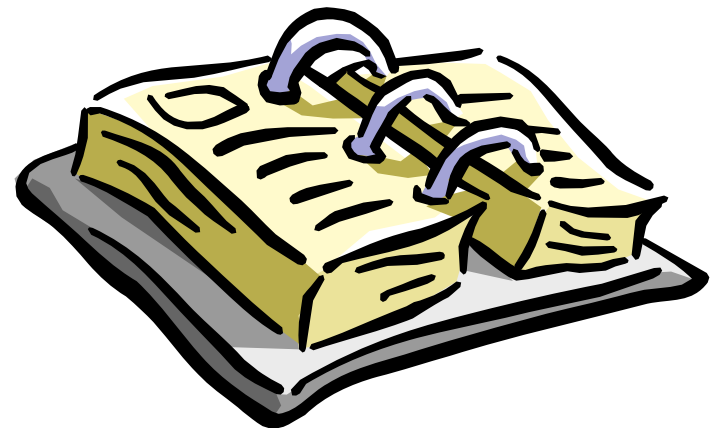


Establishing a Requirements Competency at Great American Insurance

Pete Carrion

April 11, 2007

- Scenario
 - About Great American
 - Background
 - Requirements Engineering Office
- Objective/Problem
 - The Challenge
 - Goals and Objectives
- Solution
 - 10-Step Approach
- Results
- Resources



Scenario: About Great American

- A large, financially strong insurance group whose insurance companies hold solid financial strength ratings from independent third party rating agencies.
- Established in 1872, Great American Insurance Group has successfully served its customers for over 130 years.
- Engaged primarily in:
 - Property and casualty insurance, with a focus on specialty commercial products for businesses
 - Sale of annuities, life and supplemental health insurance products.
- Provide insurance products and services tailored to meet the specific and ever-changing financial risk exposures facing our customers.
- The members of the Great American Insurance Group are subsidiaries of American Financial Group, Inc. (AFG), based in Cincinnati, Ohio.

Scenario: Background

- In 2003, IT Services senior executives identified requirements as a critical “pain point” and a top priority for improvement:
 - Growing concern with its products and delivery practices
 - Established Requirements Engineering function to address problem
- IT Services had a largely ad-hoc approach to requirements:
 - No standard process, techniques, or terminology
 - Resulted in incomplete, inconsistent, and inaccurate requirements, which often led to less than satisfactory results on projects.
- New function charged to establish a Requirements Competency:
 - Improve consistency, completeness, & accuracy of requirements generated
 - Do so in as pragmatic and non-disruptive a manner as possible.



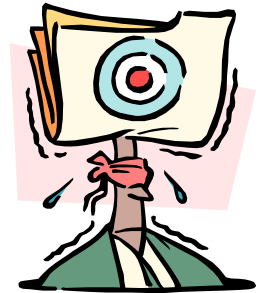
Scenario: Requirements Engineering Office

- Resides within the IT Services Project Management Office (PMO). Its responsibilities include:
 - Establishing Requirements Standards
 - Providing Requirements Tool Setup and Consulting
 - Establishing & leading Requirements Committees/Working Groups
 - Providing qualified contract analysts to projects
 - Requirements Engineering Coaching & Mentoring
 - Establishing a Requirements curriculum and training program
- Its head serves as the Requirements Competency Lead for the IT Services Division



Objective/Problem: Goals & Objectives

- Primary goal: Improve quality of business & technical requirements developed and used in IT Services projects and programs, to:
 - Reduce time-consuming and costly rework
 - Improve project cost, schedule, and quality performance
 - Shrink expectation gap between what customers need and IT projects deliver
 - Regularly meet or exceed IT, customer, and business needs and expectations



Objective/Problem: The Challenge

- Establish a Requirements Competency at a large Insurance group with:
 - Little or no formal requirements processes, standards, or rigor
 - An entrepreneurial culture resistant to anything that may constrain the flexibility of individual business units
 - An “appetite-driven” versus a “standards-driven” mentality and operating style
 - Projects that failed to identify, include, or provide adequate time for critical requirements activities in project schedules.



