

# ENHANCING PRODUCTIVITY WITH PRECISION

We prevented more than 80% of wrong supplier codes in its first iteration, enabling a global automobile company to optimize its production with AI and ML-led solutions.



## Customer's challenge

The customer faced recurring interruptions and high costs in their prototype vehicle build process due to supply issues, incorrect supplier selection, and deferrals in receiving the sought-after parts during the procurement stage. This resulted in delays, irredeemable loss of time, and budget overruns.

## The pressure points

- ▶ Delays of one to more than four weeks.
- ▶ Problems in proactively recognizing and excluding erroneous codes.
- ▶ Difficulty in mapping the part codes correctly.

## Our solution

The automobile company chose HTC NXT to transform its production process.

We thoroughly analyzed procedural obstacles and utilized AI and ML techniques to develop our solution. Led by expert data scientists, we identified the optimal ML algorithm, Naive Bayes, after comparing its performance with other algorithms. This solution facilitated significant improvements in the customer's production process, resulting in a much-needed faster turnaround.

- ▶ Utilized historical data of successful purchase orders (POs) for system training.
- ▶ Tested other algorithms but found Naive Bayes to be the most accurate.
- ▶ Deployed a self-learning AI algorithm for prompt notification to sourcing teams regarding potentially incorrect part codes.
- ▶ Collected and organized data from spare part dealers, including detailed code breakdowns for different parts.
- ▶ Conducted a feasibility analysis for a proof-of-concept (POC) development.
- ▶ Derived probabilities for different suppliers and integrated them into the self-learning AI algorithm to identify possible incorrect part codes.
- ▶ Utilized the AI ranking engine to generate a list of accurate site codes in descending order, determining the most reliable supplier for each part.

## Results that speak volumes

The ML tool streamlined supplier selection, enabling the purchasing department to focus on resolving supplier-end issues. This improved part flow, optimized labor hours, and ensured completion within the desired time limit, resulting in expected profit growth.

- ▶ Prevented more than 80% of instances of wrong supplier codes in its first iteration.
- ▶ Minimized suspense issues for purchasing/PMAs, allowing greater attention to supplier problem resolution.
- ▶ Reduced the number of stops in build instances.
- ▶ Improved process efficiencies which contributed to direct savings.