



Case Study: Applied Biosystems

LIFE SCIENCES LEADER: APPLIED BIOSYSTEMS

CollabNet's collaborative development platform helps Applied Biosystems bring remarkable new products to market with reduced development costs.

AT-A-GLANCE

Applied Biosystems faced challenges similar to many IT organizations: the business continually demanded new products, rising costs drove management to employ offshore resources, disparate tools impeded developer productivity, and the existing infrastructure and processes did not support globally distributed development.

To address these challenges, Applied Biosystems required a solution with an effective mix of tools and processes that could help deliver quality software and meet the quickly changing business needs. Using a mix of Agile processes and offshore development resources, the company deployed SourceForge Enterprise Edition and delivered world-class software for its products.

INTRODUCTION

Applied Biosystems, develops the largest, most comprehensive and integrated portfolio of instrument-based systems in the life science industry, with 2006 sales of \$2 billion.

Its business is organized into markets including basic research, commercial research (pharmaceutical and biotechnology), and standardized testing, including forensic human identification, paternity testing, and food testing. Among its customers, pharmaceutical and biotechnology companies use Applied Biosystems' products to discover and develop new drugs more effectively. The company has an installed base of approximately 180,000 instrument systems in nearly 100 countries, in over 30,000 laboratories.

Applied Biosystems' software engineering develops advanced firmware and intuitive user interfaces for its products, such as the new StepOne™ Real-Time PCR (polymerase chain reaction) System developed by a group within the Molecular and Cellular Biology Division. Real Time PCR is a laboratory technique used to simultaneously quantify and amplify a specific part of a given DNA molecule. For this product, SourceForge Enterprise Edition was used as the Collaborative Development Platform to manage the development of the embedded software application and user interface.

CHALLENGES

In the summer of 2005, the Real-Time PCR organization was challenged to both cut costs and improve delivery of the development of its firmware software products. Management mandated use of an offshore location in Singapore. The group also faced issues with its software development infrastructure:

- Software configuration management (SCM) engineers were spending over 50% of their time managing the development infrastructure, rather than supporting software developer's processes and tools.
- Development teams were using varied and disconnected project management, requirements management, and test management systems and processes.
- Teams were unable to effectively trace functional specifications and product test to original requirements.
- The organization was not able to meet the needs of globally distributed development teams.

SOLUTION

Applied Biosystems Software Engineer Process Group, lead by Brian Plew, Director of Software Development, launched an effort to select tools and processes to address these challenges. Following an evaluation, his team chose SourceForge Enterprise Edition over competitive products for a number of reasons:

CHALLENGES

Excessive time spent managing infrastructure, rather than supporting development process and tools

Varied and disconnected development systems and processes

Lack of traceability from original requirements to functional specs and products tests

Supporting the needs of globally distributed development teams

SOLUTION

SourceForge Enterprise Edition delivered as a managed service

Support and Professional Services

RESULTS

More than 500 employees in multiple continents use SourceForge Enterprise Edition for change management, software configuration management, document management, and collaboration.

Operational cost savings of approximately \$430,000 in the first year.

By standardizing its software development infrastructure on SourceForge Enterprise Edition, Applied Biosystems has improved communication between global development sites and better managed its release process.

- SourceForge Enterprise Edition provided a hosted solution for software configuration and document management that would both cut costs and relieve the support organization from managing the infrastructure.
- SourceForge Enterprise Edition offered ease of integration with existing tools. At the time, Applied Biosystems used SCM tools including Subversion and CVS to manage code, Open Source tools such as XPlanner and TikiWiki for team management and collaboration, and Serena TeamTrack for issue tracking.
- The SourceForge Enterprise Edition sales and services teams were extremely responsive to Applied Biosystems' requirements and requests for future SourceForge Enterprise Edition capabilities.

Starting with approximately 240 SourceForge Enterprise Edition developer seats, Applied Biosystems began its rollout of SourceForge Enterprise Edition with several pilot projects. The criteria for a pilot project were:

1. The project team must use SourceForge Enterprise Edition exclusively for their development effort - essentially replicating their existing environment with the single integrated toolset;
2. A distributed project with presence in Asia;
3. The project includes external partners.

