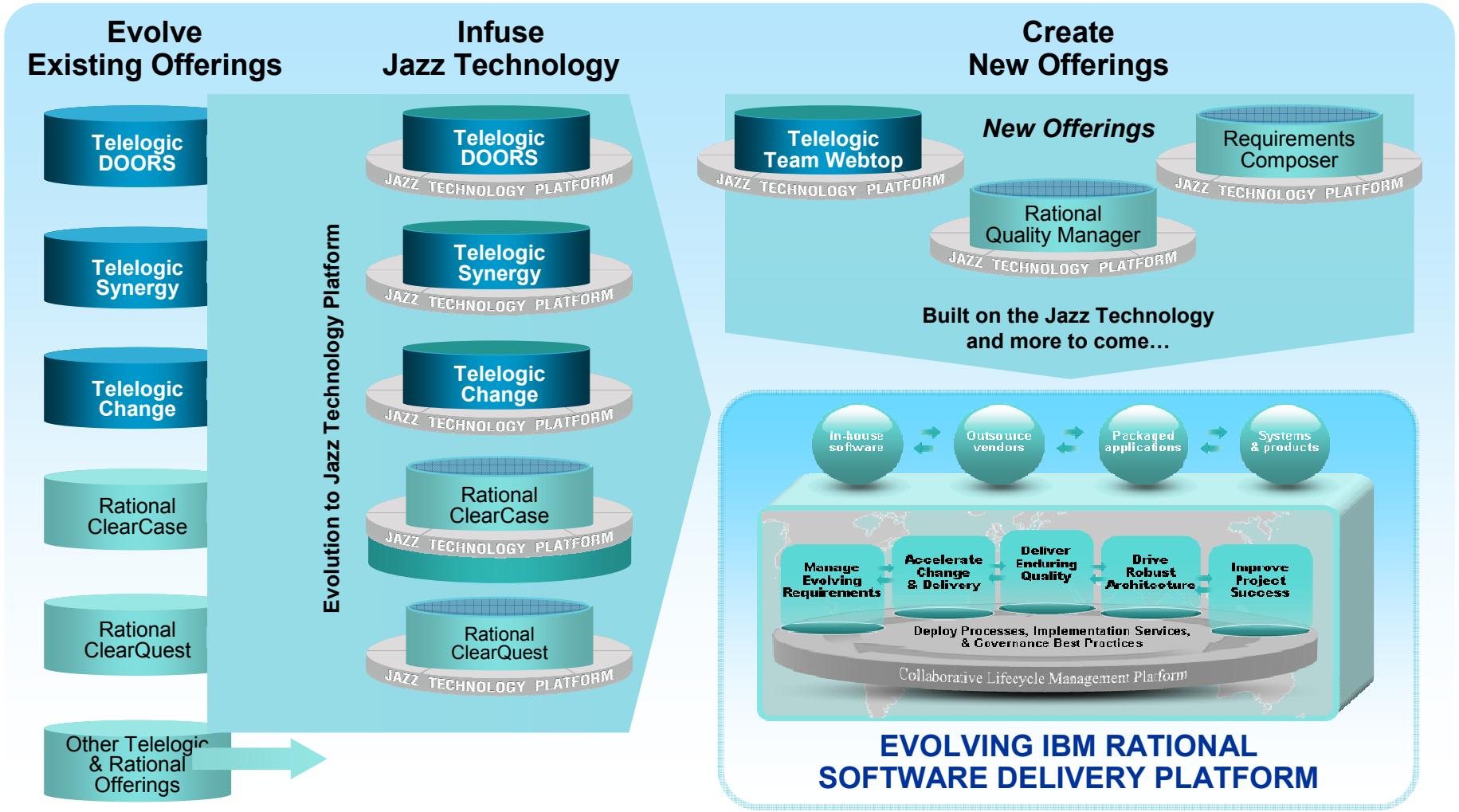


- Increase visibility of customer needs throughout the product lifecycle
  - New capabilities for extending requirements visibility and collaboration via the Web
- Validate designs early, often and iteratively
  - New code development workflow to harmonize code, design, and documentation for maximum reuse
- Improve ROI of projects and portfolios
  - New financial analysis capabilities to enable project portfolios to be continuously optimized
- Visualize and analyze your enterprise architecture to best seize opportunity
  - Align product development investments with evolving product requirements and market opportunities

Rational. software
IBM

IBM Rational and Telelogic bring together proven technology and Industry solutions to converge on the systems market

1. ***Model-Driven Development for Building Realtime Embedded Systems***
   Example: Leverage Rhapsody real-time embedded capabilities with Rational SDP
2. ***Quality Automation for Embedded Development***
   Example: TestRT and Rhapsody Integration
3. ***Automated Software and Systems Build Management***
   Example: BuildForge and Synergy/Change Integration
4. ***Asset Reuse across the Software and Systems Lifecycle***
   Example: Leverage RAM across entire Telelogic Software Delivery portfolio
5. ***Product Portfolio Management***
   Example: Extend FocalPoint reach worldwide
6. ***Integrated Requirements and Software Change Management***
   Example: Integrate “Change Mgmt” into existing DOORS/CC installations

Jazz technology will be introduced in an evolutionary manner

The evolution of the IBM Rational Software Delivery Platform