Why smart sensors are needed in smart manufacturing

Smart manufacturing technology is increasingly being adopted in factories across the globe as manufacturers strive to achieve further efficiency and productivity. In this regard, smart sensors play an important role.

That was the argument raised by [ABI Research](https://www.abiresearch.com/)in a whitepaper titled “What Comes Next in the Evolution of Sensors for Smart Factory Applications.”

According to the paper, manufacturers are increasingly looking for ways to improve production and efficiency, and more and more, they rely on data generated by sensors, which have become more advanced than ever.

“Leading sensor suppliers are seeing a rise in demand for new types of sensor data in manufacturing environments and are now trying to meet that demand. That means developing use cases for transformative sensor technologies such as radar-on-chip, video and machine vision, and acoustic and ultrasonic,” it said. “Software suppliers look to improve the accuracy and complete the picture these sensors paint of reality through sensor fusion software that combines the different types and sources of sensor data. A more accurate and complete view of the reality of their assets and processes could empower manufacturers to improve the efficiency, health, and safety of their operations.”

According to the study, different types of sensors may provide different perspectives depending on the application or use case. A camera may be needed, for example, when faults or breakdowns produce a visual effect that is out of reach for workers at a remote area. An acoustic sensor may be used when the breakdown produces an audio effect. If a failure generates a sound that is difficult to detect, an ultrasonic sensor can come in handy.

Strategic recommendations

According to ABI, the age of IIoT and Industry 4.0 is all about sensors and data that manufacturers must rely on to optimize productivity and reduce downtime. This then brings opportunities for sensor suppliers who can find further success in the market if they can meet the manufacturer's ever more sophisticated needs. That said, ABI provided the following strategic recommendations.

Go to market with gateway suppliers who can provide extra headspace in computing power. According to the paper, as manufacturers and platform providers start to implement more advanced, predictive analytics and third-party apps, they will require more types of sensor data, including acoustic, video, and infrared. If sensor suppliers hope to sell new types of sensors that generate more data, they should go to market with gateway suppliers that can handle the heavier workload, it said.

Improve access to current and legacy sensor data. The paper argues that sensor suppliers have an opportunity to work with companies such as PTC and Cisco and gateway suppliers such as HPE and Dell, and the manufacturers themselves have to figure out how to connect their sensors to the gateways more easily.

Partner with platform providers, edge processing specialists, and digital twin specialists. Sensor suppliers should partner with companies such as PTC, SAP, FogHorn Systems, and Siemens to try to better meet their customers’ needs, ABI said, adding that these companies constantly recommend that their clients get new types of sensors to maximize the utility of their products.

Network sensors wirelessly. According to the paper, software in smart glasses will combine near real-time sensor data with image recognition from the glasses to allow the wearer to virtually look inside machines, see defects, and load repair instructions on-sight. “Manufacturers need more low-latency wireless connectivity from sensors to gateways to make this possible,” it said.

The paper concludes by saying that the best solutions will result from collaborations between different stakeholders whereby a manufacturer presents a problem to a partner ecosystem or a systems integrator. “This way, sensor suppliers and industrial automation companies come from the OT side, and various computing and software companies come from the IT side to solve the problem together and better meet the manufacturer’s needs,” it said.

From:https://www.asmag.com/showpost/25851.aspx?name=news