

# Reimagining shipping through machine learning and data science

For a global logistics provider

## Client Description

An American multinational delivery services company that offers a portfolio of transportation, e-commerce, and business services to customers worldwide. The company delivers packages and freight to over 220 countries and territories through an integrated global network. It provides worldwide express delivery, ground small-parcel delivery, less-than-truckload freight delivery, supply chain management services, customs brokerage services, and trade facilitation and electronic commerce solutions.



## Business Priorities

1

The client was facing significant issues like shipment delays as a result of package content misclassification, and increase in release costs and penalties due to incorrect documentation. Erroneous Harmonized Commodity Description and Coding System (HS) mappings were delaying freight delivery and consequently resulting in customer dissatisfaction.

2

Thus the customer aspired to implement an AI based solution that would proactively predict the caging probability and classification of shipments, in order to reduce delays and improve customer experience.

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An additional objective was to deliver this solution through an MLOps framework, which would help automate the build, test, deploy and govern aspects of the AI solution.



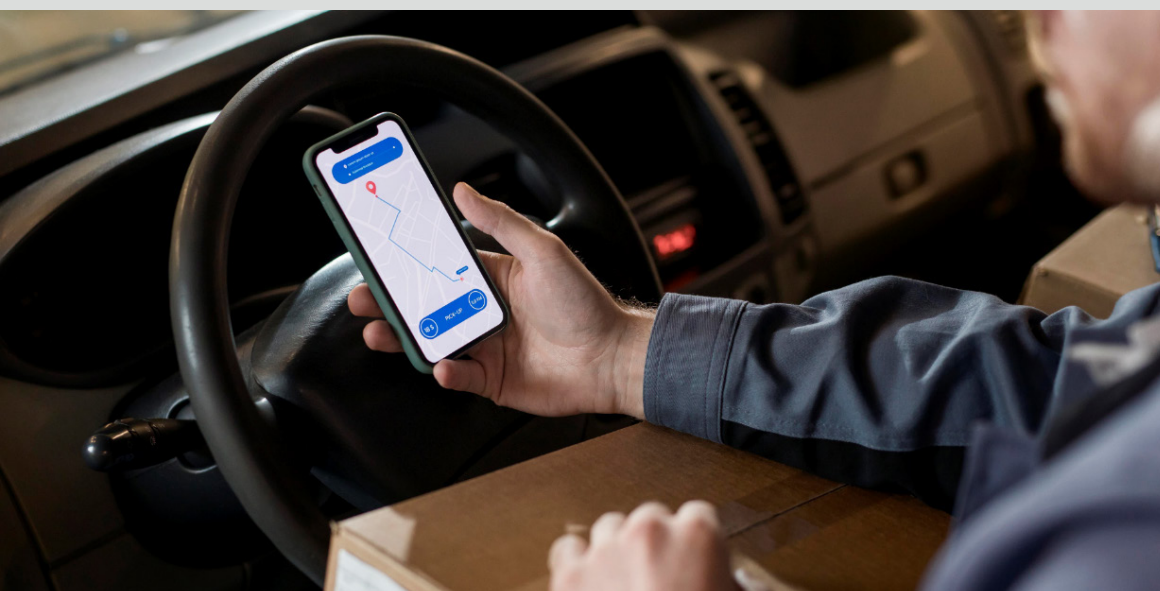
## Our Solution

HCL came onboard to help the client reduce complexities in their shipment process through a strategic transformation exercise. Our approach involved:

- > Setting up a big data platform to load vast amounts of data, and provide the ability for fast, iterative learning.
- > Developing tools, processes and infrastructure to handle high volumes of text.
- > Building models using semantic analysis, named entity recognition, ontologies, topic modeling and others to help classify shipped items.



- > Automating the model testing and comparison processes.
- > Creating a feature store to improve the productivity of the team by providing reusable features and adequate governance.
- > Achieving model management and orchestration across multiple environments using CI/CD pipelines and devising Model-as-a-Service delivery strategy to expose machine learning models to different lines of business.



## Business Impact



Machine Learning models reduced the manual efforts to classify shipments that were not being mapped correctly by rule-based systems.



Demonstrated global scale and moved from POC to production that operates in a client supported big data environment.



Provided high-performance processing design and components to support real-time workflows.



Entity profiling and data orchestration methodologies significantly reduced the time to develop new ML models.



For any queries, please reach out to us at [digitaltransformation@hcl.com](mailto:digitaltransformation@hcl.com)

