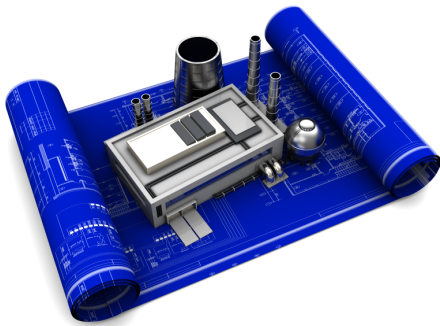


# A Blueprint for Managing Automation Obsolescence

How to identify and reduce automation-obsolescence risk with migration planning

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Manufacturers and other industrial operations are increasingly facing a critical decision point when it comes to automation obsolescence. Their assets are aging and they must determine the best path forward. According to ARC Advisory Group, more than \$65 billion worth of legacy automation assets in operation today are reaching the end of their useful life.<sup>1</sup>

In the past, operating automation equipment beyond the date of discontinuation was a nonissue, as it was not uncommon for automation suppliers to continue supporting products well past their original expected life. The recent recession, however, dramatically affected the entire chain of automation users, their OEM suppliers and the OEM's upstream component suppliers. The recession forced all parties to re-evaluate their business models. In some cases, products and/or services had to be scaled back, accelerated to end of life or prematurely terminated. In the most extreme cases, some suppliers did not survive the recession and the supply chain was immediately severed. Regardless of the situation, the continuous flow of products and services was altered permanently.

Fast forward to today – the remaining pool of discontinued automation components is shrinking to the point where some legacy products are in a critical state. And in today's production environment, where complex challenges such as cyber security, regulatory initiatives and attrition of technically trained experts are becoming commonplace, the threat of a failing legacy system only heightens the associated risks. Yet most companies do not have a plan for addressing these systems. According to the same study by ARC Advisory Group, 58 percent of users acknowledge having no formal plan for managing the lifecycle of their equipment.

*According to ARC Advisory Group, more than \$65 billion worth of legacy automation assets in operation today are reaching the end of their useful life.*

The message for industrial automation users is clear: If there ever was a time to invest in your production infrastructure, it is now. Before you do, however, it is important to step back and plan – taking a strategic approach to obsolescence planning and upgrading legacy equipment can help save time and money, and improve the overall effectiveness of upgrade projects.

<sup>1</sup> ARC Strategy Report, "Electrical Power Systems Lifecycle Management Strategies," April 2011.

LISTEN.  
THINK.  
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*...the investment made to replace a legacy system may not yield a single additional unit of output – but neglecting the replacement could be financially disastrous.*

## Understand Your Risk

Risk of obsolescence is a recurring challenge experienced in a variety of industries around the globe. Some industries, such as pulp and paper, have been forced to curtail infrastructure investments due to economic conditions. Other industries, such as oil and gas, are booming and have investment capital available; however, production demands and limited maintenance windows make it difficult to conduct an automation system upgrade in the time available during industry turnarounds. Other regulated industries, like pharmaceutical, must address unique compliance and validation challenges when considering legacy equipment updates.

Despite these differences, one common thread across all industries is the lack of understanding of automation systems at the corporate level in many organizations. Automation is complex. As a result, it is often misunderstood by those not intimately involved in front line operations. Many corporate-level executives struggle to understand the nuances involved in making decisions related to these systems. For example, the investment made to replace a legacy system may not yield a single additional unit of output – but neglecting the replacement could be financially disastrous. Consider the implication of a critical legacy-system failure: Inability to bring the system online could mean extended periods of downtime versus a shorter, planned upgrade.

In most situations, the original investment in automation equipment pays for itself many times over, but it can be difficult to receive approval of the capital requests for the critical replacements. Companies are investing in technologies, such as smartphones, computers, tablets and new Web technologies at unprecedented rates, yet the lifeblood of their operations – the production and automation systems that make it run – all too often are being ignored.

Generally, budgets and production schedules do not allow for a complete “rip and replace” migration approach to mitigate obsolescence. To help manage migration challenges, Rockwell Automation offers Lifecycle Extension and Migration services which are designed to help identify, mitigate and eliminate automation obsolescence risk.

