

## Challenges and Approaches in Global Development and Delivery

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What keeps me **Rational**?



## Agenda

- GDD Trends, Challenges and Approaches
- GDD Scenario Study
- Summary and Conclusions

# Agenda

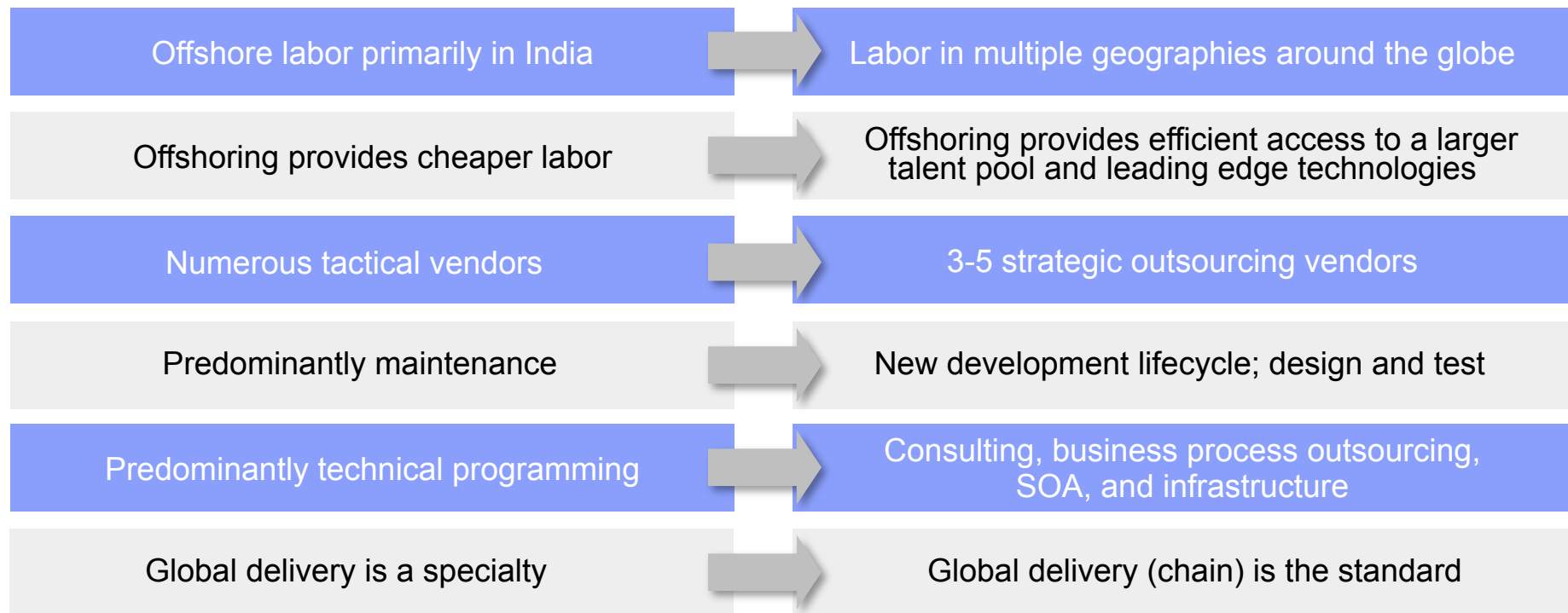
- GDD Trends, Challenges and Approaches
  - ▶ Globalization and Outsourcing Trends
  - ▶ Challenges for Global Delivery Teams
  - ▶ Global Delivery Trends
  - ▶ GDD Reference Architecture Patterns
- GDD Scenario Study
- Summary and Conclusions

# Globalization and Outsourcing Trends

## Global Sourcing is Here to Stay and is Evolving

*Evolving From...*

*... Evolving To*



*Global delivery will continue to grow and evolve  
-- away from a simple cost play for lower value services*

Sources: Future of IT Services, Bernstein Research, May 22, 2006; Gartner on Outsourcing, Gartner, December 14 2005; Future of Outsourcing, Forrester Research, Oct 24, 2006



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# Business Drivers and Global Delivery Challenges

## **Business drivers**

- Acquisitions and mergers
- Increased flexibility to adapt quickly
- Budget cuts / cost reductions
- Skill shortage
- Variable staffing model
- Application backlogs
- Competitive edge with decreased time to market and low cost solution



## **Global Development and Delivery**

*Creates*

## **Customer pain points**

- Mismatched and misunderstood process
- Communication issues
- Cultural issues
- Decreased productivity
- Increased rework
- Mistakes in work transfer
- Higher coordination costs
- Lack of project visibility, agility and control
- Lack of project metrics – unable to measure success
- Political issues
- Lack of security IP protection

*Gartner survey of 219 clients who outsourced projects offshore and domestically – half are expecting to fail to deliver anticipated savings*





# Global Development and Delivery Trends

## ■ Organizational Trends

- ▶ Traditional > Local ownership by branch and application/product
- ▶ Trend > Local ownership into Global Delivery Chain
- ▶ Emerging > Global organizational distribution

## ■ Development Infrastructure Trends

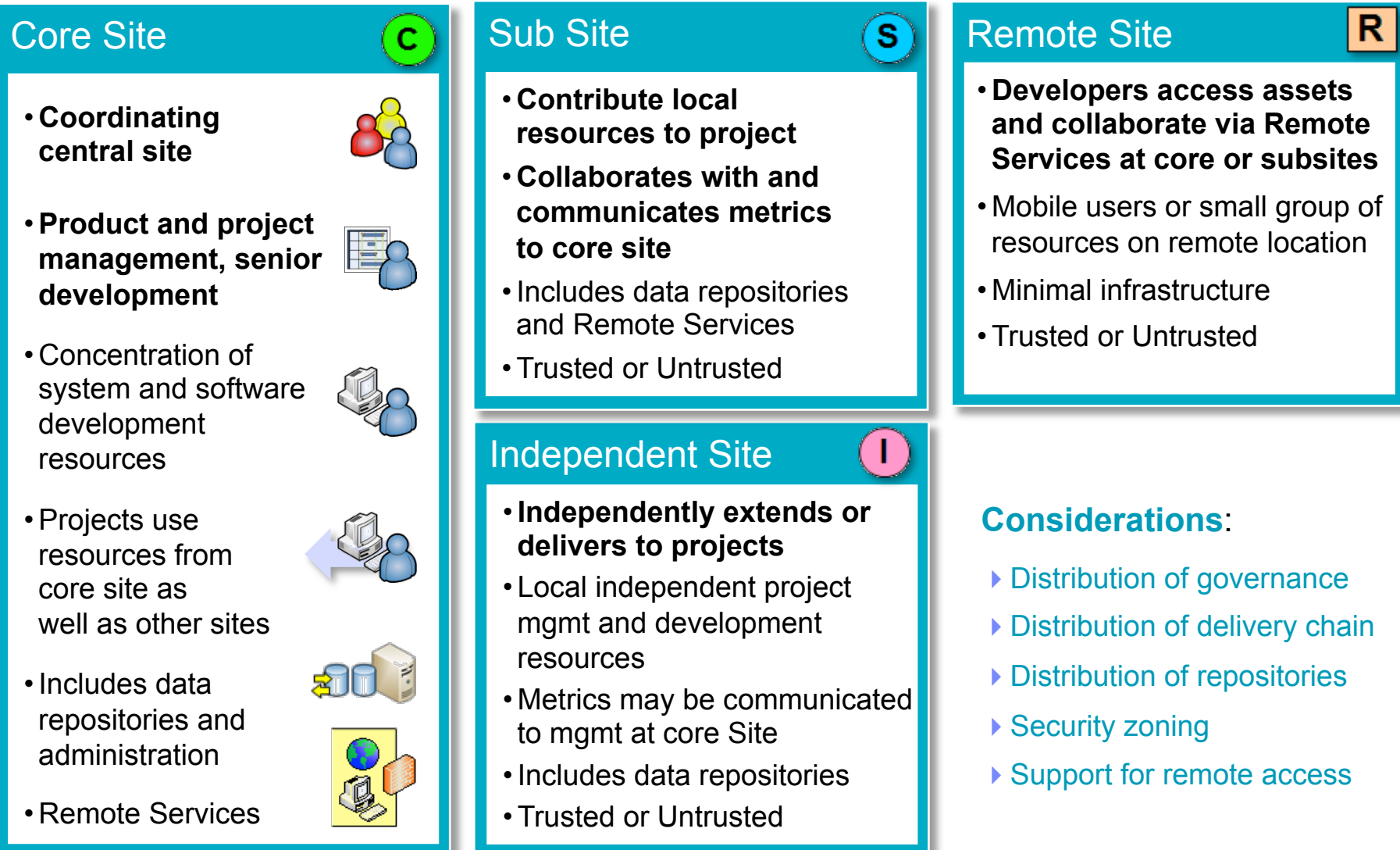
- ▶ Traditional > Corporate enterprise replication backbone
- ▶ Trend > Reduction to replication hubs with geographic WAN coverage
- ▶ Emerging >
  - Centralized infrastructure (in-house or as a service)
  - Community style