Objective/Problem: The Challenge (cont)

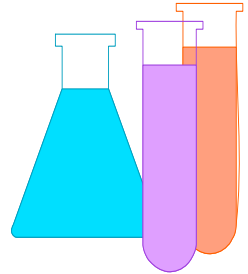
- Compounding the challenge:
 - Minimal staffing to support division of approximately 450 personnel
 - Most business analysts, and others performing in a requirements role, were not trained or familiar with formal requirements engineering techniques/ concepts
 - Requirements were a mix of business, user, and technical requirements, with a smattering of business rules and data element definitions thrown in
 - Requirements were being captured and documented using primarily Microsoft Office products (Word, Excel, and Access)



Solution:

10-Step Program

- Devised 10-Step Program to (a) develop and deploy a practical requirements process and practices, (b) support it with a skills development program and coaching support, and (c) automate it as much as practical:
 1. Develop a Strategic Requirements Roadmap
 2. Establish a Requirements Committee
 3. Inventory Current Requirements Processes, Practices, and Assets
 4. Select an Existing Requirements Approach as a Foundation
 5. Assess Organization against Selected Approach
 6. Tailor Approach and Fill Remaining Gaps
 7. Select and Implement a “Best of Breed” Requirements Management Tool
 8. Implement a Requirements Engineering Training Program
 9. Rewrite Business Analyst Role Profile to reflect New Process and Tools
 10. Provide Coaching/Mentoring to Develop Skills & Institutionalize Practices

