FINDING AIRCRAFT PARTS BEFORE THEY ARE LOST, WITH PREDICTIVE ANALYTICS

It has been decades since just-in-time (JIT) strategy was first perfected. The criticality of inventory management for efficient production can hardly be overstated. However, not all manufacturing is the same. For high volume manufacturing for instance, it's about perfecting the reduction of overheads and minimizing statistical defects. But, there are instances of manufacturing businesses where objectives, while seeming similar, may differ.

Take aircraft manufacturing, for instance. The manufacturing process is complex, considering the number of parts and assembling complexity across geographies and the precision factor in quality control. The cost of reworking or scrapping parts can run into hundreds of millions, for just a few aircrafts. The ability to detect potential problems such as missing or defective or scrapped parts, then, is pure gold. Enter predictive analytics.

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As per a study by Greyhound Research, a leading global analyst firm, predictive analytics is one of the top priorities for manufacturing companies, with 79% respondents in the survey stating so. Of all respondents, 64% confirmed that they are already leveraging predictive analytics in at least some parts of the manufacturing process, citing inventory management as one of the most common areas of investments.

A BIRD'S EYE VIEW

A large aircraft manufacturer, an Infosys client, recognizing the high cost of quality, wanted to build a program to increase visibility into the life cycle of aircraft parts. They also wanted discrete tools and processes to anticipate and reduce missing parts and scrapping in their plants which were producing a specific aircraft model. They wanted a bird's eye view of the entire product lifecycle, across their subsidiaries and final assembly line which would enable them to ramp up or down production as required. The platform was also required to provide the capability to check the status of stocks in inventory, procurement, production, and raise pay orders.

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A HUGE DATA PROBLEM

Infosys built an integrated reporting and planning platform to accomplish these objectives. The data volumes were huge - tens of millions of rows - to be processed four times a day. What made it even more complex was that the data was coming in from five different systems from different countries.

The team deployed SAP HANA for data mashing and processing of all incoming data. The platform allowed planning at the individual part level, right from engineering to installation, and also enabled dynamic data visualization across plants and functions for planning and scheduling. The platform also performed several checks to provide visibility on pending/in-progress points all along a part's lifecycle, giving real-time insight.

Our solution gave near real-time visibility throughout the lifecycle of aircraft parts – from engineering design, through manufacturing and procurement, quality, logistics, configuration management, etc. This helped the client forecast stock levels more accurately, enabling better delivery planning and more efficient execution. More importantly, the platform contributed significantly to the client's plans to ramp up production in the plants assembling the aircraft model.

FINDING AIRCRAFT PARTS BEFORE THEY ARE LOST, WITH PREDICTIVE ANALYTICS: THE FIVE TAKEAWAYS

1. **Leverage** predictive analytics to improve the manufacturing process. Develop broader visibility and tighter control through the use of analytics tools, and application of proactive planning techniques.
2. **Deploy** AI-driven data mashing and processing platform for ingestion of large volumes of data from multiple sources and generation of real-time insights.
3. **Utilize** data visualization and reporting techniques for faster and decisive actions.
4. **Build** centralized dashboard for continuous monitoring and timely actions across plants for accurate planning and scheduling. Automate monitoring for continuous checks for visibility.
5. **Integrate** reporting and predictive analytics to monitor potential issues proactively so as to perform corrective actions on time.

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BIG LEARNING:

Real-time inventory analysis is a big step up from when inventory analysis was no more than a rear-view mirror with the ability to catalogue the mistakes of the past. Predictive analytics and AI are powerful technologies for large manufacturing companies. They provide companies the opportunity to detect issues proactively and build tighter and more reliable operations.

WE DID THIS FOR THEM. WE CAN DO IT FOR YOU.

Learn how predictive analytics can help your enterprise by reaching out to us at askus@infosys.com

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