

Best Practices for Optimizing the Requirements Process



Mitch Bishop



Brian Beveridge

GREENRIDGE



#1 Issue Facing IT Leaders Today

Dramatically cutting
application
development cost



How Do IT Leaders Get There? (part one)

Rationalization & consolidation of business software



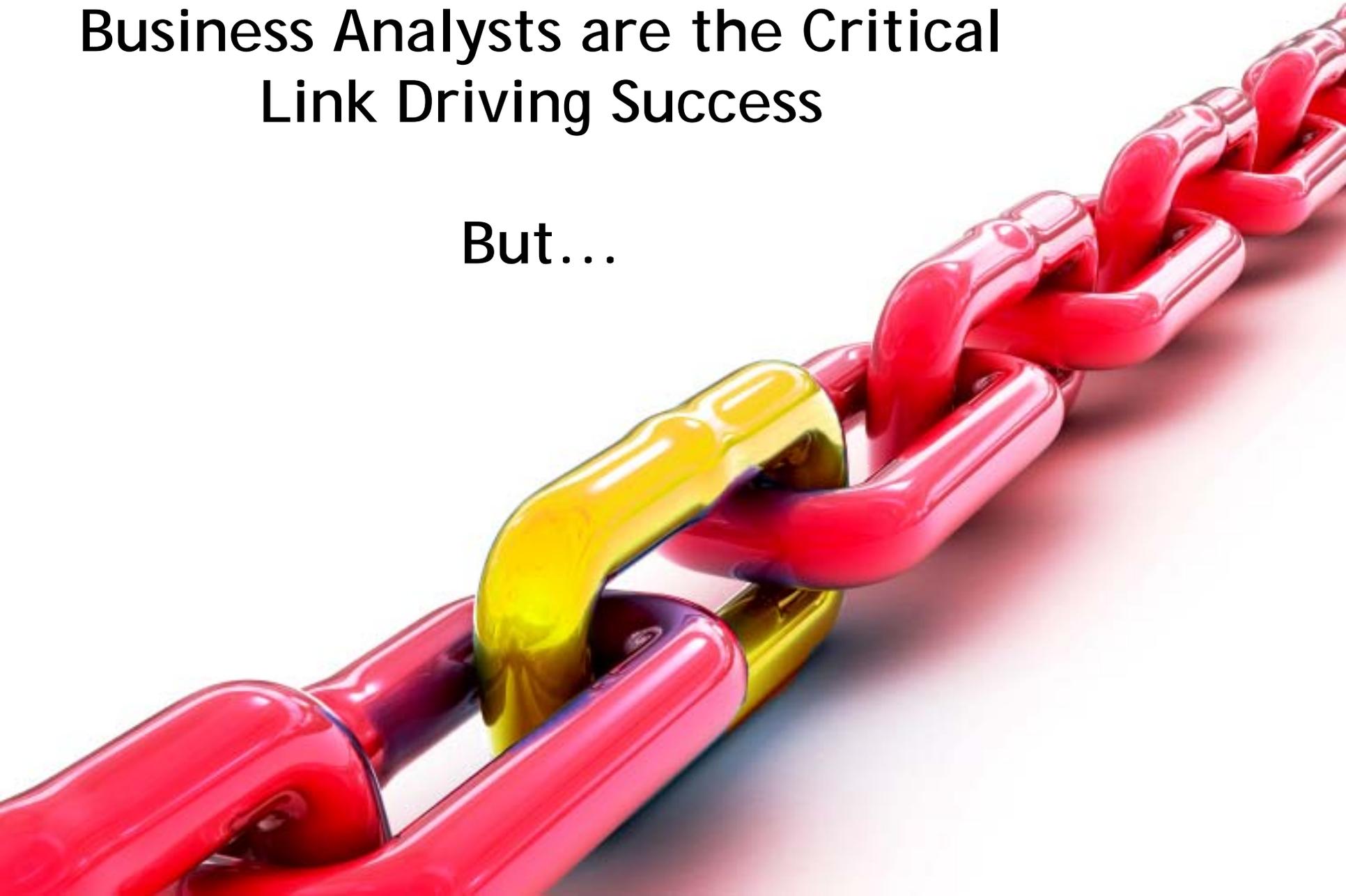
How Do IT Leaders Get There? (part two)

Accelerating global
sourcing programs



Business Analysts are the Critical Link Driving Success

But...



The Way That Software is Designed, Developed & Delivered is Fundamentally Broken

"This year's results show a marked decrease in project success rates, with 32% of all projects succeeding which are delivered on time, on budget, with required features and functions."

"44% were challenged which are late, over budget, and/or with less than the required features and functions and 24% failed which are cancelled prior to completion or delivered and never used."

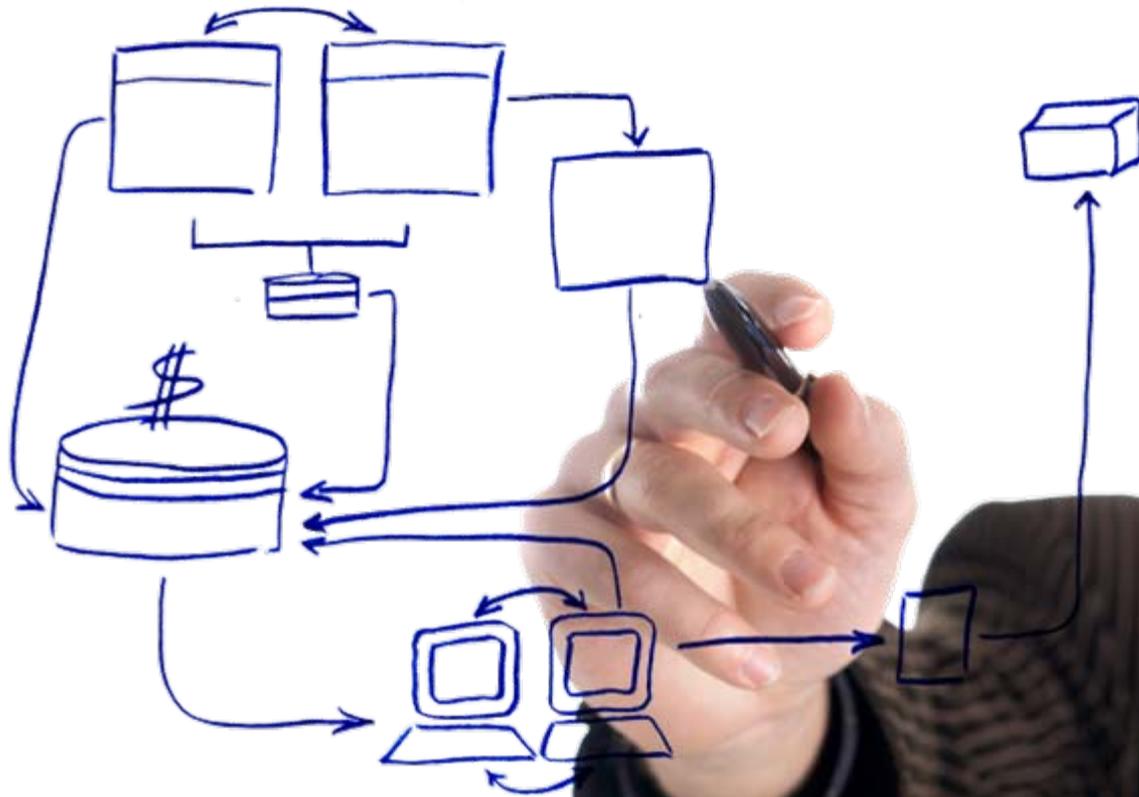
"This year's results represent the highest failure rate in over a decade."