## Risk Identification

Regardless of how migration is approached, automation users must first understand the technologies at risk of obsolescence in their facilities. It is recommended to first categorize each product into one of four lifecycle stages:

- **Active** – The most current product offering.
- **Active Mature** - Products fully supported and available, but a newer family within the product category is available.
- **End of Life** - A product discontinued date has been announced - actively execute migrations and last time buys.
- **Discontinued** – The product is no longer available for sale.



To help effectively categorize the lifecycle stages of automation equipment, Rockwell Automation offers an Installed Base Evaluation™ process. The evaluation is designed to assess the lifecycle status of automation equipment within a production facility: by enterprise (multiple facilities), facility, line or location, machine and panel. In addition to identifying lifecycle risks, the evaluation will also help optimize MRO (Maintenance, Repair and Operations) spares using a sophisticated MTBF (Mean Time Between Failure) algorithm. The evaluation can be expanded to include networks, safety, software and environmental conditions.

The Installed Base Evaluation process is completed in three steps:

- 1. Field Collection** – On-site machine and product data is collected by a Rockwell Automation Field Service Professional.
- 2. Processing** – Off-site processing and analysis determines plant lifecycle risks and overall MRO inventory status.
- 3. Delivery** – Rockwell Automation consultants deliver reporting to customer.

Gathering and reporting this data provides a benchmark for the current machine performance. At the same time, the evaluation provides the information necessary to make informed and accurate business decisions related to obsolescence risk. Once equipment has been categorized and obsolescence risks identified, the next step is to chart a path forward – this means accepting, mitigating or eliminating obsolescence risk.

## **Risk Mitigation**

In most situations, the first recommendation for eliminating risk would be to replace critical discontinued equipment still in use. However, replacement is not always practical or feasible for many automation users. With this in mind, there are a number of options available to help mitigate risk until it can be eliminated. Rockwell Automation offers a comprehensive collection of Lifecycle Extension and Migration services to help extend the life of some legacy equipment when necessary.

Lifecycle Extension and Migration service offerings may include a reserved repair service, which is particularly popular among organizations relying on legacy automation equipment for production. It offers guaranteed service on legacy technology. Rockwell Automation secures and protects component inventory in its repair centers, and commits the repair technicians, test stands and systems necessary to fulfill the commitment.

In addition to reserved repair, Rockwell Automation also provides both on-site and remote support services. These services help prevent machine failure before it occurs, and make legacy support expertise readily available when failures do occur. Lifecycle Extension and Migration services are an excellent option for maintaining production continuity, especially when combined with an overall migration strategy.

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## Risk Elimination

After evaluating risk and determining which control-system components and associated networks need to be replaced (if any), automation users will need to develop a new system architecture. Selecting the correct products and network can be a complex and daunting task, but finding answers to a few critical questions about the new system can help ensure a successful deployment:

- Will the new control-system facilitate the necessary features and functions needed to support the business goals?
- Can safety and/or regulatory requirements be incorporated throughout the new system?
- How easily can the new system integrate with the other systems throughout the site?
- What training is required for maintenance personnel to maintain the new control system?
- What is the control-system manufacturer's support infrastructure?
- Is there sufficient bandwidth in the new control system for future expansion?

After the new system architecture is developed, a migration strategy can commence. There are two different methods for performing machine, process and/or control system migrations:

**1. Rip and Replace** – The complete migration is performed during one extended production outage.

**2. Phase In** – The migration is performed in multiple shorter production and maintenance outages.

The rip-and-replace method is generally selected when an extended production outage is financially tolerable or when the new technology cannot be phased in without a significant increase in cost.

The phase-in method is utilized when the organization cannot afford to halt production for an extended time or does not have the capital to implement the migration all at once. This method is generally more expensive in the long-run due to temporary hardware and software patches that are necessary to keep the machine operating until the entire infrastructure is in place.

Though these two methods are most common, there is certainly no one-size-fits-all migration solution. Rockwell Automation Lifecycle Extension and Migration services offer a number of different migration solutions to help cost-effectively eliminate obsolescence risk.

Automation equipment is aging in facilities around the globe, and spare parts and support for these assets are continuing to dwindle. Obsolescence planning can help minimize the headaches associated with phasing out this equipment, but it requires a thoughtful approach and strategic planning. Enlist the help of third-party experts, like Rockwell Automation, to help identify, mitigate and eliminate your obsolescence risk before it is too late.

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