



Client



COLUMBUS
STAINLESS
—[Pty] Ltd—

Challenge

Agile, profitable production of stainless steel, a complex process with hundreds of variables

Solution

Progress Corticon for responsive and cost-effective business rules management as part of their steel production planning and management system

Benefit

Agility in stainless steel production; the ability to maintain high margins in an accelerating market environment

Whether it's washing the dishes or taking a shower, most of us use stainless steel products many times throughout the day. The substance is so ubiquitous and uniform that it's tempting to think of it as a dull industrial commodity—if we even think about it at all. The truth is that stainless steel is a marvel of metallurgical science that's extremely difficult to make. Producing it profitably, in high volumes, and with enough agility to keep pace with accelerating shifts in market demand is a tour de force of materials handling and production planning.

This was the challenge faced by Columbus Stainless when it decided to replace its aging production planning system. Columbus Stainless, part of the Acerinox group, is the only producer of stainless steel flat products in Africa. Flat stainless steel is formed in coils and used in the manufacturing of thousands of everyday products. Serving both domestic and global markets, the group also has plants in Spain, North America and Malaysia. Columbus Stainless operates in a competitive market, with volatile raw material prices and tight margins that require a highly flexible manufacturing production process.

Re-engineering production planning for rapid fire change, Columbus Stainless' unique market conditions and production challenges necessitated an equally agile business system that could facilitate the planning, optimization and execution of the manufacturing process. However, the company's legacy system for production planning was aging, and decreasing skills availability and high maintenance costs drove a decision to replace and re-engineer the production planning system with one developed in-house.

Re-engineering the production planning process would allow for rapid change and more effective working practices, which in turn would lead to an increase in production volumes. Because responsive control of materials flow is the key to a cost-effective manufacturing system, the design of the new system had to focus on tracking, controlling and optimizing these flows during the production process.

Building the new system was a significant challenge. The production of stainless steel involves a wide range of control variables, including differing chemical compositions, mechanical properties, physical properties and surface finishes. To address the challenge, Columbus Stainless selected Progress® Corticon® Business Rules Management System. Corticon has a patented "no-coding" rules engine that automates sophisticated decision processes. Corticon, distributed throughout Sub Saharan Africa by AIGS, enables organizations to increase efficiencies, operate more responsively, reduce rule development and improve cycles by up to 90%.

"There are actually too many variables to catalogue," says Alfrieda Robertson, the former Technical Project Leader who is now an external consultant with a BPM firm. "To get the agility we required, we needed a business rules engine that could operate within a highly multifarious, technical environment. We evaluated all the options, and Progress Corticon ticked all the boxes. It could support all our rules, no matter how intricate."

Automating Rules And Logic In Business-Friendly Terms

"When replacing an existing business system, the principal challenge lies with the vast number of business logic and rules captured in the source code of the old application over many years of adaptation,"

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said Tienie de Klerk, Columbus Stainless Business Systems Manager and Technical Project Manager, who had been involved with evaluating Corticon during the prototyping and proof of concept phase. "Fortunately Corticon automates these business rules and logic in business friendly terms understood by those who have to operate and maintain the system without having to understand the underlying programming conventions of the application code."

Previously automated business rules were coded directly into applications as business logic. Columbus Stainless wanted these rules externalized from the code, allowing business personnel to change, build, and integrate the logic as easily as decision services while still meeting enterprise performance and scalability demands. This would ultimately allow the business analysts full control of daily operations and business rules without any involvement from program developers.

"We didn't want to put this tool into the hands of IT people—we wanted the business people—the decision-makers to use it," Robertson explained. "Corticon distinguishes itself from other Business Rules Engines because it is much more than just the standard table lookup mechanism—it manipulates datasets and allows for complicated calculation and algorithms. As an added bonus it was the most user-friendly option for end users."

Teaming IT and Business For Implementation Success

Due to the strategic impact of the project on the future of Columbus Stainless, the company made a somewhat unorthodox decision to appoint an internal IT Project Manager partnered with a joint Business Project Manager with equal authority. This partnership demonstrated the value of the business representation internally and changed the project from an IT Technology initiative, to a business-driven Strategic Objective.

“It was empowering for both the industrial engineers and the IT staff,” Robertson said. “If you consider how long the legacy systems had been in place, you can imagine how long it would have taken for a new developer to read the old code and start changing things. By taking out the business logic and putting it into the hands of the industrial engineers who understand the policies, processes and underlying business logic that has to be implemented, it allows the development team to focus on their expertise without having to master the entire business platform or build algorithms around all its complexities by looking up tables to get an answer. This accelerates the entire development process.”

“Progress Corticon is a really easy system to install and operate,” de Klerk also noted. “Once Corticon is installed and configured, the development of rules is done in non-technical variables and most users quickly grasp the system. In addition, the separation between application code and the business rules and logic allowed for a parallel development cycle where the industrial engineers could develop and test the business rules while the main business application was still under development. This significantly reduced the development time.”

Business analysts and industrial engineers worked with IT at each stage of the design process. The engineers were empowered to manage the entire rule authoring process from inception to deployment without having to master a technical programming language or the

complex interactions of rules. The people who understand the business best were driving the business. With rules extracted from the system, the team also gained greater visibility. Robertson likened the old legacy system to diffusing a bomb by pulling different wires. “Now, everything is transparent and we can see exactly what the rules are built on.”

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Discovering New Testing Capabilities

Corticon allows for ample testing once rules have been changed. “The process creates vast amounts of products, finishes, shapes and grades,” de Klerk said. “During development, we couldn’t test every scenario. Manually, we might have tested one or two. With Progress Corticon, you can change rules and run through all predefined scenarios to see whether you’d get the same result, assuring that the rule sets driving the company’s operations are accurate.”

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Tienie de Klerk
Business Systems Manager and Technical Project Manager
Columbus Stainless

Conclusion

Corticon delivers a flexible and agile IT environment to a complex, and fast-changing manufacturing operation and still remains business friendly. As one of the IT project managers succinctly put it, “A successful Business Rules Management System (BRMS) does not just involve implementing the IT solution, it also focuses on process ownership and developing a common understanding of the business processes and partnership between business and IT.” Columbus Stainless’ collaborative approach demonstrates exactly that. The proof of the project’s success has been seen as Columbus implements Corticon at other facilities. In each case, the business-oriented nature of the rules allowed for remote support of the system despite timezone differences and language barriers.

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“Progress Corticon was the most user friendly option for end users. They loved the power we put in their hands.”

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About Progress

Progress (NASDAQ: PRGS) is a global leader in application development, empowering the digital transformation organizations need to create and sustain engaging user experiences in today’s evolving marketplace. With offerings spanning web, mobile and data for on-premise and cloud environments, Progress powers startups and industry titans worldwide, promoting success one customer at a time. Learn about Progress at www.progress.com or 1-781-280-4000.

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