## ■ Collaboration Trends

- ▶ Traditional > Integrated tools, e-mail and phone conferences
- ▶ Trend > URL references, chat, wiki and web conferences
- ▶ Emerging > Embedded contextual collaboration



# GDD Reference Architecture Patterns \*



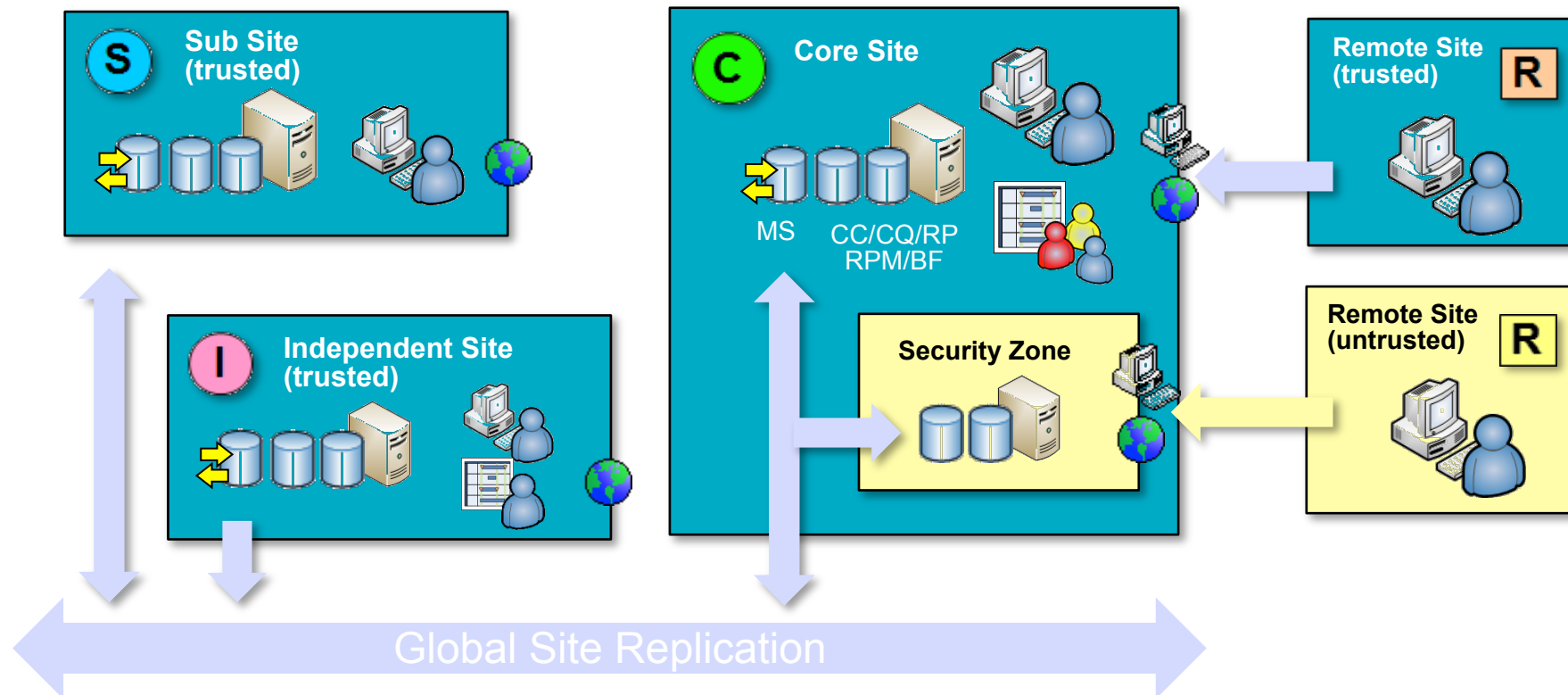
## Considerations:

- ▶ Distribution of governance
- ▶ Distribution of delivery chain
- ▶ Distribution of repositories
- ▶ Security zoning
- ▶ Support for remote access

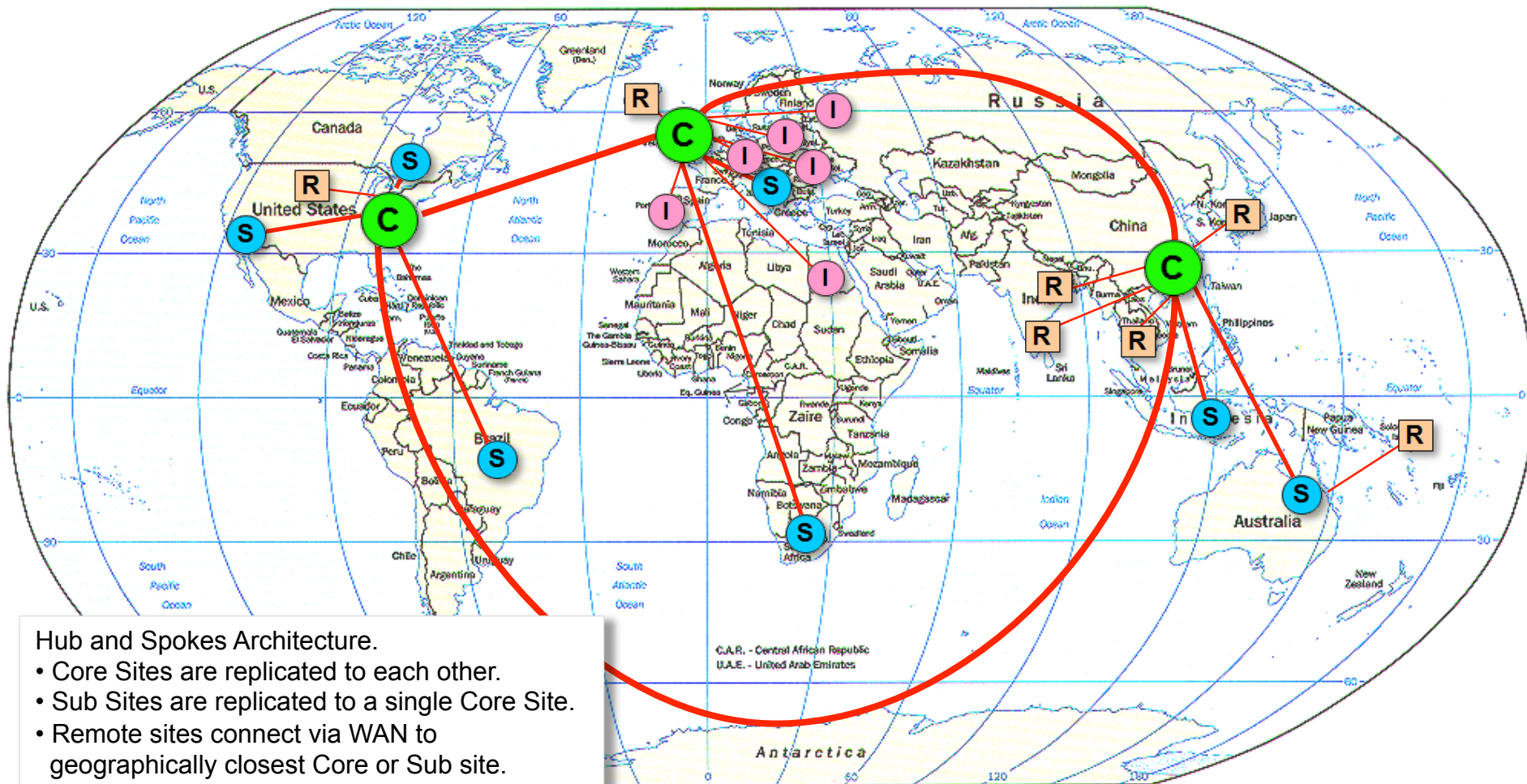
\* Elaborated IBM Rational ECM Community of Practice. Presented by Daniel Toczala,