A project led by Software Development Manager, Mike Pallas, was selected as the primary pilot candidate. Following a one day training class, the teams were up and running.

Change isn't easy and there was certainly resistance from some Applied Biosystems developers. Pallas' attitude was "If it works, it will sell itself." Following the pilot period, he was able to convince staff from both the development and validation and verification (V&V) organizations by offering voluntary participation and à la carte adoption of SourceForge Enterprise Edition capabilities. Various integration to legacy tools were provided to those teams that weren't ready to make a complete move.

Running an offshore project requires effective communication and collaboration. Most offshore projects employ traditional waterfall development processes, passing deliverables from the customer site to the offshore team by phase of development. But Pallas' organization had begun using Agile processes to improve its effectiveness, and didn't want the offshore requirement to impede that progress. Why not use Agile processes offshore as well?

Pallas' projects used Scrum to help manage the distributed teams, holding daily standup meetings to discuss progress and managing development in three week iterations. Adapting Scrum to the offshore environment required all teams to be flexible. Several times a week, the Singapore team came in early and California teams worked late to hold a single standup meeting. Recently, Pallas has expanded his Agile focus and introduced some Extreme Programming (XP) practices, including test-driven development and continuous integration. His goal: remove the manual steps in the SCM, build management, and unit testing processes to further improve the collaborative development process. SourceForge Enterprise Edition's capabilities, including its issue and change tracker workflow, automated monitoring, and integration with tools like CruiseControl and Subversion, are well-suited to these Agile techniques.

RESULTS

Applied Biosystems' initial metrics around SourceForge Enterprise Edition focused on two categories: cost reduction and user adoption. The cost analysis was straightforward: by leveraging SourceForge Enterprise Edition's hosted model, Applied Biosystems was able to cut costs (software licenses, hardware environment, staffing) by approximately \$430,000 in the first year. Moreover, the SCM support teams were able to provide value-added services to development teams, rather than maintaining the legacy infrastructure.

Adoption rates are easily visible. After one year, over 200 people across the development, V&V, and business organizations were using SourceForge Enterprise Edition on 180 projects. In fact, 60 percent of developers use SourceForge Enterprise Edition exclusively for their global development environment.

"SourceForge Enterprise Edition has significantly improved the communication between our Singapore and California development teams. The integrated tracker and Subversion SCM tools have allowed us to better manage our release process and issue management," said Mike Pallas, Software Development Manager at Applied Biosystems.

FAST FACTS

Applied Biosystems products and services serve the life science industry and research community, as well as other markets, including basic research; pharmaceutical and diagnostic discovery and development; biosecurity testing, such as infectious disease analysis; human identity testing, which include forensic and paternity testing; and food and environment quality and safety testing.

Headquarters: Foster City, CA

Employees: 5,000

Industry: Life Science

Problem solved: globally distributed software development

What's most notable is the grassroots use of SourceForge Enterprise Edition outside of the development organization. Based on recommendations from developers, 300 additional users in product development groups such as Chemistry and Instrumentation are using SourceForge Enterprise Edition for project management, document management, and collaboration for their projects.

"SourceForge Enterprise Edition is just taking off. Once users see the advantages SourceForge offers for their core activities, they are pushing themselves to use the tools in new and creative ways," said Thomas Reeves, IT Operations Manager at Applied Biosystems.

LEARN MORE ABOUT COLLABNET

CollabNet provides the most widely used platform for distributed development with over 1.2 million users. The company transforms the way software is being developed by enabling organizations to leverage global development talents to deliver better product and innovate faster.

More than 350 companies use CollabNet solutions today as the foundation for their collaborative development, off-shoring, open source, and partner co-development efforts. Founded upon open source principles, CollabNet is the primary sponsor of the Subversion open source project, the next-generation version control system and sole leader in stand-alone SCM in the "The Forrester Wave™: Software Change and Configuration Management, Q2 2007".

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