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Connected Maintenance Solutions Enable



New Business Models

by Isaac Brown

There is tremendous hype around the burgeoning Internet of Things (IoT), but the IoT is not a singular entity as the value proposition, timeline and technological needs vary widely across its three major domains – industrial, consumer and healthcare. The hype across all three of these IoT domains is palatable, with talk of industry 4.0, smart homes and digital healthcare increasing on a daily basis. This makes finding the right IoT markets and the best bets an enormous challenge.

For those seeking near term returns, the Industrial Internet of Things (IIoT) is an attractive candidate, as hype is beginning to give way to value. Manufacturers, utilities providers, farmers, oil producers and other industrial stakeholders are witnessing returns from investments in sensing, connectivity, analytics, systems integration and process transformation. Nearly every industrial organization stands to benefit in one way or another from these developments, leaving those that act too late at a significant competitive disadvantage.

Fueling the hype of the IIoT is its ability to deliver value in many different value propositions, from increasing supply chain visibility to improving worker safety. Among the many value propositions of the IIoT, asset optimization is one of the most promising. For many years, organizations have remotely monitored individual internal assets to understand their performance. The Cloud has made it possible to monitor a fleet of globally separate assets and analyze their data in conjunction with each other, something that is becoming a common practice for forward-thinking organizations.

While many organizations have analyzed their own internal operations over the Internet for years, the ability for industrial original equipment manufacturers (OEMs) to draw data from their product fleets in the field is completely revolutionary. To illustrate, a major airline may have hundreds of aircraft in operation at any given time. If GE Aviation and its partner compa-

nies can collect data feeds from its jet engines once they are in use by the airline, it can develop a far deeper level of insight into engine performance than any other single airline could accomplish on its own. This new practice of monitoring and analyzing equipment *after* it has been deployed in the field by customers is a key aspect of the IIoT revolution.

Connected machines come with new business models. For example, Caterpillar plans to roll out a suite of Web- and mobile-based predictive diagnostics and fleet optimization services over the course of 2016, aiming to draw data feeds from 3,000,000 Caterpillar engines and machines worldwide. Kaeser Compressors, a German manufacturer of air compressors, has a few experimental pay-per-use customers. With this model, it gives customers compressors for no up-front costs, monitors the equipment remotely, guarantees a service-level agreement, maintains the compressors when necessary and charges customers for the quantity of air they compress. This model is very appealing to both OEMs and their customers, but proper pricing structures must be put into place. In addition, customers must be comfortable with having their equipment monitored over the Internet by their providers.

However, challenges exist beyond a strong value proposition and business model. According to a recent Lux Research survey of more than 120 operational leaders, organizations like Kaeser Compressors may see more cultural pushback than organizations like Caterpillar. As shown in Figure 1, heavy industry tends to be comfortable with remote monitoring, with 61 percent of respondents reporting they were comfortable with OEMs monitoring their machines over the Internet, compared to 50 percent for energy organizations and only 47 percent for manufacturers.

Figure 1 further shows that regional preferences turned out to be an important factor as well, with 61 percent of North American respondents accepting of remote monitoring over the Internet, compared to only 38 per-

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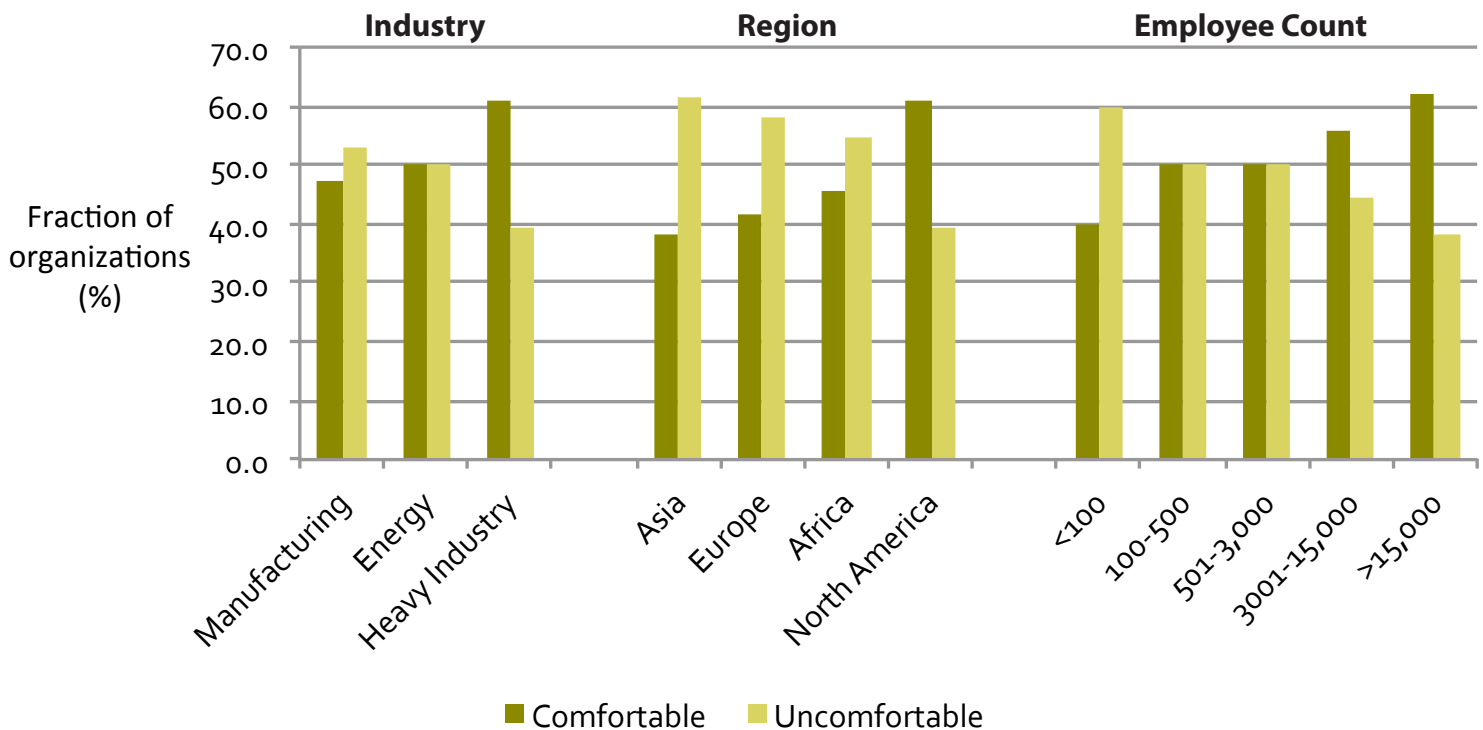