# GDD Reference Architecture Patterns – Components and Deployments



# Sample GDD Reference Architecture



- Core Sites



- Sub Sites



- Independent Sites



- Remote Sites



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- GDD Scenario Study
  - ▶ JK Enterprises Scenario
    - Rational Cross-Product Green Threads
    - Scenario Context
    - Rational Solution Verification Test Environment
  - ▶ Solutions Validated
- Summary and Conclusions

# Rational Cross-Product Green Threads

## Definition

- Workflow across a set of products to solve a complex customer problem

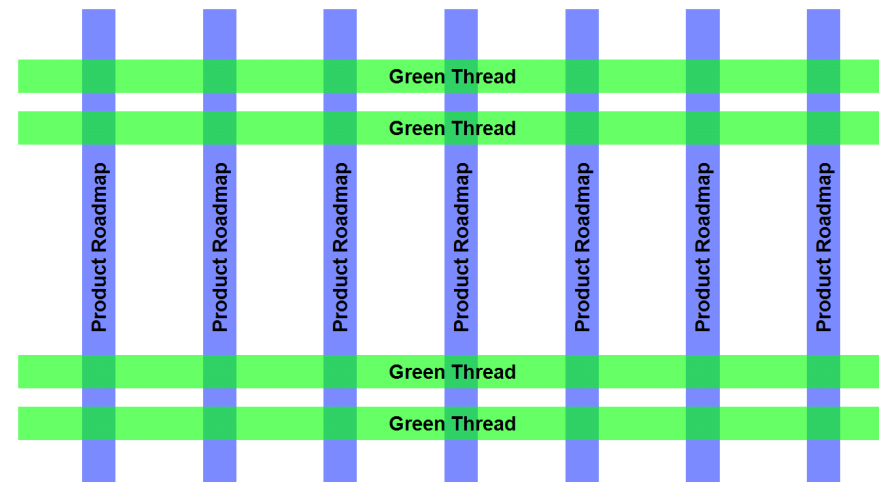
## Goals

- Move beyond point product thinking
- Deliver solutions that solve real-world customer problems
- Identify and prioritize key issues and roadblocks to product development
- Provide guidance and recommendations for customers to use

## Organization

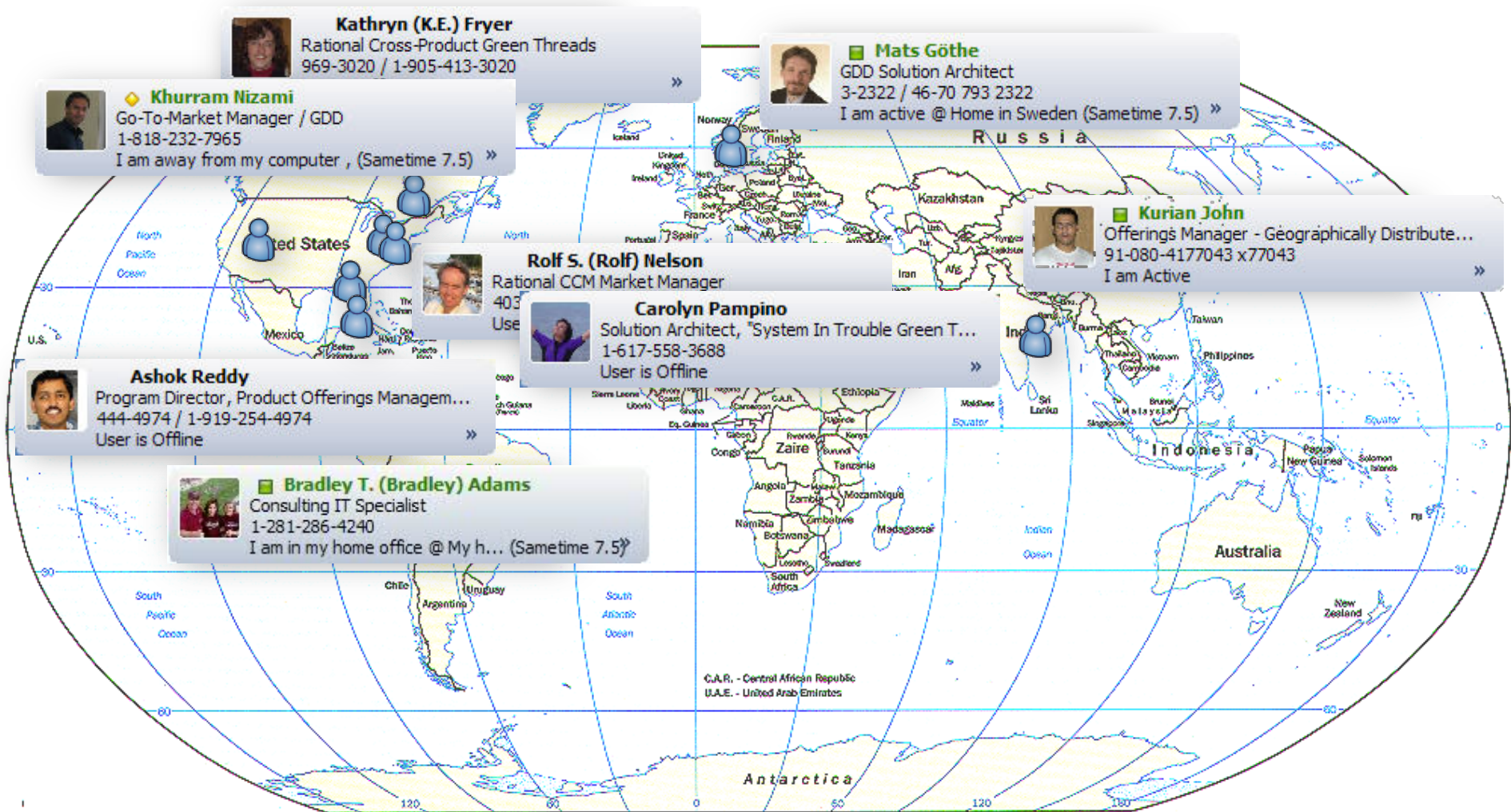
- Reporting to VP Development
- Collaborative effort with product and offering management, marketing, engineering, and field teams

