Case Study Brief

Enabling Business Change: Transforming Vision into Reality through End-to-End Traceability

Integrating Casewise Corporate Modeler and the Rational Tool Suite

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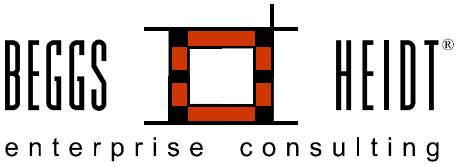

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The New Meeting: Visions and Processes

Each fall, two quasi-public financial institutions based in Washington, D.C. jointly host a meeting of the directors of each organization. The meeting brings together the financial leaders of the world as well as heads of commercial money centers. Also invited are leaders from private industry; academicians; and a worldwide press corps—over 15,000 people in all. The meeting is held in Washington, D.C., except every third year when a participating country hosts the event. After some internal review, our client's meeting organizing committee decided that its business processes and IT infrastructure were no longer effectively supporting the annual event. It was decided that the processes, applications and systems helping plan and manage the meeting would require extensive evaluation and analysis and, quite possibly, replacement.

BeggsHeidt led an intensive 40-person effort to selectively re-engineer the complete logistical support and operations of the meeting. This business transformation effort included the following functional areas: registration; local and international travel and transportation; hotel accommodations; social programs; program of seminars; courier support; and finance. To meet these demands, BeggsHeidt worked with our client to introduce tools from two leading software vendors: Casewise Systems and Rational Software Corporation.

In Phase 1, Casewise *Corporate Modeler* was used to develop future state business processes. The initial effort involved the documentation of the current state business processes followed by workshops and facilitated sessions to develop the future state for each functional area. All sessions were conducted using Corporate Modeler interactively (in real time). Each session was facilitated by an analyst while a second analyst developed the dynamics models and context diagrams. The dynamics models developed within Corporate Modeler are diagrams the business users could readily understand. The interaction between processes could be simulated so that users could validate that the diagrams represented their actual real world needs. The diagrams were also used to locate the existence of critical user-to-system interaction points. These interaction points were flagged in the diagrams as *use case locations* for subsequent analysis.

The project team then used the Corporate Modeler/MS Word documentation tool to create *process books* for each functional area. The process books were used both to begin transformation of the manual processes by each of the functional areas of the business but were also instrumental in Phase 2 of the project. During the facilitated sessions and in subsequent analysis, numerous line item requirements were captured within the business model as *process specifications*.

At the conclusion of Phase 1, the project's scope of recommendations included changes to business processes, significant organizational and staff changes, as well as the implementation of new systems.

Eliciting and Analyzing Requirements

Phase 2 involved the translation of the business processes into *use cases*. In addition to Corporate Modeler, two Rational software tools were used: *Rose*, a visual modeling tool; and *RequisitePro*, a

requirements management and collaboration tool. The use case locations documented in Phase 1 using Corporate Modeler were instantiated in Rose. These instantiations would be used to develop a *use case survey*, more detailed *use case models* and use case *flows of events*.