Figure 1: A breakdown of responses to the question: “Would your organization be willing to allow your equipment providers to monitor your equipment remotely (over the Internet) in order to provide predictive maintenance services?”



“Would your organization be willing to allow your equipment providers to monitor your equipment remotely (over the Internet) in order to provide predictive maintenance services?”

cent of Asians. The organization's size proved to be another strong factor, with only 40 percent of organizations with less than 100 people responding being comfortable with monitoring over the Internet; this number rose steadily with increasing employee count, to 62 percent for organizations with over 15,000 employees.

As OEMs develop their connected product strategies, it will be essential for them to understand the value proposition, business model and customer culture. Examining the extremes, connected products and solutions targeting large heavy industry organizations in North America must have very different forms than connected products targeting small manufacturing firms in Asia.

In the end, users should be able to deploy products and solutions in whichever format makes them most comfortable. These major formats will be products that connect over the Internet, products that connect to local

intranets and products that do not connect to any network at all. Without a doubt, any IIoT solution deployment will experience some hiccups along the way as vendors iron out these cultural kinks.



Isaac Brown leads the Industrial Internet of Things Intelligence practice at Lux Research in Boston, Massachusetts. He helps Global 1000 clients implement IIoT strategies, identify emerging opportunities, and explore strategic partnerships. Isaac graduated with a BA in Physics from Northwestern University, with a concentration in astrophysics. www.luxresearchinc.com

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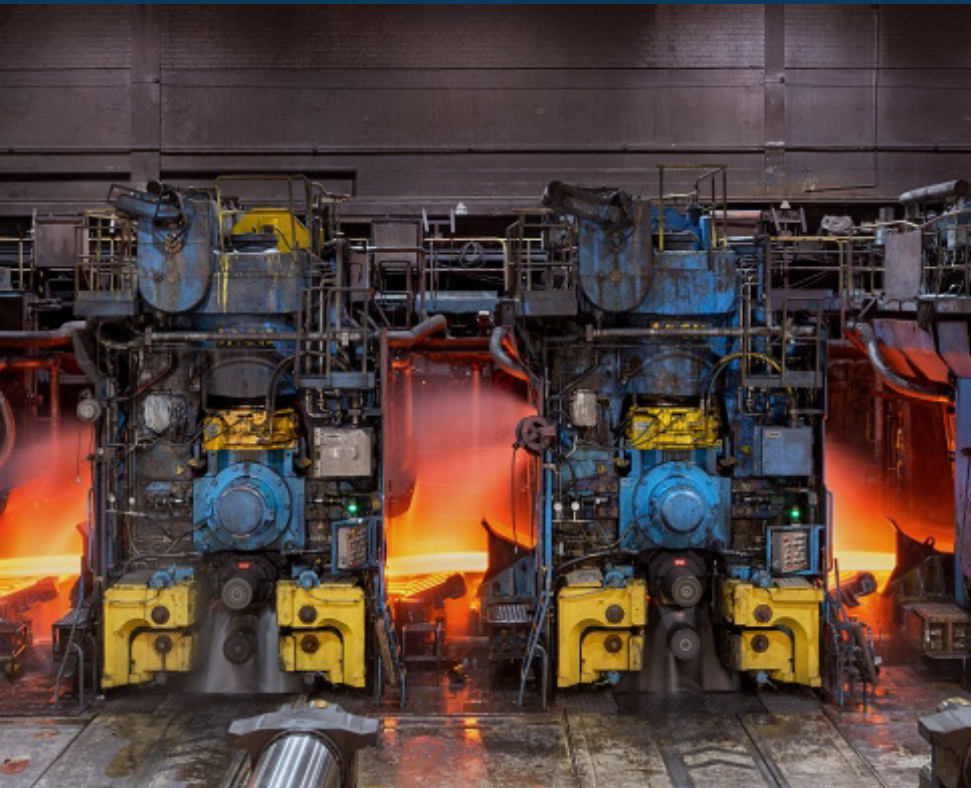
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