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Controller Replacement

5 Early warning signs it's time to upgrade

You've invested heavily in industrial automation, but your controllers lack the smart manufacturing capabilities you need to optimize growth, innovation and operational excellence. Maybe your legacy controllers can't support new information technology that improves efficiencies or transparency to gain a competitive edge. Or you upgraded to a newer system only to discover that it lacked the future-focused technologies you need to achieve maximum ROI.

Here are five warning signs that signal it's time to upgrade your controllers:

1. An increase in unscheduled downtime and system faults:

The rising amount of downtime or system faults is often a sign that your existing system lacks the ability to inform you about issues or potential issues. Without insight into how your machines or lines are performing, you risk unexpected shutdowns or delays.

Solution:

Consider controllers with integrated, "no-programming" diagnostics that are automatically displayed on all system devices, including the HMI, controller web server, engineering software and controller display for efficient fault analysis, quick troubleshooting, faster commissioning times and minimal production downtime.

2. Legacy vendor hardware is obsolete, and no spare parts are available:

Many plants are struggling to replace components when controllers fail because the vendor has phased out or dead-ended parts. When plants can locate the parts, they often pay a premium because parts supplies are scarce.

Solution:

Upgrade to controllers that are fresh in their product lifecycles and won't become obsolete in a couple of years, with feature-rich technologies.

3. Controller can't support new information technology:

Older controllers can't communicate effectively with today's data collection mechanisms.

Solution:

Upgrade to high-speed controllers with communication capabilities.

4. Capitalizing on a new or emerging business opportunity is impossible without a new system:

Plants may find that they can't add capacity or expand because their current systems are limited in their capabilities.

Solution:

Opt for faster controllers and networks that allow for more throughput and offer a single common programming platform for reduced complexities.

5. Your old system is inflexible and can't adapt to rapid shifts in customer demand:

Your customers may expect more customized products or on-demand changes to product quantities. Less-advanced controllers aren't agile enough to adapt to unexpected shifts.

Solution:

Select controllers with the ability to change processes on the fly, which enables you to satisfy customer-specific requirements without making engineering changes — even during ongoing operation. Systems with option handling offer only one hardware configuration and one configuration program for many different options.

Hidden Risks of Staying Put

Other risks that may not be as obvious but could result in costly and potentially hazardous consequences include:

- **Safety risks:** Many older automation systems lack safety integration capabilities; plant engineers were forced to hardwire standard safety features such as e-stops, door and gate interlocks, light curtains and safety PLCs as "bolt-on" accessories to a separate safety system. This approach can lead to extra costs for wiring, controls, maintenance and spare parts.

  Solution: A variety of controllers with integrated safety certified to Cat 4, SIL 3 and PLe safety levels available in different sizes. This helps lower operating costs and reduces system complexity and downtime, and protects people, equipment and the environment.

- **Security vulnerabilities:** The lack of integrated security can lead to costly threats from hackers, viruses and other malware. Compromised systems can put plants at a major disadvantage. Newer technologies bring security to the controller itself.

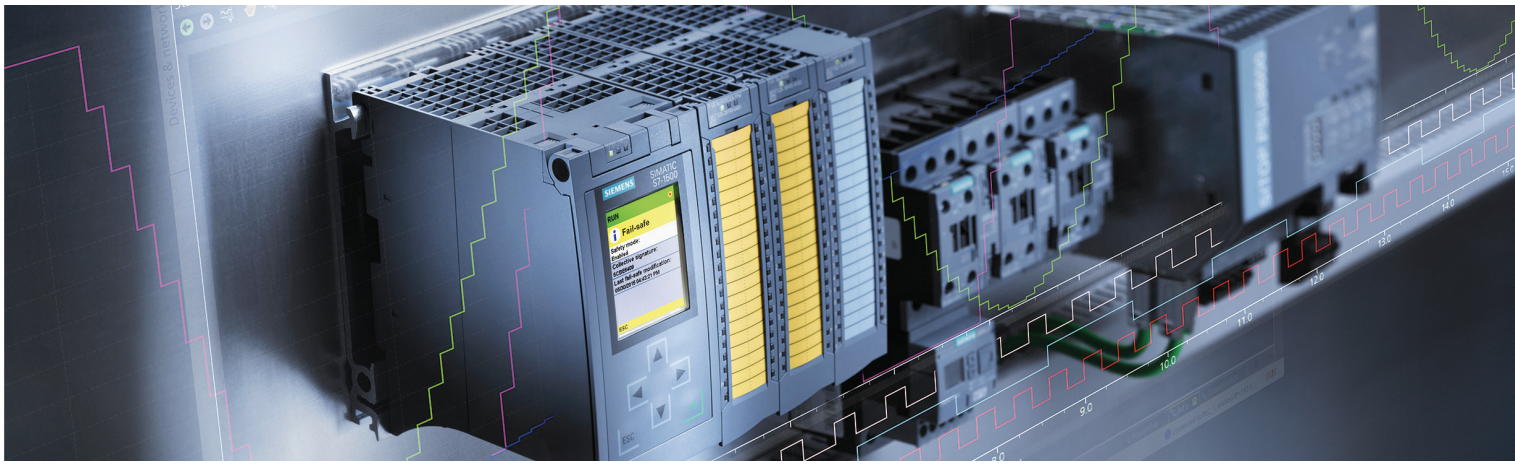
  Solution: Integrated security protects against unauthorized access to intellectual properties, helping to safeguard valuable investments. Newer controllers include security features, such as firewalls, VPNs, encryption and role-specific authentication, that can be managed from a single interface, onsite or remotely.

The latest controllers are considerably faster, smaller and less expensive. Modern-day PLCs can communicate via the industrial Ethernet at speeds of up to 1 Gbps — thousands of times faster than the 56 Kbps speeds of legacy automation systems.

Wireless implementations can eliminate expensive cabling, and offer flexibility and scalability in configuring plant layouts — and speed when reconfiguring them.

The latest controllers offer functionality that helps enable the path to digitalization. Plants that adopt new controller technology will gain an inherent competitive advantage. That's because totally integrated PLCs enable systems interoperability for greater production flexibility, lower operational costs and greater overall efficiencies.

The adoption of fast, high-performing technologies can have the added benefit of driving innovation. "Advanced manufacturing technologies can boost innovation, too, by allowing manufacturers to create new kinds of products that can't be made cost effectively with conventional processes," according to a BCG Perspectives report. "They also permit manufacturers to produce high-quality goods made to buyers' exact specifications."



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