## From Product-Centric to Solution-Centric

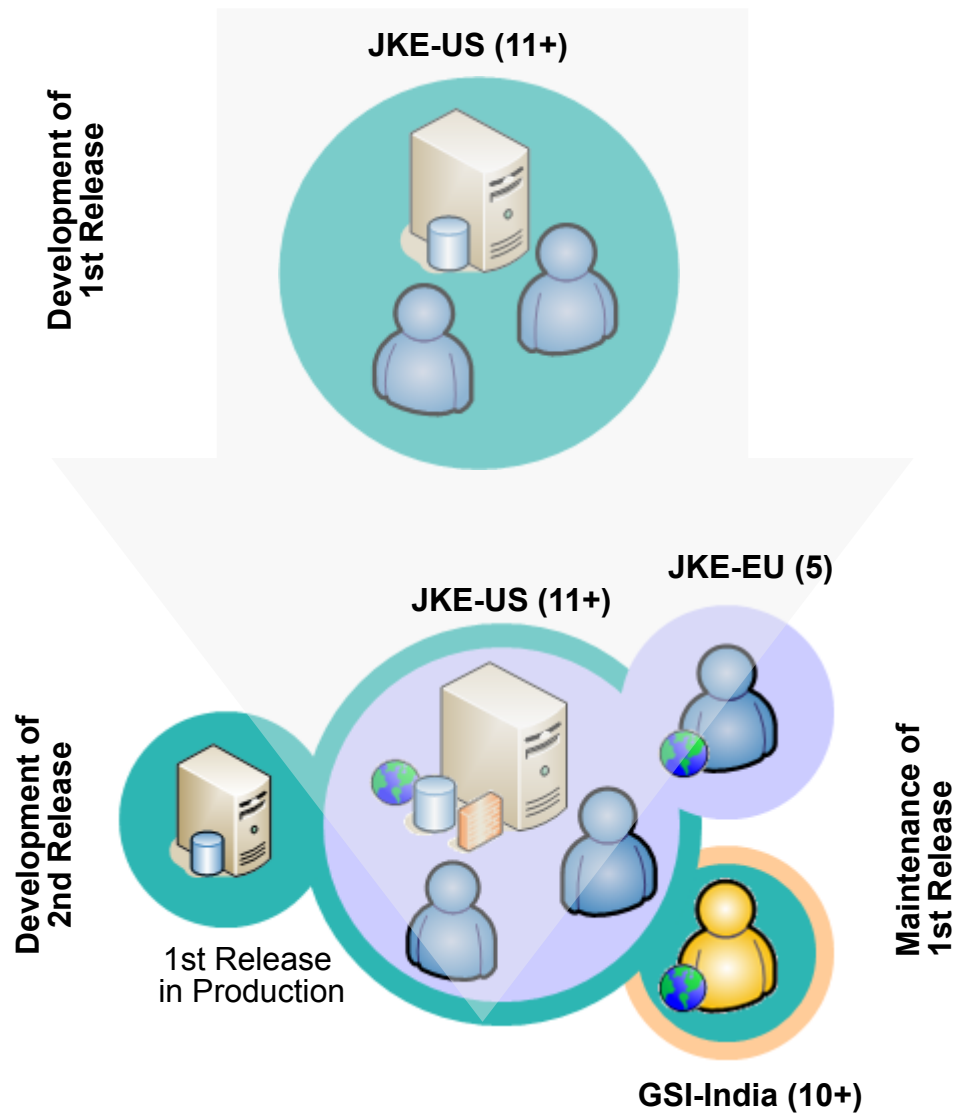




# Does the Rational GDD Team Practice Global Development and Global Collaboration?



# GDD Green Thread – Scenario Context



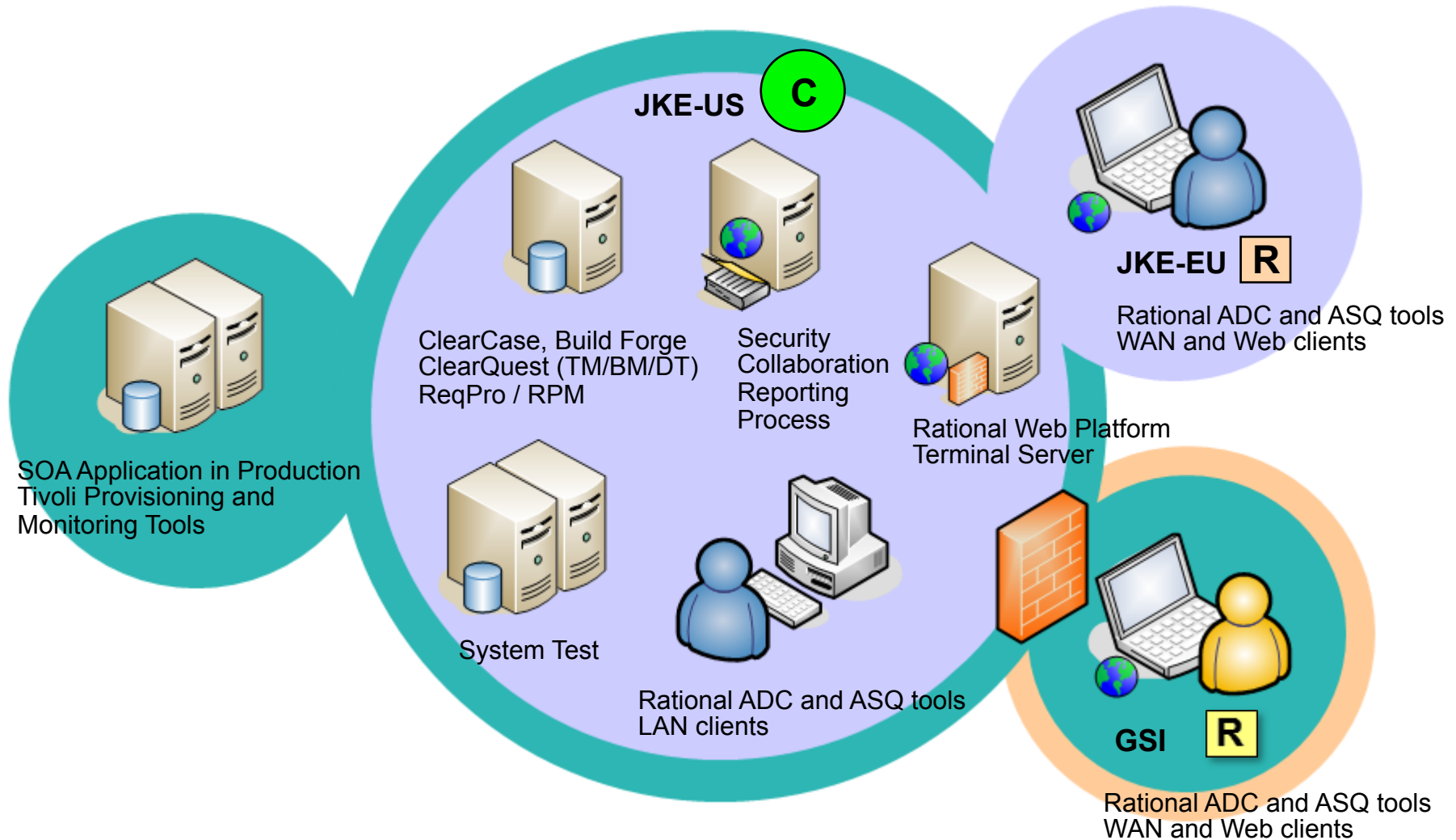
## ■ JK Enterprises Scenario

- ▶ Transform local development organization to a global and outsourced delivery project
- ▶ Execute global development and maintenance workflows