Standish Group CHAOS Report, 2009

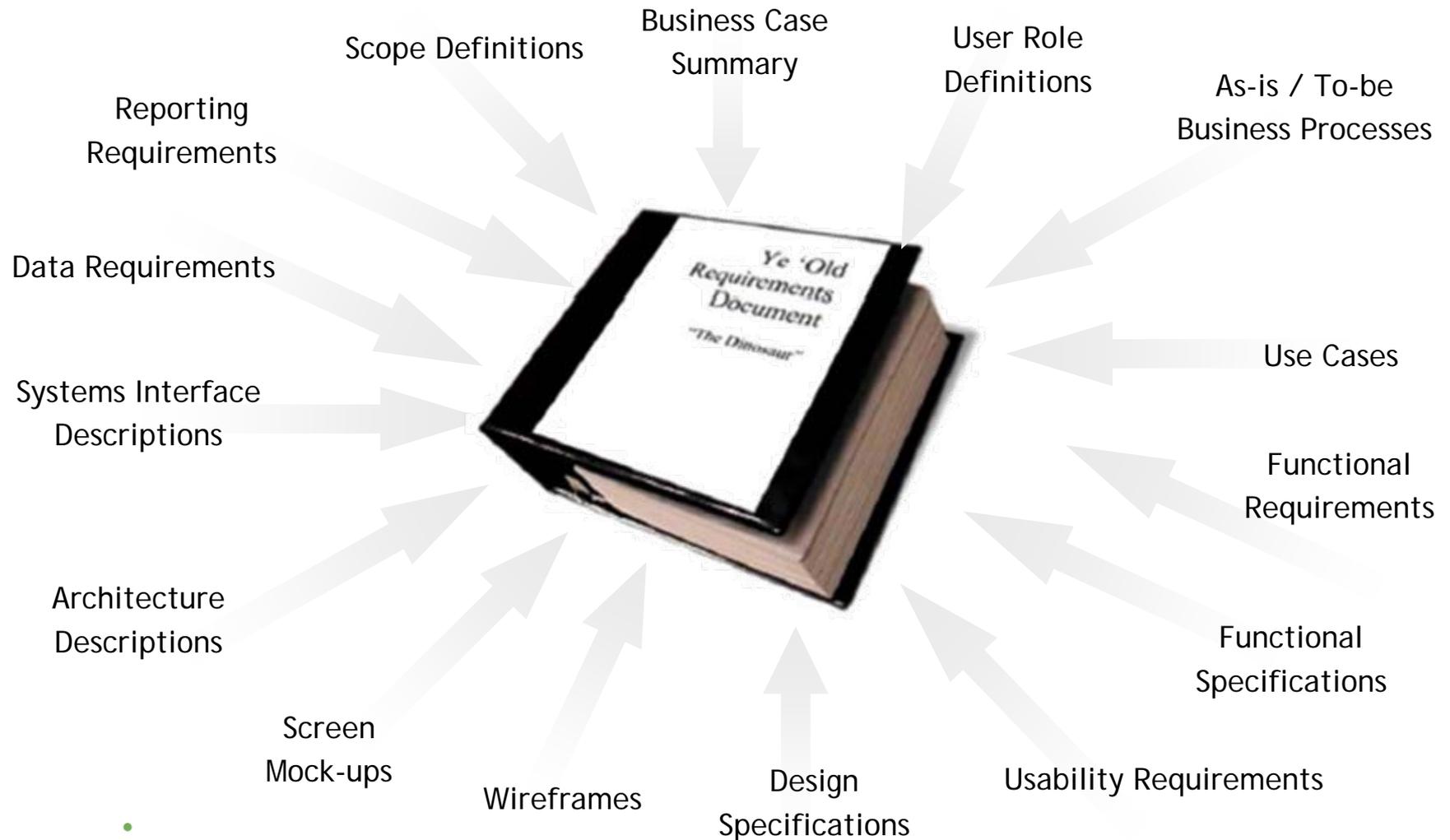


ISSUE
#1

Business Users Don't Know What They Want Until They See & Interact With It

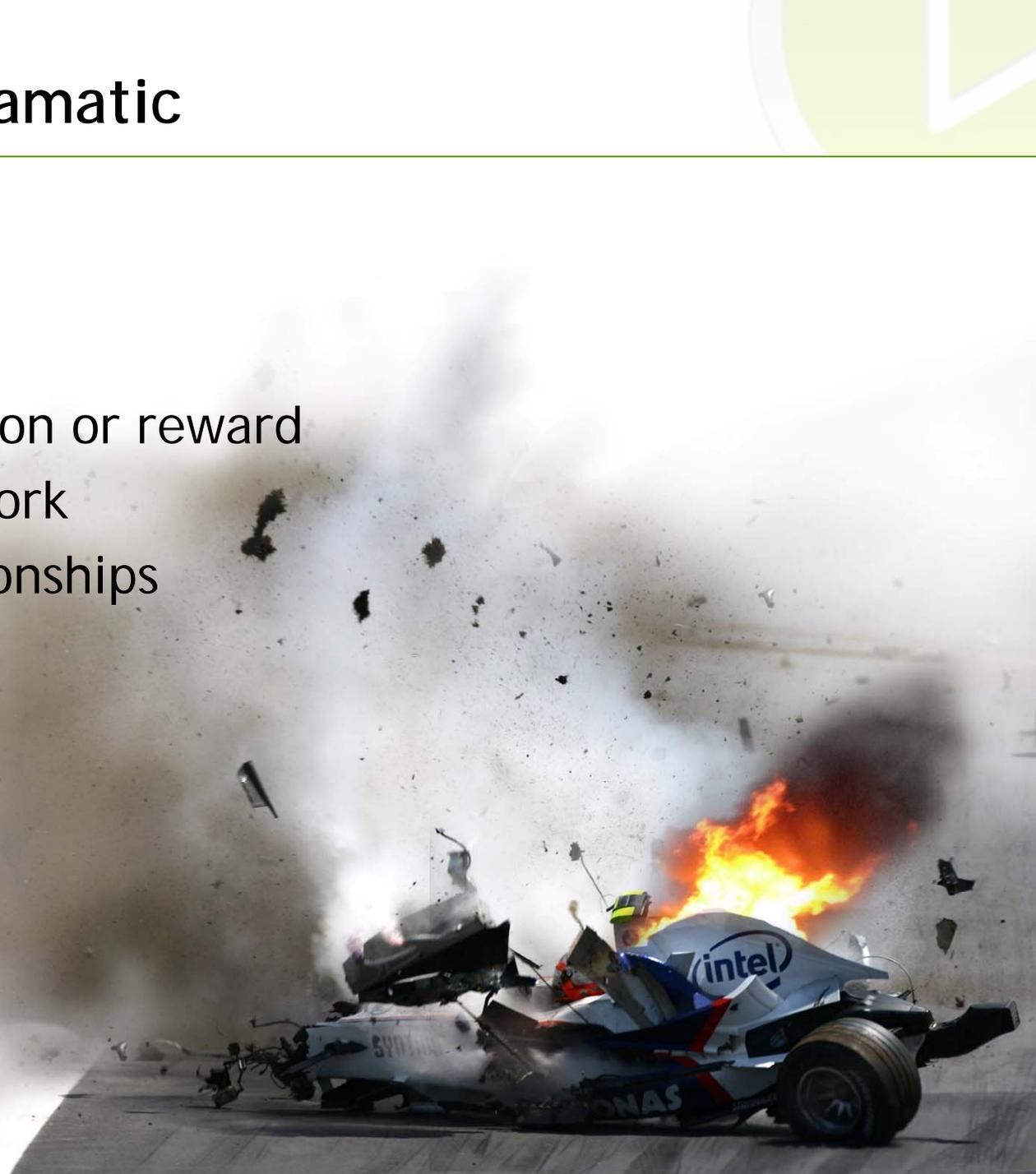


Do you really want to walk into your next stakeholder review meeting with this?



The Impact is Dramatic

- Long hours
- Delays
- Little recognition or reward
- Late stage rework
- Strained relationships



The Solution: iRise Visualization

SimBank v7.12.17bDI - Microsoft Internet Explorer

Address: http://localhost:4800/iRise/reader/render

Simulation Document SimBank v7.12.17bDI / 1.0 Home Page

Find Locations | Customer Service | En Español

March 28, 2008 09:15 PM

Online Account Access

Username:

Password:

Username/Password help

