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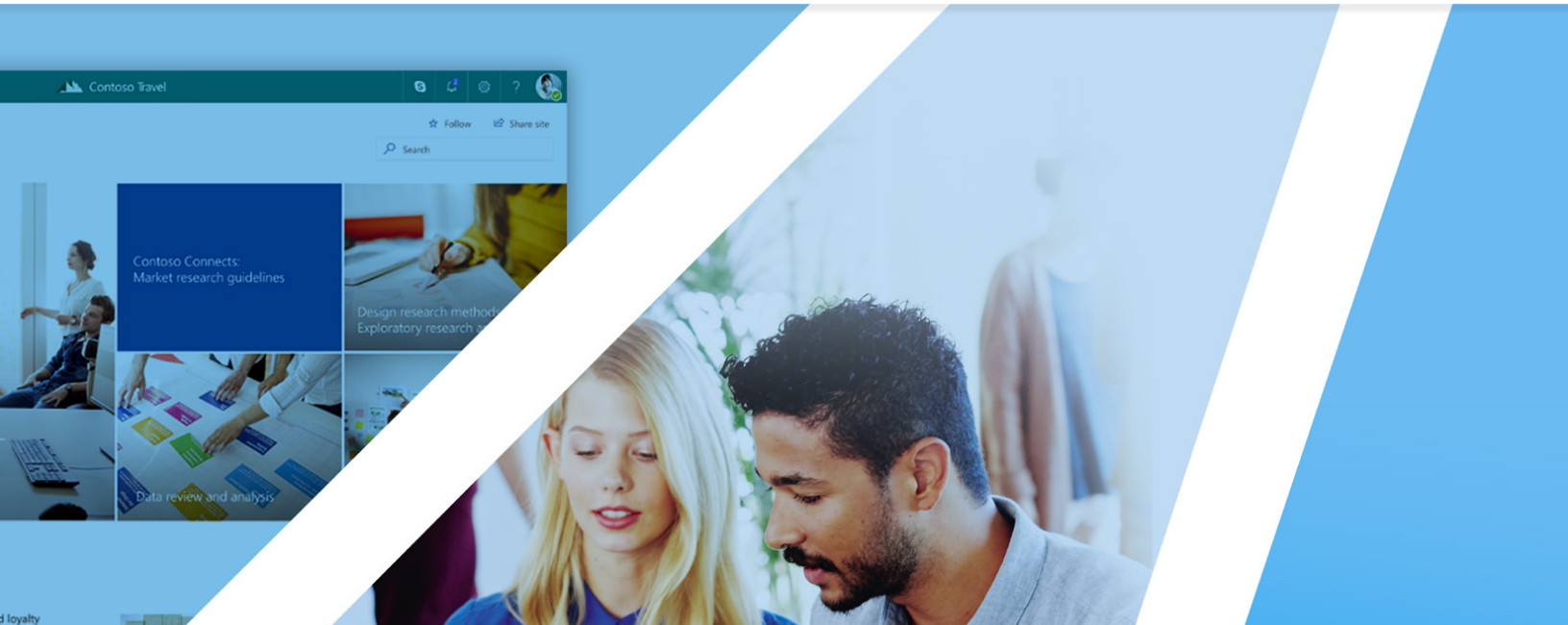

The Potential of AI in the Manufacturing Industry

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Introduction

In an era when digital technology is changing almost every aspect about how people live, work, play, and learn, it is important to think carefully about the complex questions that AI raises. Artificial intelligence (AI) is transforming the manufacturing sector by optimizing digital operations and driving efficiencies, enabling new products and services, and allowing for safer work environments. The manufacturing industry plays a central role in the global economy and because, as in previous industrial revolutions, it is once again at the forefront of adopting new transformational technologies.

This means manufacturing is one of the industries that is leading the way in exploring the full potential of AI. It also means manufacturers already find themselves responding to some of the challenges of AI — challenges like how to optimize processes to keep up with the new speed of business, how to ensure their existing and incoming workforce has the right skills to build and leverage AI, and how to create the right organizational culture to realize the benefits of data-driven decision making.

We will also discuss the way in which the managers inside manufacturing operations who are closest to the workforce are often the most sensitive to AI's impact on employees and are focused on improving worker safety and job satisfaction. And, while there is notable positivity from leaders in manufacturers around the impact of AI on jobs, there is also an understanding that a lot of work is needed to reinvent how we prepare people for the workforce.