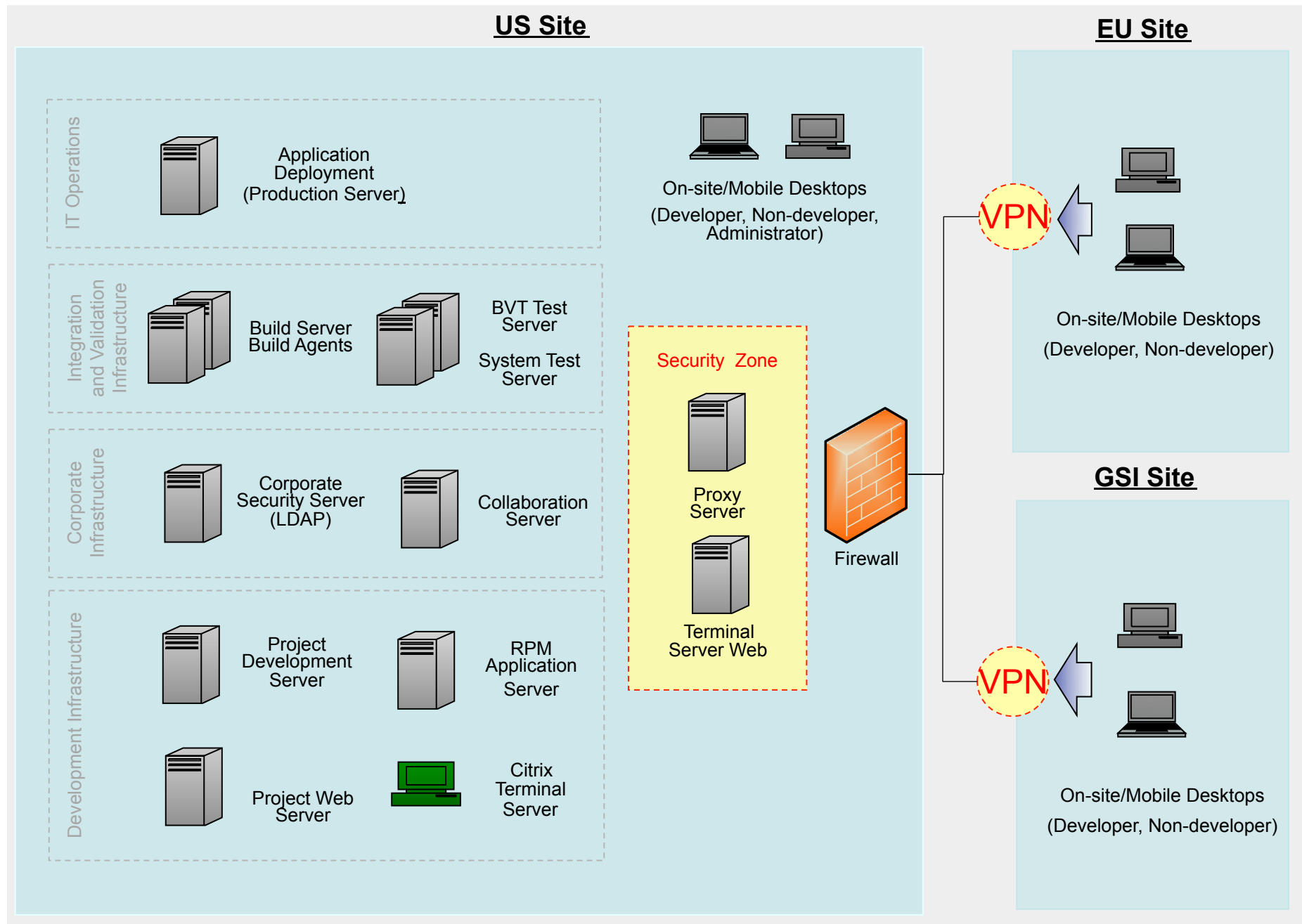
## ■ JK Enterprises Challenges

- ▶ Environment
  - ▶ Remote access via WAN and web with acceptable performance
  - ▶ Secure access to information and assets
- ▶ Governance
  - ▶ Agility of project setup / launch
  - ▶ Process and governance of distributed and outsourced project(s)
- ▶ Collaboration
  - ▶ Collaboration across team(s) and sites
  - ▶ Knowledge transfer and reuse from acquisition

# GDD Green Thread – Scenario Context (cont)



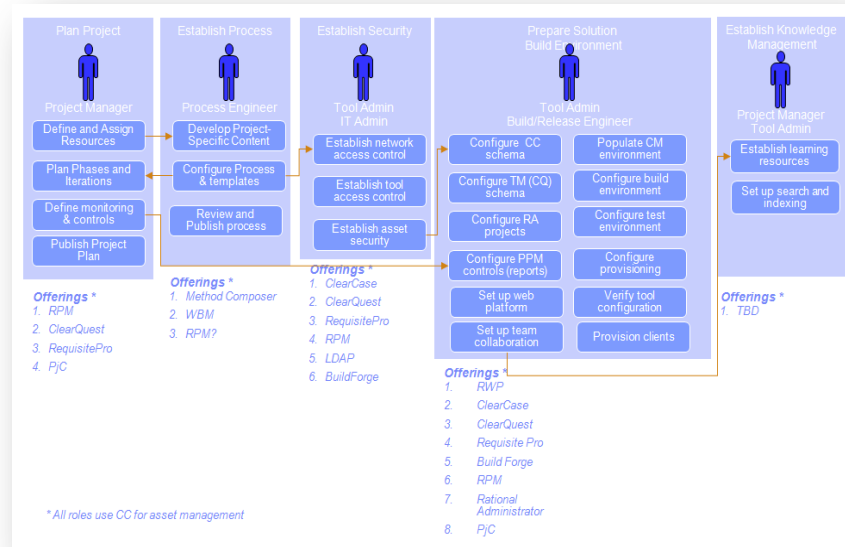
# Rational Solution Verification Test Environment



