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Thought Leadership Series

Essential Steps to Automating Your Brownfield Warehouse

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Since 2022, there has been a 25% decrease in the number of new greenfield warehouses built globally, according to the *American Journal of Transportation*.[1] Distribution organizations are looking for alternatives to building new automated greenfield facilities; with many turning to maximizing and optimizing their current brownfield locations. Upgrading processes, software, automation and equipment within their existing warehouses where they can take advantage of new methods and technologies while utilizing current material handling assets and effectively extending the life of a facility.

In a recent internal survey, FORTNA polled its roster of experts, data scientists, project managers and team leaders about what they believed were the most essential elements of a successful brownfield automation project. Many parallel responses and recommendations were noted for implementing effective brownfield automation and upgrades.

In this FORTNA Insight, we will explore our top ten recommendations for planning and executing a successful brownfield automation project.

1 https://www.ajot.com/news/article/warehouse-construction-declines-by-25-in-2023

1

Select the right supply chain partner for your operational needs

Automating a brownfield site will require experience and expertise on many levels, from facility readiness to data infrastructure to operational layout. Unlike greenfield sites, where organizations can create a distribution system from a blank canvas, brownfield sites will have existing restrictions and constraints that can affect the size and type of automation employed as well as the overall operational design. Choosing a supply chain partner is as crucial as selecting the automation, software and robotics for your warehouse. Engaging with a partner that boasts a track record of success and expertise is critical. Select a partner that is dedicated to matching your operation with the best-fit technology and offers the best-in-class, data-driven operational design that will ensure your new system achieves current needs and growth objectives.

2

Conduct an assessment

Before setting a strategy or integration plan, it is important to conduct a comprehensive assessment to determine the current state and condition of the warehouse, its assets and its operational processes. Knowing what assets can be utilized and optimized and which may need to be replaced or enhanced will help the planning process. This also allows the management team to set a baseline of expected improvements and outcomes resulting from the brownfield project.

An assessment will analyze and evaluate:

- Inventory storage and management
- Order fulfillment process
- Material handling equipment health
- Facility network and capacity limitations
- Operational software and data
- Lifecycle maintenance

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Establish a brownfield automation strategy

After benchmarking current operations, creating an optimization strategy that considers business requirements, goals and priorities will be vital to measuring the success of the implementation. Labor cost control, order cycle time, average cost per order and SKU turnover rates are key performance metrics (KPIs) that can create an overall strategy to improve or maximize operations. Working with an experienced supply chain partner can help you analyze high volumes of business and operational information from various data sources, creating an actionable strategy that meets customer and organizational goals while establishing a pathway for growth.

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Communicating the “why”

Communicating the reasoning behind upgrading a brownfield facility is a crucial step for all levels of management to understand, especially for the operational team. Clear messaging on why things must change (e.g., new clients, increased orders, tracking requirements, cost controls) can mitigate resistance to the project, integration and go-live. The more the team is kept informed, the fewer surprises they will have, and the more likely the operational team will take ownership of the required change management process.

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When "the way we have always done it" is no longer "the way we are going to do it"

A brownfield site update or retrofit involves many factors, ranging from the simple to the complex. New technologies, software and processes must be integrated with existing equipment and systems. This change can be met with resistance on the warehouse floor and throughout the organization, as change on any level is difficult. However, it can be more challenging to accept when it affects an operation that has been successful in the past.

Psychological studies on habits and long-held practices report that learning something new is easier than unlearning a past routine. Organizations must learn to abandon established assumptions and habits that no longer serve their new automated operations. While the operational team understands how to run their warehouse using their current technology, when a new design and automation are introduced, they will need to learn a new way of operating while unlearning how they did it in the past. Navigating the physical, systemic and emotional changes that will occur is critical to a smooth and successful transition.

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When your experts are no longer your experts

When updating a brownfield site, reviewing your staff and management through the lens of the new operation will be essential. How will the current workforce and their operational tendencies translate to the new automated processes and technology? Operational and technical experts that the organization has leaned on in the past may be unable to fill the required new roles within the enhanced operation. Having an honest dialogue with the leadership team and evaluating employee skill levels, ability to embrace new technologies and processes, and knowledge gaps will be all important steps to prepare the organization for a seamless transition.

7

Understanding the network

Examining a facility's current IT infrastructure, tech stack and software before integrating automation can prevent issues that could lead to significant delays and the extra cost of mitigation. A facility running a highly manual operation will likely not have sophisticated network and warehouse management system software to support a new automated system. Interfacing with in-place software while integrating new software can incur software development time and internal and external IT resources. Understanding a brownfield's network and software needs before integration is absolutely crucial to avoiding network and connectivity issues later.

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Change management

As part of the planning process, change management is critical in communicating with workers and managers about what will change with their tasks and duties within the new system. Knowing whether the change is minimal or complicated indicates how much training and knowledge transfer will be needed, which, in turn, can translate into the time required to transition the operation. Creating a process matrix outlining each warehouse employee's current tasks and new duties will help the team understand their new roles and ease the transition.

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Upgrading your operation while running your operation

Many in the industry call the process of integrating new automation into a brownfield facility operation "open heart surgery." In other words, the operation must effectively prepare to integrate and install new automation while simultaneously operating its distribution business. Below are a few key factors to take into consideration when planning a brownfield automation project:

- **Up-to-date drawings:** supplying your supply chain partners with current electrical, mechanical and control drawings and diagrams will assist in planning and lead to a smoother integration timetable.
- **Facility modification:** automation requirements such as floor flatness and load management, fire suppression systems, and electrical and data drops must be considered before construction or modifications begin.
- **Integration plan:** a clear plan on how the integration team will work around current operations; working non-operational hours; downtime for cut-ins (when an active piece of material handling equipment is "cut-in" to a new piece of automation); and the effect of changes to operations both upstream and downstream.
- **Space for construction:** planning for the appropriate space to complete the project, including storage and equipment laydown space in the facility for the new materials and tools.

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Resisting the revert

In 1519, Hernan Cortes landed his Spanish expedition in Mexico. After a long journey, he needed to motivate his crew to accept that they would stay in the new land. He ordered their ships to be burned, so there would be no question of moving forward. While not taking this example to the extreme of Cortes, there is an analogy to brownfield automation projects.

Clear communication with all levels of management is needed so there is no temptation to revert to the old ways of doing things, even if there are initial struggles and setbacks. Continuous training, knowledge sharing, and transparency will allow an organization to transition smoothly to its new warehouse operations.

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FORTNA CAN HELP

By partnering with FORTNA on a brownfield automation project, you will work with a team of experts and experienced project managers who have designed, managed and integrated numerous implementations in the past. Our unique approach allows for flexibility in design and technology to ensure best-fit solutions and delivers speed, accuracy and efficiency. From small to large footprint warehouses, FORTNA can create a business case and operational design to fit your facility, labor costs and customer demands.

Contact us today at **www.FORTNA.com**