CAZENA
THE FIRST SAAS DATA LAKE

WORTHINGTON INDUSTRIES

Cazena's SaaS Data Lake as a Service on AWS helped Worthington Industries succesfully complete their cloud migration and deliver measurable outcomes across the organization.

Worthington Industries
Manufacturing
Columbus, OH
https://worthingtonindustries.com

SOLUTION

• Cazena SaaS Data Lake as a Service

CHALLENGES

• Use data and analytics for manufacturing optimization, predictive maintenance, quality improvement and cost reduction
• Efficiently collect and analyze data from a wide variety of sources (machines, manufacturing plants, etc.)
• Stand up a modern enterprise Data Lake for advanced analytics with limited skills and IT resources

RESULTS

• Improved quality, productivity and throughput, by using data and analytics to optimize machines and processes
• Empowers organizational agility, with a unified Data Lake supporting a variety of maintenance, operations, quality, and business functions.
• SaaS model enables IT to support innovation efficiently and cost-effectively, with no additional staff or skills required

TECHNOLOGIES

CLOUDERA
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+ableau

INTRODUCTION

An Industry Leader in Steel

Since 1955, Worthington Industries has been North America's premier value-added steel processor, providing a broad set of capabilities, products and services for a variety of markets including automotive, construction and agriculture.

Worthington is the leading global supplier of pressure tanks and cylinders. The company manufactures an array of pressure cylinders products for industrial gas and cryogenic applications, transportation and alternative fuel storage, oil and gas equipment, and consumer brand retail products, including Bernzomatic, Coleman and Balloon Time. Worthington is an industry leader with a reputation built on quality, safety and regulatory compliance, ensuring the protection of employees, customers and industry.

CHALLENGE

Finding a Scalable, Secure and Simple Data Lake

Worthington Industries began its Data Lake journey in early 2018, as part of an ongoing initiative to increase quality and reduce costs. With many plants, many machines and many processes, finding even incremental opportunities for improvement or cost savings makes a big impact.

Machines and systems on shop floors produce massive amounts of data. The various formats and distributed systems meant that data often wasn't collected or reviewed until months later, and only then if there was a problem. The data collection process was silo'd and manual, which limited it's usefulness for analytics.

Worthington hoped to change that with a Data Lake. This would be a critical foundation for improving analytics on data from manufacturing machines, applications and processes. The team had already determined that these workloads wouldn't work in their existing SQL/BI environment. The data volume and variety demanded flexibility, lots of storage and capabilities for advanced analytics and machine learning.

The IT team saw an opportunity to use software based on the Hadoop/Spark ecosystem, which is designed to handle large data volumes, many formats and analytics variety. They started with an internal pilot in their datacenter, using the commercial Hortonworks software (since acquired by Cloudera).

But while the IT team could see the potential, they found the stack complex and time-consuming to manage. To be successful, Worthington realized they needed a Data Lake that was easier to use.

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THE SOLUTION

The SaaS Data Lake as a Service on AWS

A local referral led the Worthington IT team to evaluate Cazena's SaaS Data Lake as a Service on AWS. Cazena is a complete, end-to-end Data Lake delivered as private SaaS. That meant no new staff or skills would be required to manage or support the Data Lake, which was very appealing to the team, said Ken Kaufman, Director of BI and Analytics with Worthington, who led the project.

> *"The SaaS model for the Data Lake is important for us. My team previously spent a large portion of our time on troubleshooting platform performance, wrestling with security and connectivity issues, and managing upgrades. It was difficult to find qualified resources to help.*
>
> *We can now focus our time on the data engineering and analytics activities that will drive real value for our business."*
>
> *-- Ken Kaufman, Director of BI and Analytics, Worthington Industries*

Cazena quickly delivered a production-ready SaaS Data Lake on AWS for Worthington. The Data Lake is private, automated and single-tenant, optimized for Worthington's specific analytic workloads and requirements.

The SaaS Data Lake as a Service includes best-of-breed capabilities from AWS, Cloudera and others in a single solution. Cazena embeds many AWS products including Amazon Simple Storage Service (S3), Amazon Elastic Block Service (EBS), Amazon EC2, Amazon RDS and standard services such as Amazon VPC, AWS Transit Gateways, AWS Route 53, AWS Key Management Service and others. Cazena's SaaS Data Lakes deliver the benefits of all of these services, while abstracting the complexity of integration and ongoing operations.

powered by aws

The SaaS Data Lake was able to move into production quickly, paving the way for the migration of their DIY on-premises Data Lake to a Cazena SaaS Data Lake on AWS. Worthington used Cazena's built-in tools and hybrid gateways to connect their SaaS Data Lake on AWS with their datacenters. Then, the team easily migrated their data, workloads and applications. Cazena's software, automation and AWS expertise accelerated the migration.

The SaaS Data Lake requires very little administration from Worthington. IT manages user assignment and data governance. No other IT, DevOps or security resources are required, because everything is fully managed and monitored by Cazena.