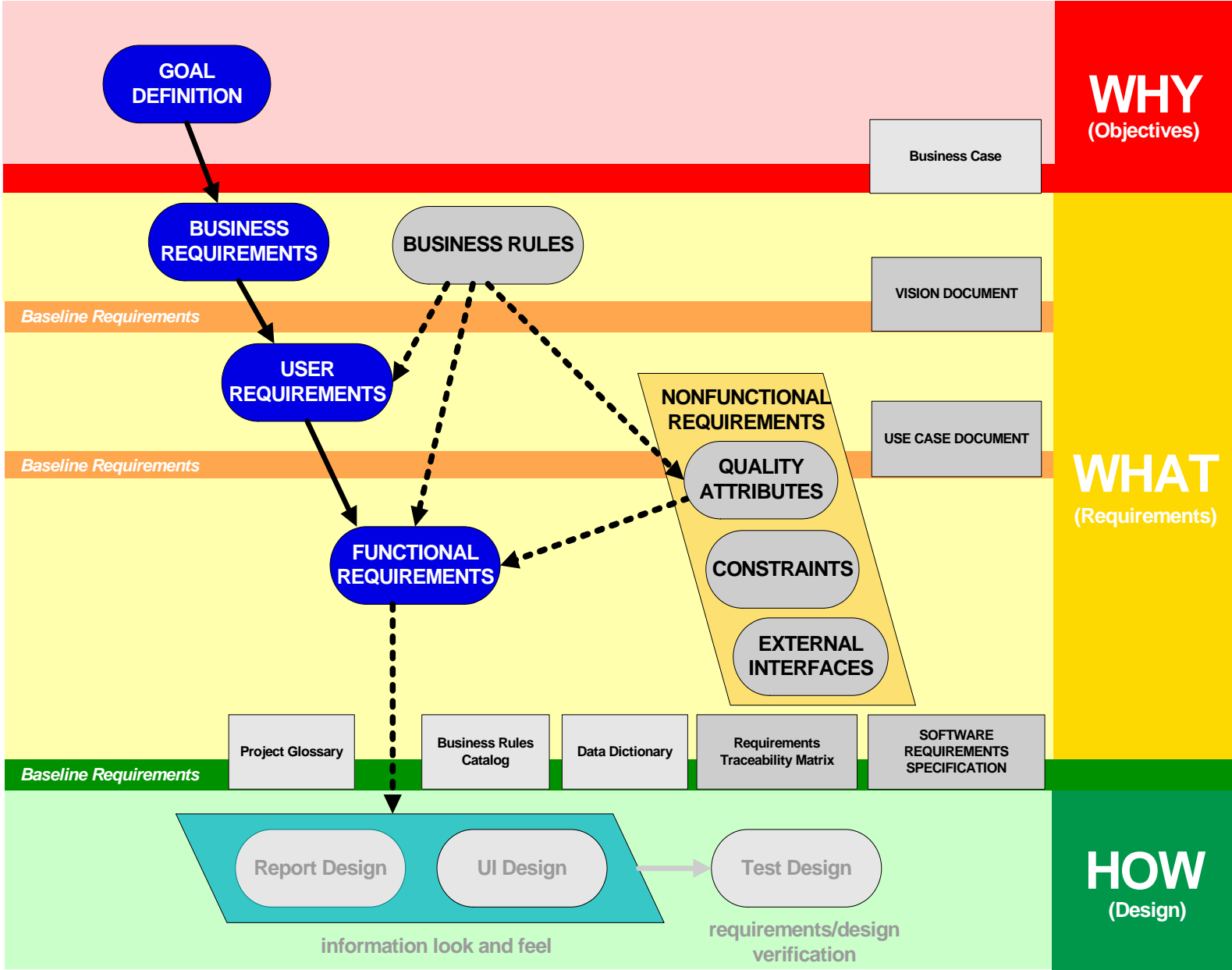


1. Develop a Strategic Requirements Roadmap

- Drafted an initial vision and scope-type document:
 - Outlined Requirements Competency Lead's vision of where we needed to be in the next three to five years
 - Reviewed and finalized by the Requirements Committee (covered in Step 2)
 - Covered the following:
 - Different levels and types of requirements to be collected,
 - Their relationships,
 - The roles/artifacts/project lifecycle phases involved,
 - Templates and other standards to be developed and implemented going forward.
 - The final roadmap was also captured and illustrated in a Requirements Roadmap Diagram.



GAI Requirements Roadmap



2. Establish a Requirements Committee

- A cross-functional committee established to:
 - Provide organizational feedback and input on requirements-related needs, concerns, and initiatives
 - Assist in the selection, development and implementation of new processes, practices, methods, and tools
 - Build buy-in from the organization by providing the major requirements stakeholders a voice in the process
- Led by Requirements Competency Lead, with part-time representatives from major IT requirements stakeholders:
 - Architecture, Business Analysis, Project Management, Configuration Management, Testing, and Development
 - Each member authorized to work on committee tasks four hours a week, or as their schedules otherwise permitted



3. Inventory Current Requirements Processes, Practices, and Assets

- First action taken by fledgling Requirements Committee
- Catalogued requirements-related processes, practices, and assets in use throughout the IT Services organization
- Assets analyzed to identify any strengths that could be leveraged as well as gaps that needed to be filled



4. Select an Existing Requirements Approach as a Foundation

- Several factors made it feasible to go outside the company for an existing requirements approach:
 - Absence of a well-defined process or standards
 - Many sound and proven approaches in the industry
 - Philosophy not to “reinvent the wheel” if we didn’t have to
- Had multiple advantages:
 - Provided a solid foundation which we could tailor to the organization
 - Provided common language and terminology around requirements engineering
 - Came with a base of training/consulting support from multiple sources



4. Select an Existing Requirements Approach as a Foundation (cont)

- Several industry approaches were reviewed against organizational criteria:
 - Practicality (minimal training and support needed to understand and implement at GAI)
 - Available industry support (training, consulting, references, etc.)
 - How well it met identified needs (Roadmap, gaps, etc.)
 - Cost and time to implement (complexity, effort, required training, etc.)
- Requirements Committee unanimously agreed on the requirements engineering approach advocated by Karl Wieggers and captured in his book, *Software Requirements, 2nd Edition*
 - Most practical, easy to understand and implement approach available, with the widest and most affordable base of support.

5. Assess Organization against Selected Approach

- Identified tailoring required to “fit” the selected approach to the organization
- Also served to identify additional gaps that surfaced specific to the approach selected
- Resulted in a final list of tailoring and development tasks
- With help of Requirements Committee, final list of tasks were prioritized, and assigned for work.

