NUCLEUS
RESEARCH

ROI Case Study: Redzone from QAD at Sauder Woodworking

ROI: 665%
Payback: 0.6 Years

ANALYST

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The Bottom Line

Nucleus found that Sauder Woodworking realized a 665 percent ROI with a 7.0-month payback period after deploying Redzone from QAD. The manufacturer faced delayed visibility into production, inconsistent shop-floor data capture, and limited ability to act on performance issues during the shift, resulting in a reactive operating model across parts of the shop floor. By deploying Redzone across Productivity, Compliance, Reliability, and Learning, Sauder improved labor productivity, increased overall equipment effectiveness (OEE), reduced maintenance and inventory carrying costs, and strengthened frontline execution. The deployment also gave operators and supervisors real-time visibility into hourly performance, helping the organization use shop floor data as a continuous improvement mechanism rather than a delayed reporting layer. Quantified benefits included approximately $4.8M in annual avoided labor impact, $400,000 in annual maintenance savings, a $3M reduction in inventory carrying costs, and a 76 percent reduction in e-commerce out-of-stock units. Looking ahead, Sauder plans to expand the value of Redzone by building on its use of ChampionAI and exploring tighter alignment between scheduling and shop floor execution.

The Organization

Sauder Woodworking is a U.S.-based manufacturer with a longstanding history in wood-based product manufacturing. Sauder Woodworking's early growth was rooted in church furniture manufacturing before the company expanded into broader ready-to-assemble product categories, including home office, entertainment, bedroom, storage, and related residential furnishings. Today, Sauder Woodworking operates as part of a broader family of manufacturing businesses with nearly 2,500 employees and annual revenue of $500M to $600M.

Nucleus calculated a 665 percent ROI with a 7.0-month payback period for Sauder Woodworking's deployment of Redzone from QAD.

The Challenge

As the manufacturer continued to evolve, cabinetry became an increasing focus for the business. This expansion increased the importance of production visibility, workforce consistency, and real-time operational data across its manufacturing environment. Leadership identified gaps in how production activity was captured and connected to performance data, limiting the organization's ability to act on frontline insights in real time and increasing the need for stronger alignment between operators, supervisors, and managers.

Before deploying Redzone, Sauder Woodworking had operational data available through its ERP environment, but the manufacturer faced challenges turning that information into timely, actionable insight on the shop floor. The data was only as strong as the information operators entered, leading to inconsistencies in how production activity was captured and reported. Integrating terminal-level production data into a centralized view was also difficult, limiting the organization's ability to connect frontline execution to broader operational performance.

Sauder Woodworking's production data was often delayed by 24 hours, limiting the manufacturer's ability to identify issues, align operators and supervisors, and course-correct during the shift.

The largest gap was the delay between production activity and management visibility. In many cases, operational data was not available until roughly 24 hours after the activity, limiting the organization's ability to respond during the shift. This created a reactive operating model where teams could review what happened after the fact but had fewer tools to identify issues, communicate priorities, or course-correct in real time.

Sauder Woodworking also identified a cultural challenge within its manufacturing environment. Historically, frontline operators had limited mechanisms for sharing feedback, raising issues, or engaging directly in continuous improvement. As the organization continued to modernize

its operations, leadership recognized that improving performance would require more than better reporting. It needed to strengthen the connection between operators, supervisors, and managers so production teams could work from the same information and address problems closer to where they occurred.

Sauder Woodworking needed more than better reporting; it needed a way to connect operators, supervisors, and managers around the same real-time production data so teams could address issues closer to where they occurred.

The Strategy

Sauder Woodworking selected Redzone from QAD after evaluating its ability to support shop floor modernization while integrating with the manufacturer's existing systems and operational workflows. The organization prioritized a platform that could be deployed quickly, integrate with current tools, and offer a practical cost profile compared with broader MES alternatives. Leadership viewed Redzone as a strong fit because it could deliver real-time production visibility and frontline engagement capabilities without requiring the cost, complexity, or extended implementation timeline often associated with larger manufacturing execution system deployments.

The manufacturer adopted a phased implementation strategy to manage change, validate the platform in production, and build internal deployment expertise over time. The organization began with a pilot in May 2025 within its IKEA-focused production environment, selecting the area because it provided a strong test case for asset utilization and OEE improvement. OEE measures how effectively manufacturing assets are used by accounting for availability, performance, and quality. At the time, the site was operating at approximately 50 percent OEE, indicating a meaningful opportunity to reduce downtime, improve throughput, and increase equipment productivity. Sauder Woodworking spent approximately 90 days stabilizing the initial deployment before using the results to support broader rollout. After the initial deployment and stabilization period, the area began running above 70 percent OEE from the start of 2026, giving leadership a measurable proof point to support continued expansion across additional production environments.

