



Big Data

When companies consider adding IIoT capabilities to their factories, they must understand the amount of data that they will be collecting. Big Data refers to the enormous amounts of data that is collected by companies in factories and production. This amount of data is staggering and typically takes very advanced algorithms to analyze since basic algorithms can not handle the size of the data. Because there is so much data captured, companies must find a way to analyze and understand the historical records from their production.

Big Data is all the information that is collected by a company. This data is constantly being collected and stored every second. This could be people's vital information in a medical system, the packages delivered per minute by a national delivery company, or even the temperature on a boiler in a factory. Big data refers to any large amount of data points collected and stored by a company. These data points vary widely and could represent thousands of different instances in a company's production. Originally humans had been tasked with the analysis of these data points, but the sheer size and constantly increasing data set proves to be far too difficult. It is easier to leverage the ability of a computer to analyze and comprehend the values that have been collected.

Big data must be leveraged so that IIoT can succeed. Without a robust Big Data algorithm and data capturing system, companies cannot

fully use all the data they have collected. By collecting thousands of data points, companies can establish a limitless amount of questions through their queries and get a better understanding of how productive they are. They can determine how to become more productive, where to make changes, and where a future problem may arise; all through their capturing of data. A major positive for big data is that all this collecting can be done with a lot of the infrastructure that is already in place. Big Data can be leveraged, along with IIoT, and companies will be able to apply Big Data analytics over their current infrastructure, with minimal changes, and will reap instant savings benefits. These instant benefits will come from the analyzed data that come from the queries, and the changes made through the data being passed to the humans who can interpret it. Companies can use IIoT and Big Data analytics to more effectively produce and cut their unexpected downtime.

What makes IIoT so useful is the data that is collected by Big Data can be analyzed to improve the company's productivity. This analysis is constantly becoming larger and more difficult due to the data set becoming bigger with each minute of data collection. Through running advanced analytics of the collected data sets, companies can effectively determine where to increase productivity, identify future problems, and eliminate unexpected downtime. It is important to recognize that Big Data can be



leveraged by any company, but the process and rewards that can be reaped from this analysis may take more time to develop in some companies. There are some companies with instant returns, like a delivery company that can modify a route to be more efficient. This will save on gas costs and the time it takes to complete a route. While some companies may be manufacturing or machining a product that takes a year to be completed. It may take several product cycles for this company to reap

the benefits of Big Data analytics since their product cycle takes longer than the delivery persons daily route.

Big Data will have a very important future in the IIoT landscape. It will leverage the old infrastructure with the new interconnectivity that will drive increases in company's productivity and profits. Big Data will require large storage infrastructure and computing ability that is waiting to be leveraged.



WE ARE MAKING THE **UNKNOWN KNOWN** THROUGH ADVANCEMENTS IN DATA.

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