

## Industry-leading practices modernize legacy public health software system

**Employing best practices in Application Lifecycle Management (ALM) and product delivery, Deloitte delivers a new Medicaid and welfare management system to the State of Montana with unprecedented efficiency**

*Facing a tight deadline, the Deloitte team needed to modernize a complex government human services system for the State of Montana. Using Jama, a collaborative requirements and test management tool, Deloitte utilized their leading practices to provide the client with the requirements and test management and end-to-end bidirectional traceability needed to produce a high-quality product while reducing risk.*

The State of Montana brought in Deloitte to revamp its public assistance eligibility software system that's administered by the Department of Public Health and Human Services. The system, called The Economic Assistance Management System (TEAMS) — a mainframe system, needed a major upgrade, and the State of Montana had a vision for a thoroughly modern system.

### The challenge

#### Complex project, tight deadline

Deloitte is no stranger to delivering complex software systems, but this project posed a few challenges. System modernization projects are complex and tough, with multiple legacy systems to navigate. For this project, the State of Montana had an extremely tight deadline.

#### Results summary

- Delivered a complex government human services system
- Managed thousands of requirements and test cases within the project
- Accurately traced design elements to requirements, test cases, and defects
- Saved money by using Jama for both requirements and test management
- Replaced documents and spreadsheets by using Jama as a user-friendly solution
- Established Jama as a new leading practice for ALM/product delivery

The team at Deloitte had to act fast without sacrificing accuracy or quality of their work.

The State of Montana spent several years identifying the business needs and system requirements for the CHIMES project. There were over 10,000 requirements and test cases exceeded 5,000. The Deloitte team assessed the situation:

- Timelines were tight; speed without sacrificing accuracy and quality was important.
- The team was geographically dispersed around the world; real-time collaboration was critical.
- Efficiency was vital to delivering this project.

They appraised the massive volume of requirements and test cases and realized that in order to track this information throughout the software development life cycle, they simply could not work the old way. The traditional manual approach using documents and spreadsheets would not suffice.



The software system environment demanded a more robust and specialized solution that does the following:

- **Manages requirements effectively.** More than 10,000 requirements demands a solution specifically designed to handle this task.
- **Traces requirements to design elements.** The system designs drive what the software will do and what the development team will build. Each one of the 10,000 requirements for the CHIMES system had to be accounted for and traceable back to a corresponding design element. The project team planned to compare coverage in a traceability matrix, which they could frequently update at each phase of the project.
- **Define quality and track defects to tests.** The project had more than 5,000 test cases, each of which had to be executed to confirm the software system worked as it should and met Deloitte's high standards of quality. Defects highlighted from the testing needed to be resolved properly.
- **Integrates with JIRA for end-to-end traceability.** The development team used a tool, Atlassian JIRA, to track project issues and defects. JIRA needed to integrate tightly with the requirements management solution to connect product planning with product development, affirm consistency of data, and produce end-to-end traceability from high-level requirements through to defects and tasks.
- **Intuitive to new users to manage user acceptance.** The State of Montana has a rigorous sign off procedure for software systems that includes a User Acceptance Test (UAT). For Deloitte to convince the State of Montana that the tool-aided testing was effective, the new solution had to be intuitive and easy to learn. Training the 75 UAT testers could not take more than a few hours of instruction, and the testers had to have a positive experience.
- **Configures to real-life scenarios.** Deloitte knew the UAT phase may likely make or break the project. Client

acceptance was critical. To give the State of Montana confidence that the system was ready for prime time, the team had to devise a user experience for the testers that mimicked how the system should work once deployed so they could confirm the system worked as designed. With the sheer number of requirements and the breadth of the system, the Deloitte team needed a solution to help them determine what to test and where to focus.

### The solution

Deloitte and the State of Montana agreed that Jama was the solution for their requirements-management, traceability, and testing needs. With Jama, the project team gained visibility into the requirements within the designs. They confirmed traceability to designs and test cases. They found documents were ill equipped to manage large data sets, and automated the process. They delivered a high-quality system that passed the test with the State of Montana. In fact, they saved money: Initially, Deloitte and the State of Montana thought they might need to purchase a separate point solution to handle test management. With Jama's native test management capabilities integrated with requirements management in one solution, this was not required.

