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Rational Green Threads Methodology

A scenario based approach to solution management

Mats Göthe, Rational Software

Abstract

The Rational Cross-Product Green Threads team is a group of Solution Architects driving Rational solution strategy using a scenario based methodology; i.e. workflow across a set of products to solve a complex customer problem.

This session will present the Rational green thread methodology and process, and provide examples from Global Development and Delivery (GDD) and Application Lifecycle Management (ALM).

Speaker: Mats Göthe, Rational Software

Mats Göthe is a Solution Architect in the Rational Cross-Product Green Threads.

Mats joined Rational in 1991 and has held various positions; development manager for Rose development in Sweden, technical and service manager in Nordic and in the Ericsson team.

Introduction

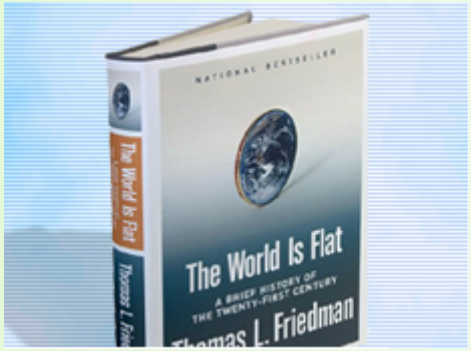
Green Threads is an approach to solution management and validation that; ‘Captures workflows across a set of products to solve a complex customer problem’ and move our organization beyond point product thinking

Agenda

- Green Threads Defined
- Process and Methodology
- Our Tools
- Impact and results
- Examples from ALM Green Thread

What IS a Green Thread?

"For most companies, the [future of commercial software] belongs to those who know how to make the richest chocolate sauce, the sweetest, lightest whipped cream, and the juiciest cherries to sit on top, or how to put them all together into a sundae... There is no future in vanilla..."
– *Thomas L. Friedman, The World is Flat*



Definition

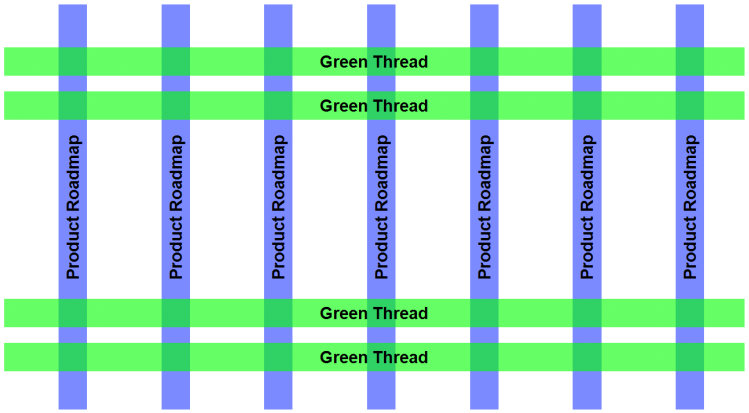
- Workflow across a set of products to solve a complex customer problem

Scope

- **Multiple green threads**, each with a different focus
- **Single path through the system**, vs exhaustive list of all tasks or workflows
- Each GT reflects a **specific usage scenario**, not all possible scenarios
- Span relevant **products from Rational and Tivoli, WebSphere, Lotus, DB2**
- **Continuously updated** for new product releases

What is our INTENT?

- Improve the IBM development tool experience based on key customer usage scenarios (solutions)
  - Includes working with customers to gather key input/requirements for the GT
  - Product and Solution Gap Analysis
  - (mainly) Inward focused on improving cross-product integrations
- Goals
  - Move beyond point product thinking
  - Deliver solutions that really work to solve real-world customer problems
  - Identify and prioritize key issues and roadblocks to product development
  - Provide guidance and recommendations for field to use now



A Brief History of Green Threads

- "Red threads" identified by early Rational teams
  - Series of user tasks that were difficult or impossible for customers to complete
  - High support costs and low customer satisfaction
- Reversal in thinking to identify the common task paths early – making the threads "Green"
  - Green threads initially scoped to individual products and focused on new features
  - Good success rate

- Issues remained at level of solutions
  - Products in combination with other Rational, IBM, or common external products
  - Lack of integration and consistency
- Decision to apply Green Thread philosophy at the solution level
  - Focus on key customer scenarios and tasks, regardless of new features
  - Ensure strategic focus and identify gaps to be addressed

Meet the Green Threads Team

Core team

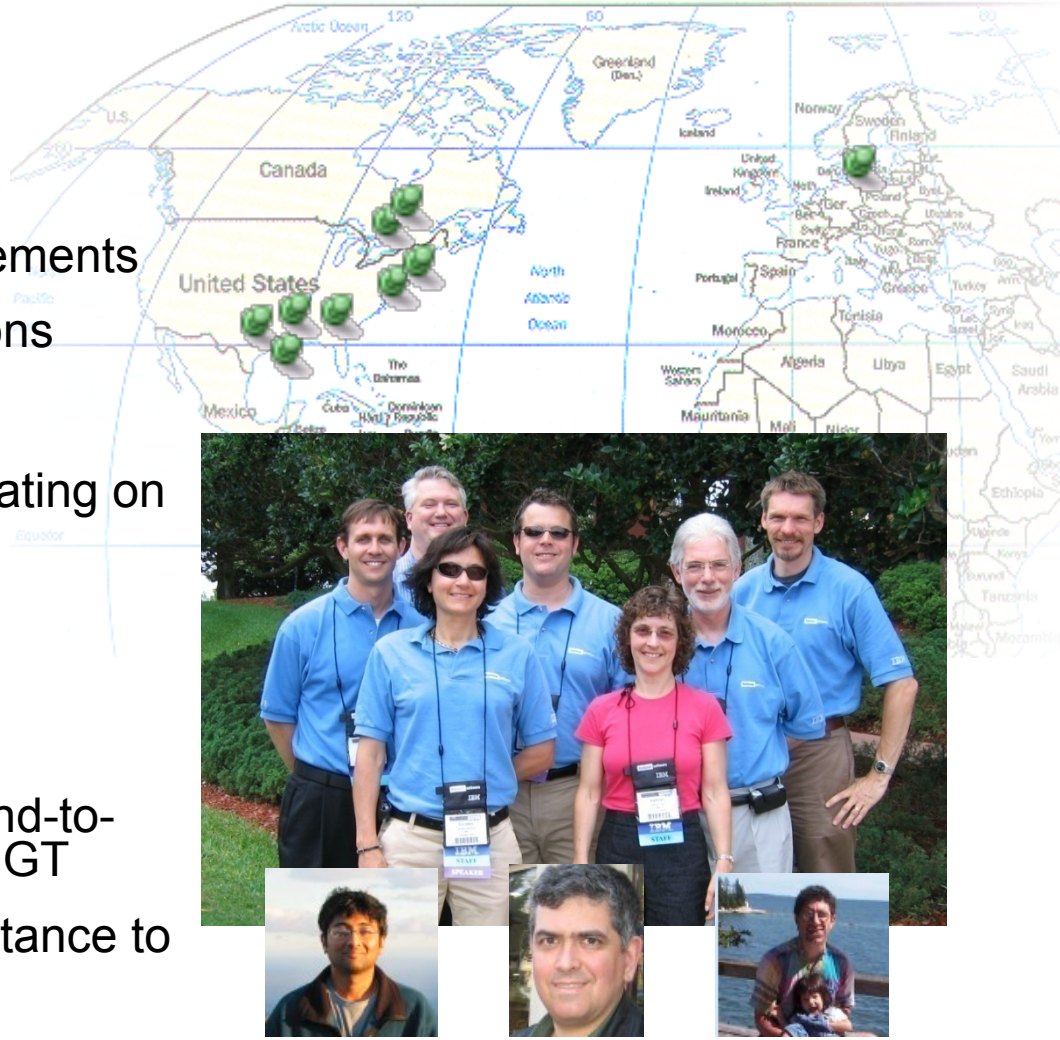
- Lead the Green Thread initiative
- Define GT content and direction
- Driving product and solution requirements
- Collaborating with other organizations

