

# Industrial Mobility: The New Norm

Time to change your perspective: Manufacturing intelligence software for industrial mobile applications is enabling users — in just seconds — to access business and production data, and personalize and share it for new levels of collaboration and productivity.

*By Theresa Houck, Executive Editor*



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➤➤ How many of you take your personal smartphone or tablet on the plant floor or to the business office, or see coworkers with their mobile devices? Does your company use mobile devices for industrial purposes? It's happening more and more, and because of that, today's industrial information software is adapting too.

Industrial information software now allows you to create, modify, personalize and access your own displays of business and process information, in the office, at the machine, at home or on any mobile device. The software's dashboard on your device doesn't have to look like everyone else's; it can contain the specific information you need. You can access historical and real-time data reports from anywhere, anytime.

It's no surprise mobility is changing the way managers, engineers, operators, technicians and others are working in the business office, the production plant and the field. Three trends have been leading to this advancement:

**1. Growth in consumer devices**, which is driven primarily by device manufacturers focusing on the user experience and moving away from single-use devices. "This isn't stopping — it's not a fad," said Kyle Reissner, mobility platform leader at Rockwell Automation, during a recent webcast hosted by *IndustryWeek*. "And it's driving a lot of small productivity gains. Although a lot of people have these in their pockets, there's a lack of industrial software that's tailored to these devices."

**2. Increased network access**, which enables external network connectivity of the control system up to the business system so information reaches a broader set of people. Users are asking their automation suppliers about consuming that data, not just



## >> The Business Case for Industrial Network Design Training

By Paul Brooks, Business Development Manager, Networks, Rockwell Automation

What's the difference between ignorance and stupidity? Ignorance can be fixed. As IT and Operational Technology (OT) groups engage more frequently, too often those discussions are driven by ignorance on both sides — ignorance that's often mistaken for stupidity.

Different stakeholders need to reach out to one another with humility. Part of that humility is to understand that to keep up with the rapidly evolving Ethernet and Internet technologies, technicians and engineers must learn new skills.

In recent years, industrial networking technology has changed. IP has become the protocol of choice. Technology has expanded to enable wireless, mobility, teleworking and wide area networking. Architectures moved from Local Area Networks to the cloud. The technology of choice now is Ethernet, leaving fieldbus-oriented skills sidelined.

IT professionals have spent the last 20 years increasing their understanding of Ethernet and IP, and OT professionals are just catching up. Too often, they're directly migrating fieldbus architectures to Ethernet, and the full value of Ethernet and IP hasn't been realized. Similarly, too often IT professionals are taking campus architectures into the manufacturing zone and failing to apply the domain expertise built by OT, just using different technologies.

This is where network design training can help. The first step is building a common baseline of knowledge — ensuring that OT and IT professionals share a common understanding of industrial and enterprise networking fundamentals.

The second step is to provide training that allows both IT and OT professionals to cross-train and be ready for the new era of industrial networking — get to the point where downtime is measured in seconds and costs are measured in \$10,000 increments per minute.

The third step is to ensure that system designers can design for security, scalability, flexibility and maintainability. Not replicating the models of legacy enterprise or operational networks, but rather merging the best of both worlds to create a new paradigm.

The fourth step is taking this formal training and applying it. Use the lessons to engage with peers from IT or OT and demonstrate that they're willing to learn from them more than to teach, and therefore to collaboratively achieve wisdom.

Visit [www.rockwellautomation.com/go/cisco-training](http://www.rockwellautomation.com/go/cisco-training) to learn about the industrial networks training program available jointly from Rockwell Automation and its Strategic Alliance Partner Cisco.

providing it. “That’s a huge market trend and shift from isolated protected control systems, to be able to share tidbits of information, or in some cases entire pipes of information, to the external world that’s never been privy to that information before,” Reissner said. “At Rockwell Automation, we call that The Connected Enterprise.”

**3. Continued productivity demands** for automation system providers helps users better utilize assets, increase uptime and equipment efficiency, and generally do more with less.

### It's All About Context

A change in thinking also is contributing to the usefulness of mobile devices in the industrial setting. In the industrial software world, “What has been primarily a machine and product focus is becoming systems thinking,” said Ryan Cahalane, director of software product development, control and visualization business, Rockwell Automation, at the 2014 Automation Fair® event in Anaheim, California.