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Account Services

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[Update Email Address](#)
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Guide on Left Nav

Scenario #1 - New Customer

Username: newcustomer
Password: newcustomer88

Scenario #2 - Manager

Username: manager
Password: manager99

New Customer: Select "Create New Account"

Manager: Select "Review Account"

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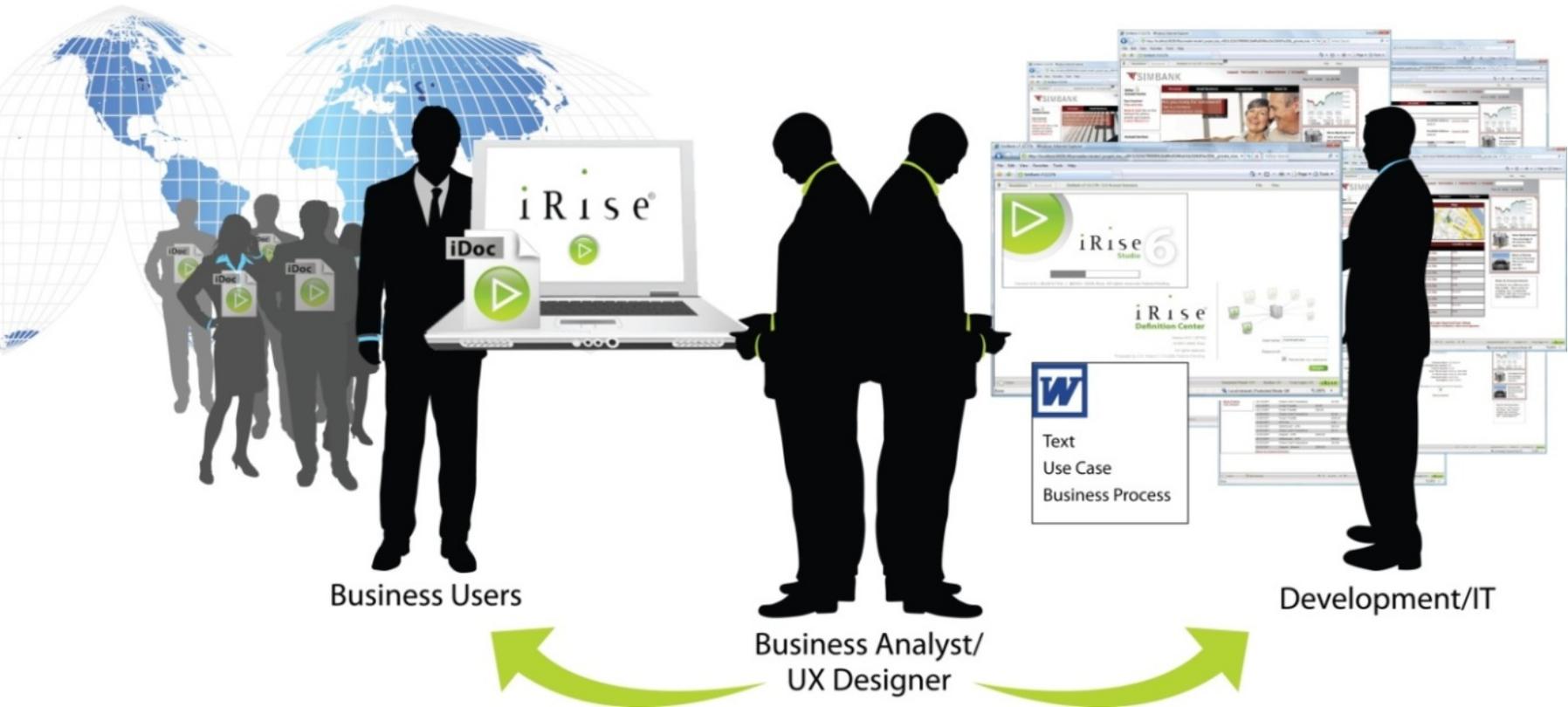
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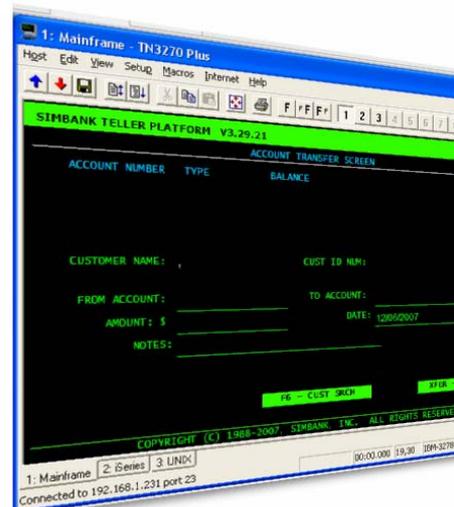
Views Add Comment 13 of 97 Comment Panel: OFF Guides: ON True Logic: ON iRise Local intranet

iRise Visualization Transforms Business & IT Communication



What Can You Visualize With iRise?

