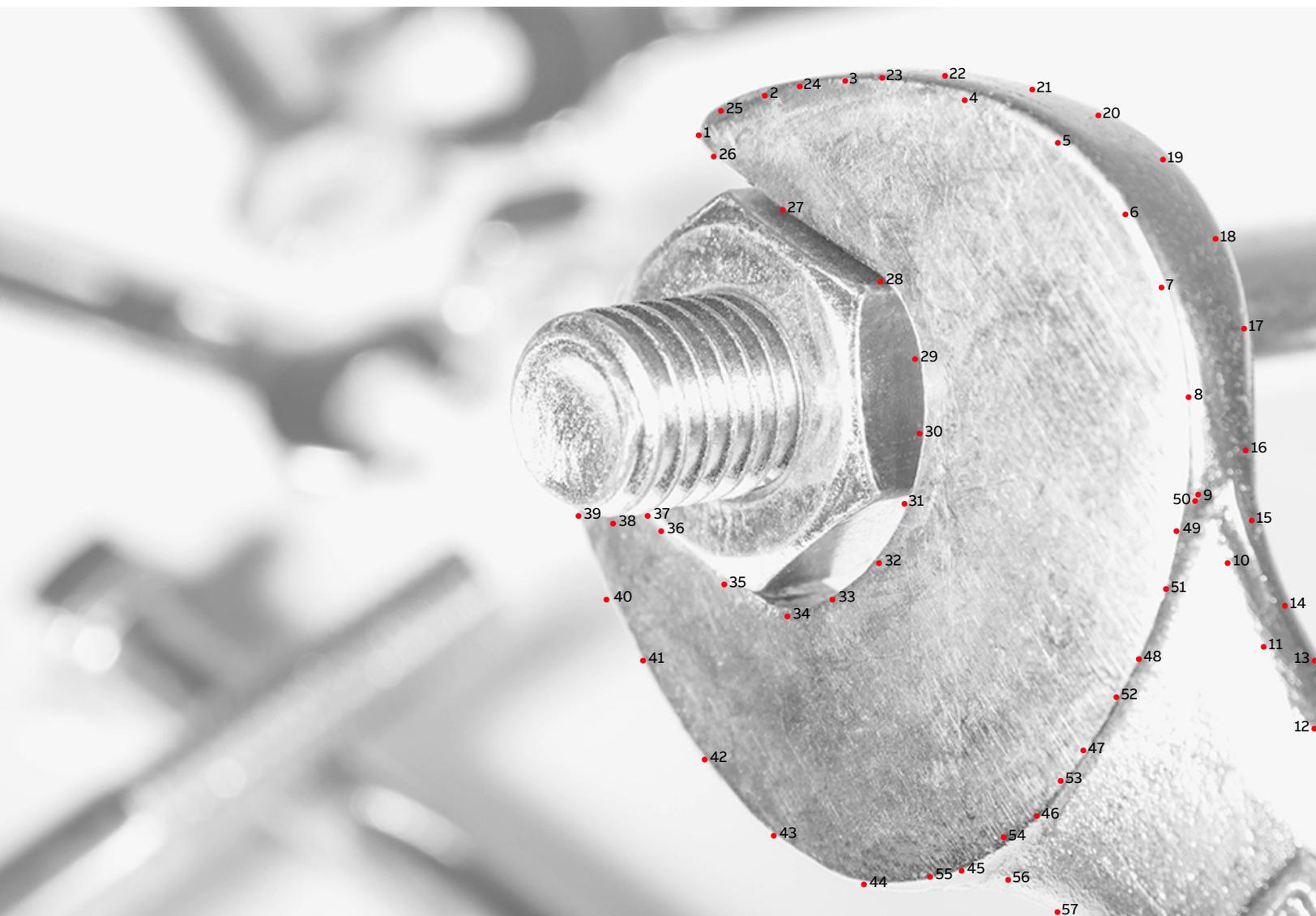


BY RICK NICHOLSON, DIGITAL STRATEGY AND MARKETING LEAD, GRID AUTOMATION

Dot to dot:

Connected asset lifecycle management for stronger, smarter, strategic asset management.



Do you remember playing connect the dots as a child?

They're the picture puzzles where you join a series of numbered dots, in a particular order, until a picture appears. The most basic patterns included whole parts of the image with dots to complete the picture, while the more complex offered just dots. The most challenging were dots and numbers with accompanying algorithms that had to be solved to see the full picture. When I graduated to these more complex puzzles, I would sometimes stare at the dots to see if an image would magically appear without having to do the analysis. It was always fun when I got it right, but more times than not, seeing the full picture took more than just wishful thinking.

Now grown and working with customers in asset-intensive industries, I've come to realize that many organizations play a version of connect the dots all day, every day – but it's not for fun, it's not intentional, and it's really not good for the business. I'm referring to the way mission-critical software systems are implemented and utilized, and the workarounds needed to connect and support operations.

It's easy to understand how it happens. Companies need systems to manage assets. They focus efforts on selecting, implementing, and learning the new solution, with the ultimate goal being to get on with business. But then, that same company needs a system to mobilize its workforce, to get them into the field, to maintain the assets. Once again, efforts are focused on selecting, implementing, and learning a new solution, with the ultimate goal being to get on with business. And it doesn't stop there. The data coming from these assets can give organizations the ability to be far more proactive in caring for the assets and prioritizing capital spending. So what comes next? They focus efforts

on selecting, implementing, and ... well, you get the picture. Or rather, you don't have the full picture at all; you've got a set of dots that you're staring at, wondering what more there is to see.