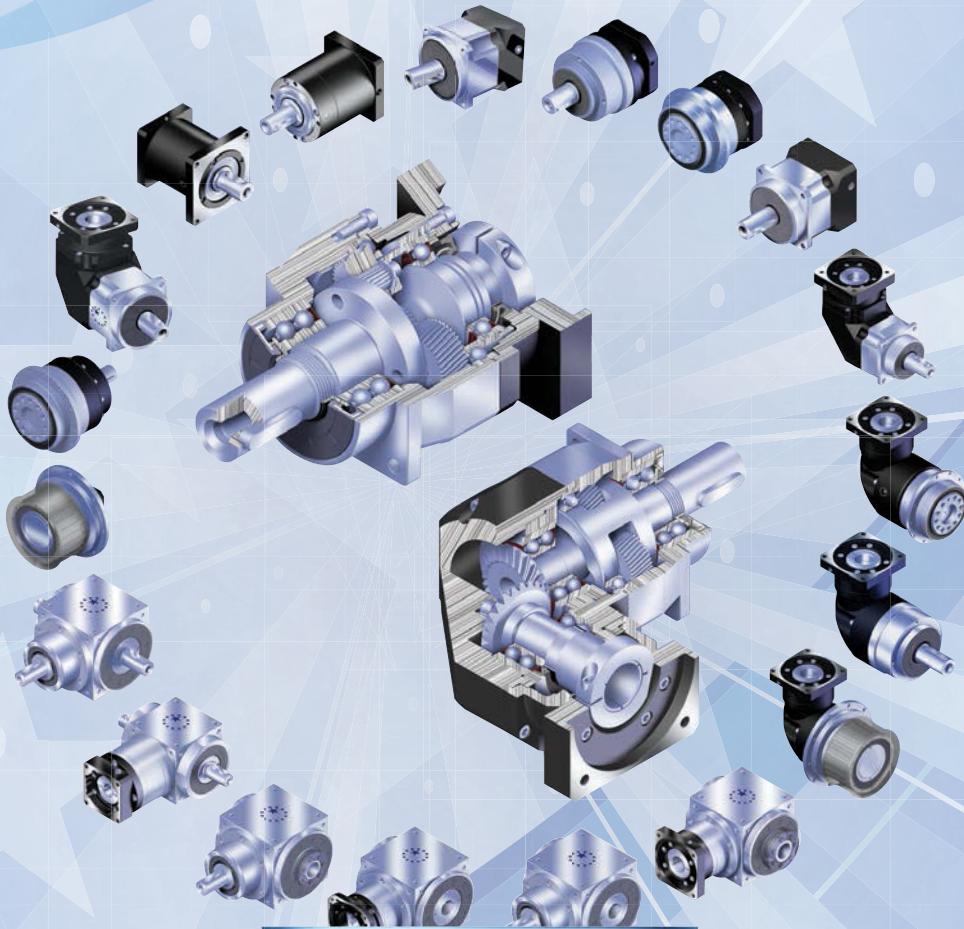
“This has been common for some time in the process industries, and now it’s everywhere,” he explained. “People want to layer in context and collaborate across sites, whether it’s a multi-facility global food and beverage conglomerate, a pharmaceutical manufacturer contracting out a plant, or an industrial machinery OEM that wants to see how its equipment is operating around the world.

“The ability to view, navigate and share information is being combined with portability and mobility to make it so operators, engineers, and managers never have to leave their work,” Cahalane continued. “With smartphones, tablets and laptops, they can access their choice of content, subscribe to feeds, and personalize their own dashboards with the exact machine, system and business information they need or want to do their job in the best possible way for them.”

The philosophy is being applied to conventional operations technology (OT) and IT, but also for management. “In mining, you have your factory on wheels. The owners

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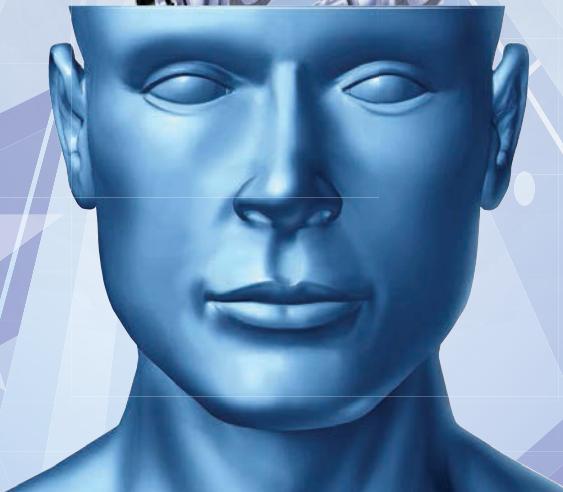
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The FactoryTalk VantagePoint mobile manufacturing intelligence suite supports personalization so users can easily configure information on the fly. Mobile displays dynamically adjust to screen sizes and types: on a smartphone, the display automatically stacks for scrolling, and on an iPad in landscape, there's no need to scroll. It's easy to navigate, and you can create your own content.

Similar tools will be available for the FactoryTalk SE HMI software later this year. This will allow PlantPAx® process automation system operator interfaces to be displayed on mobile devices.

Learn more at <http://goo.gl/9uhRrL>.



The two keys to successful industrial mobility are user enablement and system extension.

can monitor it, and so can the equipment suppliers,” said Cahalane. “In automotive, suppliers of turnkey lines can see their equipment all over the world to determine and share best practices for operation and maintenance.”

### Mobility at Tyson Foods

A prime example of mobility making a difference is at a Tyson Foods plant near Ft. Worth, Texas. The corn dog facility makes 120 million lbs. annually, collecting data from throughout the plant, with 1,500 data points. They're running a mobility pilot program using FactoryTalk® VantagePoint EMI Mobile from Rockwell Automation (see “Product Focus” on page 47).

