

“SEAMLESS FABRICATION” IS A REALITY AT MCCARL’S INDUSTRIAL AND MECHANICAL CONTRACTORS

A CASE STUDY

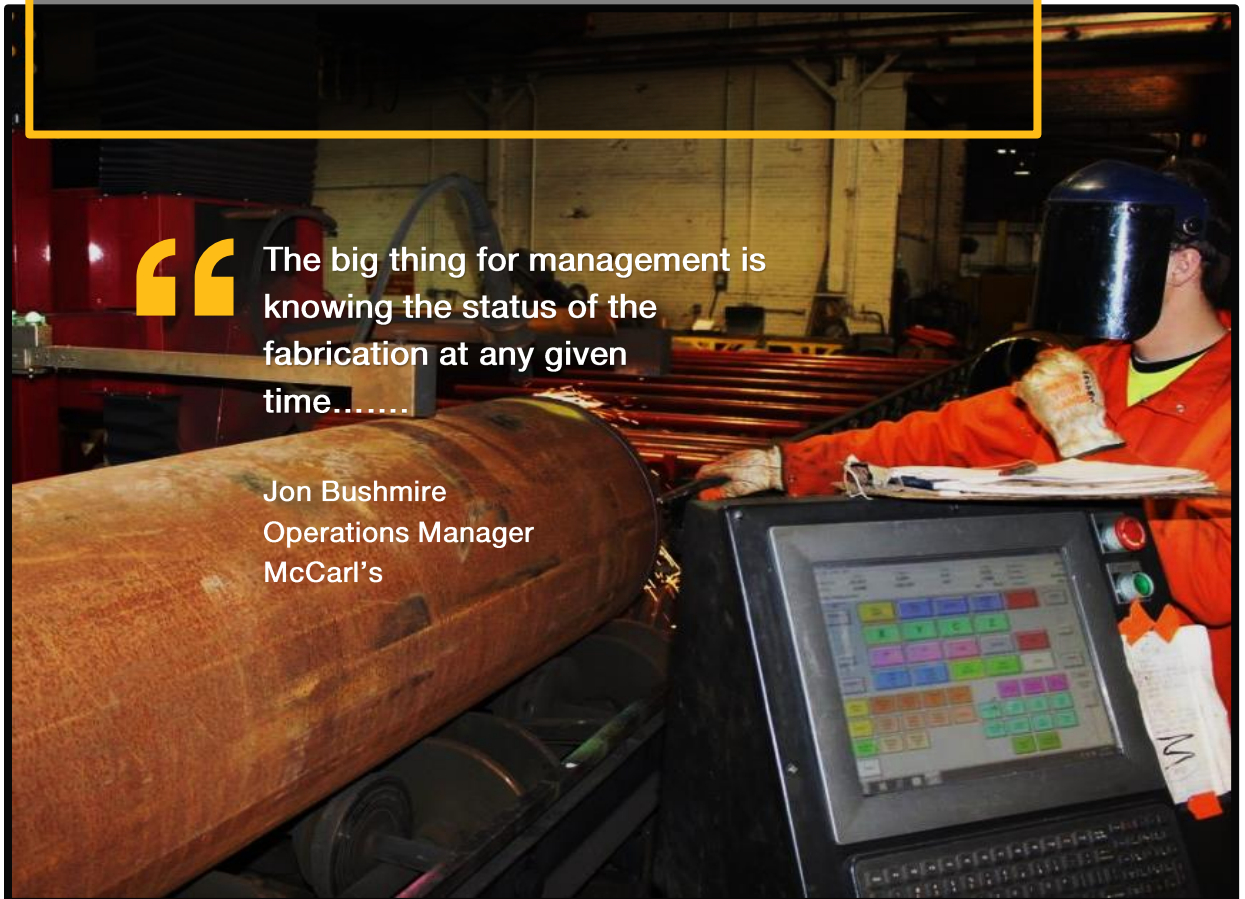


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The big thing for management is knowing the status of the fabrication at any given time.....

Jon Bushmire
Operations Manager
McCarl's



INTRODUCTION

McCarl's Industrial and Mechanical Contractors, renowned for their expertise in complex heavy industrial services and pipe fabrication across various sectors, has effectively integrated MSUITE into their operations to enhance efficiency and real-time data visibility. Previously, their data lagged by 2 to 3 days, but with MSUITE, they now have real-time updates.

The collaboration between McCarl's fabrication management team, led by Jon Bushmire, Operations Manager, and Max Wimer, Project Engineer/Project Manager, and the team at MSUITE has significantly improved their operations. MSUITE provides real-time visibility, optimized design-to-fab workflows, and enhanced quality control capabilities.

