How Manufacturers Use the IIoT

The Internet of Things (IoT) is a vast interconnected system of devices, vehicles and even entire buildings capable of connecting to the internet and communicating with each other.

As this intricate network has evolved over the past several years, manufacturers have found it to be an invaluable advancement and have thoroughly integrated it throughout the sector to form the Industrial Internet of Things (IIoT).

This system is characterised by machine learning, big data (including predictive maintenance and statistical evaluation), sensors, machine-to-machine (M2M) computing and cloud-connected facilities.

These technological improvements promise a great number of benefits, including shorter production cycles, more timely responses to supplier orders, the ability to more accurately predict shifts in consumer habits and the optimisation of supply chains to adapt to new demands.

To provide you with a better idea of how you can achieve these benefits, consider these four real-life examples of how manufacturers are currently using IIoT technology to their advantage.

1. **3-D printing**: Opel, a German automotive company, is using 3-D printers to create bespoke manufacturing assembly tools to help streamline its production process.

2. **Telematics**: Caterpillar, an international construction and mining manufacturer, has integrated telematics into its products to help cut operation costs and improve safety.

3. **Sensors**: Taleris, an international analytics provider for the aviation industry, has outfitted aircrafts with sensors that monitor the performance of specific parts and systems and predict aircraft maintenance problems before they happen.

4. **Personal protective devices (PPD)**: Intelligence on Wheels, a German railway company, provides railway workers with special PPDs that alert them of any oncoming trains.

Incorporating IIoT technology into your organisation does not need to occur all at once. Instead, consider gradual integration to ensure that you can benefit from the technology.

**DID YOU KNOW?** According to the most recent manufacturing health check from Markit, a global financial information and services company, the sector has posted its fastest export growth since January 2014. Industry experts have attributed this positive development to a weakened pound and the steady increase in the number of factory workers. This progress has helped boost the manufacturing purchasing managers’ index (PMI) from 53.4 in August up to 55.4 in September.
Harnessing and Securing Your Data

With British factories posting their fastest growth since June 2014 and the slump in sterling boosting international orders, manufacturers have turned Brexit into an opportunity. Industry experts claim this growth stems from manufacturers’ recent ability to harness big data. Every step of the manufacturing process produces valuable data but that data becomes valuable only if manufacturers can harness and use it to unlock useful, actionable insights.

Is your firm suffocating under mountains of data that languishes untouched, and therefore, does not provide any insight with which to make informed decisions? Or is your firm in control, organising its raw flow of data and mining it for valuable insights?

To help you understand where your firm stands, ask yourself the following eight questions:

1. Is our existing infrastructure fully integrated and easy to access by all of our employees?

2. Do our employees produce their own separate spreadsheets? If so, do we have easy access to those documents?

3. Can we track/measure productivity gains and problem areas with our current data collection process?

4. Do our current reports provide us with a comprehensive view of each department and its operations?

5. Can we examine our data in real time? If not, how quickly can we produce an up-to-date report?

6. Are our reports comprehensive enough to make informed business decisions?

7. Do we believe that there are areas within our manufacturing processes where we could improve efficiency? If so, where?

8. How much time do we spend analysing our data? Is that enough?

Remember that harnessing your data also involves securing it - according to IBM, manufacturing was the industry most susceptible to cyber attacks last year, second only to health care.

The Engineering Employers’ Federation (EEF) has put together a short quiz for manufacturers to gauge their cyber security - take it by clicking here. To find more general government cyber security guidance, click here.

Avoiding New, Higher Health and Safety Fines

There has been a swift and dramatic rise of massive fines for corporate manslaughter, food safety and hygiene offences, and health and safety offences since the new sentencing guidelines came into force in February.

The intention behind these new guidelines is to ensure that the fines have a significant impact on a company’s finances and to act as a sufficient deterrent so companies do not continue such behaviour. In order to mete out these bespoke fines, the Sentencing Council uses comprehensive criteria that weigh a company’s offence against its annual turnover.
From February through the end of September, there have been 222 prosecutions - 14 of which had fines of at least £1 million. What’s more, roughly 16% of those 222 offences were for the manufacturing industry, who were the second-highest offending industry behind construction, according to industry research.

Understandably, there is a certain degree of risk associated with the work that manufacturing firms handle, which may explain the high amount of fines levied against the sector. In fact, there were 70,000 self-reported non-fatal workplace injuries and 16 deaths reported in 2014-15, according to the HSE.

With potential fines ranging from £50 to as much as £10 million depending on the offence, these statistics illustrate why it is crucial that you take the necessary precautions to ensure that your workers are safe.

In order to help your firm strengthen its health and safety procedures, consider implementing the following five practices:

1. Review your risk assessment with a health and safety professional to confirm that there are no gaps.
2. Provide a comprehensive safe work practices training for your employees. This should be conducted at least annually, or after a health and safety incident.
3. Have your employees participate in regular technical and machine operation training to ensure that they can safely use all the equipment and perform all the required tasks.
4. Schedule a health and safety consultant to conduct a thorough risk assessment at least annually.
5. Give your health and safety manager the opportunity to earn health and safety and risk management accreditations.

IN 2014-15, there were 183 prosecution cases in the manufacturing sector, and 95 PER CENT of them resulted in a GUILTY VERDICT for at least one offence.

Source: HSE

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