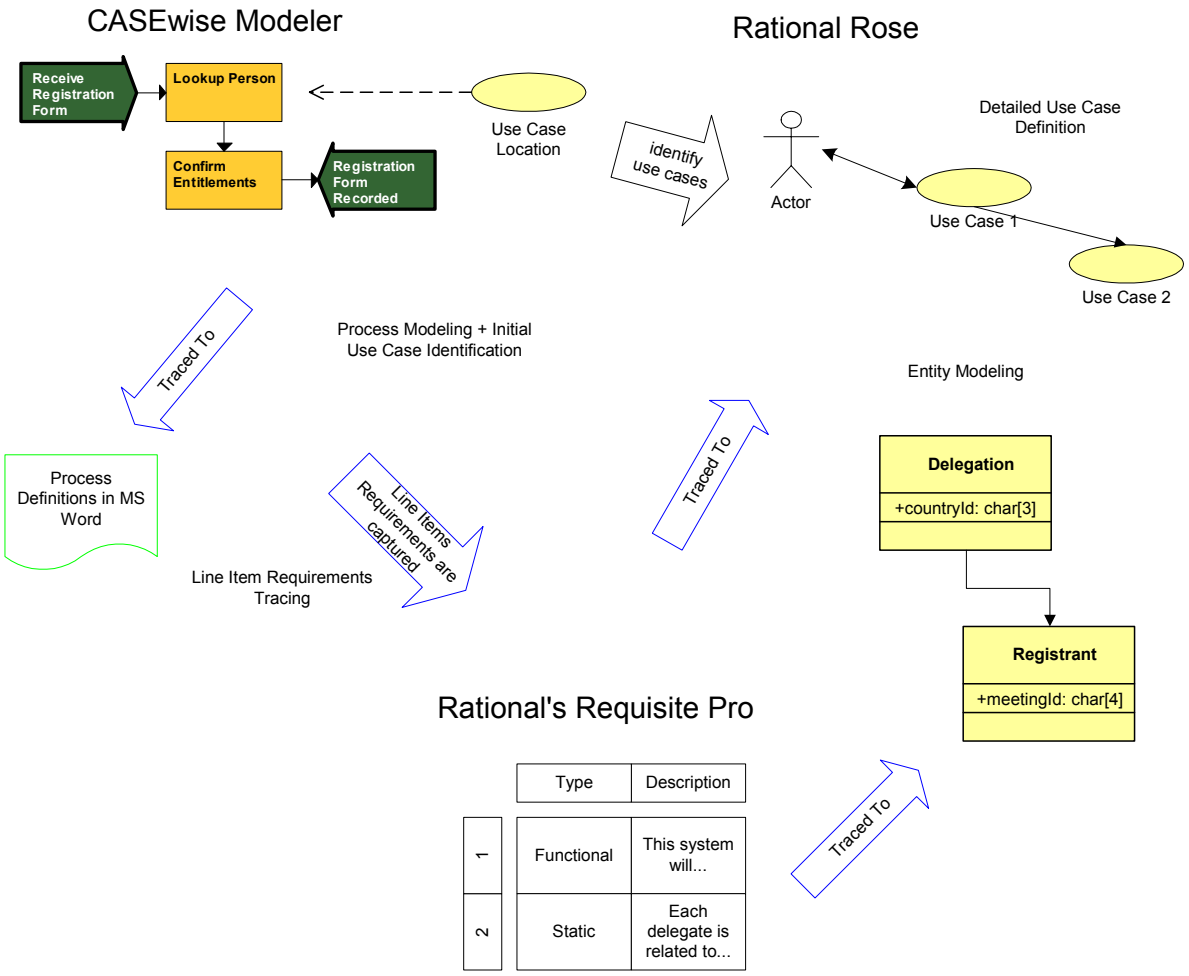

Figure 1 Integration between CASEwise Modeler, Rose and Requisite Pro

Coincident with this activity, the process books and the process specifications were loaded as unvarnished line item requirements into RequisitePro. After an intensive review of these requirements, each was refactored into functional and static system requirements. Next, the use cases that were instantiated in Rose were then mapped into Requisite Pro so that the use cases could be traced to the functional requirements. Figure 1 shows the integration of CASEwise, Rose and Requisite Pro.

This provided traceability from the business process, to the survey use case (a critical user-to-system interaction point), to the functional requirements that describe that interaction. In case users required clarification of a business process or system interaction point, it was a straightforward exercise to show where users would be required to interact with the system, the atomic functionality describing each interaction, and the elaboration of the functional flow of events (the survey use case).

Use Cases and UML Diagrams Deconstructed

To produce high quality detailed requirements the primary gathering technique utilized use cases. To accurately capture the *voice of the user*, use cases could document functional flow for the system in detail by using structured step-by-step descriptions (in MS Word) developed by business analysts in conjunction with the users.

As mentioned earlier, a survey population of use cases was identified in the first pass of capturing user-to-system interaction points that were documented in Corporate Modeler as part of the process modeling workshops conducted in Phase 1. Sixty-three such use cases were instantiated in Rose. These would require further review with users and subsequent analysis to determine if refactoring (and simplification) were possible.

