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Leveraging Big Data to Achieve Your Business Goals

With the advent of sensor technology, the digitalization of the supply chain, and increasing volumes of information about real-world product use and customer feedback, manufacturing is increasingly a data-driven enterprise.

To gain competitive advantage, manufacturers must rapidly adapt to changing market requirements, adjust to supplier and resource shifts, and optimize their supply chain to capitalize on cost or revenue advantages. With the massive new flows of data from both internal and external sources, there is ample opportunity to extract valuable analytical insights that inform decisions or serve as the basis for new products and market entry.

In order to take full advantage of available data assets, manufacturers require solutions capable of handling significant data volumes, unstructured data, and a multiplicity of data types. A modern infrastructure based on the Apache Hadoop and Apache Spark ecosystem can help manufacturers achieve insights across vast amounts of information in a cost-effective and scalable manner.
TARGETED CUSTOMER INSIGHTS

Many manufacturers – such as automotive, appliance, electronics, and clothing companies – market directly to consumers. Using a combination of data sources, they seek to better understand customer needs in order to target them. With Big Data analytics, firms can:

• **Build a 360-degree view of customers** by aggregating structured and unstructured data from multiple product lines, transactions, customer demographics, call center logs, online and mobile behavior, social media, and public sources

• **Achieve effective customer segmentation** based on a greater number of variables

• **Personalize offerings** to increase the likelihood of acceptance

• **Increase profitability** by increasing cross-sell and up-sell opportunities

• **Improve customer loyalty** by anticipating customer needs and providing relevant, timely offers

These use cases exemplify how manufacturers can leverage Big Data to achieve their business goals.
DEMAND FORECASTING AND PRODUCTION SCHEDULE OPTIMIZATION

Manufacturing leaders are focused on the automation of manufacturing, with the goal of developing “smart factories.” In Germany, this initiative is known as Industrie 4.0. It serves as a catalyst to galvanize diverse multifunctional departments together. Big Data and advanced analytics will become critical to its success, helping in the following ways:

- **Improve demand forecasting** based on seasonality, historical demand drivers, and signals sent by the supplier ecosystem or customer sentiment
- **Optimize production schedules** based on supplier, customer, machine availability, and cost constraints
- **Accurately forecast product delays** so that downstream impacts on other manufacturers, dealers, or end customers can be quickly communicated and accommodated

PRODUCT TEST ANALYSIS

Modern product testing can produce high volumes of data. Automotive sound testing alone can create terabytes of data, and the advent of sensors in crash tests can create significantly more. Hadoop is ideal for storing and analyzing this detailed, high-volume data. Considering that real-world performance is predicated on the success of testing and quality assurance efforts, a Big Data solution can assist in the following ways:

- **Store large volumes of test data** from multiple sources cost-effectively
SAP® Cloud Platform Big Data Services make it easier for manufacturers to capitalize on data quickly.

- **Quickly analyze test-result data** based on complex information to identify the extent of results and the opportunities for improvement
- **Identify potential product issues** by considering unstructured data from sources such as news and social media

**CUSTOMER SENTIMENT AND CLAIMS ANALYSIS**

Big Data is driving innovation in manufacturing by expanding the universe of data available to analysts and product managers. With greater insight into customer sentiments, warranty claims, and service claims, companies can increase profitability by improving product capabilities and optimizing warranty offers. Big Data solutions enable manufacturing companies to:

- **Accelerate claims processing and increase processing accuracy** by employing text analytics on unstructured claims data
- **Optimize warranty offers** by combining customer, service, and financial data sources to understand how to adjust offerings
- **Improve product development** with rapid feedback from multiple sources regarding the origins of product failure or product returns
SUPPLY CHAIN RISK MANAGEMENT

As manufacturing is increasingly global and distributed, involving multiple suppliers, time zones, components, and communication modes, it becomes more and more challenging to effectively manage supply chain risk. The use of Hadoop allows manufacturers to:

• **Centralize reporting and analytics to create a global supply chain view** by pulling previously siloed data from across divisions and geographies into a central repository

• **Achieve greater visibility into supplier quality**, better predict supplier performance over time, and be able to view product quality and delivery accuracy in real time, making trade-offs on which suppliers receive the most time-sensitive orders

• **Model currency fluctuation impacts** on resource, vendor, and shipping costs to optimize supplier and resource mix
Why SAP® Cloud Platform Big Data Services for Manufacturing

SAP® Cloud Platform Big Data Services make it easier for manufacturers to capitalize on data quickly. Help ensure that operational and performance objectives are met as well as provide expert advisory services and proactive support.

A COMPLETE SOLUTION, RUN BY EXPERTS

SAP Cloud Platform Big Data Services are fully managed cloud services, including everything required to run production-grade Big Data – infrastructure, a comprehensive Hadoop- and Spark-based platform, and expert operations service. With SAP Cloud Platform Big Data Services, enterprises can rapidly achieve business value from their data.

ENTERPRISE-CLASS SECURITY

SAP Cloud Platform Big Data Services are designed from the ground up with security at their core. They are Service Organization Control 2 (SOC 2) certified, and compliant with Payment Card Industry (PCI) security standards and the Health Insurance Portability and Accountability Act (HIPAA). Strong, enterprise-class Kerberos authentication is automatically available on the platform.

HIGH PERFORMANCE AND RELIABILITY

SAP offers a solution fully optimized for Big Data, resulting in up to 10x better performance than alternatives. Our operations experts help ensure that operational and performance objectives are met as well as provide expert advisory services and proactive support.

FOR MORE INFORMATION

To find out how SAP Cloud Platform Big Data Services can help your manufacturing company, contact your local SAP representative or visit us online at sap.com/bigdataservice.