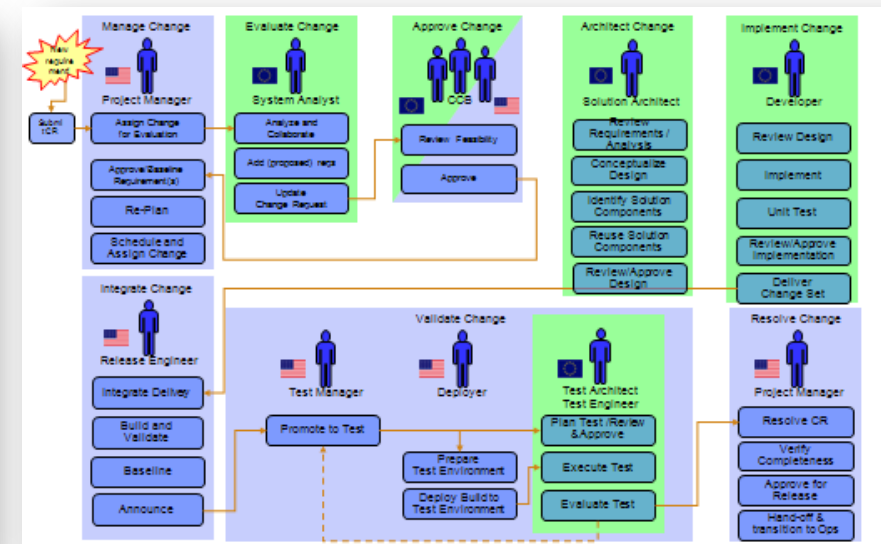


# GDD Green Thread Scenarios

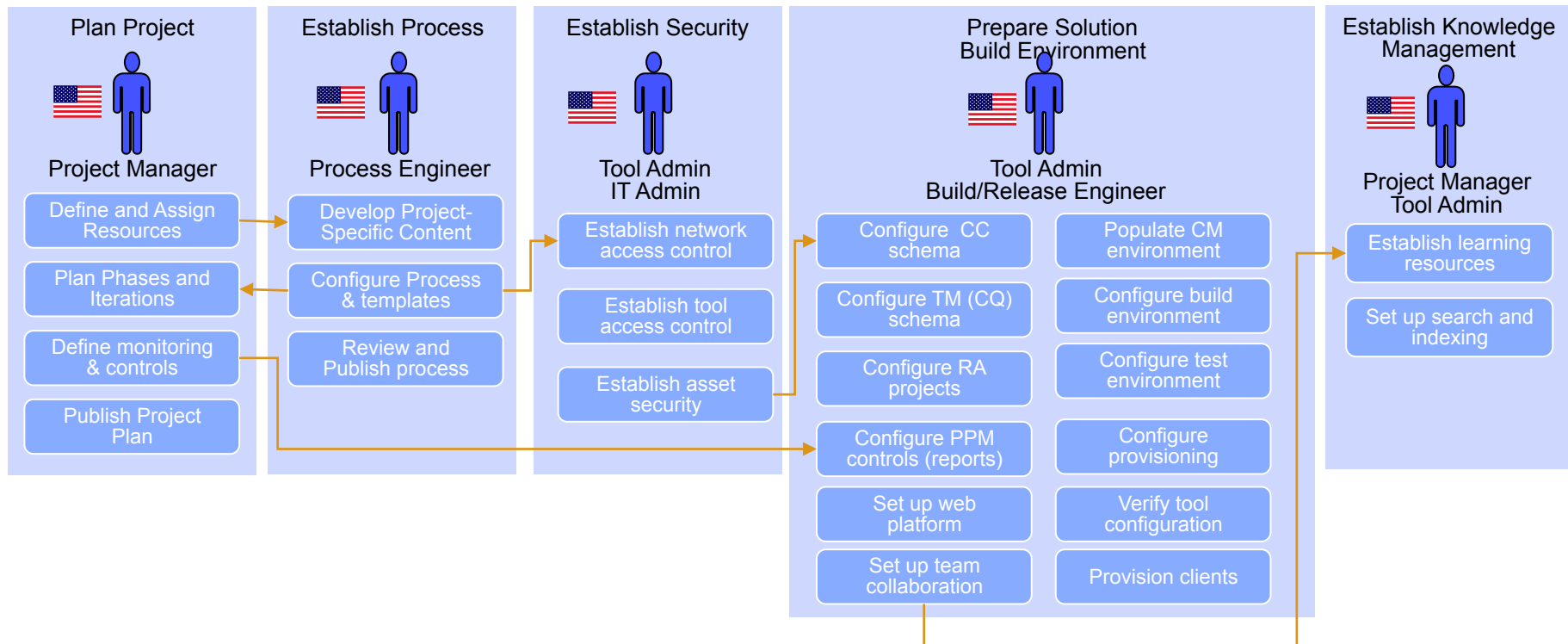
## GDD Setup Thread



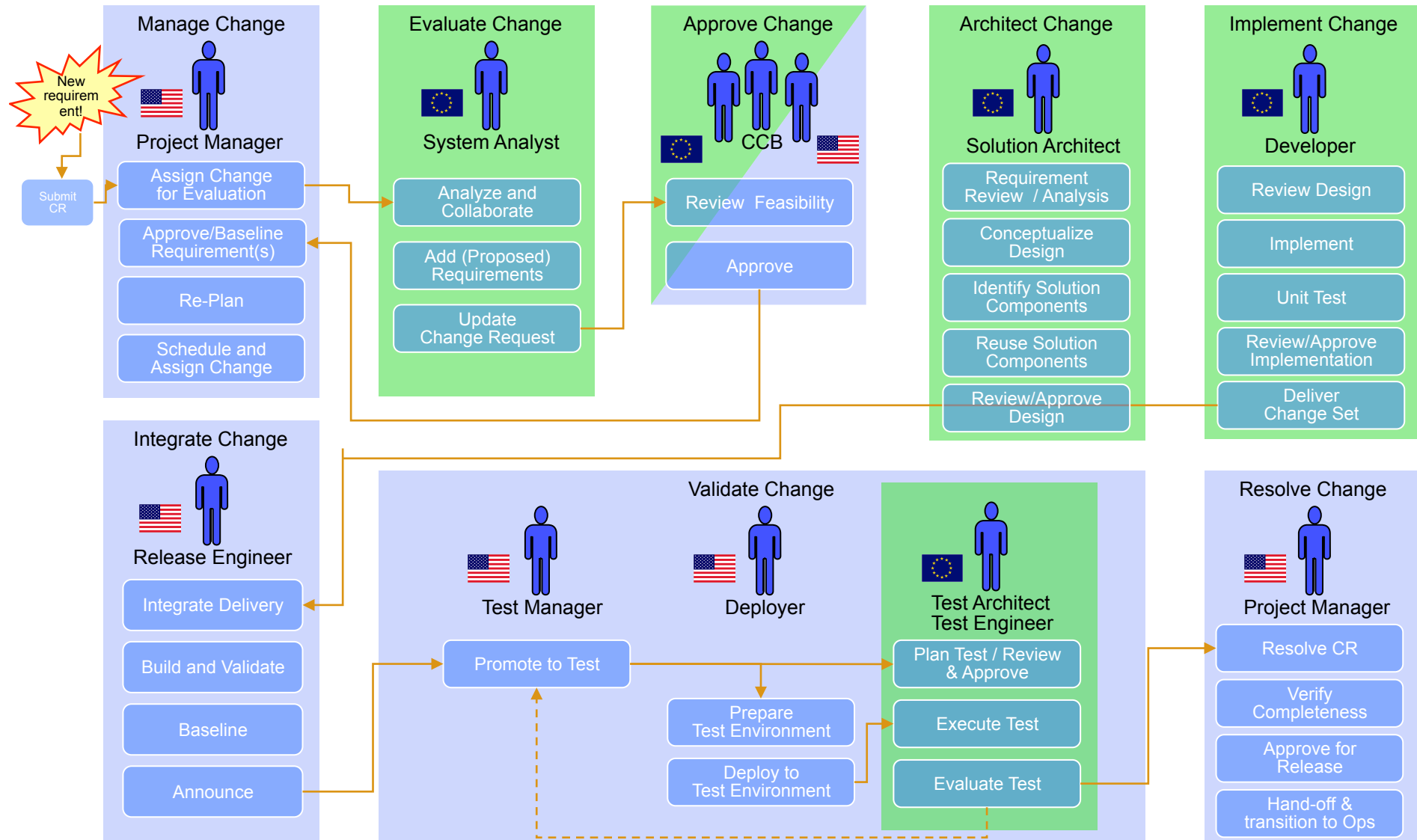
## GDALM New Development Thread



# GDD - Setup Thread



# GDALM - New Development Thread



# Agenda

- GDD Trends, Challenges and Approaches
- GDD Scenario Study
  - ▶ JK Enterprises Scenario
  - ▶ Solutions Validated
    - Success factors for Global Development and Delivery
    - Development process definition and global alignment
    - Traceability from requirements to test
    - Central build - test – deploy infrastructure
    - Global contextual collaboration
    - Security approaches
- Summary and Conclusions



# Success Factors for Global Development and Delivery

- Global coordination and oversight
  - ▶ Consistent metrics, processes, tracking
- Well-defined and consistent workflows
  - ▶ Automate where possible
  - ▶ Track change across development processes and lifecycle (e.g. change requests)
  - ▶ Clearly define roles, responsibilities, hand-offs
- Clear and accessible communication
  - ▶ Collaborate in context and record communications
  - ▶ Ensure team member notification
  - ▶ Address cultural, social, time zone differences
- Inventory and information management
  - ▶ Artifacts that make up applications need to be cohesively managed, accessed and versioned



# Success Factors for a GDD Solution

- **Governance**
  - ▶ Preconfigured roles, workflows, responsibilities, and tracking of development across a distributed organization
- **Access**
  - ▶ Role-based access to project artifacts wherever - whenever
- **Usability**
  - ▶ Easily accessible, role-based tools; integrated and packaged to support distributed development
- **Collaboration**
  - ▶ Effective communication between contributors in the context of development artifacts and workflows
- **Scalability**
  - ▶ Solutions that scale from small local teams to large geographically-distributed teams, with agility and with controlled cost of ownership.
- **Security**
  - ▶ Protection of IP in a network of WAN / LAN / Internet connections with in-house, outsourced and partner contributors
- **Administration**
  - ▶ Administration and provisioning of a team platform supporting distributed development that has a cost of ownership in parity with other IT platforms