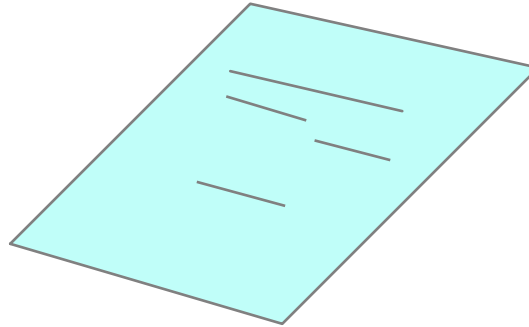


6. Tailor Approach and Fill Remaining Gaps

- Approach used to develop the standard templates needed, the most time-consuming of the remaining tasks, was:
 - a. Requirements Competency Lead would first develop a “strawman” draft of each template
 - b. Draft template then distributed to Requirements Committee members for review and comment
 - c. Comments on the draft template were discussed at the following Requirements Committee meeting
 - d. Agreed upon changes made between meetings and updated draft redistributed to members (for acceptance of changes as implemented)
 - e. Draft template placed on agenda for approval at the following weekly meeting (if not approved, repeat steps c through e until approved)

6. Tailor Approach and Fill Remaining Gaps (cont)

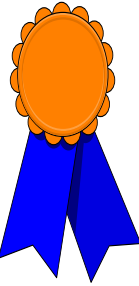
- Using this approach, the following templates were created:
 - Vision Document
 - Use Case
 - Business Rules Catalog
 - Data Dictionary
 - Project Glossary
- Along with these, the following existing templates were reviewed against the new approach, and approved for use with minor updates:
 - Software Requirements Specification (SRS)
 - High-Level Design Specification (HLDS)
 - Detailed Design Specification (DDS)



6. Tailor Approach and Fill Remaining Gaps (cont)

- In addition to the templates, the Requirements Committee finalized and implemented the first-ever requirements management plan for IT Services.
 - Designed to be used “as-is” or modified to reflect an individual area’s or project’s unique needs.
 - Along with the standard requirements organization, tools, change management and metrics sections, includes the following information:
 - Standard types of requirements and requirements-related assets collected and used in IT Services
 - Artifacts in which each type of asset should be captured
 - Traceability strategy and criteria for each asset
 - DOORS standard attribute descriptions, type, values, modules used in, and recommended use

