Rational
the e-development company

Organization:
Aspect Communications

Industry:
Customer Relationship Management

Description:
Aspect Communications Corporation (Nasdaq: ASPT) is a leading supplier of customer relationship management solutions, which enable companies in a broad array of industries worldwide to provide best-of-class services to their customers. Aspect provides an integrated family of enterprise software application suites, application services and tools, mission-critical platforms, and comprehensive professional services.

Business Problem:
Aspect was using two legacy defect tracking systems that were not satisfying requirements. Problems included non-compliance with Y2K, slow performance, weak reporting, and lack of flexibility.

Rational Solution:
After a thorough evaluation, Aspect chose to standardize on Rational ClearQuest.

Key Benefits:
Powerful reporting and charting, highly customizable GUI and workflow process, minimal training requirements, and robust Web interface.

Aspect Communications Leverages Rational ClearQuest to Perfect its Industry-Leading CRM Solutions

Aspect Communications has been one of the key forces in the transformation of simple call centers into strategic systems for customer contact, satisfaction, fulfillment, and retention. As a provider of complex customer relationship management (CRM) solutions, keeping the internal development organization supplied with state-of-the-art, reliable development tools is a key priority. Recently, Aspect decided to replace two legacy defect tracking systems with a single defect tracking solution for the entire company. After a thorough evaluation process and six-week pilot program, Aspect chose to standardize on Rational ClearQuest.™

From Call Center to CRM

When Aspect Communications was founded in 1985, a call center was little more than a switch that routed inbound telephone calls to service representatives. In the decade and a half since, Aspect has been one of the driving forces behind the transformation of the call center into mission-critical, multi-functional customer relationship management systems.

Today, Aspect provides an integrated family of enterprise software application suites, application services and tools, mission-critical platforms, and comprehensive professional services. Currently, over 2,300 Aspect solutions are implemented at more than 700 companies in a wide range of industries worldwide. Among these, Aspect develops, markets, and supports a complete suite of customer relationship management solutions that strengthen companies' ability to provide best-of-class service to their customers.

Pushing the CRM Envelope Takes State-of-the-Art Development Tools

Today the term 'customer relationship management' describes an environment where people use computerized tools to handle customer interactions, improve customer service, and build one-to-one relationships. Whether it's an airline handling a flight reservation, an insurance company processing a claim, or a retailer managing catalog sales, the transactions and the information exchanged are critical to business success. Application failure hits the bottom line instantly, so reliability and quality are paramount.

Aspect's solutions leverage an open architecture and powerful software that integrates customer relationship applications with the enterprise telecommunications and IT infrastructure. To build the latest generation of CRM applications, Aspect's development teams employ state-of-the-art application development tools. These include a number of Rational Software development solutions — including Rational Rose® (visual modeling), Rational ClearCase® (configuration management), and the latest addition: Rational ClearQuest (defect tracking).

## Change Request Management Through the Ranks

At Aspect Communications, an eight person Product Technology Infrastructure (PTI) group supports the company's internal product development organization. One of the PTI group's main responsibilities is to track the progress of work on product defects and enhancements. The selection, deployment, and administration of the defect and enhancement tracking system is the responsibility of a seven-person group consisting of developers, database experts and Web specialists led by principal software engineer, Yen Anh Brown.

"Although we 'own' the product defect and enhancement tracking system, everyone in the company who's involved in any way with product development has a role to some degree. This ranges from our customer support people who interface with customers, to developers who implement changes and enhancements, to the sustaining personnel who maintain the code that's released to the customer," Brown says. "Even many people who don't work on the

specific Aspect products themselves will use some portion of the defect tracking system to track issues, etc. So for practical purposes, the system is actually deployed to everyone at Aspect. This broad participation is necessary to ensure that we achieve a complete and rapid resolution of defects and enhancement requests."

