SoftSol Delivers Key Application for the World's Largest Steelmaker

CASSIS Highlights:

- 350,000 Requests/Day
- 24 X 7 availability; 1 hr/month scheduled downtime
- 34 Cranes; 29 Stocks
- Apprx. 1 million lines of code
- 7000 person days of effort; Fixed bid, deliverables-based contract

Background

ArcelorMittal is the largest steel making entity in the world, producing more than 100 million tons annually. It operates globally in 60 countries and employs over 300,000 workers. ArcelorMittal manufactures the full range of steel products: slabs and coil, coated steel and tinplate, wire rod and rebar, billets and blooms, and multiple stainless steel products.

ArcelorMittal's Bremen, Germany, (AMB) plant relies on an application called CASSIS to manage its entire stockyard operations, synchronizing the intricate activities of steel production with the orders received from customers. The application uses a graphical representation of AMB's multiple stockyards to log the precise location and description of each slab or coil. The system interfaces with a CRANE client, through which it directs every action carried out by the actual cranes that lift and relocate the steel product.   A positioning device installed on each crane provides the spatial context for these instructions, recording the exact physical coordinates of each barcode-labeled piece of inventory.

A second interface to a PDA client enables workers on the ground to manually categorize and store any unlabelled steel product that enters the stockyard. Supervisors manage all of these operations from a desktop client interface employing a complex graphical user interface with mapping features.

Characteristic of any commodity industry, efficiency is the lifeblood of ArcelorMittal's business. Therefore, in the case of CASSIS, there was almost no margin for error in functionality, performance, or reliability.

Challenge

AMB built CASSIS over several years on a technology that had recently entered a manufacturer-imposed sunset phase. With future plans for enhancement and an ongoing need to scale and integrate with new technologies, AMB needed to migrate CASSIS to a versatile modern technology platform and eliminate the risks to reliability and performance associated with an outdated technology platform.

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Though some inherent differences between platforms were a given, AMB required a solution that fully retained all existing functionality and closely replicated the look and feel of the original application. This would avoid the costs and service interruptions related to user training in the modernized system.

Another challenge associated with modernizing CASSIS was limitations in existing documentation. Portions of the functionality had not been fully captured and the documentation that did exist was written in German. Any company carrying out the migration with non German speakers would need to be able to automatically extract the business logic from the existing application.

Additionally, AMB identified the following objectives for the project:

- Reduce development complexity
- Address current architecture complexity
- Match improve the performance in comparison to the existing application
- Provide scalability, failover and run-time stability
- Provide consistent transaction management
- Support the existing security policy
- Provide consistent error management
- Provide deployment flexibility
- Facilitate maintainability

SoftSol's Solution

SoftSol's solution combined automated migration tools and an advanced software development team to migrate CASSIS to a Microsoft .NET platform. SoftSol worked with AMB's IT teams to design a target architecture that served the scalability and security objectives for the project.

Once the architecture had been finalized, SoftSol customized the migration tools to accommodate coding standards in the existing application and conform to AMB's preferences for the target. SoftSol's automated migration tools resolved the challenge

associated with limited documentation and language barrier by accurately extracting the business logic and replicating it in the new application.

In order to simplify the application architecture, SoftSol manually developed the CRANE and PDA screens. This also enabled AMB to leverage native UI features in the target technology.

To fully verify performance and functionality, SoftSol performed system integration testing, performance and load testing, functional testing and deployment testing to ensure that the application works correctly on clustered production servers.

Results

SoftSol delivered the migrated application to AMB in 10 months for user acceptance testing. The interfaces for the new CASSIS application supported the overall SOA architecture implemented at AMB.

The solution met AMB's requirement for maintainability and functionality and laid a foundation for a scalable, future-proof implementation.

The following are other benefits ArcelorMittal derived from the solution and target architecture:

- It further removed the complexities involved in the legacy architecture by eliminating some layers and components.
- The architecture adapted native .NET controls, making use of the existing frameworks for the GUI. These controls use native c# code, known for its flexibility to adapt to future changes.
- It incorporated bridges to address communication existing systems and the .NET environments.
- Network load balancing ensured reliable service and strong performance of the system

About SoftSol

SoftSol specializes in taking IT to the next level. We are the one-stop source for the tools, people, and processes that multiply the return on your IT investment.

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Enterprise technology modernization is SoftSol's core specialty. This service combines automated tools and an innovative methodology to migrate legacy systems from outdated platforms to the latest technologies. In the process, vital business knowledge confined by the limitations of antiquated technology can be renewed for improved compatibility, functionality, and protection against accidental obsolescence.

Because SoftSol is also a premier custom software development shop, we leverage the latest technology innovations to enhance the versatility and efficiency of both individual applications and entire enterprise systems. Web-enablement, SOA, and cloud hosting are some of the ways SoftSol can assist IT organizations in achieving their unique business objectives.

Closely associated with this modernization focus is SoftSol's data service. Enterprise technology modernization initiatives often require data consolidation, cleansing, and migration. SoftSol assists in each of these strategies, laying the right foundation for effective data integration with new systems. The natural accompaniment to such data initiatives is a comprehensive business intelligence solution, providing the analytical and reporting tools to glean strategic insight from the full body of enterprise data.

Because SoftSol offers most of these solutions within a deliverables-based service model, efficient application testing is a constant internal emphasis. For this reason, SoftSol developed a proprietary test automation framework that dramatically improves the depth of coverage, efficiency of test script development, and the speed of executing regression test cycles (up to an 80% effort reduction over manual testing). SoftSol now provides this solution directly to clients as an end-to-end managed test automation service, enabling customers to apply the same rigorous quality standards to their own internal applications that SoftSol delivers for leading IT organizations in both industry and government.

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