- New custom applications
- Enhancements to existing systems
- SAP, IBM, Oracle extensions
- Mobile applications (e.g. iPhone)
- Web 2.0 & rich Internet applications



20,000+ BAs Tell Us: Visualization Delivers

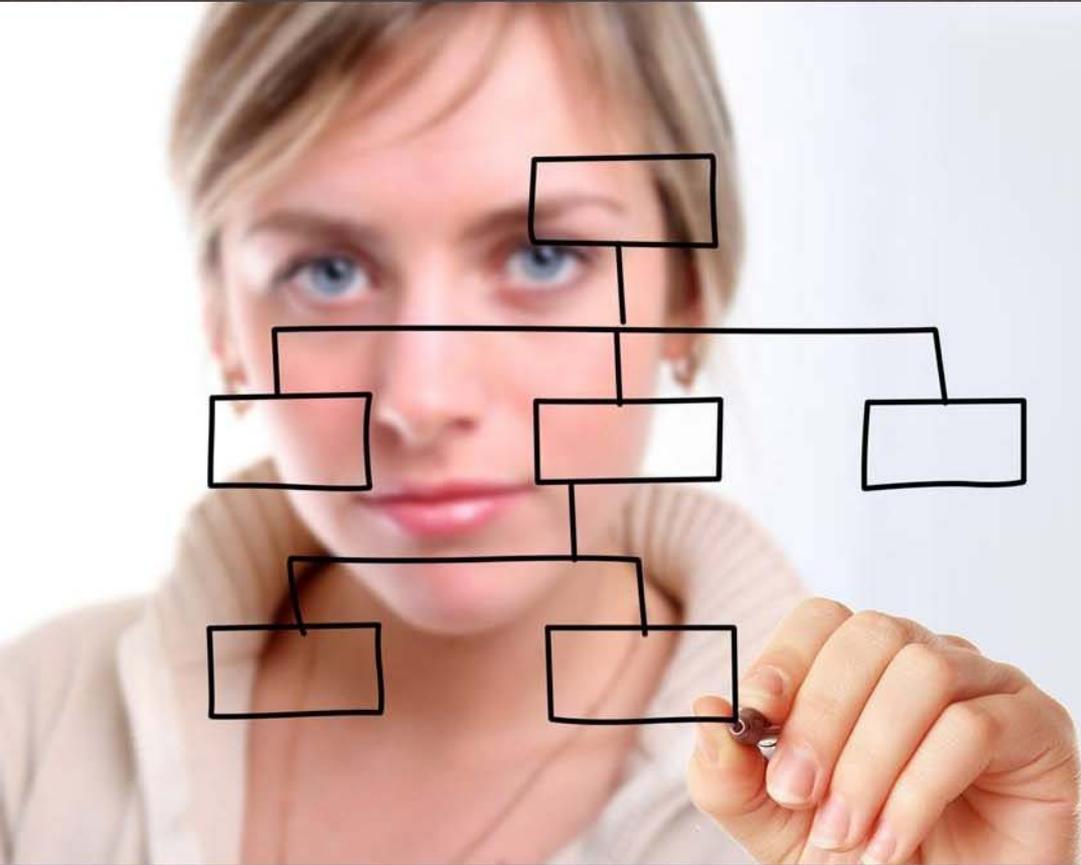
- Get to market twice as fast
- Virtually eliminate rework
- Organizations are transformed
- Business analysts are empowered
- Get more done



Our Vision



By 2020 ALL business software will be visualized prior to development, the same way that visualization is a common practice in the design of every car, airplane & semiconductor today



Best Practices for Optimizing the Requirements Process

GREENRIDGE

Topics

- **Introductions**
- **How to Enhance the Requirements Life Cycle**
- **Best practices for requirements gathering**
- **Maximizing the value of stakeholder input throughout the elicitation process**
- **How visualization integrates into the IBM Rational environment**
- **Lessons learned & best practices for future projects**

Introduction

- **A little about myself**
- **An overview of Greenridge**
 - Technology Consulting Firm focused on Enterprise Software Delivery
 - Work throughout North America – offices in Winnipeg and Calgary, Canada
 - iRise Consulting Partner
 - IBM Rational Partner
 - Certified Consultants on staff in covering Requirements, Development, and Testing areas



How the customer explained it



How the Project Leader understood it



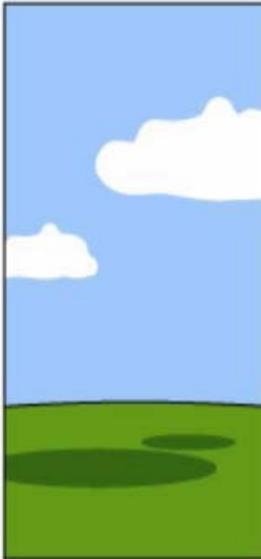
How the Analyst designed it



How the Programmer wrote it



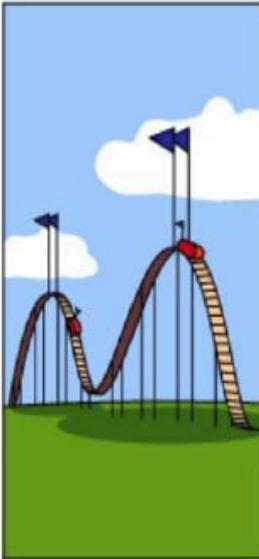
How the Business Consultant described it



How the project was documented



What operations installed



How the customer was billed



How it was supported



What the customer really needed

The Importance of Getting Requirements Right

- **68%** of projects fail, run late, or are over budget
- **53%** of projects will incur cost increases of **189%** of original estimates

- *Standish Group*

- **70%** of all REWORK is attributed to correcting requirements errors.

- *META Group*

- **30%** of project costs are REWORK
- *Requirements mistakes account for up to 70% of this cost, at an average of \$1,300 in labor to fix each requirement*

- *Forrester Research*

Three Main Problem Areas

- ***Misunderstood Requirements because of ambiguity of written specifications.***

- ***Lack of sufficient information to describe complex applications/systems.***

- ***Inability to 'Test Drive' a product design with customers and stakeholders prior to development.***

My Observations

Most Business Stakeholders ...

