

WINDJAMMER
CONSULTING

olist

Customer Lifetime Value

CLV Prediction Engine



CLV Prediction Engine

Accurate

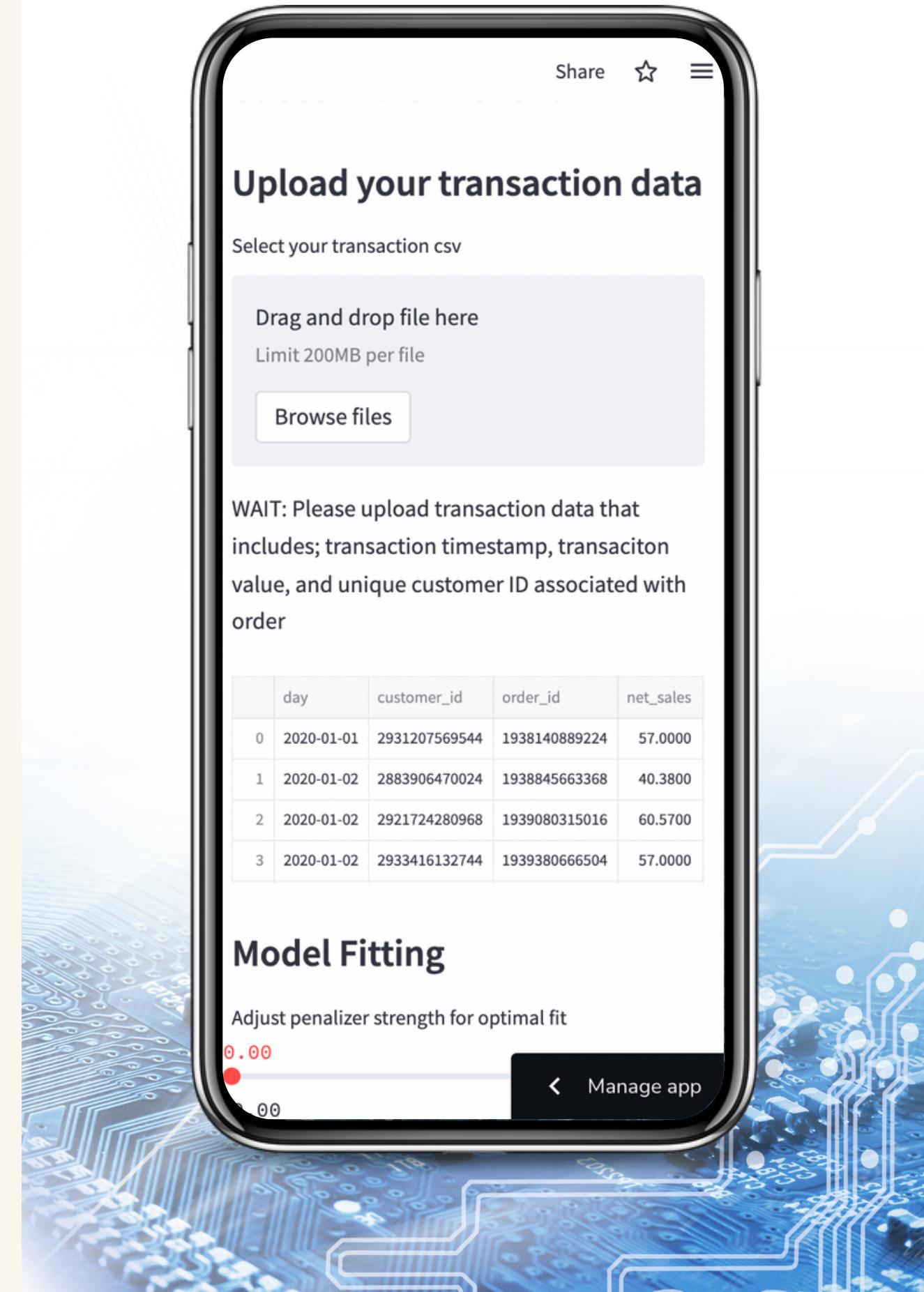
Proven accuracy (RMSE) on the full Olist transaction file