In late 1998, Aspect initiated a project to replace two legacy defect tracking systems. "Replacing two legacy defect tracking systems with a new system is a huge task," Brown says. The first was a UNIX-based product that was not Y2K-compliant. Recalls Brown, "Besides its millennium bug, the software had other drawbacks. It was painfully slow in handling queries. Its user interface was badly designed with poorly aligned fields. It lacked the flexibility of a Microsoft Windows environment — you couldn't move a window around on the screen, or if one window overlaid another you couldn't move or resize it. It had weak reporting capabilities. Security was lacking. In short, it left a lot to be desired." The second system that needed to be replaced had been added through an acquisition. Although it supported UNIX and Windows NT, it did not match Aspect's requirements for a defect tracking system, and Brown's team felt strongly that all the development groups should move to the new solution.
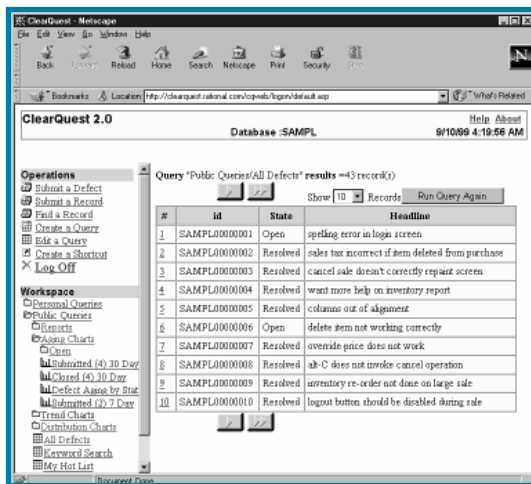
▶ Remote users can easily access Rational ClearQuest through the Web interface.

"Very few products offer the customizability provided in Rational ClearQuest. ClearQuest enabled us to add whatever fields and rules we needed, and ensured we were able to migrate all the necessary data from our legacy systems."

During the Fall of 1998, Brown started evaluating Windows-based defect tracking products. "I started with a list of about 30 vendors, and after a considerable amount of research I narrowed it down to two: Rational ClearQuest, and Clarify's ClearQuality." She lists several requirements:

- ▶ Y2K compliance
- ▶ Powerful querying capabilities
- ▶ User-friendly interface
- ▶ Customizability
- ▶ Robust reporting and charting capabilities
- ▶ Integration with Rational ClearCase for software configuration management
- ▶ Integration with Clarify's ClearSupport for call tracking

Many vendors could not provide the integration with ClearCase," she says. "It was important to us because we wanted to be able to easily track the defects that are specific to a particular source code change. ClearQuest's tight integration with ClearCase played a big role in our decision."

Another requirement was the ability to integrate with ClearSupport from Clarify, Inc., Aspect's customer support system for logging customer calls. "Naturally Clarify provided a good integration between ClearQuality and ClearSupport. But we recognized that the integration with ClearSupport is a bit easier to implement than one with ClearCase," Brown says.

Simplicity and ease-of-use was also important to us. "We felt that ClearQuality provided functionality beyond what we required and were concerned that it would confuse our users. By contrast, Rational matched our requirements, particularly in terms of its well-designed interface. The end result was that we chose Rational's solution."

"Once the selection process was complete, I did the initial design of the new system, and formed a team of about 60 developers, testers, and managers working at sites in Hawaii, California, Texas, Georgia, Massachusetts, and the U.K. to participate in the pilot project." By December, Brown and her colleagues had settled on the system requirements, specifications, and initial design. At that point, she brought in a consulting team from Rational Software to configure ClearQuest to meet Aspect's requirements. "We had very complex requirements, but they did an outstanding job," she says.

Migration...

The largest challenge Brown's team faced was in migrating enormous amounts of legacy data into ClearQuest. These legacy defect tracking systems contained over 30,000 records and 60 fields that had to be migrated. "The UNIX system produced the most challenges," Brown recalls. "We had to write two parsers to migrate the data successfully. The first was designed to traverse the data into a flat file format. The second translated the flat file using mapping rules to ensure correct input format for ClearQuest." The migration would not have been possible without ClearQuest's customizability. "Very few products offer the customizability provided in ClearQuest," Brown notes. "ClearQuest enabled us to add whatever fields and rules we needed, and ensured we were able to migrate all the necessary data from our legacy systems."