- can't describe what they want until they ' SEE ' what they don't want.
- don't really know exactly what they want at the outset of a project – their understanding evolves as the process progresses.
- do not fully understand what is possible with the latest technology and may make many false assumptions about how a problem may be solved.
- need education and guidance up-front to fully appreciate what is expected from them in the process and what will happen with the results.
- can understand a Business Process Diagram or application map but cannot understand a Use Case.

How to Enhance the Requirements Life Cycle

- **Use of Case Study Project will illustrate how to enhance your requirements lifecycle.**

Overview of the Case Study Project

- Our client, a government education department employs approximately 13,000 people in Education
- The government is planning to create a web-based Professional Learning solution for the teachers and staff and required an environment scan and needs assessment done to help justify the expenditure and scope the solution.
- **Greenridge was engaged to:**
 - conduct an environmental scan of the professional learning needs
 - identify functional specifications based on user and business requirements



Project Overview - Deliverables

- ***Specifically, Greenridge was engaged to:***
 - develop a method of ***eliciting responses to emerging themes*** that follow standard practice and implement this method;
 - ***identify functional specifications based on user and business requirements*** to determine features and functions of a bilingual (English/French) web-based technical solution to deliver professional learning opportunities;
 - ***determine usability issues based on usability evaluations*** including usability heuristics or usability testing;
 - ***create wireframe prototypes***: diagrams that show layout, labeling, and priority for features, functions and content;
 - ***summarize this research into a final report*** that includes the assessments, interviews, recommendations, observations, user and business requirements.

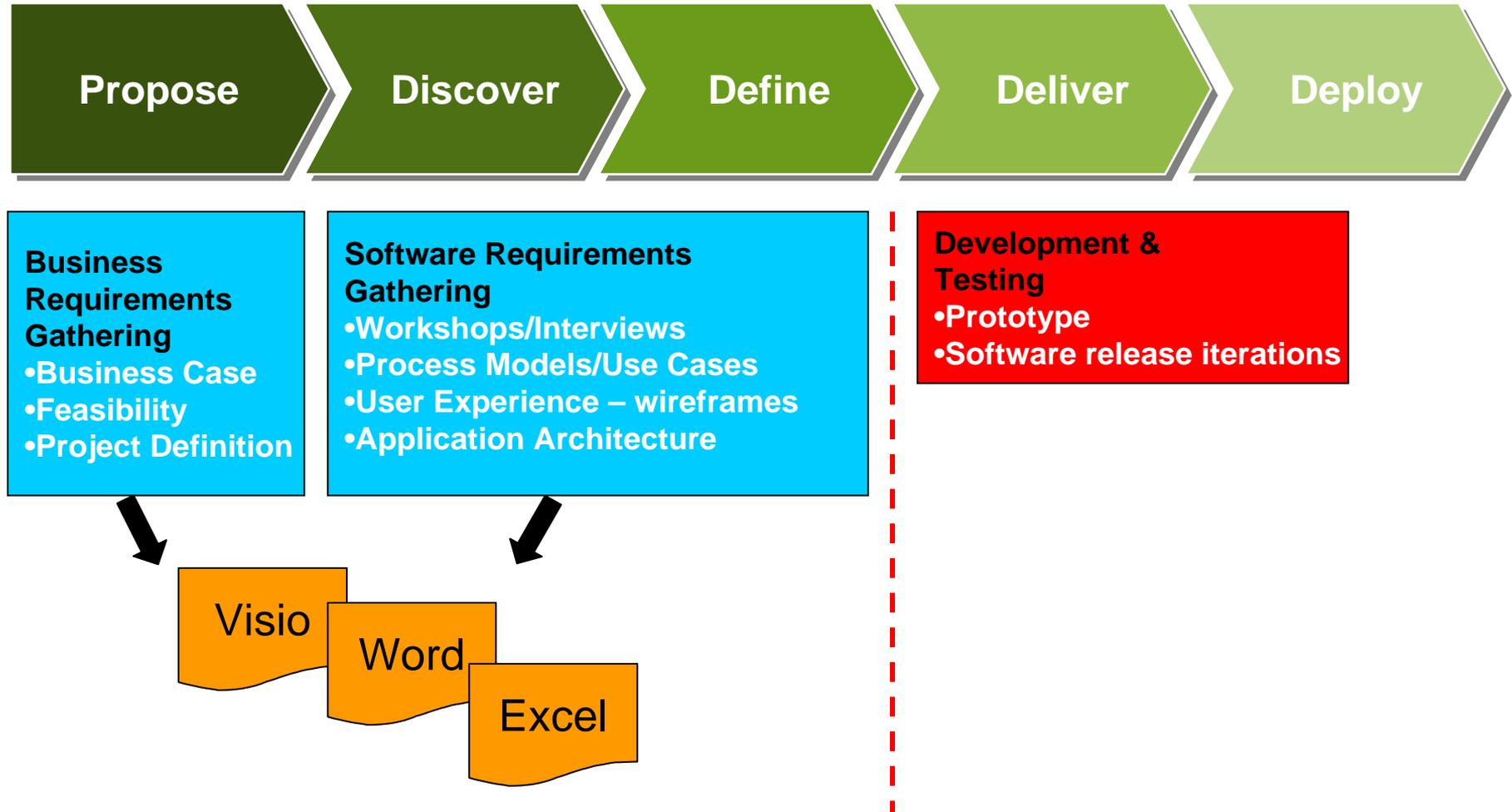
Project Overview

- The real challenge was the timeline
- Greenridge was given **2 months** to accomplish all of this to meet Government year end constraints.