# Development Process Definition and Global Alignment

## Approaches and Benefits

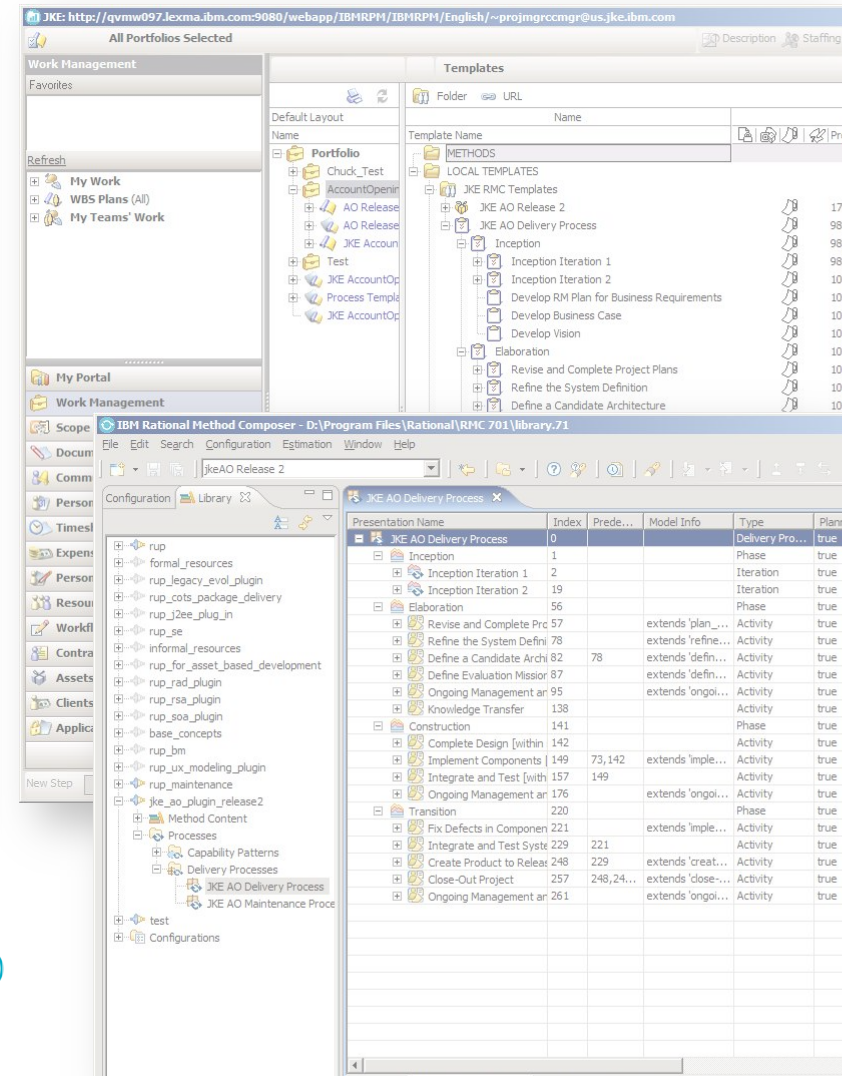
- ▶ Define and publish common processes with Method Composer
  - Accessible and trackable by all team members
  - Including Roles, Tasks, Delivery Processes
  - Include Project Specific Guidance and Tool Mentors
- ▶ Align project plans to adopted process
  - Generating WBS in Portfolio Manager from exported process templates
- ▶ Leverage Portfolio Manager to track work, balance resources, monitor effort
  - Import work items from CQ for more complete task view
- ▶ Track common metrics to enable consistent visibility and control
  - Defects and defect density
  - Schedule and cost indicators
  - Test case execution
  - Churn

## Challenges and Recommendations

- ▶ GDD-specific process guidance beginning to emerge
- ▶ Combination of RPM, PjC, and SoDA to provide reporting coverage

## Coming Improvements

- ▶ GDD Redbooks and RUP method plug-in (RSDC Solution Village)
- ▶ Jazz OOTB Process and Project Planning (SDP08 /SDP09)



# Traceability from Requirements to Test

## Approaches and Benefits

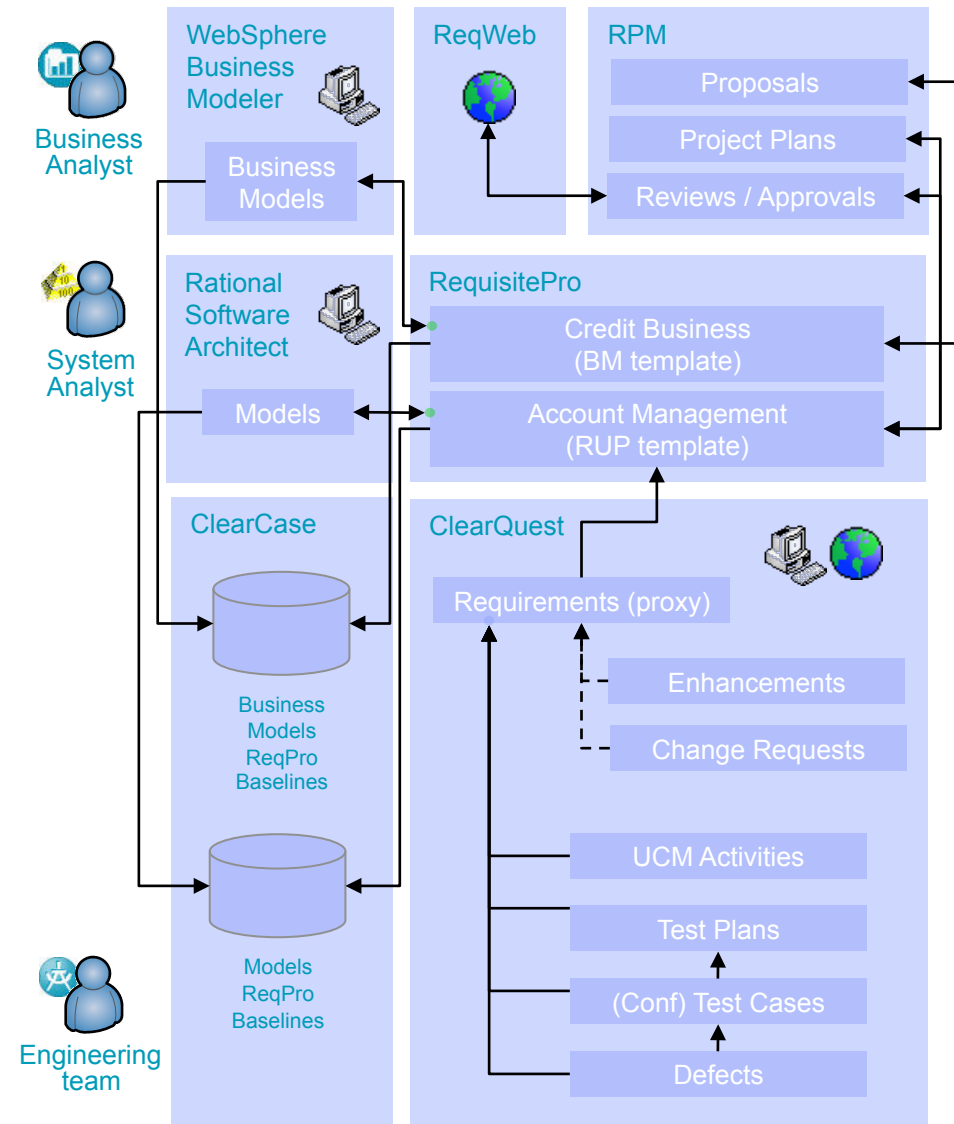
- ▶ Leverage integration with WebSphere Business Modeler to trace requirements to business needs
- ▶ Trace to architectural elements in Rational Software Modeler/Architect models
- ▶ Requirement proxies in ClearQuest for traceability to and reporting on:
  - UCM activities
  - Test plans and test cases
  - Test results, logs,
  - Defects
- ▶ RequisitePro baselines stored in ClearCase
- ▶ Manage requirement change in ClearQuest via Enhancement and Change Requests

## Challenges and Recommendations

- ▶ Use RPM workflow for requirement approval
- ▶ Use terminal services for remote RSx/WBM access
- ▶ Implement ReqPro security with
  - Multiple projects with cross-project traceability
  - Access to select CQ requirement proxies

## Coming Improvements

- ▶ Jazz ALM model (SDP08 /SDP09)
- ▶ GDALM model (RSDC Solution Village)