ClearQuest Shines in Analysis, Reporting, Ease of Use

During the pilot project, Brown and other members of the project have seen some of the key benefits ClearQuest provides:

▶ **Powerful trend analysis.** "We can analyze data in the system on reported defects to assess where problems lie and determine what we need to do to avoid recurrences," Brown says. "What is the problem area that we need to concentrate on? ClearQuest helps us answer that. That's an important capability I did not see in a number of other defect tracking tools. With ClearQuest, we have trend analysis data that helps us to concentrate on what we did wrong with the initial product. So for example, if we see that a particular component within a product is failing, we can study the data and possibly determine why. Is it because of poor design? Because of a poor development process? By analyzing the cause, we have an important tool for improving our products in the future."
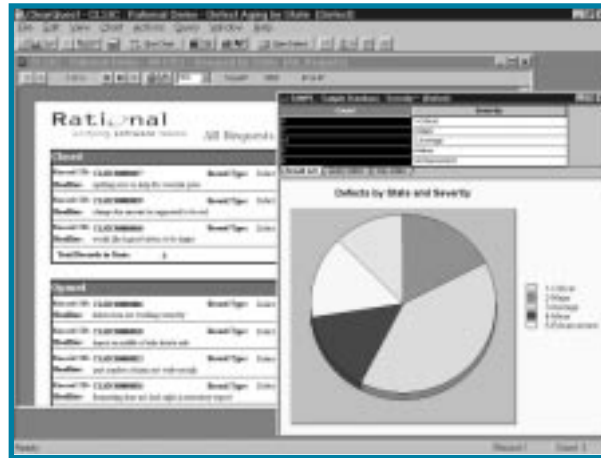
▶ Rational ClearQuest's reporting and charting capabilities provide valuable insight into project status.

▶ **Productive reporting.** ClearQuest significantly increases the productivity of Aspect's development managers by enabling them to easily generate reports. "With our legacy system, managers had to write scripts to format their reports in a way that was useful. With ClearQuest, they can extract the data they want and quickly build a report using Seagate Software's Crystal Reports report generation software. It's just a matter of clicking a button and they can get all the data they need."

▶ **Customizable GUI that 'makes sense.'** Brown notes that with ClearQuest, it is very easy to group fields logically as a user might expect. "We have organized every screen so that their fields logically correspond to the task at hand. For example, when a user submits a defect into the system, it gives them a submit form screen with only the fields they need. When users transition from one state to the next, they are presented with a screen that has only those fields they need for that state. So in total, our ClearQuest system may contain upwards of 70 fields, but for any one screen, a user may need to deal with only five or six. They don't have to worry about the other fields they don't need to deal with."

"Our ClearQuest system is very easy to use, and therefore entails less effort in terms of training people. Filing a defect has never been simpler."

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◗ **Minimal training requirements.** "Our ClearQuest system is very easy to use, and therefore entails less effort in terms of training people. Filing a defect has never been simpler."

◗ **High-performance Web interface.** "ClearQuest's Web interface is pretty awesome in terms of enabling our remote users to use the system effectively," Brown says. "This is something a lot of our support engineers will capitalize on. When they travel to user sites and configure systems for our internal customers, they can easily connect their laptop up to the network and file a defect."

In the near future, Aspect will integrate its ClearQuest change request management system with its ClearSupport system for logging customer calls. "That will set the stage to enable us to expand our ClearQuest system to track more than just defects and enhancement requests – we could track customer issues as well," Brown says. "We could maintain each kind of tracked item — defects, enhancements, issues — in a separate database for greater flexibility and efficiency."

With the pilot phase of the project now complete, the next step is the full ClearQuest implementation. Spanning over 500 users, this rollout is expected to be completed by the third quarter of 1999. Eventually, the deployment base is expected to expand to over 1500 users.