Following the initial pilot, Sauder Woodworking expanded Redzone to a second site in November 2025 and a third site in April 2026. The third deployment added another group of work centers and supported the final phase of the broader rollout. The manufacturer purchased all four Redzone modules, including Productivity, Compliance, Reliability, and Learning, but sequenced adoption to map to internal resource availability. Productivity was deployed first as the foundation for real-time performance management, while Compliance and Reliability were

introduced at the initial sites and planned for broader adoption as the rollout matured. Learning was positioned as an additional layer to support onboarding, skills development, and workforce readiness, with the final training program expected to be completed in August 2026.

Sauder Woodworking selected Redzone from QAD for its ability to deliver real-time shop-floor visibility, integrate with existing systems, and offer a more practical cost and deployment profile than broader MES alternatives.

Implementation was supported by a core internal team of approximately five to six people, including site-level Redzone leads who maintained their regular operational responsibilities while also supporting deployment. Sauder Woodworking also used Redzone coaching during the rollout to guide implementation, support change management, and train internal champions. Over time, the organization reduced its reliance on external coaching by developing an internal deployment capability, including a train-the-trainer model that enabled the final site to be implemented largely by internal resources. This approach was designed to lower long-term deployment costs while building the internal knowledge needed to support future expansion, including planned deployment at a sister company. Following deployment, Sauder Woodworking also established a dedicated Redzone team to support ongoing administration, adoption, and continuous improvement across the business.

The overall rollout followed an approximately 18-month plan across three factories, with leadership intentionally pacing implementation to avoid overwhelming the shop floor with too much change at once. The organization recognized that each site developed its own operating rhythm, user behaviors, and change management requirements. Rather than forcing a uniform deployment cadence, the manufacturer allowed each location to stabilize before expanding additional functionality. This disciplined approach helped the organization build adoption, reduce implementation risk, and establish a repeatable model for extending Redzone across additional work centers and business units.

Sauder Woodworking realized approximately $4.8M in annual avoided labor impact once Redzone-enabled productivity improvements were fully realized.

Primary Benefits

The primary benefits of Sauder Woodworking's deployment of Redzone include increased labor productivity and workforce efficiency, reduced maintenance and inventory carrying costs, and enhanced operational visibility and frontline execution.

Increased labor productivity and workforce efficiency

Redzone helped the manufacturer improve labor productivity and support workforce restructuring by increasing OEE and throughput, improving shift visibility, and supporting more consistent frontline execution. As part of broader operational changes, Sauder

Woodworking eliminated approximately 300 roles. The organization estimated that productivity improvements enabled by Redzone directly supported the elimination of approximately 100 roles by allowing the manufacturer to maintain output with fewer resources. Redzone also helped Sauder manage the broader workforce transition by giving operators, supervisors, and managers real-time visibility into production performance, helping teams stay aligned as staffing levels and operating requirements changed. At an estimated fully loaded labor cost of $48,000 per employee, this represented approximately $4.8M in annual avoided labor impact once fully realized. For ROI modeling purposes, Nucleus phased this benefit at 50 percent realization or $2.4M in avoided costs in Year one, followed by the full annualized benefit in Years two and three to reflect the timing of adoption and operational ramp.

Sauder Woodworking reduced maintenance-related spend by 10 percent against an approximately $4M maintenance budget, representing roughly $400,000 in annual savings.

The manufacturer also reported 15 to 20 percent near-term efficiency gains after deploying Redzone, supported by real-time visibility into hourly production performance. This improvement reflected early productivity gains from better shift execution, while the pilot area's increase from approximately 50 percent OEE to above 70 percent OEE indicated a broader improvement in equipment effectiveness that developed after stabilization and continued adoption.

Previously, operators and managers often had limited visibility into line output until after a shift or the following day. With Redzone, teams can now see whether they are on track in real time, identify when they are falling behind, and respond before lost productivity compounds. Sauder noted that the visibility itself created an immediate behavioral impact, as employees had a clearer understanding of performance expectations and could see how their work contributed to overall line output.

The organization also emphasized that Redzone's impact came from using visibility as a coaching mechanism rather than a punitive tool. Leadership positioned the platform as a "carrot, not a stick," giving operators a clearer voice and more control over their performance. Employees can now see when they are performing well, when they are struggling, and where they need support. This helped supervisors become better teachers and coaches, while also improving engagement on the floor.

