

# 4 ways 5G is making the factory of the future a reality now.



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Ana is a leader in delivering business transformation. She has more than 20 years of international experience in services, telco and IT, and has spent the last five years developing strategic partnerships with major consulting, technology and integration companies to deliver innovative solutions to customers. Ana has extensive technical experience and industry knowledge, and is passionate about driving productive change.

The transition to Industry 4.0 is already well underway. It's easy to understand why, the digital factory promises step changes in productivity, efficiency and sustainability. By 2030, companies, led by manufacturers, will be using millions of Internet of Things (IoT) devices to enable digital business processes. Over 20 million of those devices will be connected using 5G.<sup>1</sup> The versatility and extremely low latency 5G can provide is making the full potential of Industry 4.0 achievable now.

## Realising the promise

Many of the pieces have been in place for a while: Advanced robotics, artificial intelligence/machine learning (AI/ML), IoT, virtual and augmented reality (VR/AR) and advanced data analytics to name a few. But the full potential of Industry 4.0 has been out of reach for many. Connecting the volume and variety of devices in the complex environments common in the manufacturing industry has been challenging, if not impossible.

5G is changing that. It offers extremely low-latency and high-bandwidth connectivity, making it perfectly suited for many manufacturing applications. And it can enable manufacturers to connect more things – potentially millions – in more places. It can connect devices in environments that are impractical to reach with other technologies. That's opening up lots more potential uses.

Here are four ways manufacturers are using 5G and the benefits it's helping to realise.

### 1 Increasing efficiency

The number of connected devices is expected to reach 50 billion by 2022.<sup>2</sup> But Industry 4.0 isn't just about connecting more devices, it's about using the data in increasingly sophisticated ways. 5G can enable manufacturers to track things at a far more granular level. For example, instead of simply tracking pallets as they move around the factory, with 5G you could track each item on those pallets and where they go when they are removed.

The idea of using robots on factory floors isn't a new one, but 5G will enable greater use of autonomous guided vehicles (AGVs), more capable robots and the realisation of cobotics. Machines will be able to take on much more than basic repetitive tasks. Enabled by AI/ML, they'll be able to carry out tasks that require more responsiveness and decision making. And when even that isn't enough, 5G will enable people and machines to work together more closely. An engineer could access detailed plans through an augmented reality headset, or control a robot in near-real-time to carry out tasks in dangerous environments or which require superhuman capabilities.



## Get started with a 5G virtual workshop.

Our architecture consultants will work with you to understand your business challenges, ideate how 5G and multi-access edge computing help address them and build the business case. This advice could accelerate your efforts and help you get more from your investment.

[Find out more >](#)

## 2 Improving quality and reducing waste

5G will also enable massive IoT, connecting devices on a whole new scale. This could give you a far greater understanding of where you can make savings, both in cost and resources. Improving sustainability isn't just good for your marketing strategy. Reducing the consumption of energy and raw materials, typically two of the biggest costs for manufacturers, is good for the planet and makes good business sense.

Combined with AI/ML capabilities this could enable automation of more business processes. For example, video analytics could replace labour-intensive quality control procedures that only test a small percentage of items with near-real-time monitoring of every part at multiple points along the production process. Spotting problems more quickly can reduce damage, cut waste and reduce defects. This can drive lower costs, higher quality and improved customer satisfaction; all of which can help increase revenue. McKinsey suggests that those that fully absorb AI tools across their enterprises over the next five to seven years could double their cash flow by 2030.<sup>3</sup>

## 3 Reducing downtime and defects

Predictive maintenance reduces downtime and stops defects, but it can be challenging to have an overview of the entire factory floor. With 5G it's easier to monitor your entire operation from a "single pane of glass." You can gather data from a huge number of IoT devices reliably and securely, analyse it with AI/ML models running at the edge, and report any anomalies in near-real-time.

In many cases, you won't even need to replace equipment, or even retrofit sensors. Synthetic sensors can deliver the required information via proxy measurements. With intelligent analytics, even something as simple as a microphone could provide sufficient data to provide early warning of an impending fault.

## 4 Enabling continuous improvement

Not long ago digital twins were the stuff of sci-fi, but many manufacturers are now using them to run detailed "what if" modelling. Companies no longer need to disrupt operations to see what would happen if they rearranged the factory floor, added a new piece of equipment or even how long it would take them to rectify a problem. They can test this virtually and make better informed decisions.

This can reduce the risk of failure, reduce the time to take ideas from concept to implementation and enable a whole new dimension in continuous improvement.

## Deploy today, be ready for tomorrow.

Don't wait any longer to realise the full potential of Industry 4.0 and the Fourth Industrial Revolution. Private 5G is ideal for manufacturing environments and widely available now. It gives manufacturers their own network, with complete control over who uses it and how. It's fast, secure and built to work with edge computing. And it's less expensive than you might think.

1. McKinsey & Company, *The 5G era: New horizons for advanced electronics and industrial companies*, January 2020

2. Juniper Research, *The Internet of Things: Consumer, Industrial & Public Services 2020-2024*, April 2020

3. McKinsey Global Institute, *Notes from the AI frontier: Modeling the impact of AI on the world economy*, September 2018

## Next steps

5G is ready to transform industry and open doors to new opportunities. With Verizon's private 5G platform, we enable organisations to get on the 5G ladder now. We work in partnership to build the foundations that are right for each business, to empower new services and use cases for people, enterprises and society.

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