How to Enhance the Requirements Life Cycle

Generic Model of Traditional Development Project Phases



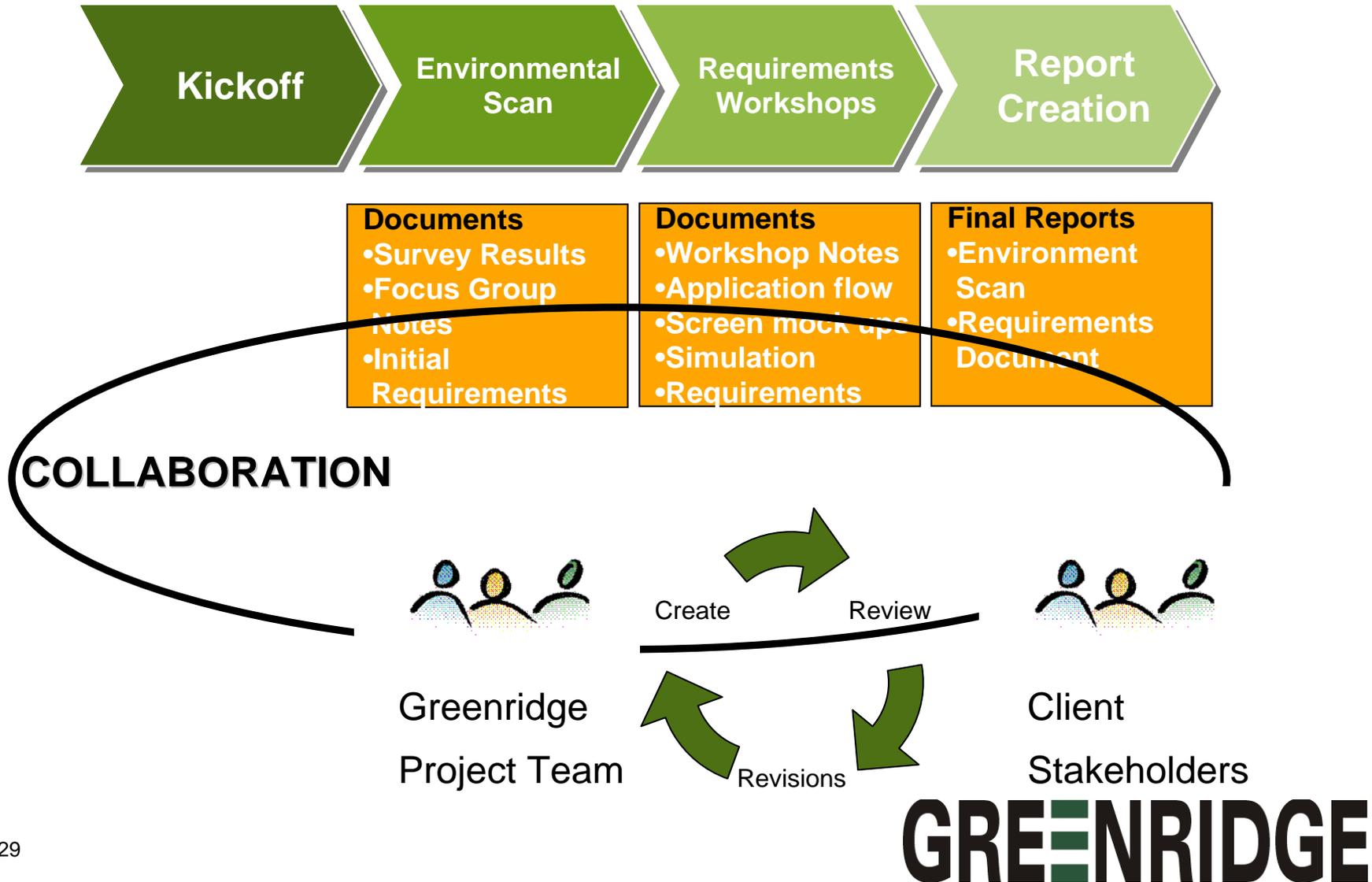
Project Approach



■ Our project included the following phases:

- Initial Kick Off
- Environmental Scan
 - 3 Surveys to the population of approximately 16000 stakeholders – 500 responses
 - 2 Focus Groups with Educators
- Requirements Workshops with Business Users
 - Workshop # 1 – Elicit high level requirements and hold initial whiteboard ideation
 - Workshop # 2 – Review wireframe models and refine details
 - Workshop # 3 – Review simulation and initiate usability testing
- Report Creation
 - Environmental Scan Report
 - Requirements Document
 - System Simulation and Report

