

**Industry:**

Information technology services and e-business solutions for large to mid-sized organizations.

**Organization:**

Complete Business Solutions Inc. (CBSI)  
(NASDAQ: CBSI)

**Description:**

CBSI offers its worldwide clients a broad range of IT and e-business services including: custom software and emerging technology solutions, large systems applications development and maintenance, packaged software implementation, and testing and contract programming services.

**Business Problems:**

Need to standardize the development process of internal teams creating software for diverse projects through a flexible, comprehensive and easy to implement off-the shelf process.

**Rational Solution:**

The Rational Unified Process (RUP)

**Key Benefits:**

CBSI has identified the following benefits associated with its adoption of the Rational Unified Process as its standard process framework:

- Leverage best practices across organization
- Shortened training curve for resources moving from Y2K to e-business
- Improved customer satisfaction
- Rapid reaction capability
- Allows flexible process tailoring for specific domains and for individual projects
- Helps sell opportunities (recognized as emerging standard)
- Supports company philosophy of "Local Partnership, Global Delivery"
- Greatly simplifies geographically distributed development
- Standardization improves reuse

**Programming Environment:**

*Platform:* UNIX, Sun Solaris, Windows NT and others

*Development Tools:* Rational Unified Process, Rational Rose, Rational RequisitePro, Java, C++, Visual Basic, EJB, CORBA, JSP, ASP, and others

*Number of Developers:* several thousand

*Number of Testers:* several hundred



# CBSI Chooses the Rational Unified Process to Accelerate e-business and IT Projects

How does a company successfully manage and execute hundreds of simultaneous, diverse projects for clients widely scattered across geographic boundaries, technical parameters and business domains? Furthermore, how does a company that's widely diversified within itself adopt a common process to unify and streamline its software development operations? And how can such a process be economically and efficiently implemented without negative impact on the company's on-going operations and client services?

These were some of the questions and dilemmas recently faced by Complete Business Solutions Inc. (CBSI), a worldwide provider of information technology (IT) services to large and mid-sized organizations. Founded in 1985, CBSI ([www.cbsinc.com](http://www.cbsinc.com)) provides customers around the world with a broad range of e-business and IT services including technology consulting and custom-tailored software solutions based on the client's individual needs.

As their various businesses and clientele grew and diversified, CBSI was faced with the challenge of keeping their software development teams "on the same page." Without a common process to unify their efforts, many branches and practices within CBSI were doing similar kinds of projects in different ways. This resulted in development groups unwittingly replicating the completed work of other groups, making it very difficult to manage geographically distributed projects. Such problems were compounded by other across-the-board inefficiencies brought about by projects being created through different processes.

In an effort to improve their capabilities and remain flexible while consistently delivering high quality solutions to their clients, CBSI began searching for a standardized software development process that could work across their entire organization.

## Search Leads to the Rational Unified Process

CBSI's search began in its corporate Object Oriented (OO) Practice, which the company had organized as an Advanced Technology Center. The OO Practice researched a number of off-the-shelf process solutions, looking for the product that was the most flexible, comprehensive and would require minimum tailoring to fit an organization's specialized needs.

It soon became clear that the Rational Unified Process™ (RUP) from Rational® Software was the best choice to satisfy all these requirements.

The Rational Unified Process is a Web-enabled software engineering process that enhances team productivity and delivers software best practices to all team members. RUP functions as an HTML-based "e-coach," making process practical by providing prescriptive guidelines, templates and examples for all critical e-development activities. This e-coach is non-intrusive and tightly integrated with Rational software tools, allowing development teams to gain the full benefits of the Unified Modeling Language, software automation, and other industry best practices.

## Becoming the Corporate Standard

The Rational Unified Process was adopted as the standard process for OO projects at CBSI in January, 1999. As project teams began to use RUP and experience its flexibility and best practices, it quickly became a very popular tool both within and outside the OO Practice.

This rising popularity coincided with CBSI's shift in focus away from Y2K issues to its growing e-business clientele. CBSI found in RUP a proven and well understood solution

to their e-business process needs and it was quickly adopted for these projects as well.

By Q4 of 1999, the Rational Unified Process had found its way into most areas of CBSI's operations. RUP now forms the basis for a common process framework for all types of projects at CBSI. It's rapidly evolving as CBSI's corporate-wide software development process standard.

### **CBSI e-business Clients Benefit from RUP's Best Practices**

The Rational Unified Process has already proven its value in numerous projects throughout CBSI, with the most consistent examples found in e-business projects delivered through CBSI's regional E-business Solutions Centers.