Reduced maintenance costs

Nucleus found that Redzone improved Sauder Woodworking's ability to increase OEE by making small production losses visible and

actionable in real time. Prior to deployment, micro-stoppages and recurring machine-level issues were more difficult to isolate, which limited the organization's ability to understand where throughput was being lost. With Redzone, operators and supervisors can identify issues such as feeder disruptions, machine slowdowns, and recurring stoppage patterns as they occur. This has enabled Sauder Woodworking to move from after-the-fact downtime review toward more active production management during the shift.

Redzone enabled Sauder Woodworking to identify micro-stoppages, recurring machine issues, and feeder disruptions in real time, shifting production management from after-the-fact review to active issue resolution.

Nucleus also observed that improved production visibility strengthened the connection between operations and maintenance. With clearer data on machine performance, stoppage trends, and work order requirements, maintenance teams can better prioritize recurring issues and reduce reliance on anecdotal feedback. As equipment problems were addressed and performance trends became easier to analyze, the manufacturer reduced maintenance-related spend across supplies and labor time. The organization reported a 10 percent reduction against an approximately $4M maintenance budget, representing roughly $400,000 in annual savings. For ROI modeling purposes, Nucleus began recognizing this benefit in Year two to reflect the time required for equipment trends, work order prioritization, and changes in maintenance behavior to mature.

Reduced inventory carrying costs

Analysts found that Redzone supported Sauder Woodworking's broader inventory transformation by improving production flow, reducing excess inventory, and helping the manufacturer operate with a smaller physical footprint. Prior to the Redzone deployment, production schedules often emphasized avoiding changeovers due to the excess time lost during transitions, and unpredictable downtime further contributed to elevated safety stock levels for priority customers and programs. By improving visibility into downtime, micro-stoppages, and line performance, Redzone helped Sauder increase schedule confidence, reduce the need to buffer inventory as heavily, and improve flow through the manufacturing environment. Within its IKEA-related production environment, the manufacturer had approximately $5M in inventory carrying costs. Following efficiency and flow improvements tied to the Redzone deployment, the organization reduced its inventory carrying costs by approximately $3M. For ROI modeling purposes, Nucleus recognized the inventory carrying cost reduction in Years two and three to reflect the time required for production flow improvements to translate into sustained inventory optimization.

Redzone helped Sauder Woodworking improve product availability, reducing e-commerce out-of-stock units from approximately 50 to roughly 12.

Additionally, Redzone contributed to better product availability by enabling Sauder Woodworking to produce more consistently with fewer resources. In its e-commerce division, the manufacturer reduced out-of-stock units from approximately 50 in December to roughly 12, representing a 76 percent reduction. These gains were tied to improved production efficiency, stronger flow through the manufacturing environment, and better visibility into where constraints were affecting output.

Sauder Woodworking reduced inventory carrying costs by approximately $3M in its IKEA-related production environment after improving production flow and visibility into execution with Redzone.

Enhanced operational visibility and frontline execution

Redzone also strengthened frontline management by giving supervisors and operators access to live production information throughout the shift. The organization described this as a shift toward daily operational "vital signs," in which teams no longer wait until the end of the day or week to assess performance. Instead, managers can now see production status, line performance, and execution issues as they occur. This created a higher sense of urgency across the floor because employees had immediate visibility into whether they were on pace, where constraints were emerging, and what actions were needed to recover performance.

This real-time visibility also supported a broader change in shop floor behavior. Frontline teams became more engaged in performance management because the data was current, visible, and directly tied to daily execution. Sauder Woodworking reported that the tool helped stabilize finished goods inventory and better align output with forecasted demand, particularly on the ready-to-assemble side of the business. Overall, as equipment downtime decreased and output rates improved, the organization was better positioned to respond to upcoming changes in the forecast while maintaining stronger in-stock performance.

Key Cost Areas

The primary cost areas for Sauder Woodworking's Redzone deployment included the annual software subscription, one-time implementation and installation costs, internal deployment resources, coaching services, and shop floor hardware. Sauder deployed all four modules within the Redzone manufacturing suite, following an 18-month implementation supported by a core internal deployment team. Following deployment, the organization also dedicated four internal analysts to support ongoing administration, adoption, and continuous improvement. Additional costs included Redzone coaching and consulting during rollout, as well as recurring monthly or quarterly coaching to reinforce

usage over time. The manufacturer also invested in hardware such as TVs, iPads, and related equipment to ensure frontline employees could access Redzone at the point of work.

