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## Industry 4.0: Bringing down the barriers to asset data visibility



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**The power of digitisation to transform asset performance has been demonstrated in multiple industry sectors. Across the world, companies are using digital data to boost productivity, improve reliability and increase the flexibility of their processes. Those changes translate directly into real business benefits: lower costs, happier customers and greater profitability.**

Yet despite their potential, the adoption of new digital techniques remains patchy. Encouraged by government support and a strong domestic technology base, Japan and Germany have made the most progress<sup>1</sup>. In other countries, including the UK, uptake has been considerably slower.

Industrial companies, rightly, take a conservative approach to the adoption of new technologies, but many of the perceived risks associated with Industry 4.0 technologies are overstated. Let's look at some of them:

#### **Myth 1: Industry 4.0 requires significant investment in new equipment**

There are some elements of Industry 4.0 that are genuinely new, including interconnections between systems and networks of different types, and the application of advanced analytical techniques to draw insights from complex data. The technologies that underpin these innovations, however, are mature and widespread. The PLCs and other control devices in common use in today's industrial plant already have the ability to collect and communicate large volumes of data. Many are already doing so. For most companies, there is significant value to be obtained simply by making greater use of existing equipment and data sources.

#### **Myth 2: We don't have the data we need to apply Industry 4.0**

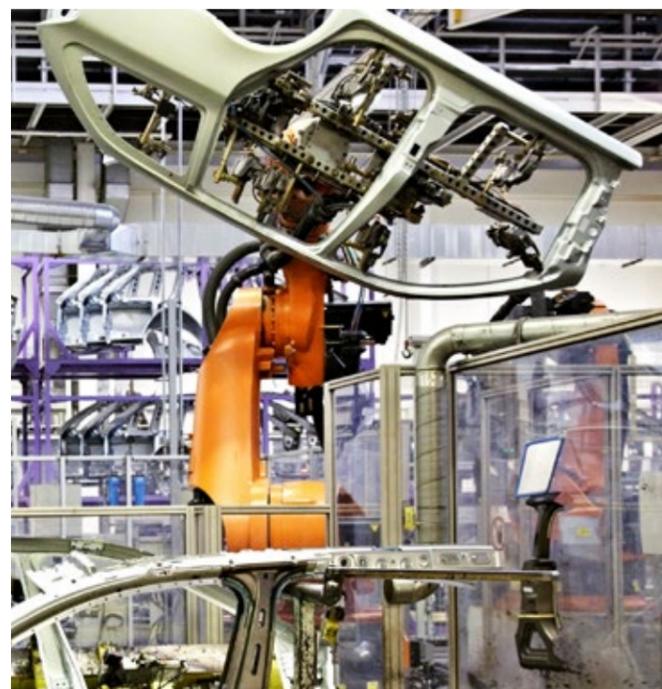
Most companies today only make use of a tiny percentage of the data already collected by their assets. Up to 99 percent of the available data on equipment health or process conditions may be discarded or archived without any further analysis. This existing data may be the most underexploited resource that companies possess.

Even where data on key process parameters is missing, modern sensor and networking technologies allow additional data sources to be added at low cost. Integrating a new temperature or vibration sensor into an existing industrial network can often be done in minutes, at a cost of just a few pounds. It is possible to dramatically upgrade the data collecting capabilities of even decades-old equipment without significant disruption or capital investment.



#### **Myth 3: Industry 4.0 projects will interrupt my existing operations**

Industrial processes achieve their currently high levels of productivity, quality and reliability through a delicate process of incremental improvement and refinement. Companies often fear that the introduction of new digital systems will disrupt their existing operations and upset that hard-won balance.



In practice, however, the majority of Industry 4.0 initiatives can be introduced in a manner that is entirely non-invasive, with little or no disruption to operations. Tapping into existing data streams poses no threat to ongoing production.

Process control systems are designed to be interrogated as and when required, so new data can be extracted with no ill-effects. Companies don't have to wait for scheduled shut downs or systems upgrades to start making better use of their data. And in most cases, Industry 4.0 technologies can be built to run alongside today's systems, not to replace them.

#### **Myth 4: We don't have the skills or capabilities we need**

Your top engineers and IT personnel are already busy people. Managers may worry that Industry 4.0 projects will be a costly distraction, pulling valuable staff away from their current roles and putting process stability in jeopardy.

In practice, these projects often require much less human resource than companies expect. The front-end work required to collect and store relevant data is often little more than a few lines of code. Thanks to today's smart analytical tools and machine learning technologies, analysing data to extract the insights is also faster, easier and more highly automated than many managers expect.

#### **What to get right**

Making better use of data from industrial assets is much more straightforward than many companies fear. It is not a trivial undertaking, however. To maximise the success of the Industry 4.0 efforts, companies have to get certain foundations in place.

- **Quality:** To be useful, the data collected from assets must be consistent, complete and error free. Problems with data acquisition, communication or storage are common in many installations, and may only be revealed when companies start looking for new uses for that data.
- **Access:** Many industrial users have multiple data collection and storage systems with little or no integration. Industry 4.0 projects may require them to bring that data together into a common platform for the first time.
- **Architecture:** Asset data must be comprehensible. Time spent building appropriate data structures, ensuring, for example, that all the data collected from a single machine is properly labelled and stored in a suitable place within the organisation's overall data hierarchy will pay off handsomely when that data is required for analysis.

#### **How Capula can help**

With more than 40 years of experience in the design, operation and support of industrial automation systems, Capula is the right partner to support your organisation on its Industry 4.0 journey. Our engineers can help you identify opportunities, understand the strengths and limitations of your data, and build the foundations of your digital manufacturing transformation. For more information visit [www.capula.co.uk](http://www.capula.co.uk)

#### **About the Author**

David Robinson is Market Development Manager at Capula. He is responsible for helping to define and position new offerings and portfolios across the business and has extensive experience in senior product and commercial marketing roles gained from working at major engineering internationals including Mitsubishi, Rockwell, GE Intelligent Platforms and telent.



<sup>1</sup> <http://www.pwc.com/gx/en/industries/industries-4.0/landing-page/industry-4.0-building-your-digital-enterprise-april-2016.pdf>