

### Factory & Machine Automation Playbook

This one-of-a-kind Factory Automation Playbook is packed with best practices, practical tips and pitfalls to avoid on a wide range of topics, from defining project objectives to selecting components to implementing technologies that can make your automated systems smarter and more productive.

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## Your 2014 Networking & Automation To Do List★

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Forget all of the predictions about what will happen in 2014, you can control your future in the industrial world by moving boldly forward with the right actions and commitment to make your operation more agile, effective and competitive. If you're ready to sign up for that, here's your 2014 to do list.



Enlarge

**Move to industrial Ethernet now.** Sure, you're moving away from ubiquitous use of fieldbus networking and incorporating [industrial Ethernet](#) into the heart of your manufacturing process. But for many, this move has been more of an evolution to a hybrid network rather than a move to Ethernet. According to Aberdeen Group, 67 percent of the best-in-class industrial companies have made the move to fully use Ethernet, while only 33 percent of the rest are fully Ethernet. It's not just the move to industrial Ethernet that matters, but what these best-in-class companies are able to do with their improved ability to control information over their Ethernet networks.

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**Go from Ad-hoc to Infrastructure.** Lacking a good infrastructure design and bolting on switches as you go, you've learned that Ethernet keeps working and makes for quick and relatively easy expansion. But an ad-hoc infrastructure can be difficult to manage, maintain and troubleshoot. Further, it can be nearly impossible to secure. The changes needed to transition into a well-designed infrastructure are not difficult or expensive. In 2014, evaluate what you have, create a great infrastructure design and move quickly forward.

**Abandon Thoughts of a Security Risk Assessment.** Forget about doing a full-blown security risk assessment and instead do an uptime

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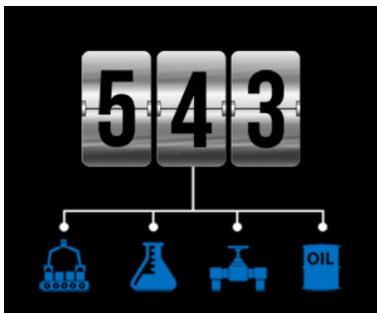
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assessment of your operation that includes consideration of the factors key to making your production hum. The [process for an uptime assessment is easy](#), just consider those things that are most important to assure uptime, determine what could go wrong with them, and work to eliminate, shift or minimize the risk. Of course, adding security measures as appropriate will be part of the improvement plan, but those actions can be prioritized along with other factors like mechanical equipment reliability, machine and worker safety, energy reliability, and process variability.

**Grow Domain Experts.** Few, if any, engineers graduate with the ability to make steel, paper, glass, cars, pigment, pharmaceuticals, packaging equipment or any of the zillion widgets we produce. And most of us fooled ourselves into thinking that we'd all somehow perfectly document our tribal knowledge for

the next generation of workers instead of beefing up the workforce to ensure the newbies got solid training and real experience from working along with us. Those who have pulled in next-gen workers have found that they have very different thoughts about teamwork, work-life balance, and problem solving than we do. Despite these differences, if you work hard to understand them you'll find their traits and capabilities are admirable. In the near-term, make it a point to find the domain experts that have moved to work for machine builders, integrators or consultants and bring them into your inner circle by making them an integral and trusted part of your company's operations. This includes trusting them to work remotely over your network. In 2014, start a real program to fund, mentor, train and grow the experience of the next generation of domain experts by leveraging you current in-house expertise plus that of what you add through your expanded use of third parties with specific domain expertise.

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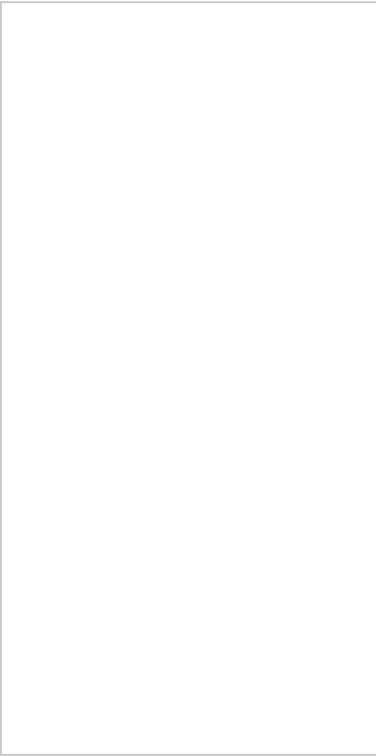


**Create an Industrial Wireless**

**Infrastructure.** Most manufacturers are using wireless today, but in a very limited application and many are using the previous generation of technology. When asked about expanding the use of wireless, reliability, robustness, security and ease of deployment are typically cited as the main concerns holding them back. But when asked if each of these concerns could be addressed, the vision they share for

industrial wireless is boundless, from worker mobility with on-the-spot access to everything and everyone to blazing fast machine reconfiguration. The good news, and apparently best kept secret in networking, is that wireless N (IEEE-802.11n) addresses the very things that keep manufacturers from doing more with wireless. Today, the technology is available in industrial products, so in 2014, make your list of awesome improvements that an industrial wireless infrastructure can provide, then make them happen.

**Play Nice with IT.** Many controls and process Engineers have been working with IT since they started adding Ethernet into industrial environments. But the opportunity is largely



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untapped to do more. IT has great network tools, best practices, and network and security know-how. They also come with objectives that conflict with yours, practices that won't work in manufacturing, and a lack of understanding for those things that are critical for networking or computing in the factory. Regardless of this conflict, they are worth the investment of time and the test of your patience. In 2014, let down your guard and drive your levels of trust, understanding and collaboration with IT much higher.

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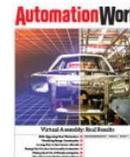
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