Lessons Learned and Looking Ahead

Sauder Woodworking identified several lessons learned that other industrial manufacturers should consider when deploying Redzone. The primary lesson was that Redzone should not be treated as a reporting tool or shop floor dashboard. Its value comes from using real-time data as the backbone for continuous improvement, daily management, and frontline accountability. For Sauder Woodworking, the platform was most effective when live information was embedded in production meetings, supervisors' routines, coaching conversations, and operational decision-making, rather than being viewed as a passive system for tracking performance.

Sauder Woodworking found that Redzone delivered the greatest value when treated as a continuous-improvement backbone, not simply a reporting tool or a shop-floor dashboard.

The organization also emphasized the importance of starting with a clear pilot and defining success before broader rollout. Sauder Woodworking selected an initial production environment in which OEE improvement could be measured, and used the pilot to validate both the operational value and the change-management requirements. From there, site ownership became critical. Each location needed local champions, consistent reinforcement, and accountability around how the tool would be used. The manufacturer found that every site developed its own rhythm, making it important to maintain standard expectations while allowing teams enough room to adopt the platform in a way that fits their operating environment.

Looking ahead, Sauder Woodworking is expanding its use of AI on the shop floor through Redzone's ChampionAI. The organization is beginning to identify additional value from AI-assisted support, including helping users access information, troubleshoot issues, and navigate the platform more effectively across sites. Feedback from operators has been positive, including adoption by less technical users who have used the chatbot to ask questions and retrieve information. This suggests that AI can help reduce support friction, improve user confidence, and make Redzone easier to scale across a broader frontline workforce.

Sauder Woodworking is also exploring how Redzone can support additional operational use cases beyond its initial deployment scope. The organization is evaluating opportunities to create tighter alignment between Redzone, scheduling, and execution processes, including how

schedule information can be brought into Redzone more directly as existing interfaces are replaced or modernized.

Calculating the ROI

Nucleus analyzed Sauder Woodworking's software subscription spend, one-time implementation costs, internal personnel time, coaching services, hardware costs, and ongoing administrative support to calculate the organization's total investment in Redzone. Direct benefits included avoided headcount costs from operational efficiency gains, reduced maintenance spend from OEE and asset performance improvements, and lower inventory carrying costs from improved production flow and inventory control. Additional benefits included improved operational visibility, stronger frontline execution, faster issue escalation, better supervisor coaching, and reduced out-of-stock units in the e-commerce division. These benefits were not fully quantified in the ROI model but contributed to the overall business case by improving responsiveness, workforce engagement, and Sauder's ability to align production output with demand. Nucleus evaluated costs and benefits over a three-year period to calculate the annualized ROI and payback period.

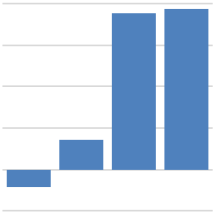
Sauder Woodworking is expanding its use of ChampionAI and exploring tighter scheduling integration to extend Redzone from production visibility toward more coordinated shop floor execution.

Detailed Analysis

Benefits	Pre-start	Year 1	Year 2	Year3
Direct	0	2,400,000	8,200,000	8,200,000
Indirect	0	0	0	0
Total	0	2,400,000	8,200,000	8,200,000

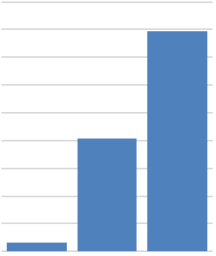
Time to Value
7.0 Months

Net Cash Flows



Costs	Pre-start	Year 1	Year 2	Year3
Software	266,000	210,000	210,000	0
Hardware	100,000	0	0	0
Consulting	170,000	200,000	120,000	120,000
Personnel	300,000	550,000	350,000	350,000
Training	0	0	0	0
Other	0	0	0	0
Total	836,000	960,000	680,000	470,000

Cumulative Benefit



Net Benefit	Pre-start	Year 1	Year 2	Year3
Net	(836,000)	1,440,000	7,520,000	7,730,000
Cumulative	(836,000)	604,000	8,124,000	15,854,000

Financial Calculations

Annual ROI	**665%**
Payback (months)	**7.0**
Benefit to cost ratio	6.4 : 1
Net Present Value (NPV)	7,363,420
Average Annual Cost of Ownership	982,000
Average Annual Benefit	6,266,667
3-Year IRR	331%
Assumed cost of capital	7.0%

In the first three years the project returns 6.4 for every 1 invested.

About Nucleus Research

Nucleus Research is the leading provider of ROI-based technology research and advisory services. Since 2000, we've helped our clients prove ROI and build the business case to support their technology decisions. Nucleus Research is registered with the National Association of State Boards of Accountancy.

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