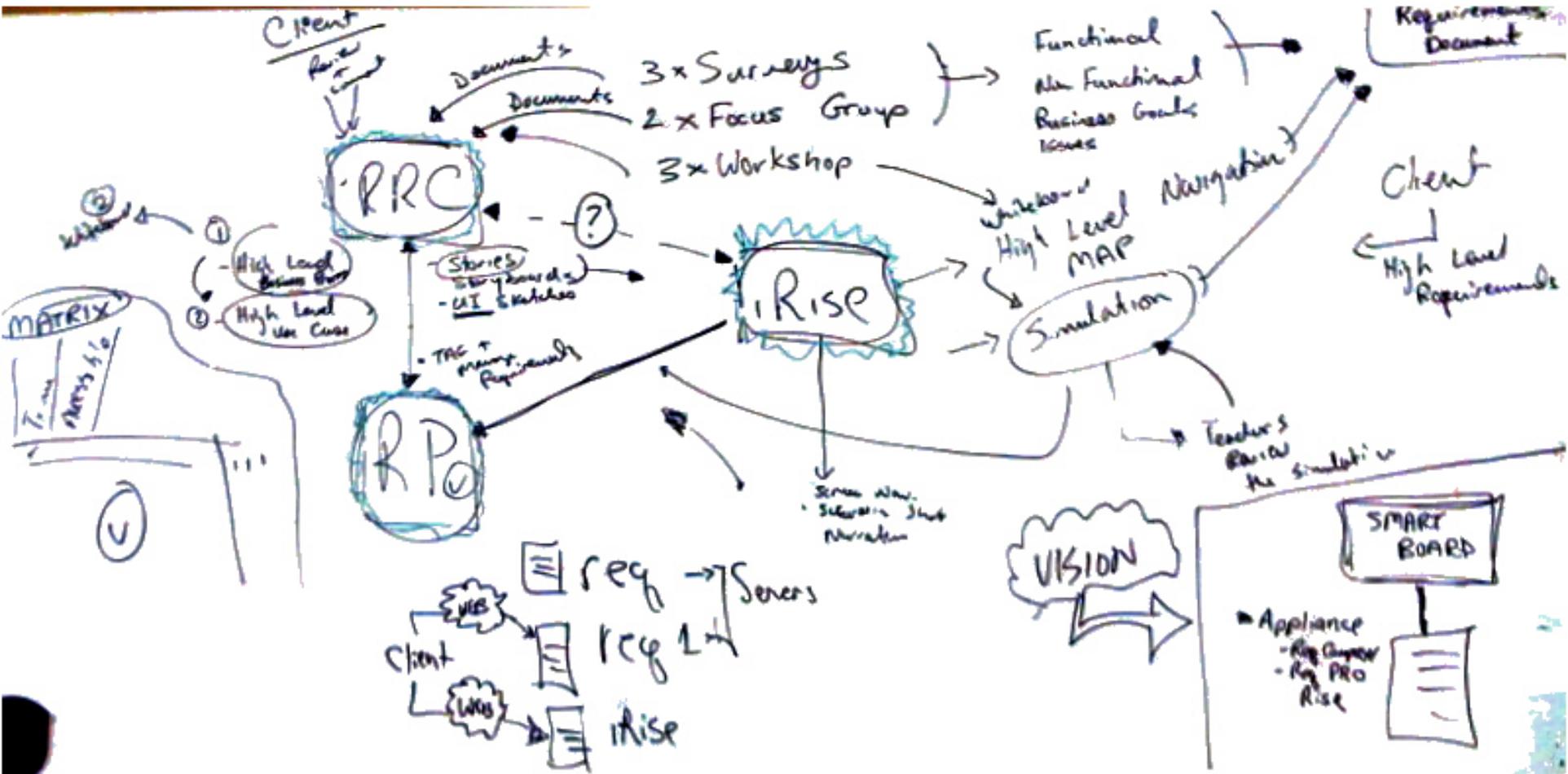
Dealing with the Timeframe Challenge



Vision for 'Ideal' Requirements Definition Lifecycle

- **Greenridge has a standard methodology for requirements gathering, but we typically tailor for each project.**
- **This project offered opportunities to 'showcase' the latest IBM Rational and third party solutions to the government in a controlled pilot**
- **Greenridge is an IBM Rational partner and consults with clients on using these tools and saw the opportunity to update our approach with the latest Jazz based technology**
- **Project team had a meeting and created the following whiteboard as a starting point for the 'ideal' approach for this project and the basis for our updated methodology**

Whiteboard 'Vision'



Our 'Ideal' Process for Requirements Gathering



Phase : Initial Kick Off

■ Key Artifacts

- Client RFP
- Greenridge RFP response
- Any background documentation
- Notes from Kick Off Meeting relating to requirements

■ Tool Support

- Import RFP and Response documents to Rational Requirements Composer
- Start to build glossary in Rational Requirements Composer from these
- Identify any Functional / Non-Functional requirements in these documents in Rational Requirements Composer

Our 'Ideal' Process for Requirements Gathering



Phase : Environmental Scan

■ Key Artifacts

- Interview Notes for Survey Creation
- Survey Questions
- Online Survey Results
- Focus Group Notes
- Environmental Scan Document – justification/background to requirements

■ Tool Support

- Import Notes for Survey Design and to Rational Requirements Composer
- Start to build glossary in Rational Requirements Composer from these
- Identify any Functional / Non-Functional requirements in these documents in Rational Requirements Composer

Our 'Ideal' Process for Requirements Gathering



Phase : Requirements Workshops – Workshop #1

■ Key Artifacts

- High level Functional and Non-Functional Requirements
- Initial 'Application Map'

■ Tool Support

- Whiteboard screenshots and session notes imported to IBM Rational Requirements Composer
- Initial Scenarios created in iRise
- DRAFT document for Functional and Non-Functional Requirements created in Rational Requirements Composer

Our 'Ideal' Process for Requirements Gathering



Phase : Requirements Workshops – Workshop #2

■ Key Artifacts

- Initial Application Wireframes
- DRAFT Functional and Non-Functional Requirements

■ Tool Support

- iRise created the wireframe simulation screens and screen flows
- 'Live' review session running through wireframes in iRise and facilitated via SMARTboard
- Notes captured by iRise in Document View and on comments associated with widgets
- Notes created in documents uploaded to Rational Requirements Composer
- Items reviewed and discussed in Requirements Composer within Greenridge team

Our 'Ideal' Process for Requirements Gathering



Phase : Requirements Workshops – Workshop #3

■ Key Artifacts

- Detailed 'high fidelity' Simulation
- Functional and Non-Functional Requirements Document

■ Tool Support

- iRise created the high fidelity simulation screens and screen flows
- 'Live' review session running through high fidelity simulation in iRise for last changes and facilitated via SMARTboard
- iRise Definition Center used for live usability testing by stakeholders
- Notes captured by iRise in Document View and on comments associated with widgets
- Notes created in documents uploaded to Rational Requirements Composer
- Items reviewed and discussed in Requirements Composer within Greenridge team
- Revisions made to Functional and Non-Functional Requirements document in Rational Requirements Composer

Our 'Ideal' Process for Requirements Gathering



Phase : Report Creation

■ Key Artifacts

- Report Creation
 - Environmental Scan Report
 - Requirements Document
 - Repository of Requirements
 - System Simulation and Report

■ Tool Support

- Environmental Scan Report – reviewed/commented/finalized in Rational Requirements Composer – links from environmental scan to Functional and Non-Functional requirements created
- Requirements Document – reviewed/commented/finalized in Rational Requirements Composer – import scenarios/screenshots and document view from iRise. Requirements identified and tagged with Rational Requirements Composer.

Our 'Ideal' Process for Requirements Gathering

Phase : Report Creation

■ Tool Support Continued

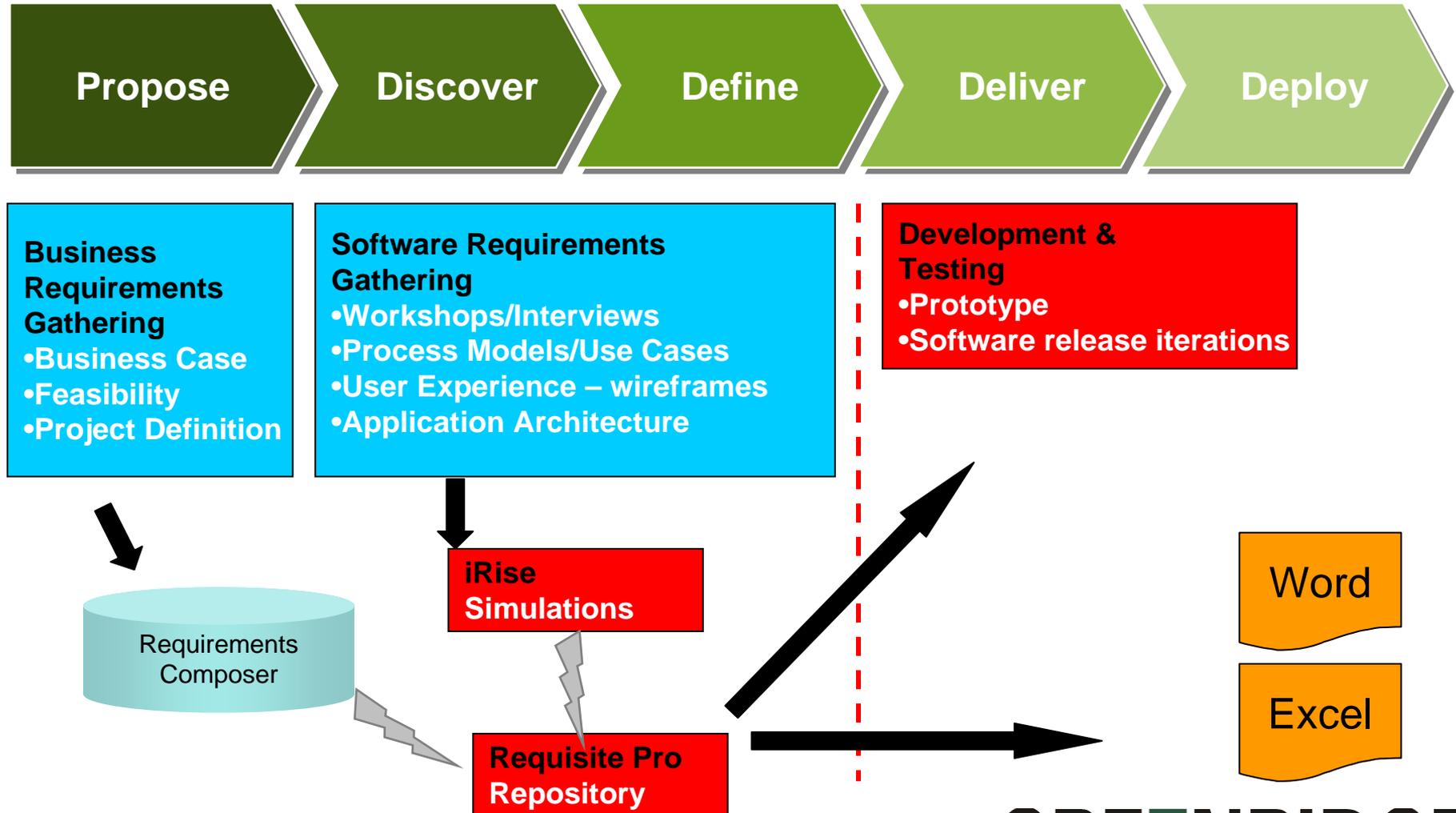
- Repository of Requirements – export from Rational Requirements Composer to Rational Requisite Pro. Further analysis done in Requisite Pro.
- System Simulation and Report – iRise iDoc and Definition Center used to run usability test and gather feedback. Comments exported to excel/word for further analysis and incorporation as required into Requirements Document.