One recent project at CBSI's Farmington Hills, Michigan, E-business Solutions Center involved developing a policy management system for a leading insurance service provider. The project involved interfacing with several of the client's extensive legacy databases. A huge quantity of records and regulations had to be merged from Oracle and DB2 databases into Word documents stored on a central server with easy retrieval from desktop workstations. To achieve these goals, CBSI developers employed a thin-client architecture with a Visual Basic based user interface and COM based business objects interacting with Oracle and DB2/400 databases.

According to Prasad Yechoor, Director of the center: "The Rational Unified Process methodology proved to be a common sense guideline for the entire software development lifecycle. The UML (Unified Modeling Language originally created by Rational Software) notation was very handy in communicating user and design requirements between the different members of the development team. Use case analysis was very effective in bridging the gap between end users and the technical folks. Additionally, the requirements that were documented in the form of use cases could easily be reused for the development of test cases and system documentation."

The project team also benefited from the RUP's tight integration with other Rational tools, such as Rational Rose® and Rational RequisitePro®, which were used for requirement's management on this project. "That is the beauty of the Rational approach that I really like," said Ravi Chandran, Senior Project Manager at the Farmington Hills center. "Rational hasn't just put together a set of tools or methodologies. With RUP, they give us detailed blueprints that guide us through each development step, telling us what tools to work with to get the desired results. I think that's a good approach. Without RUP we would be thinking on our feet and making it up as we go along."

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*Prasad Yechoor, Director,  
CBSI e-business Solutions Center  
Farmington Hills, MI*

### **The Rational Unified Process Beneficial to Larger, Long-Term Projects Too**

CBSI is not restricting the Rational Unified Process to smaller scale e-business projects. On the contrary, RUP's chief value to CBSI is found in its flexibility and scalability and it's currently being used on several ongoing large scale projects throughout the company.

One of these is an ongoing effort for the Oregon Public Employees Retirement System (OPERS). This project involves design and development of a new client/server pension administration system to replace OPERS' current mainframe system. The new system will integrate client/server, object-oriented and electronic commerce functions, giving members and employees the ability to transact related business over the Internet. According to John Kostakos, CBSI Director and OPERS Project Manager, RUP's best practices has helped CBSI developers identify core activities and the artifacts to be produced as output from those activities.

RUP's risk identification practices have also proven important. "One of the RUP best practices is to identify major risks and focus on them early in the project," Kostakos pointed out. "Because of this, we are doing a proof of concept for the core executable architecture to address technical risks. By using RUP to focus on risks early, issues have surfaced earlier in the project than they would have with a traditional waterfall approach. The result has been a major saving of time, effort and expense."

### **A Unified Solutions Source for Building e-business Enterprises**

The combination of CBSI's comprehensive service offerings, as provided by their more than 5,000 employees, and Rational's integrated suite of tools and process, provides customers with a recipe for success. "Our customers now have the benefit of a unified solutions source capable of offering them best-of-breed services from business strategy definition through custom systems design and development, to the actual methodologies and tools used in such efforts," said Sean Barnum, CBSI Director of Quality & Knowledge Management. "This depth of expertise and experience will empower the customer to shortcut the clumsy e-business learning curve and move straight into solving the 'e-software paradox' of delivering better software in shorter development time frames."

**About Rational Software Corporation:**

Rational Software Corporation (NASDAQ: RATL), the e-development company, helps organizations develop and deploy software for e-business, e-infrastructure, and e-devices through a combination of tools, services, and software engineering best practices. Rational's e-development solution helps organizations overcome the e-software paradox by accelerating time to market while improving quality. Rational's integrated solution simplifies the process of acquiring, deploying, and supporting a comprehensive e-software development platform, reducing total cost of ownership. Founded in 1981, Rational, one of the world's largest Internet software companies, had revenues of \$411.8 million for its fiscal year that ended in March 1999, and employs more than 2,000 people around the world.

**Rational**<sup>®</sup>  
the e-development company™

**Corporate Headquarters:**  
Rational Software  
18880 Homestead Rd.  
Cupertino, CA 95014

**Toll-free:** (800) 728-1212  
**Tel:** (408) 863-9900  
**Fax:** (408) 863-4120  
**e-mail:** [info@rational.com](mailto:info@rational.com)  
**Web:** [www.rational.com](http://www.rational.com)

**International Locations:**  
[www.rational.com/corpinfo/worldwide/locations.jttml](http://www.rational.com/corpinfo/worldwide/locations.jttml)

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