RISK PROFILING USING PREDICTIVE ANALYTICS

Leading Airport Solutions Provider

THE CLIENT PROBLEM STATEMENT

Client wanted to test and build an innovation proof of concept to predicting the valid hit (Rule-in hit), using the historical patterns of the travelers and profile available in the system (idea was to improve accuracy of predictions in comparison to rule based approach that is deployed currently)

NIIT technologies

SOLUTION

It is the machine leaning based approach to reduce the False Positive rate for the hit generation. Our objective would be to increase potential rule-in hit cases of new travelers crossing the border.

Analytics Approach and Tools & Techniques

- Leverage open source R, Python for modeling
- Key algorithms to be used – Clustering, Time Series, Regression

MODELING APPRACH

Data Model and Outcome

iBorders Data Model

Manual Rules

	No Hit	Hit	
Qualification Rule_Out	TN = 6516	FP = 287	6803
Qualification Rule_In	FN = 0	TP = 1686	1686
	6516	1973	

ML Rules

	Predicted Rule_Out	Predicted Rule_In	
Actual Rule_out	TN = 6737	FP = 66	6803
Actual Rule_In	FN = 21	TP = 1665	1686
	6758	1731	

After ML implementation
- *False Positive Rate is improved by 77%*
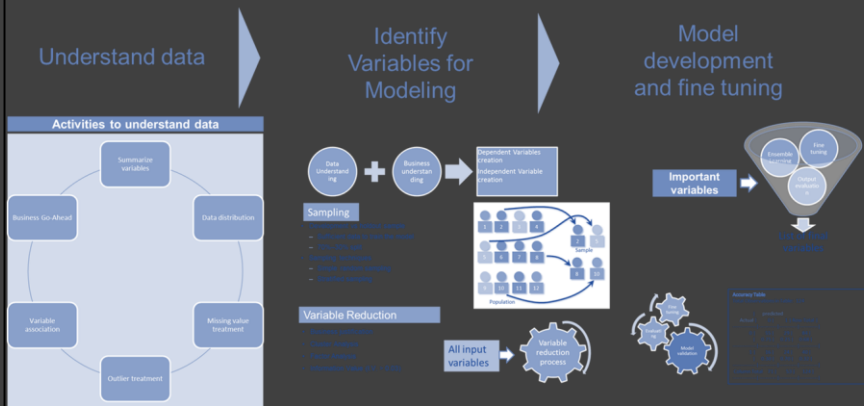- *Overall hit accuracy is also improved by 2 bps*

BUSINESS OUTCOME

CUSTOMER SERVICE

After ML implementation
- False Positive Rate is improved by 77%
- Overall hit accuracy is also improved by 2 bps