Extended team

- Field representatives, each participating on a specific Green Thread
- Contributing and feeding customer experience to validate the GT

SVT Green Thread Team

- Ensure comprehensive testing of end-to-end customer work flows based on GT
- Provide lab infrastructure and assistance to execute GT



Active Cross-Product Green Threads

Business Driven Development	Explores identification, analysis, design, implementation, test, deployment and monitoring of a process change.
Geographically Distributed Application Lifecycle Management	Explores traceability across the development lifecycle, following the path of a business change requirement through a milestone iteration.
Software Development Governance	Explores the requirements definition, design, and implementation of the control and measurement mechanisms needed to enforce and support the JKE governance decisions.
Requirements Definition & Management	Explores the requirements definition and management process and the ways to elicit, discover, and specify requirements.
Enterprise Modernization and Governance	Explores the ALM and BDD scenario using enterprise modernization tools.
Systems	Explores software development in the context of systems development
System In Trouble	Explores the detection, diagnose, fix, test and redeployment of an encountered incident in a system in production.
SOA for Financial Services Sector	Explores the of use, reuse, and management of IFW/IAA models, SWG tools and methodologies

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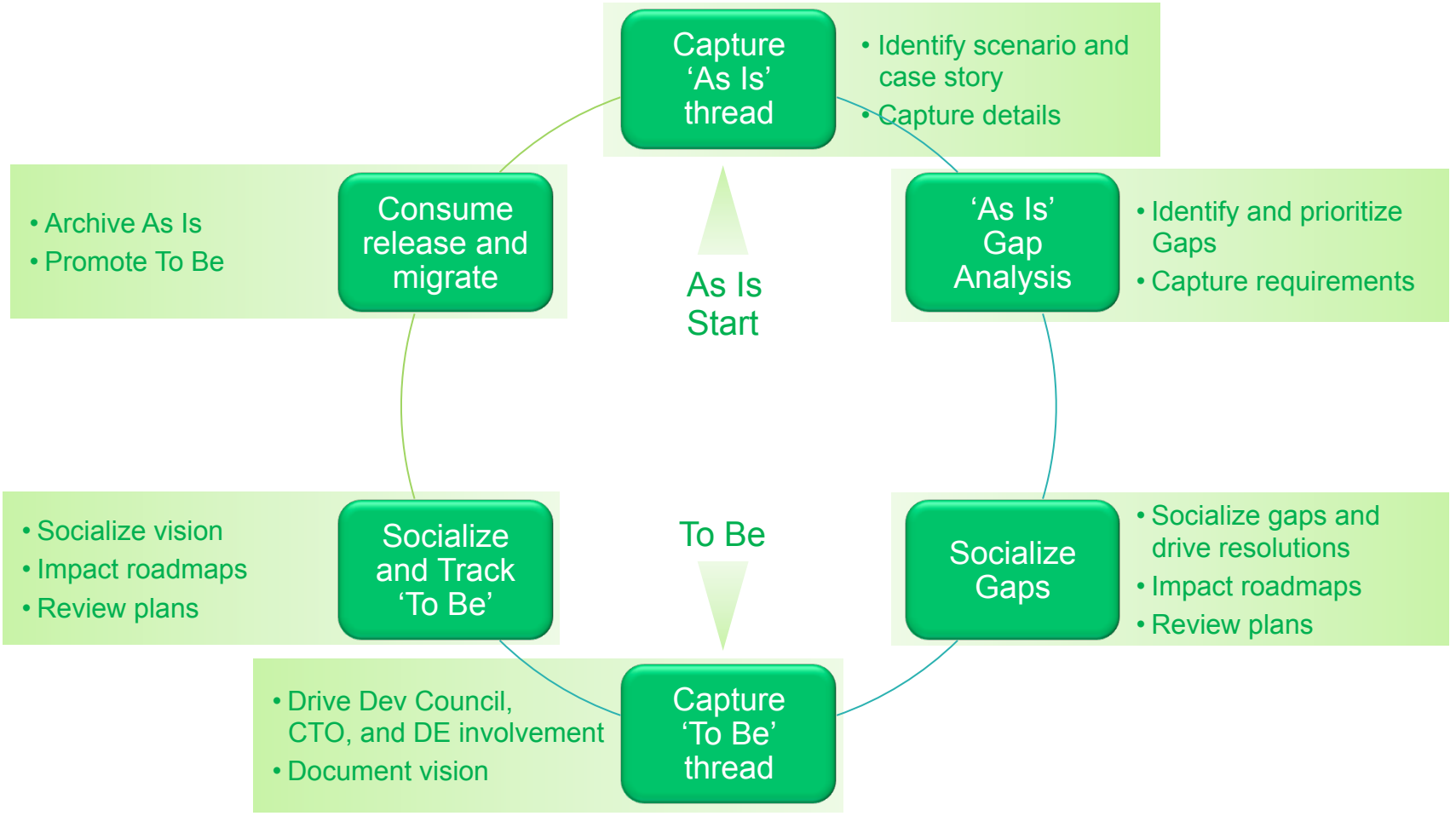
The Green Thread Lifecycle