McCarl's specializes in services for industries such as Oil and Gas, Chemical, Power, and more. The decision to implement MSUITE across their three fabrication shops, which cover a total of 150,000 square feet and employ about 50 workers, has transitioned their operations to a fully digital platform. This change has optimized workflows and increased operational efficiency.

MULTI-SHOP FABRICATION OPERATIONS:

- **FAB SHOPS:** Three fab shops, with MSUITE implemented in two.
- **FACILITY SIZE:** Each shop is 60,000 square feet.
- **EMPLOYEES:** Approximately 50 employees in the Fab Shop.
- **DESIGN TEAM:** Utilizes Plant 3D to send designs to both shops.
- **INTEGRATION:** PowerBI with MSUITE supports enhanced assignments, visibility, and tracking.

According to Jon, implementing MSUITE has faced the typical challenges of new software adoption, but it has been a success, particularly due to the instrumental role of McCarl's team members like Max. MSUITE's user-friendly and centralized system has streamlined operations, reduced confusion, and improved efficiency in managing projects across multiple shops.

"As we grow, we've found the system to be very user-friendly and centralized. Our design and drafting departments are in one area, making it easy to create and distribute drawings to the fab shops. This has streamlined working on the same project across multiple shops, reducing confusion," said Jon.

MSUITE INTEGRATION WITH **POWER BI** DASHBOARD

The integration of MSUITE with Power BI provides a comprehensive overview of activities across two fabrication shops and one design team. This integration allows for easy monitoring of completed stages, tracking the delivery status of items, and determining the next steps for field teams.

The dashboard is also shared with clients for better transparency, and reports can be easily exported to provide stakeholders with clear visibility into project statuses.

SHOP PROGRESSION

- MONITOR COMPLETED STAGES

FABRICATION STATUS

- TRACK ITEMS = DELIVERED OR NOT
- DETERMINE IF ITEMS ARE GOING TO PAINT OR WHERE THEY ARE BEING DELIVERED

Field teams use this information to understand what's coming next, ensuring smooth operations.

QUICK CLIENT REPORTS:

- Fabrication projects in process (WIP)
- Items in the QC process
- Items scheduled for delivery
- Items that have been delivered

This report gives McCarl's stakeholders and clients clear visibility into the status of their projects, whether they are fabricating for their projects or occasionally for others Jon said.



PRE-MSUITE OPERATIONS AT MCCARL'S

Before implementing MSUITE, McCarl's used an internally developed Excel spreadsheet to track activities. According to Jon Bushmire, Power BI closely mirrors their old spreadsheet, which made the transition smoother. They utilized this template to pull information into Power BI, maintaining a familiar format for their field teams.



MANUAL CHALLENGES VS TECH ADVANTAGES

CHALLENGES WITH EXCEL & MANUAL TRACKING

- **LIMITED ACCESS:** Only one person could use the spreadsheet at a time, leading to inefficiencies.
- **DATA INTEGRITY ISSUES:** Multiple users caused data duplication, deletion, and inconsistencies.
- **MANUAL UPDATES:** Tracking and updating information manually was cumbersome.

ADVANTAGES OF MSUITE & POWER BI

- **DATABASE RELIABILITY:** The database handles fabrication data management, helps provide accuracy and consistency.
- **IMMUTABLE REPORTS:** Power BI allows view-only without manipulation, preserving data integrity.
- **AUTOMATIC UPDATES:** Users can simply refresh the data to get the latest updates without manual input.

FEATURES LIKED ABOUT MSUITE

"From a management perspective, the real-time visibility provided by MSUITE is invaluable. Previously relying on outdated Excel spreadsheets, the team now benefits from up-to-the-minute data, significantly enhancing their ability to manage fabrication status," said Jon. MSUITE's user-friendly interface ensures that everyone, regardless of age or tech experience, can operate the system easily with their iPads.

REAL-TIME FABRICATION MANAGEMENT

MSUITE delivers real-time data, replacing the previous system where data lagged by 2-3 days. This immediate access to current information is crucial for effective management and decision-making.



IMPROVING QC DEPARTMENT PROCESSES

"MSUITE has revolutionized the QC Department by automating the generation of quality documents, which previously required manual input. This automation allows the QC team to make final adjustments and send documents to clients quickly. Our fitters and welders enter heat numbers, select weld procedures, and claim welds completed instantly," said Max.

Max Wimer also notes that MSUITE has streamlined the design-to-fabrication process, especially when releasing drawings to the shop, further enhancing operational efficiency.

CLIENT-FOCUSED PRODUCT SERVICE & SUPPORT



"The regular bi-weekly meetings with the MSUITE support team foster a strong partnership. These meetings ensure the software is continually improving and address any immediate issues.

We're also working with MSUITE to develop more features tailored for industrial pipe fabricators like us. Our business is very dynamic, given the nature of industrial piping," said Max.