7. Select & Implement a “Best-of-Breed” Requirements Management Tool



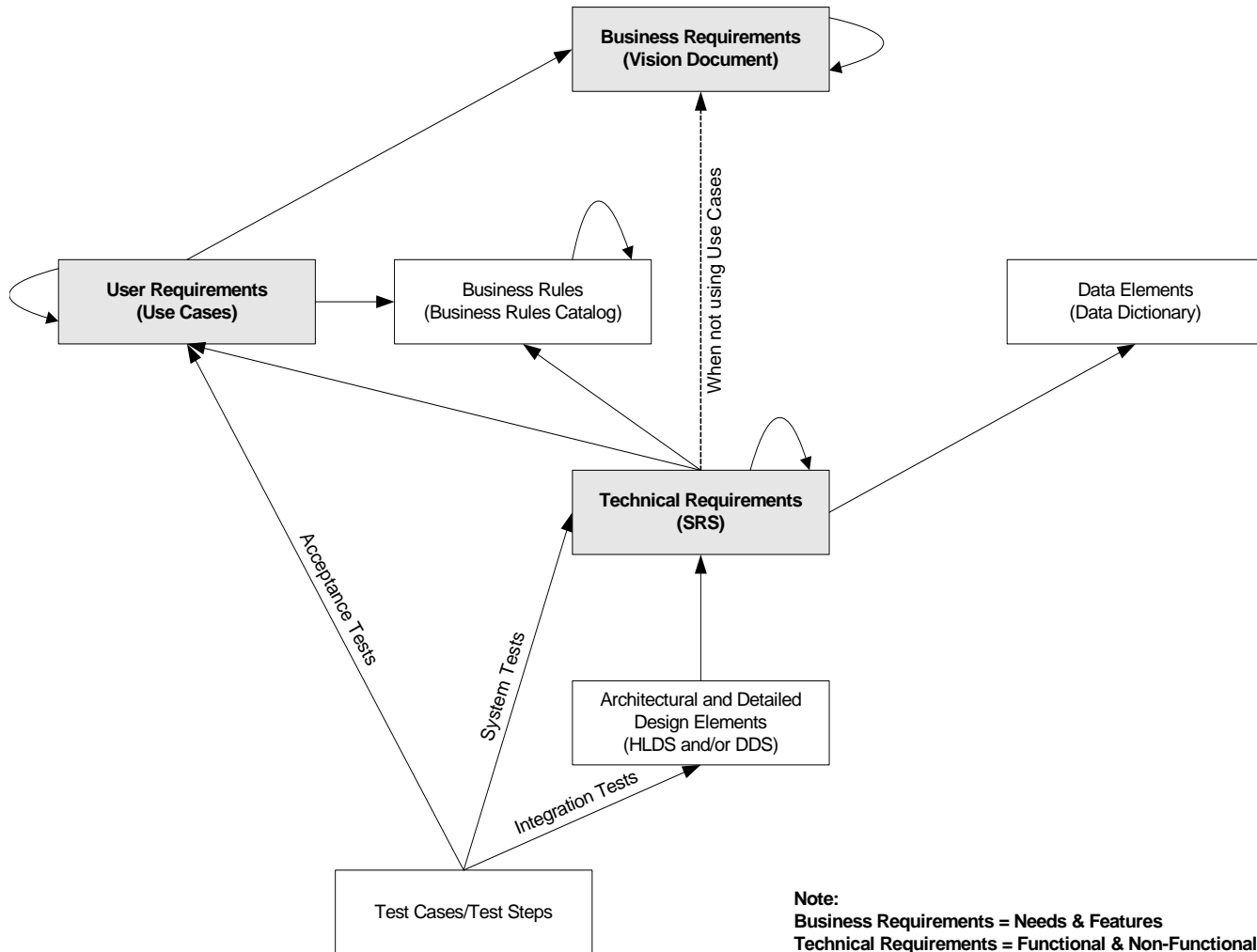
- To facilitate adoption of the new process and approach, elected to:
 - Automate approach and process to the maximum extent practical
 - Develop and implement standard, pre-configured implementations for different classes of projects
- Determined a requirements management (RM) tool was the top priority
- Formed an RM Tool Evaluation and Selection team to select the “best of breed” RM tool for the organization:
 - After reviewing roughly 20 significant RM tools against basic criteria, narrowed list down to three finalists
 - Telelogic’s DOORS proved to be the best fit for GAI needs, by a significant margin.

7. Select & Implement a “Best-of-Breed” Requirements Management Tool (cont)

- Working with Telelogic’s Professional Services, planned an initial rollout of DOORS which called for:
 - Holding an initial enterprise-level Project Architecture Workshop (PAW)
 - Goal to produce a DOORS architecture that would work “as-is” for 80% of our software development and maintenance projects, and
 - Serve as an effective foundation or base for the remaining “variants”
 - Preceding PAW with advanced DOORS training for all PAW participants
 - Architecture included structure and format for data to be captured and maintained in DOORS, traceability strategy, standard views & attributes, etc.
- Built first project template and launched first DOORS projects in Feb 2004