In review sessions with the users, a BeggsHeidt business analyst and system analyst collaborated to identify major scenario flows for the use cases as well as the participating entity classes required. Based on the basic scenarios flows identified, the business analyst identified logical user interface entities and was able to build logical UI models for review with the users. Meanwhile, the system analyst used Rose to document logical classes and build UML class diagrams that captured key business entities along with their attributes and relationships. As these class diagrams were drafted, the domain class model of the system to be built began taking shape. As more knowledge was gained about user interaction, desired system behavior and relationships among classes, the survey use cases and class diagrams could be reviewed for any refactoring opportunities. Some use cases elaborating similar functionality were combined into a single use case, while others were renamed to more accurately reflect their flows of events. Use cases could then be further developed and scenario-based flows of events could be documented. Once drafted, these flow of events were reviewed with users for understanding and clarification. The domain model was also continuously evaluated and refactored as necessary.

The process of user review, class diagram and domain model development, use case refactoring, and use case flow of events development was iterative and with each round of review (about three rounds were average), the view of participating classes, the domain model as a whole, and the use case flow of events were better elaborated. The business analyst and a systems analyst would validate each use case against these business entity models during subsequent review sessions with users. Once completed, the sixty-three survey-level use cases were winnowed to thirty-seven use case realizations.

Next, the business analyst and systems analyst drafted step-by-step diagrams using Rose to create UML sequence diagrams, which in turn related to the use cases. The sequence diagrams elaborated for users how actual usage scenarios would work using these business entities and others representing ancillary processes and external systems. The diagrams also served to validate the domain model.