CHALLENGES WITH INDUSTRIAL CONSTRUCTION

"In industrial fabrication, tracking every detail is crucial. We need to know the heat number, chemical makeup of the steel, welding procedures, who welded it, and the results of X-ray tests.

There's a lot of information to manage. Unlike some types of commercial work, which may not require such extensive tracking, industrial fabrication demands it. For less complex fabrication tasks, I think MSUITE works perfectly, but for intricate levels where tracking is essential, it's a vital tool," said Jon Bushmire.



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INDUSTRIAL FABRICATION TRENDS

THE INDUSTRY IS RAPIDLY ADVANCING TOWARDS THE ADOPTION OF NEW TECHNOLOGY, INCLUDING ROBOTICS IN WELDING.

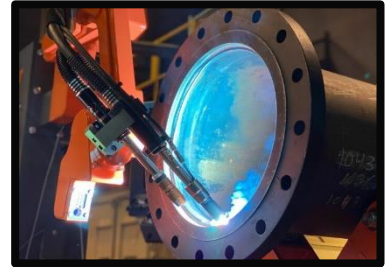
Jon Bushmire has been in the industry for about 10 years now, and Max has been in the industry for about 5 years. Both agree that technology is the way everything is going.

The industry is rapidly advancing towards the adoption of new technology, including robotics in welding. Jon Bushmire noted that while every fabricator has their own way of doing things, technological systems greatly enhance efficiency. "Implementing new technology is a significant task and doesn't happen overnight," he said. It took McCarl's about a year to fully integrate and optimize their new MSUITE system.

Bushmire also emphasized the importance of ensuring that these systems can integrate seamlessly with robotics and stay updated with the latest technology. As more fabricators adapt to new technology, maintaining pace with these advancements is crucial.

ROBOTICS IN MCCARL'S FABRICATION SHOPS

"In our pipe fabrication, the [Rotoweld](#) is our most advanced robot. From my visits to [PFI](#), I've become well-acquainted with two industry-leading robots: the [Novarc](#) and the Rotoweld. Both are excellent, each with unique strengths suited to different types of fabrication," said Jon Bushmire.



IMPACT IN THE FABRICATION SHOP

FOR HIGH-VOLUME FABRICATION, TRACKING THOUSANDS OF WELDS EACH MONTH, MSUITE IS ESSENTIAL.

Max Wimer reports that staff at various shops find MSUITE comprehensive and easy to use, making their tasks straightforward and satisfying. Jon Bushmire highlights that the new process, combined with tools created in Excel, has significantly streamlined operations. "We're just a couple of clicks away from getting 20-30 drawings in," he said, noting the immense time saved compared to the previous manual spreadsheet method.

A recent example involved a job that started in the Beaver Falls shop but had to be moved due to overflow. Tasks were seamlessly reassigned to another shop with all necessary drawings and welds in place, demonstrating the system's efficiency and ease of use.

ADVICE FOR OTHER CONTRACTORS



Jon Bushmire emphasizes that the necessity of MSUITE depends on the scale of operations. For high-volume fabrication, tracking thousands of welds each month, MSUITE is essential.

While Excel might work for a single job, it becomes infeasible for managing multiple simultaneous projects. Bushmire advises fabricators looking to grow and manage multiple shops seamlessly to consider MSUITE. As McCarl's expands into new areas like Nevada, Oregon, and North Carolina, using a system like MSUITE is crucial for ensuring seamless operations across various locations."

Jon Bushmire
Operations Manager
McCarl's



MSUITE

MSUITE is cloud-based suite of management software to connect BIM, Fab, and Field Construction Teams.

MSUITE helps you track, manage, and share data throughout the entire life-cycle of a construction project. Stemming from a Mechanical Contractor in Iowa in 2015, MSUITE's products have been a solution to a problem that the construction industry has needed for decades.

McCARL's

McCarl's Industrial and Mechanical Contractors is a renowned leader in the industrial services sector, specializing in complex heavy industrial services and pipe fabrication. Serving a diverse range of industries, including Oil and Gas, Chemical, Power, Steel, Environmental, Heavy Industrial, Manufacturing, Water Treatment, and Cryogenic Processing, McCarl's excels in delivering high-quality, integrated solutions.

Founded in 1946 on a commitment to innovation and excellence, McCarl's combines advanced technology with decades of expertise to provide comprehensive services from design and engineering to fabrication and installation.

The company's extensive experience in executing EPC projects highlights its ability to manage large-scale, multifaceted projects with precision and efficiency. McCarl's operates three state-of-the-art fabrication shops, totaling 150,000 square feet, equipped to handle a wide variety of fabrication needs and planning to expand. With a dedicated team of skilled professionals and a focus on continuous improvement, McCarl's remains at the forefront of the industrial services industry, consistently delivering exceptional results and maintaining a strong reputation for reliability and excellence. Visit [website](#).



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