# Contextual Collaboration

## Approaches and Benefits

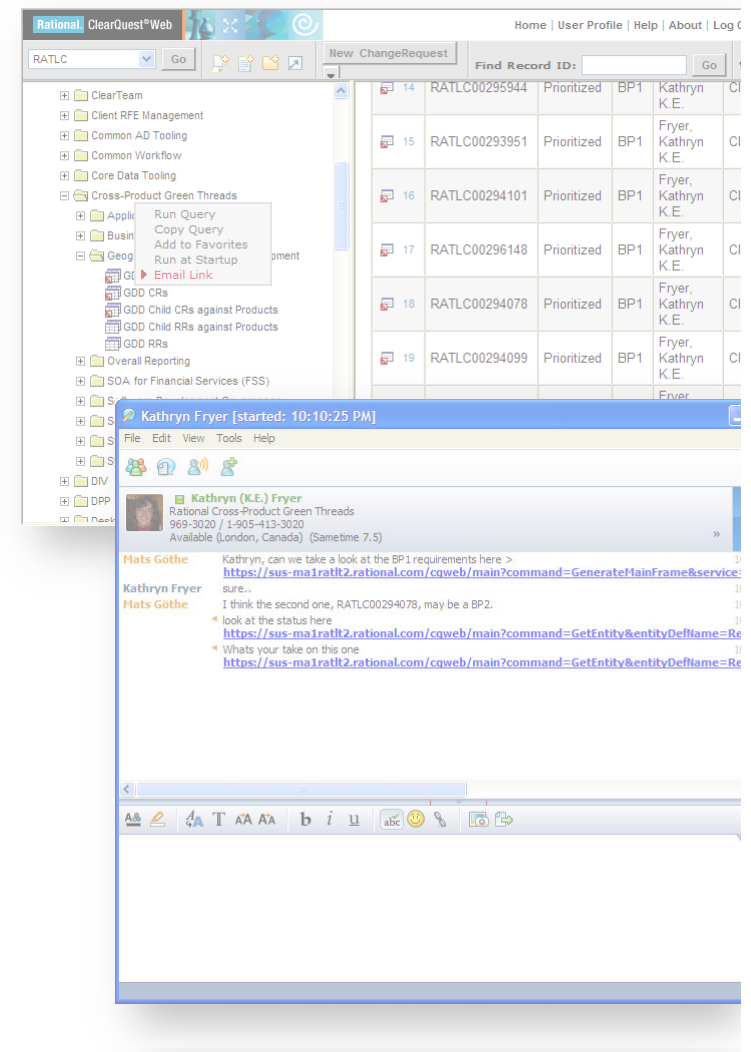
- ▶ Leverage Web UI for contextual collaboration workflows
  - URLs can be copied or constructed, and shared
  - ClearQuest and CQTM Record and Queries
  - Build Forge assets and reports
  - RequisitePro Requirements and Views
  - Files controlled in ClearCase Web views
- ▶ Collaboration mechanisms available in many tools
  - ClearQuest Notes and Notifications
  - RequisitePro Discussions and Notifications
  - Portfolio Manager Communications and workflow
  - ProjectConsole sharing of reports

## Challenges and Recommendations

- ▶ Some tools are more helpful in providing a URL
- ▶ Scripting may be used to generate URLs

## Coming Improvements

- ▶ Jazz Collaboration (SDP08 /SDP09)



# Central Build-Test-Deploy Infrastructure

## Approaches and Benefits

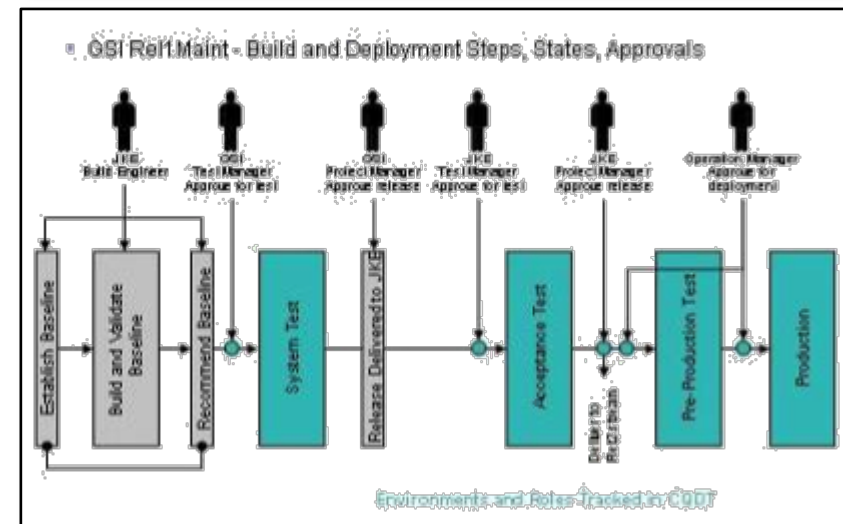
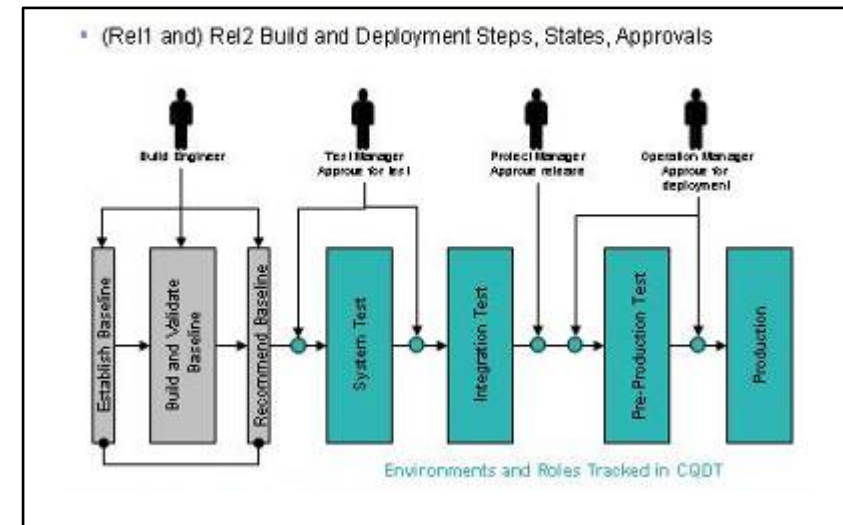
- ▶ All JKE teams using central functions for
  - Build – using Build Forge and ClearQuest Build Tracking
  - Test – using ClearQuest Test Management
  - Deploy – using ClearQuest Deployment Tracking and Tivoli Provisioning Manager
- ▶ Builds managed by central Build Engineer role
- ▶ Build records and Deployment records created by build script
- ▶ Roles, Environments, Releases setup for JKE
- ▶ Standard CQTM test plan structure

## Challenges and Recommendations

- ▶ Execute CQTM local to test environment
  - (alternative) Use terminal services for test team
  - (alternative) Use global CQTM replication
  - (alternative) Upload test results
- ▶ Engage with IT Operations team to implement TPM deployment automation
- ▶ Practices exemplified in Build and Deployment Automation Proof of Technology

## Coming Improvements

- ▶ Styx deployment automation (QM03)



- Approaches and Benefits

- 
- The diagram illustrates a network architecture for connecting an IBM Corporate network to various lab subnets. The IBM Corporate network is connected to the Existing Lab Router. The Existing Lab Router is connected to the Existing Path, which is connected to the WAN. The WAN is connected to the Lab Subnet 9.34.116.0/23 - GSI Site and the Lab Subnet 9.34.106.64/27 - DMZ. The WAN uses IPsec tunnels for secure communication. The Lab Subnet 9.34.116.0/23 - GSI Site is connected to the WAN via an IPsec tunnel. The Lab Subnet 9.34.106.64/27 - DMZ is connected to the WAN via an IPsec tunnel. The WAN is also connected to the Lab Subnet 9.34.112.10.

- ▶ Implement ClearCase security on VOB level
- ▶ Implement RequisitePro security with
  - Multiple projects with cross-project traceability
  - Asset type security classification
  - Access selected requirements in ClearQuest
- ▶ Implement ClearQuest security with SecurityContext

- ▶ Team Server security (CRMA45 / BOF)
- ▶ GDALM model (RSDC Solution Village)

# Agenda

- GDD Trends, Challenges and Approaches
- GDD Scenario Study
- Summary and Conclusions
  - ▶ Rational GDD Solution Benefits
  - ▶ Solution Improvement Areas



## Rational GDD Solution Benefits

- ▶ **Flexibility** - Supports a wide spectrum of distributed, replicated and centralized reference architectures
  - Centralized web solution can lower TCO of administration and setup
  - Common, scalable tools and workflow
- ▶ **Traceability** - Across the lifecycle from business models to requirements to test cases and results
- ▶ **Collaboration** - Through a variety of means
- ▶ **Governance** - Through process configuration, publication, and integration with project planning and governance
  - Cross-repository reporting and roll-ups
- ▶ **Breadth of offering** - Products across the lifecycle, with integrations across Rational and to other IBM brands



# Continued Solution Improvement

## ► Areas of focus

- Global development and delivery practices
- Improve project setup with out-of-the-box ALM solution
- Global development and delivery platform scalability and WAN access
- More complete and easier-to-configure reporting
- Security model with increased granularity

## ► Global Development and Delivery solution improvements demonstrated at RSDC

- GDD Redbook – (RSDC Solution Village)
- GDD RUP Plug-in – (RSDC Solution Village)
- Jazz – (SDP08 /SDP09)
- GDALM – (RSDC Solution Village)
- Team Server – (CRMA45 / BOF)



# Questions



# Thank You

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