

Why?

* An SPE (driver) is a key contributor in meeting the end consumers demand during normal shipping/expedited shipping/ holiday peak loads.SPEs that are at high risk of churn need to be identified to ensure they are given adequate loads to move and thereby able to earn enough to continue their association with XPO.

How?

* Use historical attributes of SPEs like frequency of loads moved for XPO, payouts, shipments rejected, demographics, regional preferences, last minute cancellations etc and the historically observed drivers churn to build a predictive model
* Understanding factors that are leading to drivers churn in a region is an important task for the transport lines of businesses

XPO LOGISTICS HACKATHON

S.P.E. (Driver) Churn Prediction

The Rules

* Before the hackathon begins, you will have 30 minutes to ask questions about the project.
* The hackathon will last for 12 hours from start to finish.
* Participants are encouraged to work in pairs.
* Once the 12 hours have passed, teams will present their product in a 3-minute pitch. 15 finalists will be selected.
* During the final round of judging, the 10 finalists will provide a 5 minute pitch.

XPO Contact Info

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Data Access

<https://big.xpo.com/Hackathon/>

**User**: Infosys

**Password**: IAcceptHackathon2017Challenge

What?

Create a Service Provider Employee (driver or a.k.a SPE) churn prediction model that will take a SPE’s historical attributes like, frequency of loads moved for XPO, payouts, shipment rejects, demographics, preferences and predict likelihood of driver churn as of today based on the latest information.

The system should rank the drivers based on the probability of churn and also create appropriate flags for High Risk, Medium Risk and Low Risk drivers.

Who?

* The scope of this project is for Last Mile Line of Business to understand the different reasons for driver’s churn.
* (The use case is also applicable to driver churn in Brokerage. But the scope of Hackathon is limited to Last Mile Data set.)

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S.P.E. (Driver) Churn Prediction

## Description

Last Mile Line of Businesses uses third party service providers and their employees (drivers) to meet the demands. Every day, the shipments (pickup/drop) for the day are allocated to drivers based on their availability and the number or shipments to be delivered.

The third party drivers are contacted by Last Mile teams in advance to meet the upcoming shipments of B2B customer or B2C customers. If the drivers are available for the delivery, they would agree to operate on the given days. The payment to third party drivers is based on the number of the pickup/drops that are successfully completed in a day. Usually a driver makes 12-16 deliveries in a day and paid accordingly. They are also occasionally supplemented with a non-standard payment if they are assigned too few deliveries in a day, as the payment based on deliveries alone may be too low for not a fault of theirs.

In several scenarios, the drivers do not turn up due to unavoidable circumstances and this leads to excess load on shipment delivery. Sometimes, the third-party drivers refuse to take order consistently, leading to permanent churn of drivers. A driver not showing up for XPO for 3 consecutive months can be considered as churn. This creates shortage of drivers and impacts the SLAs promised to end customers. Business would like to understand what are the factors that lead to drivers churn and can they predict the drivers that are at risks in upcoming months so that corrective actions can be taken.

* Identify factors that has led to drivers churn in the past
* On an ongoing basis, identify the drivers probability of churning
* Flag the drivers that are at risk of churning
* System much be able to perform the based on the latest driver attributes etc.
* Asses the influence of non-standard payment in driver retention

## Data

Data Dictionary

Output

* Utility to predict the SPE churn probability
* Ranking of drivers based on historical data
* Summary of risk status of the list of SPEs provided
* Factors that influence SPE churn