Early Warning System

Manufacturing

Awards & Recognition

To know more
Visit the Manufacturing page on tcs.com
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About Tata Consultancy Services Ltd (TCS)
Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India’s largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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IT Services
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With the emergence of Product-as-a-Service (PaaS) in the manufacturing industry, product quality and customer service have become more critical than ever. Companies need to deliver superior products and services that meet customer expectations. The ubiquity of connected devices provides companies with device operating data that can be used to identify potential product quality issues and predict product failure.

Tata Consultancy Services’ (TCS’) Early Warning System (EWS) leverages advanced analytics and simulation techniques to deliver a paradigm shift in manufacturing business models. At the heart of the system is a new measure, ‘Anomaly Score’, which is calculated by combining insights from structured and unstructured data. This score offers manufacturers the insights to detect and prevent product failures, thus proactively avoiding expensive damage control and product recalls.

Overview

With a view to increase their market share, OEMs rapidly launch new products that offer compelling and customizable features. Quality management teams, however, face a challenge due to the long detection-to-correction process, which often takes three to six months, and if compromised, can result in expensive product recalls.

TCS’ Early Warning System addresses this challenge by harnessing the data generated much earlier than claims to calculate an innovative ‘anomaly score’. The score, representing the quantum of quality issues in every part of the machinery or equipment running in the field, enables manufacturers to predict product failures and offer proactive solutions.

The system’s application spans beyond quality management to initiate the right counter measure in time, and extends to multiple functional areas that enable:
- Service engineers to identify the ‘sick’ products in the field for proactive service, thereby, enhancing customer satisfaction
- Design engineers to simulate the prototype testing and reduce the time to market
- Buyers to streamline the supplier recovery process, thereby, reducing the warranty cost
- Part supply chain managers to accurately forecast part requirements, increasing both service level and inventory turns

Our Solution

TCS’ Early Warning System leverages machine learning algorithms, Big Data tools, and TCS’ rich domain expertise to extract insights from both unstructured data sets of call centers, social media, surveys, customer appointments and repair orders, as well as structured sensor data to generate the ‘Anomaly Score’. When this score exceeds a threshold value, it signals an impending failure of the system under observation. Key features of the system include:
- Early updates on the priority of quality improvement projects to improve product quality rating
- Fault code patterns for design engineers to quickly calibrate new products
- Proactive service capability for customer service teams to generate ‘sick product’ reports
- Accurate forecasting of parts by supply chain teams, reflecting the condition of the product in the field

Benefits

TCS’ Early Warning System enables manufacturers to benefit from:
- Shorter issue detection time by 35 to 40 days
- Reduced time to market
- Greater mind share through superior quality rating
- Margin improvement by reducing warranty cost with early correction
- Perfect fulfillment with optimum safety stock in the field through condition-based forecasting
- Enhanced customer experience through proactive service
- Enriched supplier relationship with organized recovery processes

The TCS Advantage

Working with TCS offers distinct advantages:
- As-a-Service: Our solution is available as a highly scalable, on-demand, plug-and-play service on the cloud for the business to draw quick insights in a rapidly changing market.
- Deep Domain Expertise: We engage with leading global enterprises across the value chain. These engagements further contribute to our deep hands-on domain expertise and technology experience, which we leverage to solve real business problems.
- Large Talent Pool: Our strong and diverse talent pool have executed transformation engagements and implemented technology-based business solutions to deliver value to manufacturers.
- Mature Offerings: TCS invests in evolving offerings and capabilities to address market trends and help companies stay ahead of the curve. Our comprehensive solutions cater to the varied business integration needs of enterprises to add incremental value.

How we have helped our customers

Gearbox failure identified 7 months in advance for a leading luxury automaker

37% new issues related to reliability and customer dissatisfaction identified for a Japanese automaker
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- Proactive service capability for customer service teams to generate ‘sick product’ reports
- Accurate forecasting of parts by supply chain teams, reflecting the condition of the product in the field

Benefits

TCS’ Early Warning System enables manufacturers to benefit from:

- 30 to 45 days shorter issue detection time
- Reduced time to market
- Greater mind share through superior quality rating
- Margin improvement by reducing warranty cost with early correction
- Perfect fulfillment with optimum safety stock in the field through condition-based forecasting
- Enhanced customer experience through proactive service
- Enriched supplier relationship with organized recovery processes

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TCS Design Services 03 1601 17