Flexible

App can take in data from any merchant and return CLV predictions

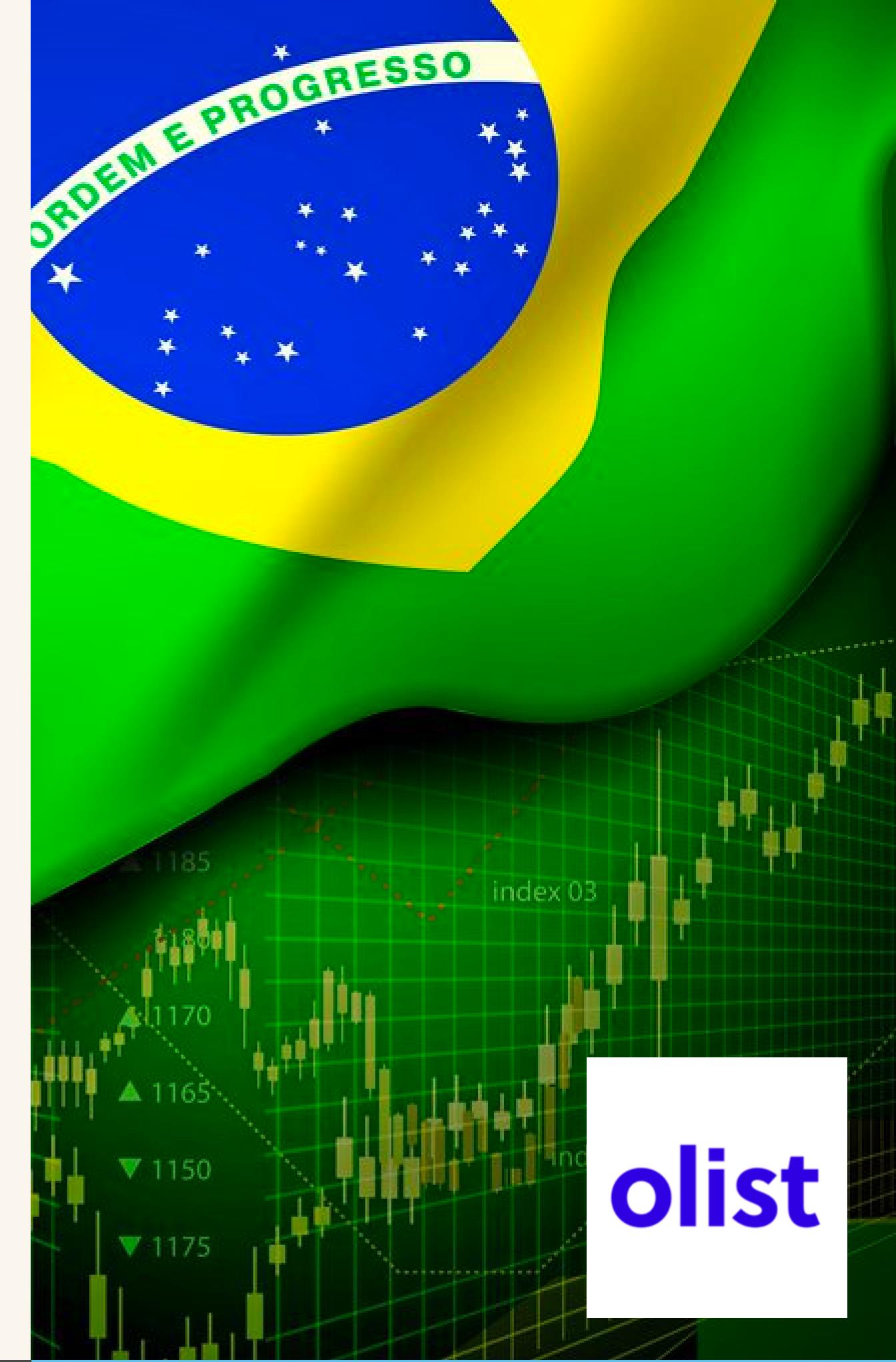
Deep insights

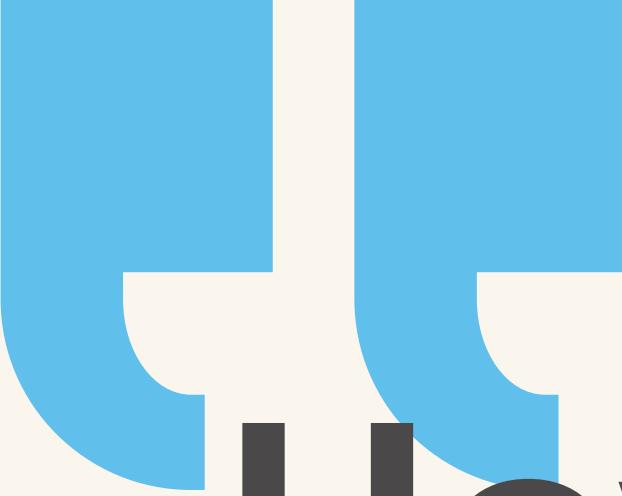
Empower your merchants to make better decisions and delight customers



Business Challenge

Olist E-commerce platform for Brazilian merchants





How much are my customers worth?