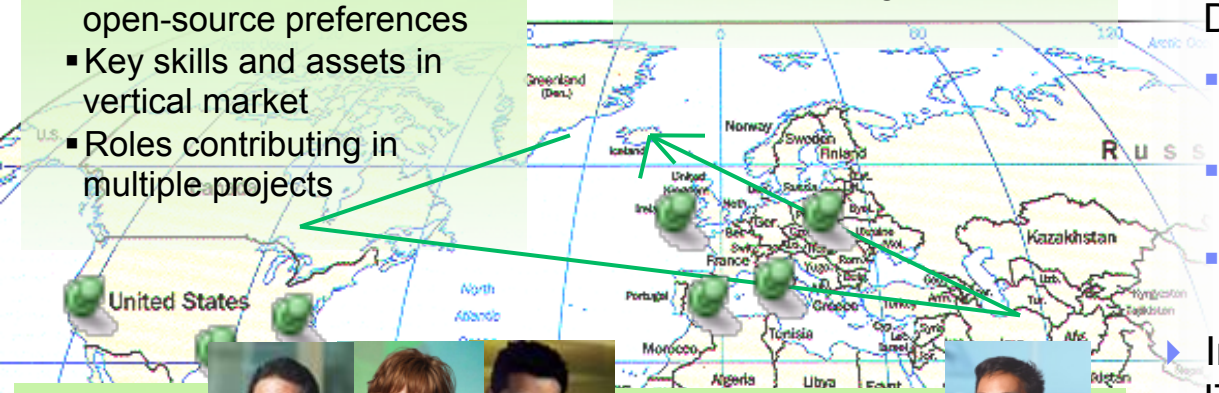
JKE Scenario – The Story

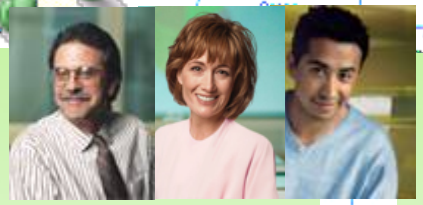
JKE-EU

- Agile development team w/ open-source preferences
- Key skills and assets in vertical market
- Roles contributing in multiple projects

EU Regional Partners

- Consumer of deliveries for localization and local market testing





JKE-US

- HQ functions
  - Business leaders
  - Program and Project leaders
  - IT Operations
- Multiple project spanning multiple sites
- Central dev functions

GSI-India

- Strategic System Integrator partner
- Mature internal processes on CMMI level 5
- Roles contributing in multiple innovation projects
- Ownership of maintenance

Story

- JK Enterprise is a financial sector, enterprise sized and global, corporation
- JKE IT is tasked to deliver business optimization program(s)
- JKE R&D Conducting Organizational Distributed Development
  - New innovation projects run in US, EU, India, and beyond
  - Maintenance projects run in India with GSIs
  - Partner network deliver application localization
- Increasing dependency on off-shore IT capacity

JKE ALM Challenges

- Extending silo'd tools to a Global Governance and Delivery Platform
- Improve IT delivery efficiency and capacity
- Enable team flexibility and collaboration
- Manage ALM (repository and asset) integration and security

JKE Scenario – The Roles

Hi, I'm Patricia

I'm the Project Manager for JK Enterprises, a global financial corporation. My role is to lead the Account Opening project. We just released a major milestone for our business analyst to assess.

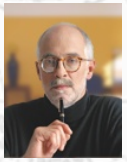
My team is distributed over three continents and development follows the sun. To lead my project I need to to manage change, track health and manage quality by collaborating with my team and stakeholders .

We're a small team in a larger enterprise, so I'm depending on Rational to provide an ALM solution that supports our agile way-of-working.

However, our project is a component of a larger solution, so we need integrations that let us release to JKE's global integration and delivery chain which is based on ClearCase.

