Industry 4.0: Opportunities for Telecom in Manufacturing

EXECUTIVE SUMMARY

Manufacturing is going through a period of change as factory owners and operators look to take advantage of technological advances to improve their competitiveness. Changes in several areas have opened up new opportunities, and collectively they provide a new platform for manufacturers.

In the first stages, manufacturers can use their new connected systems to gain critical insights about their operations. These insights can be used to improve the way the business is run, with potential enhancements to every aspect of their businesses. There are significant opportunities for telecom companies to support manufacturers as they follow this process – by the provision of services on the factory shop floor, across campus settings and as products are bought and used by customers.

This vision of the future offers a potential opportunity for wireless telecom vendors and service providers to unseat providers of fixed telecom infrastructure, or to insert their products and services in place of self-provisioned enterprise networks built on fiber Ethernet cabling or expensive, proprietary private wireless networks.

Analysis of existing players in the manufacturing market shows that they have already made moves to position themselves strongly as the ideal suppliers of Industry 4.0 technologies and services. The most advanced of these already have portfolios covering the entire value chain, and can cite experience of building next-generation factories for themselves and for customers. Neither operators nor vendors would be well placed to try to take a lead role in this market, as they are coming from too far behind.

Where they have not already developed their own IoT platforms, operators have an opportunity to become branded resellers of third-party IoT platforms. This will enable them to better control the connectivity that accompanies the overall IoT package, including mobile, fixed and nomadic wireless services.

There is a strong divergence of views between those keen to promote the idea of a wireless (as opposed to simply "connected"), or even mobile (as opposed to nomadic wireless), factory future, and others who simply don't see their customers ripping out and replacing their factory solutions.

Ways operators might attempt to break into the market include: targeting new factory builds (where using mobile might reduce the upfront networking cost) and targeting factory
refurbishments (where the cables need to ripped out anyway). They might also try a completely different tack. Spectrum sub-licensing (where national regulations allow) may make sense here, giving operator revenues (where otherwise they might have none), vendors the opportunity to sell their kit and factories the capability to use licensed spectrum within the geographical confines of their properties but retain control of their infrastructure and (assuming the licensing model makes sense) retain control over costs.

**Industry 4.0: Opportunities for Telecom in Manufacturing** assesses the roles that telecom operators and their vendors might play in the manufacturing revolution. It looks at what Industry 4.0 is, how that fits with other visions of the industrial future – such as the Industrial Internet of Things (IIoT) – and what role connectivity will play in enabling manufacturers to revolutionize the ways in which they run their operations. The study discusses how value chains are evolving and where telecom companies might fit into those value chains. Further, it looks at which connectivity technologies might fit within a factory environment and considers the state of Industry 4.0 now. Finally, it profiles companies from various parts of the value chain to show how they are addressing the Industry 4.0 opportunity.

The market is evolving fast, with a blurring of the boundaries between the domains of the manufacturing automation specialists, such as ABB, Bosch and Siemens, and of the IT providers offering applications and systems integration services. Where once there were separate ecosystems of hardware and software suppliers, the development of cloud and IoT solutions is bringing them together into the same competitive arena. At the same time, communications providers (hardware providers or service providers) are being sucked into the value chain to enable interconnection of devices and sensors so that data can be aggregated and analyzed.

**Figure 1: Industry 4.0 – Emerging From the Coming Together of Three Industries**

![Figure 1: Industry 4.0 – Emerging From the Coming Together of Three Industries](image)

*Source: Heavy Reading; illustrative companies, not exhaustive list*

**Industry 4.0: Opportunities for Telecom in Manufacturing** is published in PDF format.