

CF INDUSTRIES

LABVANTAGE Harmonizes Processes and Documentation for Global Fertilizer Manufacturer

Company Background

CF Industries, headquartered in Deerfield, Illinois (USA), is a global leader in fertilizer manufacturing and distribution, serving both agricultural and industrial customers worldwide. It owns and operates six nitrogen plants in North America, making it the second largest nitrogen fertilizer producer in the world. It is the third largest phosphate fertilizer producer amongst public companies. In 2010, CF Industries acquired Terra Industries, Inc. To fully integrate Terra and maximize the effectiveness of the acquisition, CF Industries implemented LABVANTAGE's Laboratory Information Management Solution (LIMS).

Key Challenges

CF Industries is committed to providing its agricultural and industrial customers with a reliable source of nitrogen and phosphate fertilizers and industrial chemicals. Operating multiple plants in the United States and Canada, the company sought to standardize manufacturing, quality assurance, and laboratory processes and gain process improvements. The overall goal was to deliver a consistent product with identical documentation, regardless of its manufacturing origin.

According to Donald Thomas, director of technical service and quality programs at CF Industries, they first turned to the enterprise resource planning (ERP) software from SAP® to meet their needs. However, the company quickly learned that the SAP Quality Management module was limited in its ability to manage the types of analytical data that CF Industries handled on a daily basis. It would require significant customization to meet CF Industries's requirements.

Solution

After assembling a business requirements team and articulating very specific goals, CF industries evaluated several LIMS. The winning LIMS would have to seamlessly integrate with the existing SAP infrastructure and provide corrective action and preventive action (CAPA) capabilities. The LIMS had to ensure compliance with all standard regulations and customer product specifications. Also, the LIMS needed to introduce standard documentation and laboratory processes, whether product was shipped from a plant in Ontario, Canada or Oklahoma in the US. After a thorough seven-month evaluation process, CF Industries selected LABVANTAGE.

Why LABVANTAGE?

The business requirements team, which included representatives from corporate and plant-level IT, sales, customer service, and manufacturing/plant quality, defined system requirements. Specifically, the team sought a LIMS that provided:

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CASE STUDIES

- Traditional LIMS functionality that served as an application for best practices in raw and finished materials
- Comprehensive reporting tools
- Integration with CAPA process
- Integration with SAP
- Web access and scalability
- Interface with plant data historians
- Configurability to grow with CF Industries's longer-term needs

LABVANTAGE met those requirements as an out-of-the-box solution that, given a defined scope, could be deployed in a guaranteed timeframe.

In addition, CF Industries conducted reference checks on all LIMS vendors under consideration. This helped them understand LABVANTAGE's commitment to customer support, on-time and on-budget deployment, and general ability to deliver on its promises.

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MEETING CF's REQUIREMENTS

LABVANTAGE met CF Industries's key requirements for:

- Rapid, reliable deployment
- Seamless integration with SAP
- CAPA

Regarding CAPA, LABVANTAGE incorporates, out-of-the-box, the corrective and preventive actions needed to investigate and correct incidents and nonconformities throughout operational processes. LABVANTAGE CAPA remediates problems and prevents recurrence specific to CF Industries's needs and is fully integrated into the company's quality assurance and quality control processes.

Certified SAP Integration

LABVANTAGE has earned certification from SAP for its bi-directional interface to the enterprise resource planning system. CF Industries relies on a seamless interface between these two applications, as data shuttles back and forth to produce the product and documentation necessary to comply with its many customers' unique orders. Orders are entered into SAP, which houses all the critical customer master information. They are then shared with the LIMS, where product specifications, testing methods, calculations and reports reside. To eliminate human error, the LIMS performs all calculations and determines if the product meets specifications, then generates a Certificate of Analysis (CofA). CF Industries configured LABVANTAGE to flag any out-of-spec products and prevents a CofA from being created to ensure its product quality.

Thomas said two benefits of the SAP/LABVANTAGE certified interface are:

- The two applications “exchange information and execute transactions as if they were one system”
- Increased operating productivity between the lab, manufacturing, and corporate

Rapid Deployment

To meet the requirements for a reliable, rapid deployment, LABVANTAGE worked closely with CF Industries to leverage out-of-the-box functionality and avoid scope creep. LABVANTAGE is a single-instance application, deployed on a single server and accessed by users across the enterprise via a secure Internet browser. Single-instance deployment:

- Facilitates a quick implementation
- Enables enterprise reporting across all manufacturing sites
- Prevents site-specific customizations and violations
- Requires just one IT group to handle maintenance
- Provides a lower cost in terms of hardware and software

RESULTS

CF Industries went live with LABVANTAGE at two of its plants within five months, and all six plants were deployed by the end of 2010. Thomas reports that CF Industries is enjoying quicker response to information requests, as well as process improvements. They have found significant, immediate value with inter-site and cross-site data reporting. And feedback from the user community has been very positive, with reports that the LIMS is “extremely intuitive and user friendly.” Thomas said ease of implementation meant “those working the 11 (p.m.) to 7 (a.m.) shift on a holiday weekend” were well trained and ran into few problems. Training was accomplished via webinars, enabling each user to access the system from their own workstations.

LESSONS LEARNED

Thomas suggests the following steps can help ensure a successful deployment:

- Set realistic goals and objectives with milestone measurements, then target the focus of your team on achieving those goals and objectives. “Save the bells and whistles and more exotic stuff for later.” This avoids scope creep.
- Choose a configurable, off-the-shelf product with 100% browser-based infrastructure.
- Use as much out-of-the-box functionality as possible and leverage the LIMS deployment to harmonize processes and determine and standardize best practices.
- Include on your selection and deployment team the people who will use the system and need the information it yields. This helps secure buy-in.

In addition, CF Industries benefitted from LABVANTAGE’s project management and business analysis team to handle predefined configurations and support implementation. Thomas commented, “There was a strong team of people behind the software that continues to work with CF Industries even today as required to grow the application.”

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