The full picture in view:

connected asset lifecycle management (CALM) Enterprise asset management (EAM) and workforce management (WFM) systems are ubiquitous components of most IT landscapes within asset-intensive companies. Because of their basic, can't-live-without-them capabilities to, well, manage assets and workforces, they have been the operational backbone for utilities for many years. Now with the digitalization of industry, smart sensors and the Internet of Things, asset performance management (APM) is rapidly gaining traction because of its ability to apply complex algorithms to the "data dots" to help utilities make better decisions and reduce unnecessary maintenance and expense while improving safety. On their own, each component is powerful, greatly increasing efficiency and productivity, but when you connect the dots, together, they become an intelligent, predictive, and prescriptive solution for managing assets, maintenance, people and costs.

Keep CALM and carry on

ABB Ability™ Ellipse® is the answer for total business visibility, a complete connected asset lifecycle management solution that provides unprecedented insight into the health of assets, operations and the resources to keep them humming. With the ABB Ability Ellipse solution, APM, EAM and WFM systems are seamlessly integrated to enable a highly efficient workflow:

ABB Ability Ellipse workflow

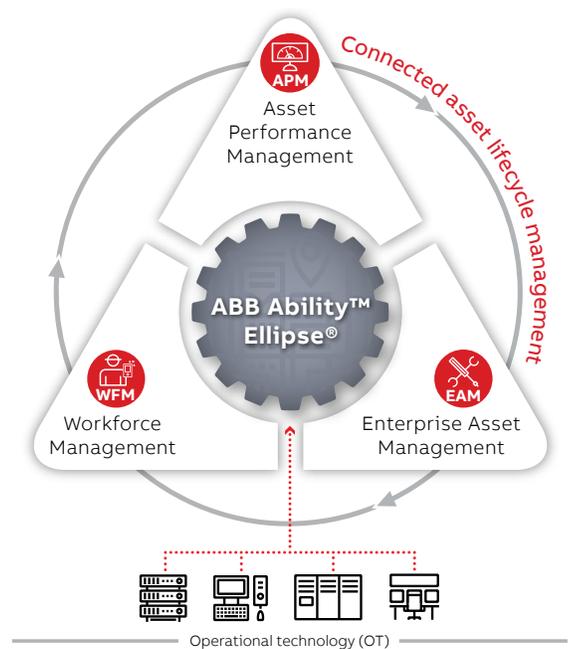
- Monitored by embedded sensors connected to the APM solution, an asset (yes, the asset itself!) creates an alert that its temperature has exceeded a predefined threshold.
- The alert is delivered to an operations manager in the control center and displayed on the Ellipse APM executive dashboard, where its location, age and other classifying information is easily accessible. Within the dashboard, the operator finds prescriptive actions for mitigating the issue based on the equipment's class and asset history.
- Through seamless integration with Ellipse EAM, the operator delivers the instructions from the dashboard as a work request, including prioritization of the request, as well as information on the asset and the tools & spare parts required.
- Ellipse EAM creates a work order and sends it to the integrated Ellipse WFM system with a worker assignment. The field technician accesses the work order on a mobile device (phone or tablet).
- The technician follows the route provided by Ellipse WFM to the work site, locates the equipment using GPS and performs the work. Once done, the technician closes the job.
- Ellipse WFM communicates work completion to the Ellipse EAM system, which stores the historical data for the asset and also records spare parts use and associated costs, in turn creating a request to replace the spare parts in inventory.
- The operator in the control center sees on the dashboard that the work has been completed and the alert has been dismissed. The Ellipse APM system retains information about the event and uses it in ongoing analysis, helping to build a clearer picture of long-term asset health and care.
- This information is fed to dashboards that give executives **a clear ongoing view of the state of the company's assets and operations.**

The sum is greater than its parts

You might be thinking: "That's all just integration, right?" No. It's true that a connected asset lifecycle management solution requires systems to actually be integrated, but it is not necessary that they all be from the same vendor. However, what makes ABB Ability Ellipse so powerful is ABB's 125+ years of expertise in asset-intensive industries, along with a deep understanding of industry best practices and assets. With ABB Ability Ellipse, collaborative processes and advanced, asset-specific, predictive algorithms can be embedded and enabled by machine learning that increasingly optimizes asset management over time.

The ABB Ability Ellipse CALM solution recognizes and caters to the relationship between people and systems. Knowing where and how to automate and embed machine learning takes critical industry experience, and ideally encompasses any system that touches your assets, including historians, control systems, and other operations technology. If we think back to the "connect the dots" example, what you want is a vendor that already sees whole parts of the image and therefore understands how to bring the rest of the picture together.

As a leader in engineering and asset management process innovation, ABB, in partnership with Microsoft®, a leader in analytics software and cloud solutions, stands ready to support your transformation to a connected asset lifecycle management solution.



Let's face it – connecting dots may be fun as a kid, but in the business world, you shouldn't have to guess at what the big picture might be.



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