MÁRCIA ALVES
CO-FOUNDER, PEAK POTTERY
& OLIST USER



CLV Is The North Star Metric for Marketers

$$\text{CLV} = \text{A\$} \times \text{T\#} \times \text{R}$$

Customer
Lifetime Value

Average Value
of Sale

Number of
Transactions

Retention
Time Period

- Marketing ROI
- Sales forecasts
- Company valuation
- Churn risk
- Persona analysis

Merchants Cannot Accurately Predict CLV On Their Own

Simple assumptions fall short

Ex. most assume churn behaves linearly when it's actually logarithmic

Accurate predictions require complex modeling

Windjammer Consulting's approach combines two models



CLV Engine Creates Value for Olist & Merchants

BETTER STRATEGY

Give your merchants the tools to improve their marketing strategy and delight their customers

MORE COMMISSIONS

Better merchant marketing means more sales and commissions through the Olist network.
It's a win-win

LONGER RETENTION

Best in class analytics tools is differentiator for Olist and will keep merchants coming back

Data & Methods



Transaction Data From All Olist Merchants

Nearly 100K online transactions

99,441 online transactions from 96,096 unique customers

Transactions ranging 773 days

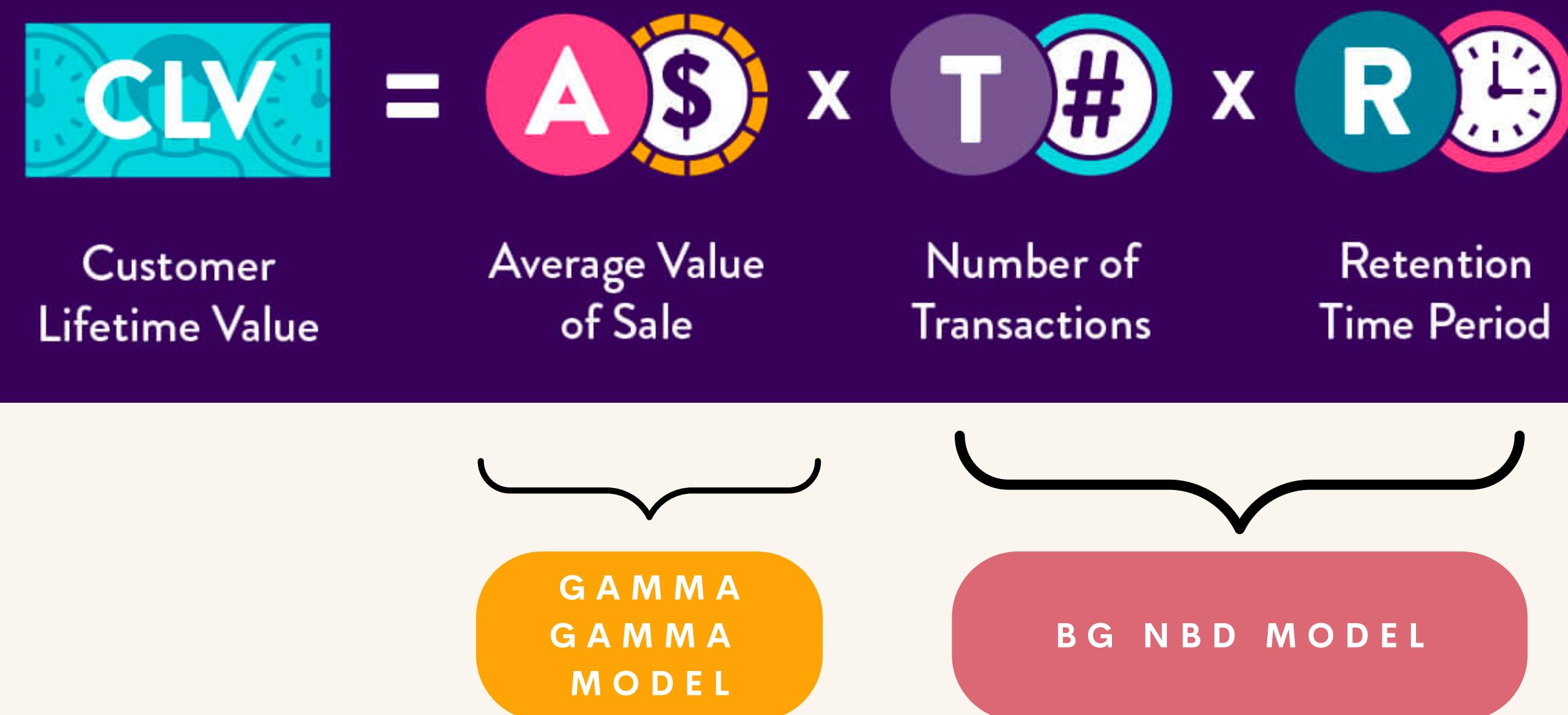
Transactions included in the data ranged 773 days, from 2016-09-04 to 2018-10-17