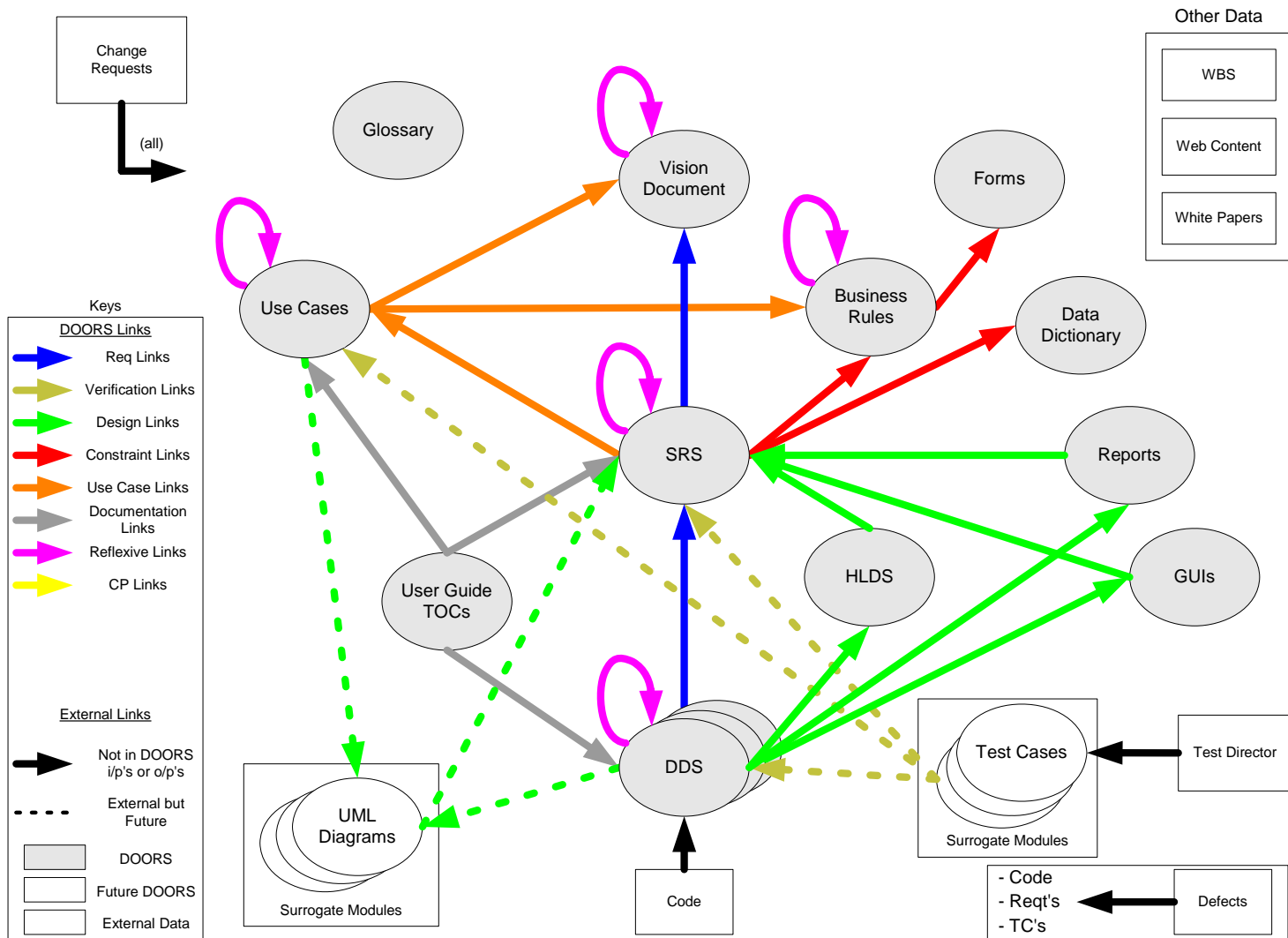


GAI Traceability Strategy



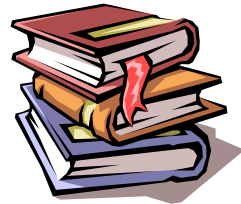
Note:
 Business Requirements = Needs & Features
 Technical Requirements = Functional & Non-Functional Requirements

GAI DOORS Architecture



8. Implement a Requirements Engineering Training Program

- To address the lack of formal requirements engineering knowledge in the organization, a training program was developed:
 - First course in new curriculum presented in late 2003
 - Covered fundamentals of approach and requirements engineering in general
 - Quickly followed by addition of a second course on using the DOORS RM tool, in early 2004.
 - 2005 and 2006 saw the addition of the following classes:
 - Facilitating Requirements (JAD) Workshops
 - Workflow and Process modeling & Logical Data Modeling
 - First offerings of a custom-developed, follow-on course to the initial requirements engineering fundamentals course.



