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How analytics and AI unlock value in manufacturing

For all the buzz around data analytics and artificial intelligence (AI), manufacturers have hardly scratched the surface with these technologies. Thus far, analytics and AI have seen relatively limited application in manufacturing. While their utility is indisputable, few companies have considered how they may holistically integrate these technologies into their process to unlock greater value.

A couple of great examples are the areas of quality and predictive maintenance. AI and analytics allow us to achieve tremendous efficiency in these spaces, delivering better products for our customers while dramatically streamlining the manufacturing process.

How AI and Analytics enable predictive maintenance

For most manufacturers, downtime is the single greatest source of lost production. While all downtime is expensive, unplanned downtime is especially damaging and can easily lead to hundreds of thousands of dollars lost per hour. The challenge is accurately predicting when each machine will need maintenance across large fleets.

AI provides a highly effective solution to this challenge. Machine learning algorithms can analyze large, complex data sets and identify patterns or trends that otherwise could not be recognized. As a result, AI can help manufacturers predict

machine failure and breakdowns well in advance and prevent costly downtime.

Leveraging video and data analytics to improve quality

Defect detection has always been one of the biggest challenges in manufacturing. The reality is that the human eye will only ever spot a portion of defects passing through the facility. While it remains to be seen whether AI and analytics could achieve a defect-free facility, there is no doubt that these technologies can dramatically improve detection.

Study after study has shown that AI can identify more than 99% of defects before they leave the plant floor. As an example, a food production facility may use video analytics to inspect produce, and sorting unwanted materials. Alternatively, video could be utilized to measure splashes in the welding process across a fleet of machines and mark products that may require further inspection. In brief, AI offers the ability to rapidly identify defects or unwanted materials and sort accordingly with an astonishing degree of accuracy.

Beyond defect detection, existing process data can be used to create machine learning algorithms to predict the quality of new product designs. This can shave large amounts of time of effort

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off the testing process, saving money and allowing businesses to bring products to market considerably faster. As time-to-market grows ever more important, this technology offers a significant advantage for manufacturers.

In short, video and data analytics in combination with AI provide a seamless, highly effective tool for boosting quality and driving efficiency in the manufacturing process.

Manufacturers need an innovative, value-driven partner for analytics and AI

One of the most common missteps with any new technology is losing sight of the desired business results. AI and analytics are both incredibly powerful tools, but it's important to remember that they are tools all the same. They only hold value if they are applied properly and in service to a greater goal.

Siemens offers holistic experience with analytics and AI and we offer comprehensive expertise for digitalizing and optimizing various manufacturing processes. We have a proven track record of implementing and fine-tuning analytics tools to deliver incredible results for our clients.

It's not enough to merely have analytics technology. Manufacturers need a partner who will help them unlock the greatest possible value from analytics and AI by producing better products more efficiently. If you want to learn more about how Siemens can help your organization get the most from these tools, contact us today.

To find out how we can help your business, or to get in contact with us, please visit usa.siemens.com/digital-enterprise-services

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