“Our goals are to use data to improve transition from sanitation to production; produce end-of-day production reports more efficiently; enhance food safety traceability; and promote communication and flexibility,” explained Jon Riechert, senior corporate engineer for innovation at Tyson Foods, during the *IndustryWeek* webinar.

Riechert said the production plant has many different areas that must communicate with each other and see what's happening, and mobility provides visibility using the plant's wireless network.

“Production supervisors can manage production flow by seeing machine statuses and speeds, what's running and

what's not, how long it hasn't been running, and be able to adjust on the fly as production happens,” he explained. “It also improves the amount of time we have for production — the amount of time we have to make products.”

Another big advantage supervisors have reported is they get to see what they want to look at when they want to look at it, compared to some other Tyson facilities that have dedicated human-machine interface (HMI) monitors on the plant floor that rotate dashboards. Sometimes the information the supervisor is looking for might not be showing on the monitor when the supervisor goes to look, so they might have to wait to see it.

“For our plant management, they can take a quick glance and get a quick overview, and it gives them the ability to know if a deeper dive into an issue is needed,” Riechert said. “For example, maybe every time they've looked on their mobile dashboard, line 1 has been down for the last hour. Now they know about it, and instead of having to rely on someone coming to tell them, they can go ask questions.”

Mobility also brings multiple ways to collaborate, he noted. “Instead of the dashboards on static monitors or on just a laptop or desktop, you've now got that information on a handheld device, so you can use it easier in small groups to collaborate. You can even take a screen shot of

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a dashboard and text or email it to someone else and ask questions.”

The mobile function also helps track product distribution for food safety traceability. “We have many different packaging configurations, so we want to know which fryer was attached to which packaging machine at any point

during the day. It’s important to track product as it flows through the plant. We can monitor distribution settings. And it provides traceability from packaging back to earlier processes,” said Riechert.

## Portability and Personalization

The two keys to successful industrial mobility are **user enablement** and **system extension**. It’s called the “Value- and User-First Philosophy.” User enablement lets you configure your dashboard, reports and other information on the fly and make it personalized. System extension means the industrial information software uses HTML5 and other technologies so you can tailor the device to your specific needs.

Reissner explained the three primary ways to accomplish this:

- 1. Provide role-based and user tools for user enablement.** This means you can configure on the fly, and it’s personalized to you. “We believe mobility really is a landscape in which users don’t want the generic login and the same report 50 other people want,” Reissner said. “They want a report that’s personalized to them, and then they want it personalized across a mobile device or laptop.”
- 2. Innovate in the collaboration space.** This means looking at collabora-

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tion not from a machine telling you what’s happening, but other people telling you what’s happening — being able to provide a framework where, for example, an operator

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can talk with an engineer, or people are collaborating across sites. “For example, users aren’t just looking at notifications,” Reissner explained. “Instead, they see that this alarm happened, and here’s the trends graph that attached with it on my mobile device, and historically he sees the top three reasons why the alarm happened so the issues can be addressed.”

**3. Extend existing systems.** This means, as described previously, using HTML5 and other technologies to be able to customize existing views to any mobile device in a secure and logical way, including existing reports on a PC that can be used on a mobile device.

“We make it easy with user-friendly names for parameters and data,” said Damon Purvis, product manager, Rockwell Automation, during the Automation Fair® event. “They can see it, save it and make it public. They can create it on an iPad and see it on their iPhone — or on an Android device.”

For example, say you’re working at a plastic extruding company. “As a manager, your main concern is, is my line running?” Purvis explained. “If an extruder has gone down, you want to know if it’s back up, but it doesn’t help the technicians make the repair if you keep asking them. Now you can just go in and look.”

Purvis said users can select parameters, create a graph and save it in their own “playground.” They can edit it in Composer, combine content easily and do it quickly, in a few seconds, instead of an hour.

The approach empowers operators to have the displays they want and need to do their jobs most effectively, to satisfy their curiosity and find ways to do their jobs better, to run the equipment a better way.

“When I’m happy with it, I can put it in my Favorites, and go straight there without having to open the development environment,” he added. “Once I’m there, I’m back in the model so I can make further changes if I want.”

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Cahalane expects this kind of access to help people leverage their experience, and their companies to leverage their most experienced people, who might not be right there at the machine. “They might be at home or even retired, and can still lend their knowledge and experience to people in the plant,” he said.

System designers can regulate access. “Even those people who are steeped in Excel, who love it and do it in their sleep, they see this and get into it,” Purvis noted. “It’s a new paradigm for visualization and reporting.” Similar capabilities work the same way in manufacturing execution system (MES) environments where having mobile operators further eases the work and still enforces process workflow.

### Collaboration Makes a Difference

Mobility is moving beyond replacing

existing plant- or machine-based experiences on a mobile device to enable collaboration across sites. Today’s industrial information software can help you solve problems faster and more efficiently — and even prevent them.

New levels of mobility, portability and personalization can allow your team to easily try out different data, displays and configurations in a matter of seconds, without the need to call IT or a developer. Getting the information you need where, when and how you want it allows you to do your job better and to run equipment and operations in a better way. □

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