9. Rewrite Business Analyst Role Profile to Reflect New Process and Tools

- Negotiated ownership of the Business Analyst role profile (e.g., similar to a job description)
- Rewrote it to align with the new requirements engineering process
- Key for ensuring our analysts were being asked to do, and rewarded on, the right activities and behavior.
- Coordinated new role profile with business analyst managers, to obtain their buy-in and approval of new direction and additional rigor.
- New profile approved and implemented for use in 2005 calendar year.



10. Provide Coaching & Mentoring Support to Develop Skills & Institutionalize Practices

- To ensure knowledge imparted in formal training is not only put into practice, but practiced correctly:
 - Provide coaching and mentoring support to requirements practitioners on an ongoing basis

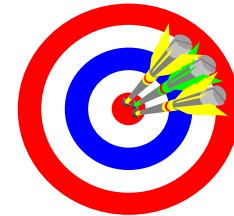


- IT Services Projects and personnel now:
 - Use a common "language" and process around requirements
 - Utilize standard, current practices and our standard requirements management tool, DOORS
- As a result of early successes:
 - DOORS was made an IT Services standard in Jan 2005
 - The BA Role Profile ownership was willingly transferred to the Requirements Competency Lead
 - The training curriculum and demand for classes continues to grow
- From this encouraging start, we now have:
 - Over 100 projects using DOORS, including our flagship programs
 - Over 350 DOORS users and counting
 - Grown the requirements engineering curriculum to six courses



Results (cont)

- IT Services personnel now starting to appreciate importance of such basic practices as:
 - Upfront stakeholder analysis
 - Requirements peer reviews
 - Non-functional requirements
 - Requirements management and the benefits that DOORS provides
- Today's requirements continue to improve and are higher quality, more consistent, and more complete than even those of a year ago.
- Customer satisfaction, both internal and external, continues to rise.



Summary

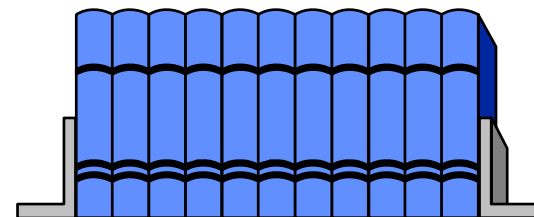
- The requirements engineering process was quickly and successfully developed and implemented, using minimal resources.
- Strategy of gaining maximum involvement from the organization, proved crucial to generating buy-in needed for success
- DOORS RM tool played a key role in:
 - Facilitating adoption of, and breaking down resistance to, the new requirements approach
 - Enabling and facilitating requirements management practices.

The hardest single part of building a software system is deciding precisely what to build. No other part of the conceptual work is as difficult as establishing the detailed technical requirements, including all the interfaces to people, to machines, and to other software systems. No other part of the work so cripples the resulting system if done wrong. No other part is more difficult to rectify later.

*Frederick Brooks in his classic 1987 Essay
“No Silver Bullet: Essence and Accidents of Software
Engineering”*

Resources

- *Software Requirements, 2nd Edition*, Karl Wiegers, 2003, Microsoft Press
- Process Impact (Karl Weigers' Company) Web Site, www.processimpact.com
- *Requirements by Collaboration: A Workshop Approach to Defining Needs*, Ellen Gottesdiener, 2002, Addison Wesley
- *The Software Requirements Memory Jogger: A Pocket Guide to Help Software and Business Teams Develop and Manage Requirements*, Ellen Gottesdiener, 2005, GOAL/QPC
- EBG Consulting (Ellen Gottesdiener) Web Site, www.ebgconsulting.com



Contact Information

Pete Carrion

Requirements Competency Lead

Great American Insurance, IT Services

(513) 412-4413

pcarrion@gaic.com