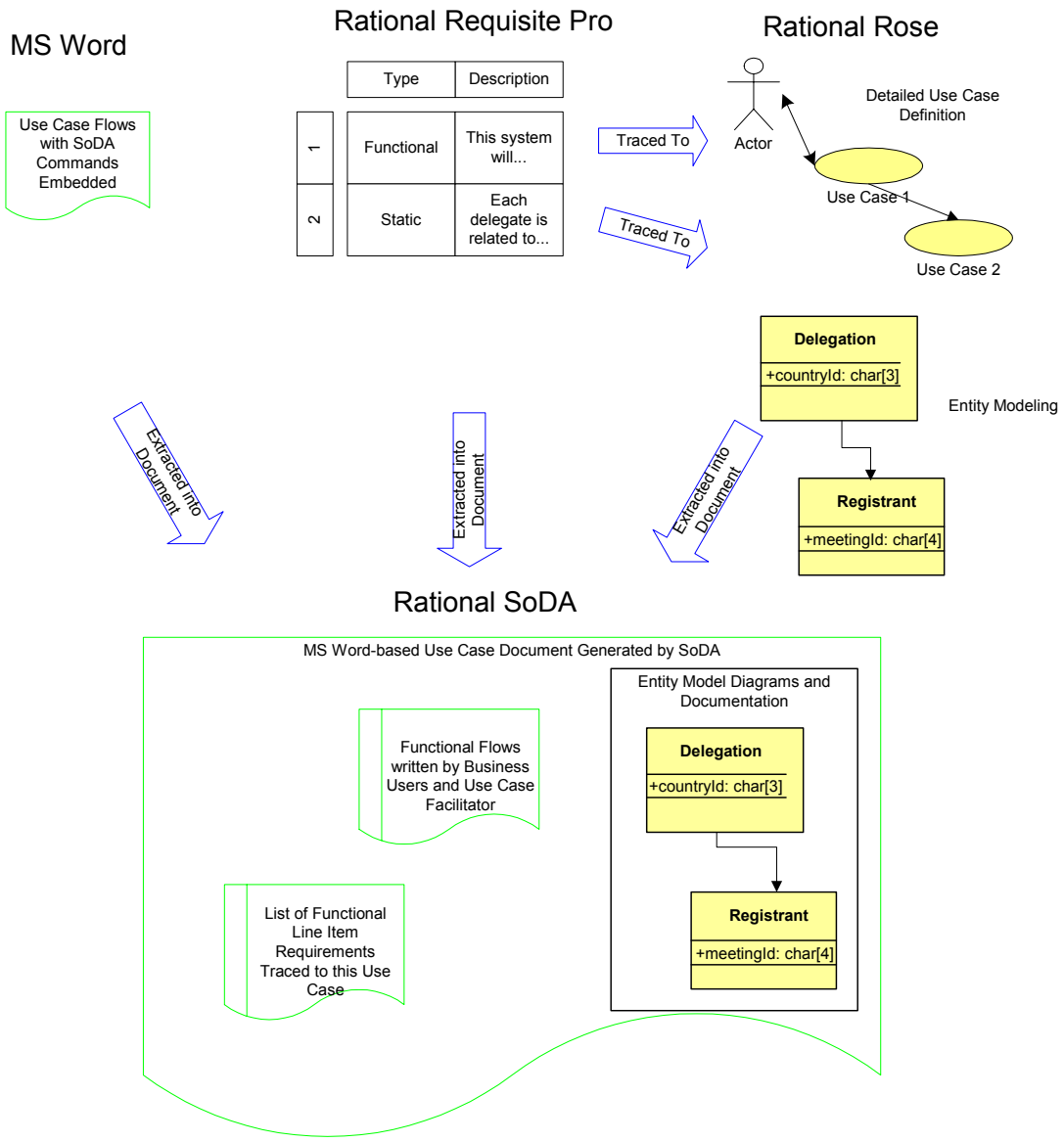

Figure 2 Pulling Together the Use Case Document

Finally, all of the work products were integrated using Rational's *SoDA* automatic documentation generation tool. SoDA enabled BeggsHeidt to produce an MS Word document with step-by-step flow of events descriptions, accompanied by models of the entities and diagrams of the flows themselves (both automatically extracted from Rose), plus the complete system requirements for each use case (extracted from RequisitePro). Figure 2 shows the result: a single cohesive document to be validated by the business users who were the driving force behind it and the business analysts who actually forged the use case and all the inputs that it required.

As the use cases were being developed, BeggsHeidt architects were developing the system's technical and application architectures in Rational Rose. These models were developed based on our client's desired platform strategy, the overall application requirements and the detailed use case scenarios.

Summary

The approach outlined in this Case Study Brief has endeavored to describe the effective use of documentation and analysis tools and how the integration of these tools can support an end-to-end discovery, analysis and design lifecycle—from business process visioning to system design. These tools are also used to continue the analysis and design from the logical use case view, to the design and implementation views, and ultimately the deployment view.

Integration of Casewise Corporate Modeler with Rational's Rose, RequsitePro and SoDA—along with the comprehensive use case artifacts that resulted—enabled BeggsHeidt to maintain traceability as knowledge was gained (through iterative reviews and analysis) about the system to be built. It also allowed the team to understand what impacts to the business would result if scope was changed or reduced. Last, it provided BeggsHeidt's technical architects with a sound, cohesive framework from which to develop the technical and application architectures.

About BeggsHeidt Enterprise Consulting

BeggsHeidt Enterprise Consulting is a company of business and technology strategists that help organizations transform their business with advanced approaches and technology. Established in 1993, BeggsHeidt has numerous clients in North America and Europe.

BeggsHeidt's project and lifecycle best practices ensure that the progression from concept to design to operation is an integrated, naturally evolving process. The result is an enterprise that fully embodies the strategies and principles of our clients' business objectives and allows the constant reinvention demanded by a changing market. BeggsHeidt has real-world experience taking a project from the business process modeling stage all the way to the design stage—including a process for end-to-end traceability.

The integration of CASEwise Modeler and Rational's toolset allows BeggsHeidt to deliver an end-to-end process that gives organizations a cohesive approach for actualizing business process into software architecture.

For more information, contact David Heidt: David.Heidt@BeggsHeidt.com, or +01-773-227-7110 x106 or view our case studies and white papers at www.BeggsHeidt.com.

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