

Sensor Data Analytics – Can You Afford To Ignore It?

As recently as a decade ago, who would have thought that by combining data from automobile sensors with weather readings and traffic data, insurance companies could gain a better situational understanding of conditions surrounding an accident claim? Similarly, could anyone have predicted that utility companies would combine smart meter data with billing data to provide wide-ranging customer reporting, actually helping customers optimize their usage?

In nearly every industry today, sensors are being created to monitor and report on specific events.

Everywhere one looks, these sensors, used in countless devices, are also generating massive volumes of data. Common examples include utility smart meters, healthcare biosensors such as EKGs, HVAC monitors, traffic readings, insurance company automobile sensors, and smart appliances for the home. In the current technology landscape, every organization has the potential to make use of this data and turn it into a valuable asset. Businesses that think creatively can harness this sensor data and turn it into usable information, thus gaining a huge competitive advantage, driving efficiency and innovation far into the future.

In recent years, there has been a well-documented big data explosion and one big driver of this is the growth in data that sensors are creating. In the past, technical challenges prevented companies from analyzing this “atomic” data. There was simply too much data, created too quickly, to allow for realistic storage and practical analysis. Companies analyzed either small windows of the data, looked at statistical sample sets,

aggregated data to usable levels, or they simply ignored the data altogether.

Old barriers to analyzing this data are falling by the wayside, as are the traditional high costs associated with creating effective tools to analyze this data.

Newer technologies have removed the technical barriers to the big data problems. MPP databases, Hadoop-based systems, and cloud storage can all play a role in storing this data in a cost-effective manner while efficiently integrating it using parallel processing. On the front end, newer analysis and reporting tools make use of these technologies and allow both business users and data scientists to dig into the information. Most important, it’s now possible to do all of this without a large financial commitment. With these technological and financial limits stripped away, the value of analyzing this data is undeniable.

By itself, there is value with sensor data, but by tying this data to other sources, the value grows enormously.

Sensor data can be used toward both external-facing applications to customers and vendors, as well as for internal efforts between business units. Integrating sensor data into a larger big data strategy, enterprises can develop tools to quickly discover faulty equipment, fraud, and operational inefficiencies, as well as create predictive modeling and forecasting. With deeper data mining, one can even unearth trends and outliers, finding untapped markets that can drive new business models. *Combining sensor data with other complementary sensors or operational data provides value that is well beyond the sum of its parts.*

Furthermore, the inherent makeup of sensor data allows for quick deployment of new systems. For one, these data structures are often quite simple, so the sensor data itself doesn't need a complex model. In addition, many sensor data systems follow consistent paradigms, allowing common storage and analysis patterns to be used without reinventing the wheel, so to speak. Coupled with agile development techniques and prototyping, it's very realistic for a business to see real value in a month or two. Establishing an ongoing program can provide continual added value by expanding the scope of the data and performing additional analysis. With the enormous value that can be achieved, along with the low risk and quick turnaround, it's difficult to justify not starting a program to perform sensor data analytics. There's a very good chance that the competition has already started.

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