The advent of AI makes this an exciting time to be in manufacturing. But it is also a time filled with great uncertainty.

How AI is transforming the Field Industry

The Manufacturing industry has seen great advancements in terms of automation, cloud computing, and IoT, the next manufacturing breakthrough is artificial intelligence, or AI, to enable the smarter machine, the smarter factory, the smarter ecosystem—and even the smarter car.

This new era of AI is driven by the combination of almost limitless computing power in the cloud, the digitalisation of our world, and breakthroughs in how computers can use this information to learn and reason much like people do.

Field service organisations have traditionally operated under the break-fix model, responding to device failure after the customer reports an issue. This operating model has grown costly and inefficient and has proven less than effective in satisfying the customer's rising needs.
By applying advanced AI technologies such as machine learning and cognitive services against the data coming in from the manufacturing process, you now have a value-added layer of insight into your data. This allows you to improve operational efficiencies, speed production, optimise equipment performance, minimise waste and reduce maintenance costs.

Advancements in AI are also opening a hybrid workforce where people and machines work together.

Why AI for Field Service?

If field-service reps could communicate with the equipment they're sent out to repair, they wouldn't have to come in unprepared. Predictive systems driven by AI can automate manual, time-consuming tasks like collecting data, diagnosing problems, and identifying the best solutions to resolve issues.

AI optimises resource management, empowers field teams through mixed reality and mobilisation, and improves customer service with proactive and predictive service.

The goal is to transition from a reactive, break-fix service model to one that is proactive and predictive, achieving a near constant uptime.

Three ways AI can transform your field service operations.

1 Optimise resource management

When a work order is scheduled in an intelligent system, assignments are optimized using multiple factors such as a technician's experience, customer preference and proximity to the site. Leveraging machine learning, this intelligent system can automatically assign the work order to the best available technician matching these criteria.

If the devices affected were an IoT-connected sensor, a real-time alert would be received, triggering an automatic service request. The system would attempt to self-heal the issue first and if unsuccessful, a technician would then analyse the data and commit a repair remotely, often without the customer ever knowing there was a problem. Sending the technician for an onsite visit would be the last option if the device could not be repaired remotely.

2 Empower field technician

To be the most effective and prevent costly return visits, technicians must have complete access to the information and real-time guidance they need. If the technician could utilise a digital twin of the device to learn about its status and operating condition, and to train on the problem that requires repair. AI's cognitive capabilities can even help optimise repairs before a technician arrives, taking care of routine diagnostics and testing for common or similar issues.

These capabilities ensure the technician is better prepared for the work and that his or her time and the customer's is used efficiently. The technician's mobile service app empowers the technician to better manage appointment schedules and access turn-by-turn routes to the customer site.

3 Improve the customer experience

Prior to AI-empowered systems, the customer would have to actively reach out to report that the device had failed. Depending on the type of failure, work could be slowed down or blocked for days/weeks until a technician could complete the repairs. Without intelligent support, the technician may need to return for follow-up visits, unnecessarily wasting both time and money.

AI allows for automated, remote self-healing and predictive forecasting, monitoring and analysing connected devices for potential issues. If one is identified, the system can remotely attempt to resolve problems through self-healing processes. Using historical device data and predictive analytics, the system might make a recommendation to schedule a technician site visit to head off future problems, notifying the customer of the work order. The customer could then plan around the scheduled downtime and even track the technician's arrival to the appointment in real-time.

An investment in the Future

Here at Spanish Point we see AI as a defining technology that every industry, every enterprise can use on the path to transformation. With the right guiding principles, intelligent technology has the potential not only to change businesses for the better, but society as well. Because, in the end, it's less about what AI can do than what people can do with AI.

If you want to dive deeper into Azure Data Analytics and Machine Learning, come along to our upcoming Azure Data Analytics and Machine Learning Bootcamp & Training which is presented by one of our Senior Data Analytics and Machine Learning experts, Daire Cunningham.

The Azure Data Analytics and Machine Learning bootcamp will cover all you need to know about Microsoft data and analytics platforms, data storage options, ingesting data and machine learning

Learn more about our Azure Data Analutics and Machine Learning Bootcamp here.

The Industry 4.0 revolution that is happening in our industry is cumulative. One breakthrough drives the next, and these innovations continue to build on one another. It's important to have a strong digital infrastructure and strategy in place so you are ready to capitalize on what's coming next.

To learn more about how Spanish Point can help your business get started with AI today, visit the Azure Data Analytics and Machine Learning.

Microsoft

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