Bob –
EU Business Analyst

Marco –
EU Dev Manager

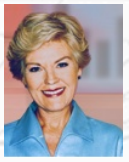


Al –
US Software Architect

Deidre –
EU Developer

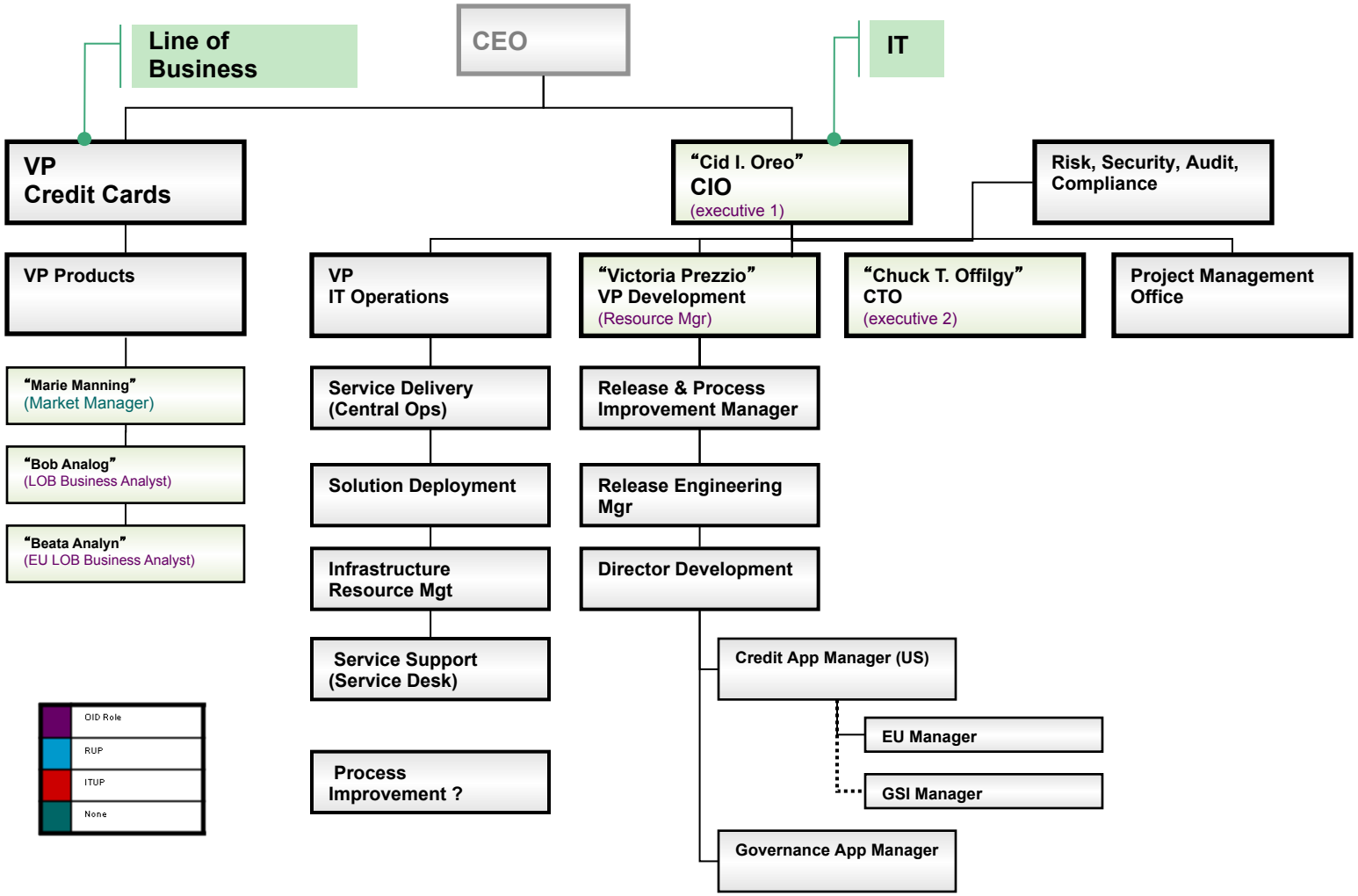
Tanuj –
India Tester

Rebecca –
US Build Engineer

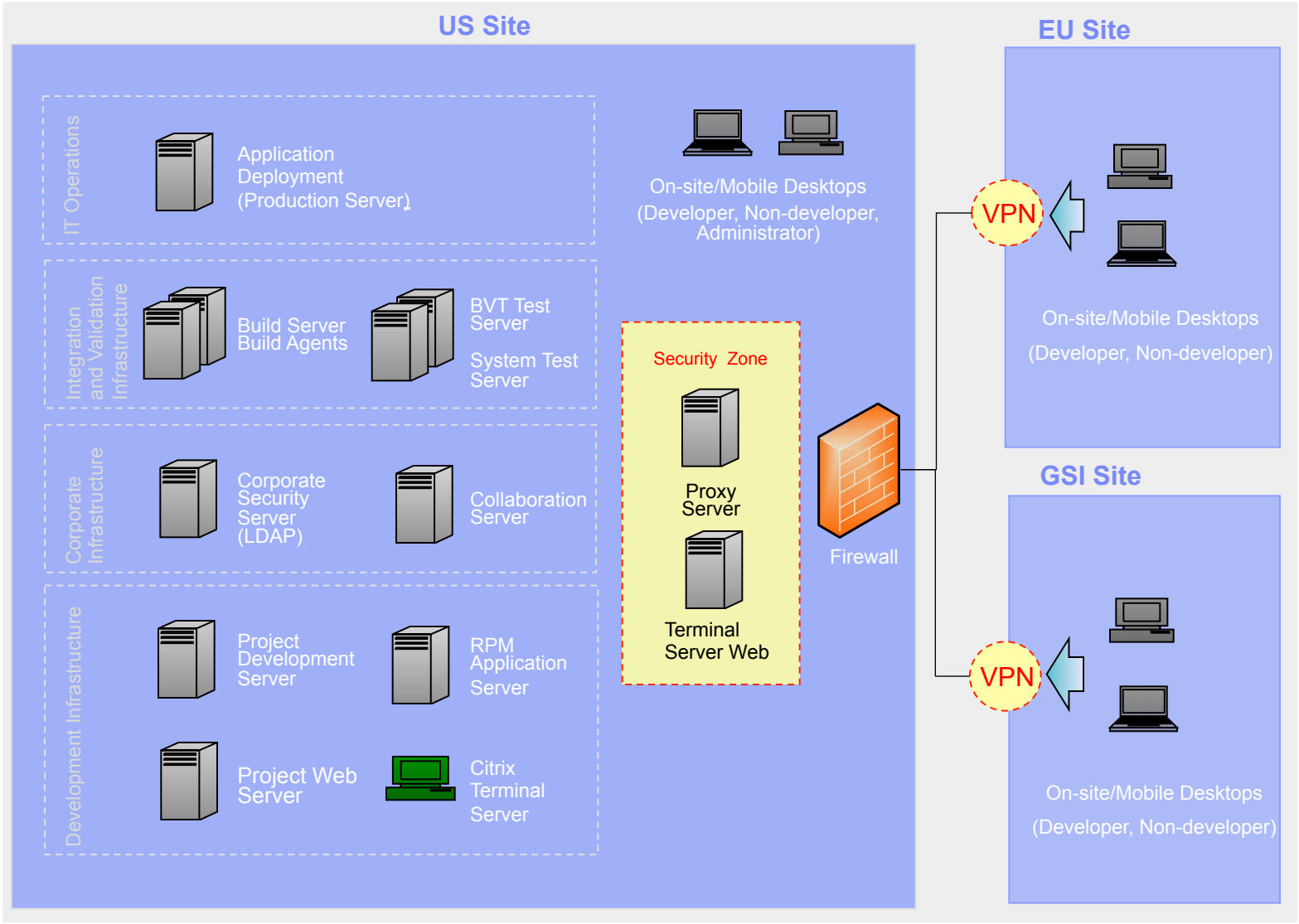


Tammy
US Test Manager

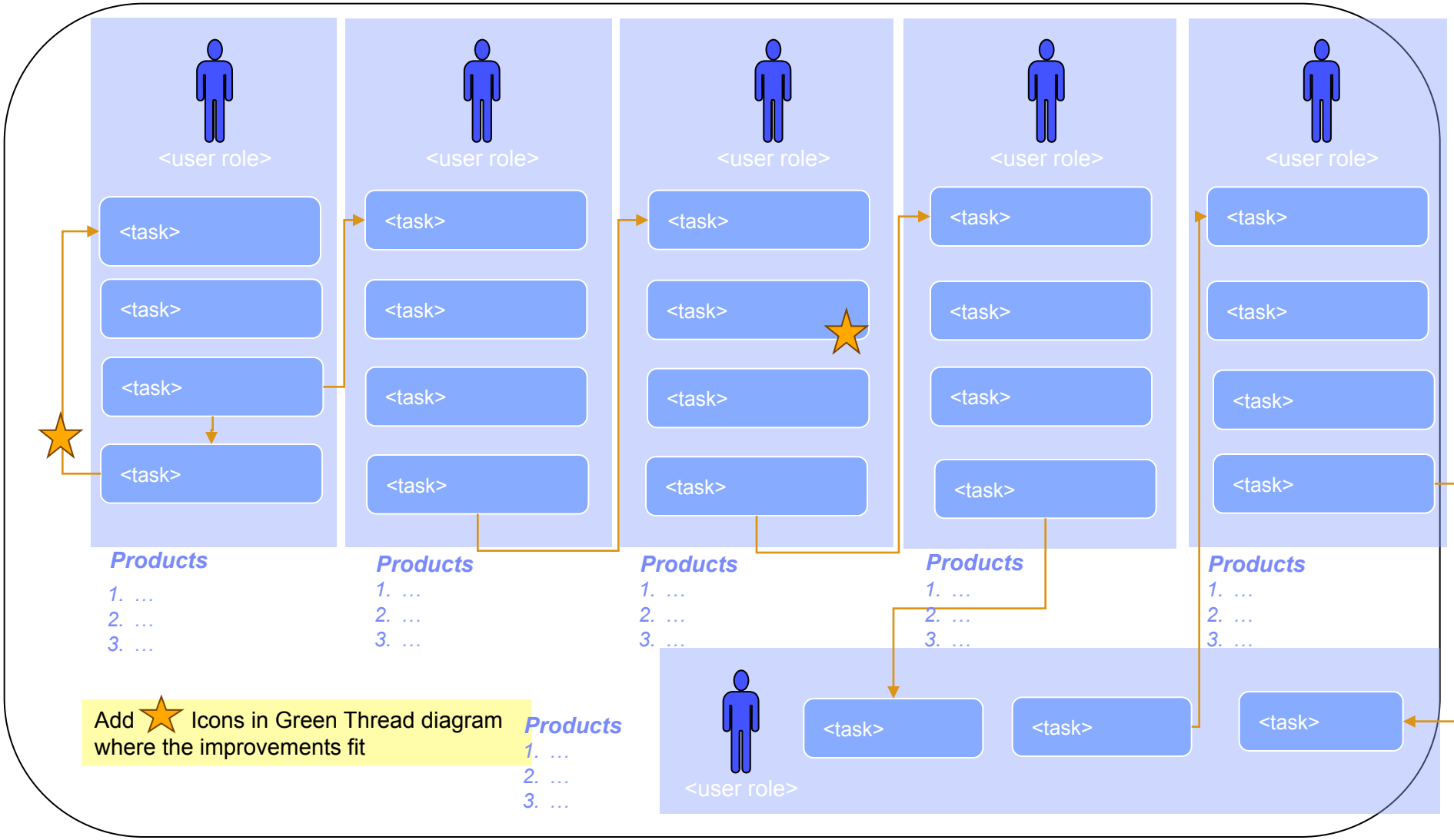
JKE Scenario – The Org Chart



JKE Enterprise – The Infrastructure



Example: Target Green Thread: <name>



Overall <product> Green Thread Scorecard

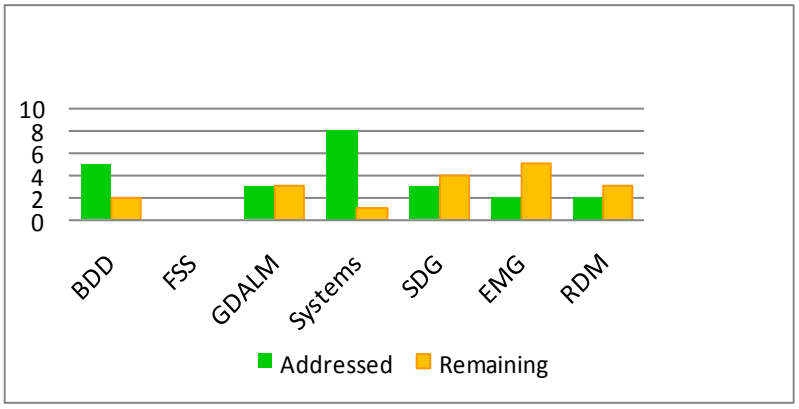
Green Thread Relevance for <product>

Green Thread	Impact
BDD	
SOA for FSS	
GDALM	
Governance	
Systems	
Enterprise Modernization/Governance (EMG)	
Requirements Definition and Management (RDM)	

Top Green Thread Remaining Issues for <product>

Green Thread	Headline

Overall Green Thread Release Requirements



Kludge Index Scores (Current/Predicted)

Green Thread	Current	Predicted
BDD	#	#
SOA for FSS	#	#
GDALM	#	#
Governance	#	#
Systems	#	#
EMG	#	#
RDM	#	#

'The Kludge Index'

InfoWorld

Article by Bob Lewis

- Definition
  - A kludge is an inelegant and fragile solution to an engineering problem -- a bag stuck with chewing gum to the side of the box that's been attached to the main system with band-aids. The question is, how do you tell if you have one?
  - http://weblog.infoworld.com/lewis/archives/2006/06/the_kludge_inde.html
- Kludge Examples
  - The more **steps required** in the solution, the more of a kludge it is.
  - The more **fragile each step** is in the solution (dependency on an exact data format is an example), the more of a kludge it is.
  - Using tools to **accomplish tasks for which they aren't designed** or intended adds to the kludge index.
  - The **use of multiple technologies** is a warning sign, but doesn't automatically make a kludge.
- Kludge Index:
  - 1 = a work of art and 5 = something you wouldn't want your mother to see

