

to connect machines. It is needed to make machines smarter, to figure out the best ways for embedding intelligence into machines and devices, then to develop the best techniques for collecting the data generated by those machines and devices, analyzing that data and generating usable insights that will enable the company to run its equipment more efficiently and optimize the operations and supply chains.

GE has achieved its success by quickly realizing the importance of being a data-driven manufacturer and moving first. Not all manufacturers will go as far as GE in producing data-driven services as a new line of business. The companies that thrive - rather than simply survive - will be those that find the best ways to harness their data to improve operational and business performance.

AI + Analytics = Data-driven manufacturer

It's interesting to note that 'Waking up as a Software and Analytics Company' as there has been a great deal of coverage about the revolutionary capabilities of AI in manufacturing. However, it is only once AI is combined with analytics that companies can begin to fully realize the value in their data. AI technologies employ technology and algorithms to automatically extract concepts and relationships from data, understand their meaning, and learn independently from data patterns and prior experience. Analytics provides the vital element of interpreting what this information means and applying it to accelerate and improve decision-making.

OpenText Magellan Company calls this AI-enhanced analytics. Core to delivering the capabilities of AI-enhanced analytics is a central platform that can connect to and access all data sources. Modern platforms - such as OpenText Magellan - combine open source machine learning with advanced analytics, enterprise-grade BI, and capabilities to acquire, merge, manage and analyze the Big Data and Big Content stored across your organization. AI-enhanced analytics can help break down the barriers between data silos and also analyze the information that has been previously trapped in unstructured data and other forms of content.

This type of platform allows data-driven manufacturers to improve their major business processes including forecasting, inventory management, procurement, supply chain management and production. It's impor-

tant to understand that AI doesn't replace traditional analytics it augments it.

The benefits of being a data-driven manufacturer

Companies that have already introduced AI-enhanced analytics are seeing impressive results in areas such as smart manufacturing and predictive maintenance. McKinsey reports that predictive maintenance reduces machine downtime by 30 to 50%. One organization states that it has been able to increase production capacity by 20% while reducing material consumption by 4%. While Forbes suggests that analytics can reduce breakdowns by 26%.

Impressively, the power of AI and analytics is in doing things that would be virtually impossible to achieve any other way. McKinsey uses the example of profit per hour - an analysis of everything that happens within end-to-end production process to work out exactly how much profit is created - that looks at thousands of parameters to establish how best to optimize each part of the process. The consulting firm says: "Unlike human planners, this advanced analytics approach typically factors in as many as 1,000 variables and 10,000 constraints to help manufacturers figure out what to buy, what to make, and how they should make it to yield the most profit in each period."

Product customization is another area where the application of AI and analytics can help companies become far more responsive to customer demands. The data-driven manufacturer can leverage analytics platforms to better predict customization demands through identifying patterns and trends in customer behavior. This can be translated into fully optimized production where customized products are created at near mass production levels and costs. AI and analytics allow a granular view of manufacturing processes that enable the late manufacture of products to the point of almost 'made to order' where the customer can become involved in the final production decisions. This is the new type of opportunity that data-driven manufacturers can quickly embrace.

Therefore, the data-driven manufacturer is becoming a reality for many companies. The combination of AI and analytics will let companies create business and production efficiencies through better understanding the data that they are creating.

Analytics and AI: The Rise of the Data-Driven Manufacturer



Times are tough. Global economic growth for the manufacturing sector is slow with few signs of recovery. Companies have worked hard to reduce costs and boost productivity. There's now really only one asset that hasn't been optimized: corporate data. Manufacturing firms are still a long way off fully exploiting the mountains of data they produce. In order to increase performance and build for future success, it is believed that 2018 has been considered as the year of the data-driven manufacturer. The intelligent use of Artificial Intelligence and analytics will be key.

Modern Machine Shop (MMS) defines the Data-Driven Manufacturing as the situation where "decisions controlling the manufacturing process should be based on facts, not guesses, wishes, theories or opinions. Emerging technology is enabling both people and equipment to collect and process the facts they need to achieve better results." It's clear that the emerging technologies MMS refers to are a combination of Big Data analytics and AI. It is also thought about this recently when reading about how General Electric (GE) Comp. is trans-

forming itself from an industrial and consumer products, and financial services firm into what it describes as a 'digital industrial' company. AI and analytics sit at the heart of GE's transformation enabling it to make sense of the vast amounts of data being captured by industrial devices. It was able to then use this information to improve its own performance as well as parcel it as a service to manufacturing and industrial clients.

Explaining the company's thinking is not enough