Actual vs. Ideal Process

- **The bulk of the initial artifacts were created in iRise and Word**
- **Word Documents were imported to Rational Requirements Composer with further refinement**
- **iRise Documents imported into Rational Requirements Composer**
- **Requisite Pro repository initially created from Rational Requirements Composer**
- **Final documents exported and reviewed with client through traditional Office tools**

How to Enhance the Requirements Life Cycle

Requirements Lifecycle and Development Project Phases



Hot off the Press – New Integration - Adding Interactive Simulations to IBM RRC

- **iRise is building an integration to IBM RRC called “iRise Connect for Rational Requirements Composer”**
- **Interactive visualizations created with iRise tools can be added to an RRC project**
- **The visualization can be viewed within RRC**
 - The latest version authored in iRise will be automatically available
- **The visualizations are then included in the “web of requirements” just like any other RRC artifacts**
 - They can be linked to/from other artifacts
 - Comments can be added
 - They can be “tagged” with attributes

Sample Usage

- **Develop an RRC Use Case model to determine the scope of a project, with minimal description of the use case**
- **Select the use cases that would benefit from interactive visualization, and add corresponding scenarios to an iRise project.**
 - Note: You may discover new scenarios first in iRise, and then add these scenarios to an RRC use case model
- **Publish those scenarios to RRC and link them to the use cases**
- **Elaborate the scenarios visually in iRise, driving out the detailed specification through interactive simulation**
- **The elaborated simulations are visible in RRC and can be reviewed in the context of the other RRC requirements**
 - You can add links, comments, and attributes just like any other RRC artifact

Best Practices

- **Formalize the Plan and communicate the plan for Requirements Gathering and Management to Delivery Team and Business Stakeholders**
- **Use the simplest approach that will work to produce ONLY those artifacts that are required**
- **'Seed' the Process with initial ideas – undertake 'primer' education sessions with business stakeholders**
- **Leverage the Power of Visualization very early in the process - widespread use of Whiteboards in sessions – capture ideas graphically and make visible**
- **Use Collaboration early in the process to more deeply engage business stakeholders and increase the 'think time' on the biggest problems**
- **Get to the 'heart' of the problem/solution quickly and address it first**

Lessons Learned

- **Non-technical business users responded extremely well to ‘visual’ models of the application and UI – it helped focus their attention on what the solution could deliver**
- **You need to do some education with the business users or ‘seeding’ of the application models to get the dialog started**
- **Facilitating live whiteboard ideation sessions is useful, but you need to rehearse and leverage interactive whiteboard technology (i.e. SMART board)**
- **You need to test the limitations of each tool and decide how the information will be stored so that redundancies are reduced and that data is not migrated until it is stable (i.e. Requisite Pro and Requirements Composer do not synchronize all attributes and/or tags)**
- **The analysis team needs to fully understand the deliverables that will be produced and the overall requirements elicitation approach**

Lessons Learned - Continued

- **If this is a V1.0 of the process, you need a very understanding client and budget for experimentation**
- **You need to determine the appropriate level of fidelity of UI sketches and ‘gradually’ increase the fidelity of the UI and simulation depending on the stage of the process and the understanding of the business users**
- **There is overlap in functionality across the tools – you need to plan which tools will host the functionality (i.e. do you comment on UI functionality of a screen in Requirements Composer or iRise...do you have a discussion about a requirement in Requirements Composer or Requisite Pro**
- **Don’t be afraid to leverage collaboration with the ‘external’ client**

Lessons Learned – Which Tools Fits Where

■ iRise

- Create initial whiteboard ideations of application map
- Create initial wireframes
- Gather stakeholder comments
- Create higher fidelity simulation
- Gather stakeholder comments
- Export documentation to Office

Lessons Learned – Which Tools Fits Where

■ IBM Rational Requirements Composer

- Gathering existing documentation, notes, project information
- Creating and maintaining Project Glossary
- Composing notes from workshops and requirements gathering sessions
- Creating BPM, Use Case Diagramming
- Create UI Sketches and Storyboards
- Collaborative discussion/development of documentation

■ IBM Rational Requisite Pro

- Repository of Requirements – import from other tools or enter via integrations
- Create various views and reports from Requisite Pro and export to Office apps

Project Success through People, Process and Technology

■ People

- Experienced Business and Systems Analysts
- Communication (verbal and written), Facilitation, and analysis skills are the most important
- Assess Stakeholder maturity level – may need to educate on what is expected from them

■ Process

- One size or approach does not always fit all – be prepared to adapt
- Decide on the process and share early with the entire delivery AND stakeholder community
- Leverage collaboration – in workshops and throughout review/revision cycles

■ Technology

- Leverage technology for Requirements Definition, Application Simulation, and Requirements Management

Thank you for attending
**Best Practices for Optimizing
the Requirements Process**



Please submit questions now...

Contact Information:

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Weekly Web Demo

An Introduction to iRise

Held Twice Weekly

10:00 AM PST



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