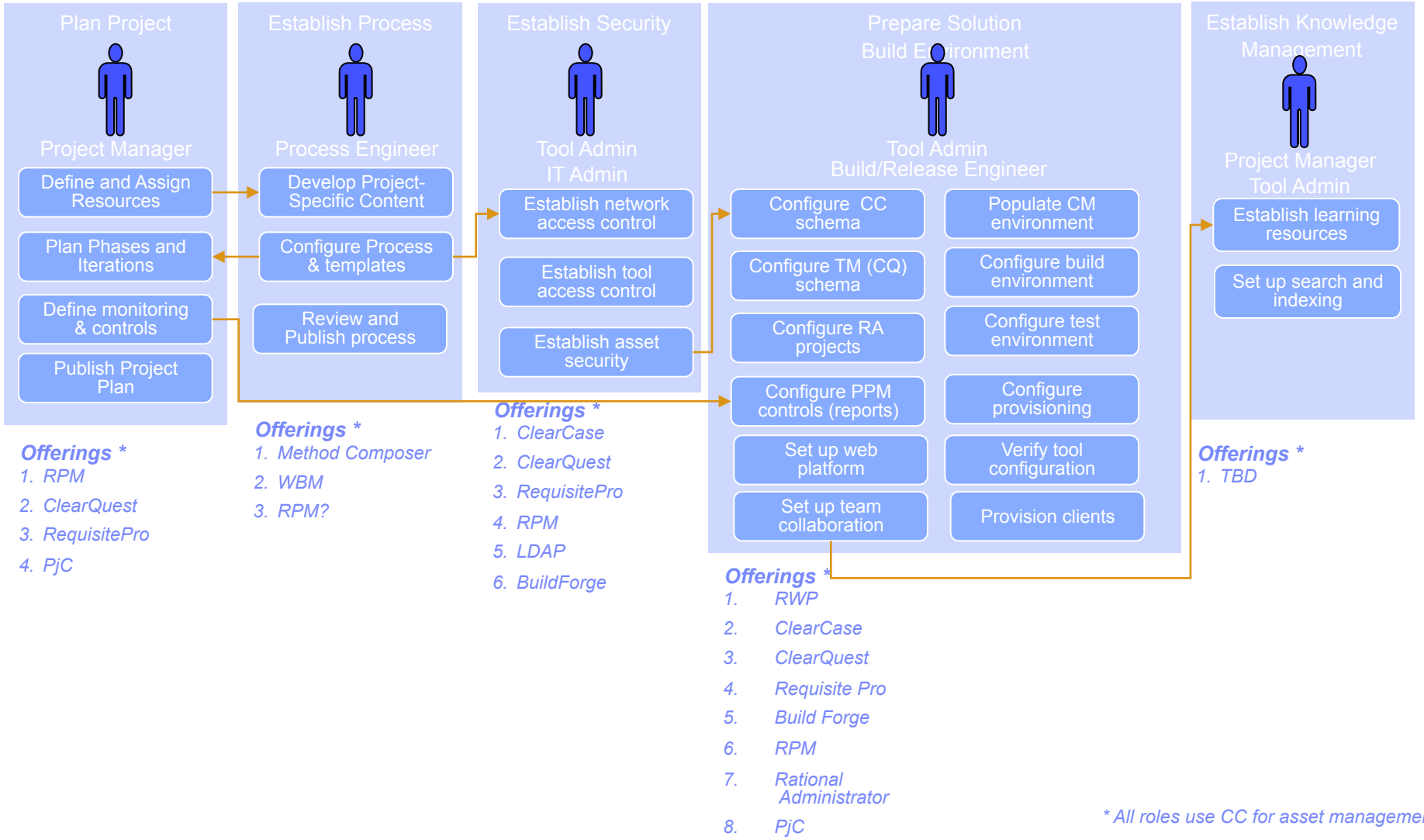
Green Threads – Impact and Results

- Rational development process impacted
  - Product plans must address Green Thread requirements
  - Green thread scorecards mandatory in all Development Check Points (DCPs)
  - Green threads represented in product offering teams
- Rational products impacted
  - RATLCs submitted and tracked
  - Key gaps tracked on product roadmaps
- Rational solutions impacted (examples)
  - Increased testing of integrations based on solution scenarios
  - Gap analysis resulting in acquisitions (Build Forge)
  - Gap analysis resulting in new offerings (Rational test lab manager)
  - Gap analysis resulting in focused investments (Security/Access/Scaleability)
  - Gap analysis resulting in new or improved integrations
  - Gap analysis resulting in improved consumability and OOTB functionality
- Customer material impacted
  - IBM Redbooks and DevWorks Whitepapers
  - TechWorks Proof of Technologies

Agenda

- Green Threads Defined
- Process and Methodology
- Our Tools
- Impact and results
- Examples
  - GDD Green Thread
  - ALM Green Thread

GDD Green Thread Scenario Part 1: Setup



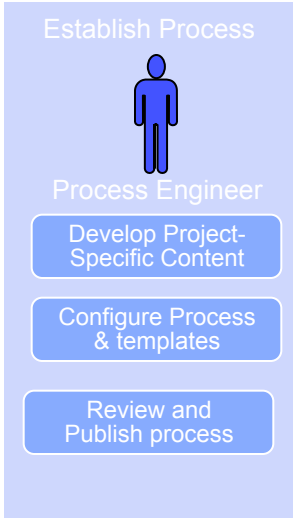
Step: Configure Global Delivery Process

- **Situation**

JK Enterprise will transform from single site to a global delivery organization working on multiple concurrent releases. JKE have no prior expertise in distributed development. The team is already using Rational tools and a configuration of RUP. JKE is expecting to reconfigure the tools and processes to support the new global organization based on best practices.

Project Manager: How is GDD changing my development process? What risks do I need to mitigate? How can I measure success and predict failure?
Development Manager: How can I balance globalization benefits with TCO and overhead staff
Process Engineer: How can I Plug-and-Play RUP content on GDD? How do I integrate GSI delivery process?
Tools Administrator: What is my new reference tool architecture for GDD?
Practice Leads: What is the impact on CM/TM/RM and how can I ensure that we get the best out of local experiences and shared workflows?

- **Project Participants:** Process Engineer, Project Manager, Tools Administrator, Practice Leads
- **Tasks and Recommendations**
  - Assemble Practice Leads to provide project specific content
  - Use RMC and RUP to configure a GDD extensions to development case
  - Use Roles, Tasks, Delivery processes and Assets to pinpoint key responsibilities and touch-points
  - Create work breakdown structures to drive project plan templates
  - Publish a process configuration that all teams can access and track
- **Challenges**
  - Over emphases in process will slow down agile project inception
  - Pre-configured GDD best practices and Outsourcing best practices
  - Cross company collaborations
- **To Alleviate Risks**
  - Use or learn from RUP best practices
  - Rational GDD service offerings
  - Identify key touch-points with service provider
  - Ensure communication and collaboration cross the distributed teams



Offerings *
1. *Method Composer*
2. *WBM*
3. *RPM?*

Recommended Actions

Access	Enable fully-functional remote clients (WAN and/or web) Enable test management capabilities from remote client
Administration	Enable centralized solution with remote access Consolidate and unify user/access management
Collaboration	Integrate collaboration technologies – in-place asset collaboration, preservation and search, team-building
Governance	Enable consistent and comprehensive reporting Deliver GDD practice guidance (RUP plugin, redbook, whitepapers) Deliver out-of-the-box ALM with schema, reports, process, tool mentors
Scalability	Enable high-availability centralized solution with remote access Exploit scalable 3-tier Team architecture
Security	Provide finer-grained access control; Deliver consistent, role-based authorization and authentication Address security issues (database id/password; shipping servers)
Usability	Consolidate clients and provide consistent UI

GDD Green Thread Gap Analysis - Focus Areas

Line of Business (Non-IT Executives)

- IBM Rational enables your business objectives through your global software supply chain. With IBM Rational, global teams collaborate more effectively and improve the translation of business requirements into software.

Stakeholder collaboration and communication

Global secure access to proposals, requirements and asset traceability

Flexibility and Predictability of delivery

CIO / VP of Engineering

- With an open and integrated platform, IBM Rational drives global team collaboration and enables you to successfully leverage a global software supply chain so your organization can innovate faster and with greater predictability.

Flexible, scalable and global platform based on open standards and known TCO

Supply chain flexibility and agility

Collaboration in a global team

Development / Project Manager

- IBM Rational enables you to successfully plan and execute cohesive global development projects with a flexible end-to-end global software development lifecycle platform that fuses your development process and your global teams.

Best practice processes and tools for global development and delivery

Scalable ALM support for global project governance

Collaboration in a global team

Practitioner

- IBM Rational allows you to team globally, while working locally. With flexible usage options, IBM Rational ensures that you have access to global team repositories from your desktop increasing your productivity in GDD.