Worthington teams use a variety of analytics tools and processes with the Data Lake. Some connect with their existing Tableau visualization software, or use built-in advanced analytics interfaces to power new applications and projects. Others use cases are more specialized, such as an internal tool that was developed to help managers visualize and track deviation from standard setup to track compliance and quality.

Collecting and storing everything in a single, unified Data Lake provides a comprehensive view across the enterprise and enables many different analytics projects

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Read other SaaS Data Lake as a Service success stories.

cazena.com/customers

OUTCOMES

Measurable Impacts from the Plant Floor to the Bottom Line

The SaaS Data Lake was quickly put to use, collecting data from the machines and processes across the company. It easily supports ingest of different data formats, low-latency streaming data collection, high-volume storage and advanced analytics capabilities. As anticipated, the data volume is significant. In just a few months, the SaaS Data Lake had four times the volume of data as their existing data warehouse. But data volume was never the main metric for measuring the Data Lake's success. Worthington focuses on the impact.

> *"For us, it's all about outcomes: improving quality, accelerating productivity and reducing costs. A SaaS Data Lake and managed service in the cloud helps our team work more efficiently to drive faster business outcomes from our data."*
>
> *-- Ken Kaufman, Director of BI and Analytics, Worthington Industries*

The first use cases for the SaaS Data Lake targeted quality improvement, a constant goal for manufacturers that encompasses many systems and processes. Other projects began as a result of demands for higher throughput, based on a successful product. Worthington experienced many positive outcomes from their SaaS Data Lake quickly, including:

• **Improved Quality.** The Data Lake meant the team could expose more detail in real-time to the quality team, so they could spot potential issues sooner. That's helped them spearhead resolution of quality issues faster, resulting in measurable cost-savings.

• **Improved Productivity.** The team has also used machine and shop floor data to increase productivity and throughput for in-demand products. By exposing and visualizing the shop floor data, the team can detect subtle bottlenecks such as machines experiencing recurring downtime or incorrectly cycling and causing delays. One plant quickly uncovered issues that helped contribute to capacity gains.

• **Higher Yield.** Additional visibility in machine settings has helped standardize and optimize how the operators process steel. One plant has experienced a dramatic decrease in scrap rates and is expecting to save hundreds of thousands of dollars annually.

• **Organizational Agility.** Analysts are also building tools on top of the Data Lake for use by maintenance, operations, quality, or business functions. Many more stakeholders stand to benefit from the consolidated manufacturing and machine data in the SaaS Data Lake. The output can be delivered in many formats, as summarized reports, data extracts or as interactive dashboards. The ease of access to data and early results inspired more ideas for use cases and applications.

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BEST PRACTICES & LESSONS LEARNED

SaaS makes a Measurable Impact for IT and Business

The Data Lake's ability to support near-real-time data visibility and advanced analytics has unleashed a variety of new tools and insights. Importantly, Worthington has been able to take action on these insights, making adjustments and measuring the result of changes to understand the impact on outcomes.

The SaaS Data Lake empowers IT to focus on more strategic activities, and enables them to use their budget most effectively. No new staff or skills were required to get started, and administration is simple. All patching and upgrades are included in the service. That also means Worthington always has access to the latest data and analytics capabilities.

Worthington Industries has proven that a SaaS Data Lake can make a big impact in a short time to accelerate outcomes, quality and innovation.

To learn more about this or other SaaS Data Lake success stories, please contact us.

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aws partner network

Advanced Technology Partner

ISV Workload Migration

Cazena + AWS ISV Workload Migration Programs

Migration success stories and fast outcomes have underscored Cazena's leadership in cloud Data Lakes. Cazena was named among the first Amazon Web Services (AWS) Partner Network (APN) Partners for the launch of the ISV Workload Migration Program (WMP) in 2019.

The program helps companies migrate Independent Software Vendor ("ISV") workloads to AWS so they can achieve business goals faster and accelerate their cloud journey. The WMP program provides additional resources to APN Partners, including technical enablement, migration funding to offset costs, and go-to-market support, making it easier to migrate more enterprise workloads to AWS.

The AWS WMP Program and Cazena address an increasingly common challenge in enterprise cloud migrations. Whether it's a new project or part of an ongoing transformation initiative, the migration of ISV workloads from on-premises data centers to AWS requires significant domain expertise in planning, execution, and optimization. Such migrations require an understanding of workload dependencies, application customizations, and AWS deployment options.

As the first SaaS Data Lake, Cazena offers specific software automation and expertise for data and analytics migrations, which often require additional DevOps skills for connecting to data sources and tools, and optimizing performance. As part of the program, Cazena worked with AWS to build a repeatable migration process playbook.

Cazena is proven and trusted. Enterprises rely on Cazena's SaaS Data Lake to migrate and run millions of analytics workloads on AWS, including data science, machine learning (ML) and artificial intelligence (AI), data warehousing, data engineering, and more.

Learn more about Cazena & AWS: Cazena.com/aws