Using Jama, Deloitte met the deliverables of the project with several tangible benefits:

- **Requirements validation** — The first milestone for the project was to analyze the 10,000 requirements and distill them to what was going forward into design. Jama provided an efficient and effective method for analyzing requirements. Working closely with the State of Montana, the Deloitte project team was able to efficiently and effectively review and incorporate client input. By taking advantage of Jama's automated import/export round-trip feature and customizable workflows, the project team accelerated the review and approval process.
- **Traceability** — Using the traceability reports in Jama, the project team uncovered orphan requirements and made sure that they were pulled into design. After they completed the design, they used the same features to make sure that the remaining designs had proper test coverage. The reports provided a requirements traceability matrix at critical points in the project so that the State of Montana and its independent verification and validation vendor could verify that requirements were being met by the design, and that testing provided acceptable coverage.
- **Test case management** — Jama provides test management features that tightly integrate with its

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“This was a very complex project. There were over 10,000 requirements and test cases exceeded 5,000. We used Jama to manage and collaborate successfully with our client through requirements, design, system, and user acceptance testing.”

— Kenneth J. Smith, Senior Manager

requirements management capabilities. The Deloitte team saved substantial time and effort using the version control features in Jama to make updates to test cases directly in the solution instead of having to resubmit updated deliverables to the State of Montana team. In addition, test management proved essential in demonstrating that the system met end-user criteria.

- **Seamless connectivity with JIRA** — Jama has an optional connector with JIRA, which the team opted to use. The testing team was able to report defects directly from Jama while executing test cases, which aided their efficiency mission. Additionally, the defects were tied to the test case so that the team could evaluate the test cases impacted by defects. If the same defect impacted multiple test cases, they could be traced to that defect. This allowed the test team to prioritize defect fixes based on the number of test cases impacted by a particular defect. As the development team updated JIRA, Jama captured their updates.
- **Ease of use and rapid adoption** — The Deloitte team demonstrated Jama to the UAT department within the State of Montana, which grasped the benefits of Jama for user testing. They also witnessed how easy it may likely be for their testers to do the test execution. The Deloitte team trained more than 75 UAT testers, and each was able to effectively run a test case after just two hours of instruction, with much of the training focused on proper defect reporting, not on navigating an unfamiliar software interface. The Jama system was easy to use and intuitive to those involved in the project.
- **Transparency between teams** — Communication and collaboration were the keys to the transparency between the Deloitte project team and the State of Montana's project team. Deloitte was able to stay in constant contact with both the team members and the vested stakeholders in the project's achievements with Jama's embedded collaboration capabilities.



## Results

Deloitte helped the State of Montana execute on its vision for a modern public assistance management system by upgrading TEAMS within the State of Montana's deadline. The system exceeded expectations due to Deloitte's experience and leading practices in the modernization of legacy systems, particularly in the areas of requirements and test management. Using Jama, the project avoided the use of documents, spreadsheets, and communication challenges that are sometimes common throughout a project's life cycle. In addition to effective project completion, Deloitte realized several goals in working with the State of Montana:

- Efficient and effective administration throughout the life cycle of the project
- Full traceability to affirm design requirements were fulfilled and sufficient test coverage
- Clear communication and transparency
- Client achievements in upgrading a complex, extensive software system in a compressed deployment timeline

Deloitte, with the help of Jama, met the demands of a complex project delivering real business value to the State of Montana. As a result, Deloitte has developed leading practices they can deploy on similar projects using Jama to develop complex systems for other states.

## About Jama Software

From concept to launch, the Jama product delivery platform helps companies bring complex products to market. By involving each person invested in the organization's achievements, the Jama platform provides a structured collaboration environment, empowering everyone with instant and broad insight into what they are building and why. Visionary organizations worldwide, including SpaceX, the Department of Defense, VW, Time Warner, GE, United Healthcare, and Amazon.com, use Jama to accelerate their R&D returns, out-innovate their competition, and provide business value. Jama is one of the fastest-growing enterprise software companies in the United States, having exceeded 100% growth in each of the past four years, during which time both Inc. and Forbes have repeatedly recognized the company as a model of responsible growth and innovation. For more information, please visit [www.jamasoftware.com](http://www.jamasoftware.com).

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