Roles based tool configurations

Access – whenever / wherever

Collaboration in a global team

GDD Green Thread Gap Analysis - Planned improvements

Stakeholder collaboration and communication

Global secure access to proposals, requirements and asset traceability

Flexibility and Predictability of delivery

Flexible, scalable and global platform based on open standards and known TCO

Supply chain flexibility and agility

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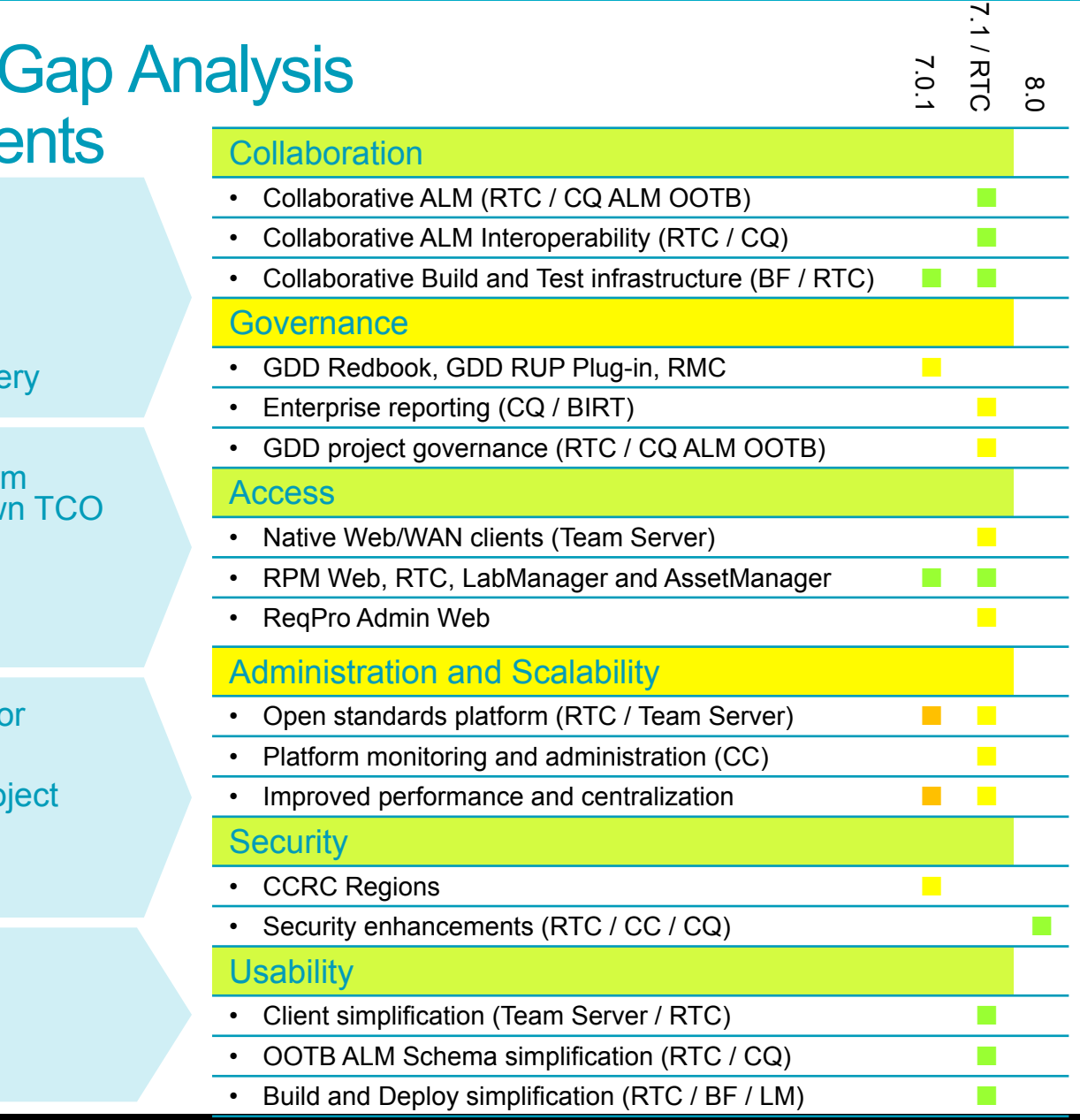


Geographically Distributed Application Lifecycle Management (GDALM) Thread

- Green Thread
  - Timeless ALM green thread scenario
  - RTC agile view
  - ALM 2008 view
  - ALM 2009+ view
- Current product improvements
  - CQALM OOTB schema
  - RTC consumability
  - CC/CQ preconfigured server
- Foundational ALM activities
  - ALM definition
  - ALM Manifesto
  - ALM object model

GDALM Scenario – JK Enterprises Account Opening Project

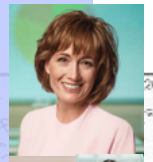
1 Assess Solution &

2 Request a Change

Bob – Europe: Business Analyst

Bob and his LOB peers review on the latest Milestone Release

He identifies that UI changes are required to meet business needs. He submits a Request



3 Collaborate on a Plan

Patricia – US: Project Manager

Patricia is managing the review and approval of new business requirements

She and the AO team plans, assesses and assigns Requests and Work for next Milestone

7 Monitor Health

She tracks work progress and project health

4 Develop Solution

Deidre – Europe: Developer

Deidre collaborates with the team on design scenarios and impact. She implements, reviews and integrates the change.

She delivers the change set to the integration stream and central build in US

6 Manage Quality

Tanuj – India: Test Engineer

Tanuj ensures application release quality and performance

He and his peers use the centralized build and test lab to make quality 'follow the sun'

8 Deliver

Rebecca – US: Release Engineer

Rebecca packages and publishes releases and milestones for others to use

She baselines project artifacts

5 Build and Verify

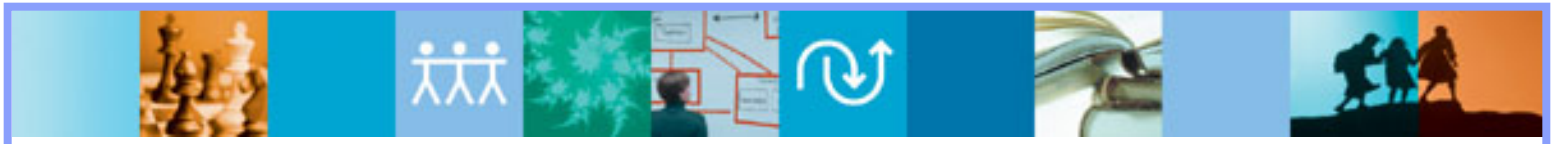
Rebecca – US: Release Engineer

Rebecca monitors the continuous Build and Verification process and resolve and report baseline instabilities

She publish and announces availability of recommended builds

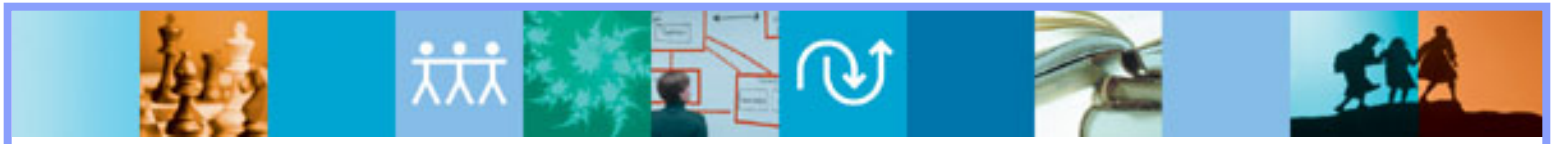
Conclusions

- Key part of Rational Solution definition process
  - Focus on customer needs and solution value
  - Target key solution gaps
  - Balance solution enhancements ‘As Is’ and vision ‘To Be’
- Consumable approach for external and internal stakeholders
- Customer validation, prioritization, and guidance is key



Questions
Discussion
Feedback


Thank
You



Backup

Product Improvements influenced by Green Threads

- **Governance:**
  - WBM<>RMC Integration
  - Improved RMC/RPM Reporting
  - Improved RPM<>ReqPro/CQ integration
  - Compliance Methodology Plug-in
  - Portfolio Management Methodology
  - Governance Platform Strategy
- **GDALM:**
  - BuildForge acquisition
  - Lab Manager offering (announced)
  - CCRC improvements in CC/CQ
  - RPM Web UI
  - ReqPro Web UI Improvements
  - GDD Redbook/RMC Plugin
  - GDD PoT based on GDALM
  - CQALM Common Object Model (7.1)
  - Planned improvements to CQWeb (7.1)
- **BDD:**
  - WBM<>ReqPro Integration
  - RSA<>WID Integration
  - RAM<>WSRR Integrations
  - Service modeling whitepapers
  - Asset reuse across the whole BDD process using RAM
  - Alignment with RUP for SOMA and SOMA-ME
- **Industry Models:**
  - Industry Models/SDP Redbook
  - Reusability Indices in WBM 6.1
  - Cross-project references in WBM 6.1
  - Local to Global Task refactoring
  - Established a model management/ governance approach with UCM (CC/CQ)
    - developWorks whitepapers
    - Governing Models demonstrations (Camtasias)

Application Lifecycle Management

Enables enterprises to effectively develop and deliver software solutions to an agile business

ALM DEFINED

the coordination of development activities to produce software applications

the lifecycle management of assets and their relationships

ALM Pillars

Governance
continuously assess progress and results

Traceability
manage dependencies and impact

Collaboration
connect stakeholders and contributors

Automation
improve performance, compliance and quality

Distribution
connect software delivery chain

Enterprise ALM Model

- Enterprise process model focused on Request object submitted for a Release of a Project
- Requests are planned as Tasks and performed as Activities
- Workload can be balanced across Phases and Iterations of a Project
- Activity objects governing the work performed by the Roles in the teams

Submitter
- Submits request for change
- (Validate release)

Change Control Mgr
- Triage requests
- Schedule changes as tasks

QE Lead
- Ensure quality of delivered changes to releases

Dev Lead
QE Lead
- Assigns tasks as activ

Change performed in the context of

Project	Request
Category	Task
Release	Activity

Project and Plan definition

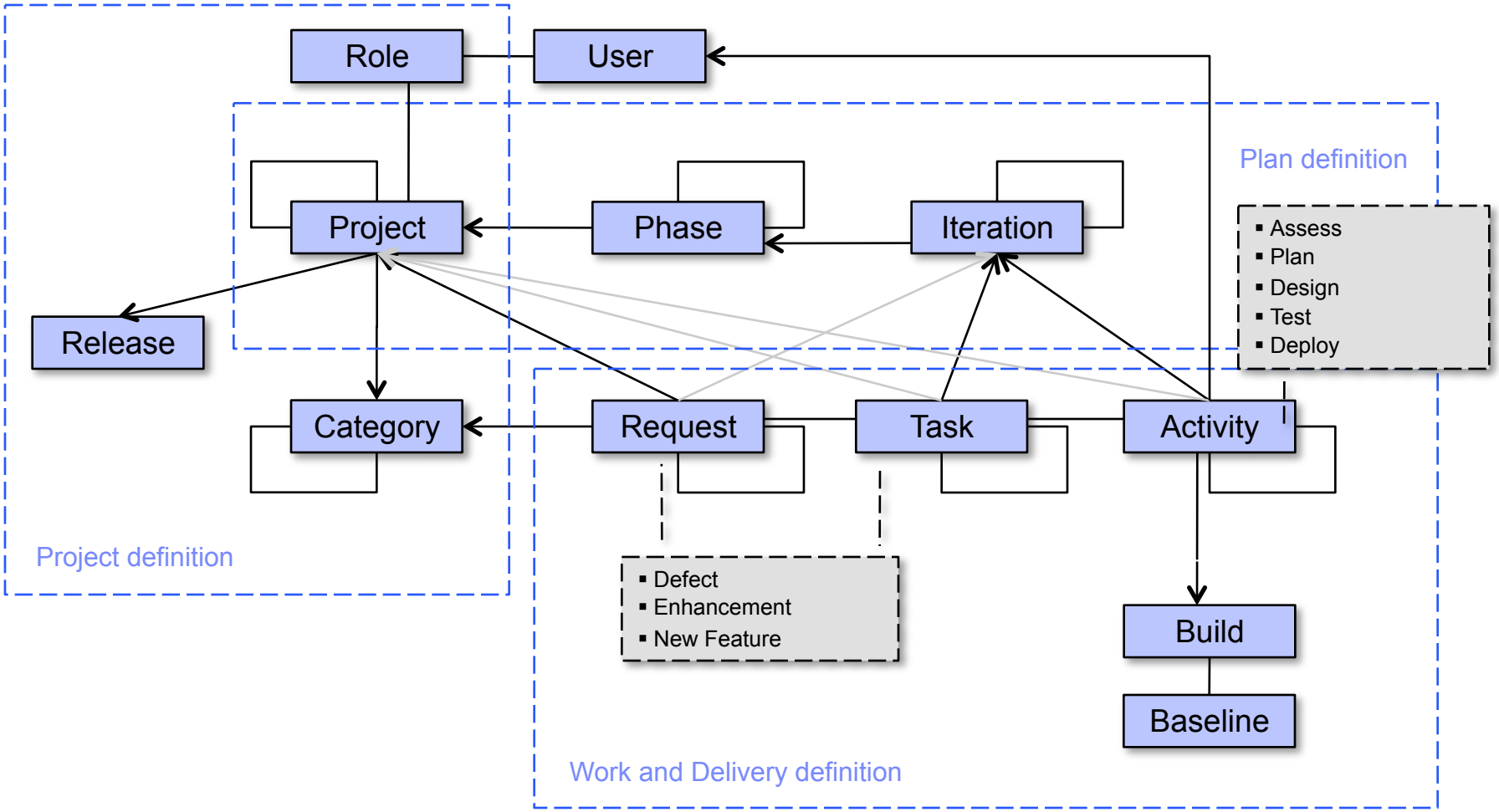
Work and Delivery definition

Tester
- Works on activities
- Test changes in baselines

Developer
- Work on activities
- Develop and deliver chan

Builder
- Integrate and build delivered changes
- Create baselines

CQALM Object Model



CQALM Role Views - Examples

Govern Project Structure
View ‘My projects’

Project | Category | Release | Role

Govern Project Plan
View Phases and Iterations
View Requests

Phase | Iteration | Request

Monitoring Work and Status

Task

View ‘My activities’
Deliver Work and Changes

Activity

Plan and Execute Tests on Requests

Test Plan | Test Suite | Test Case

View quality by Phases and Iterations

Test Logs | Requests