All merchants

To validate the process and accuracy of the model we used the entire Olist data set



Hierarchical Models Estimate Each Element of CLV

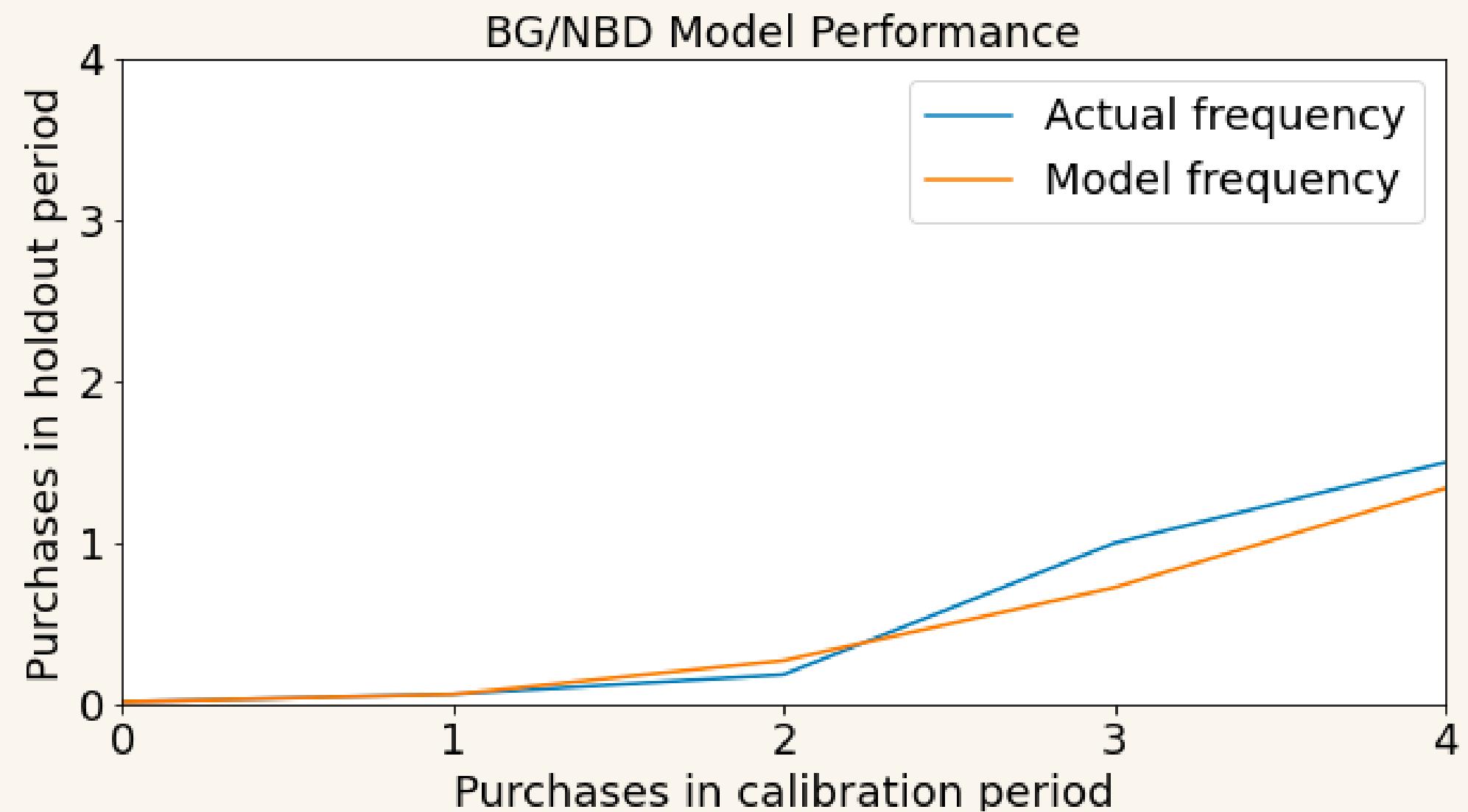


Model Performance & Results

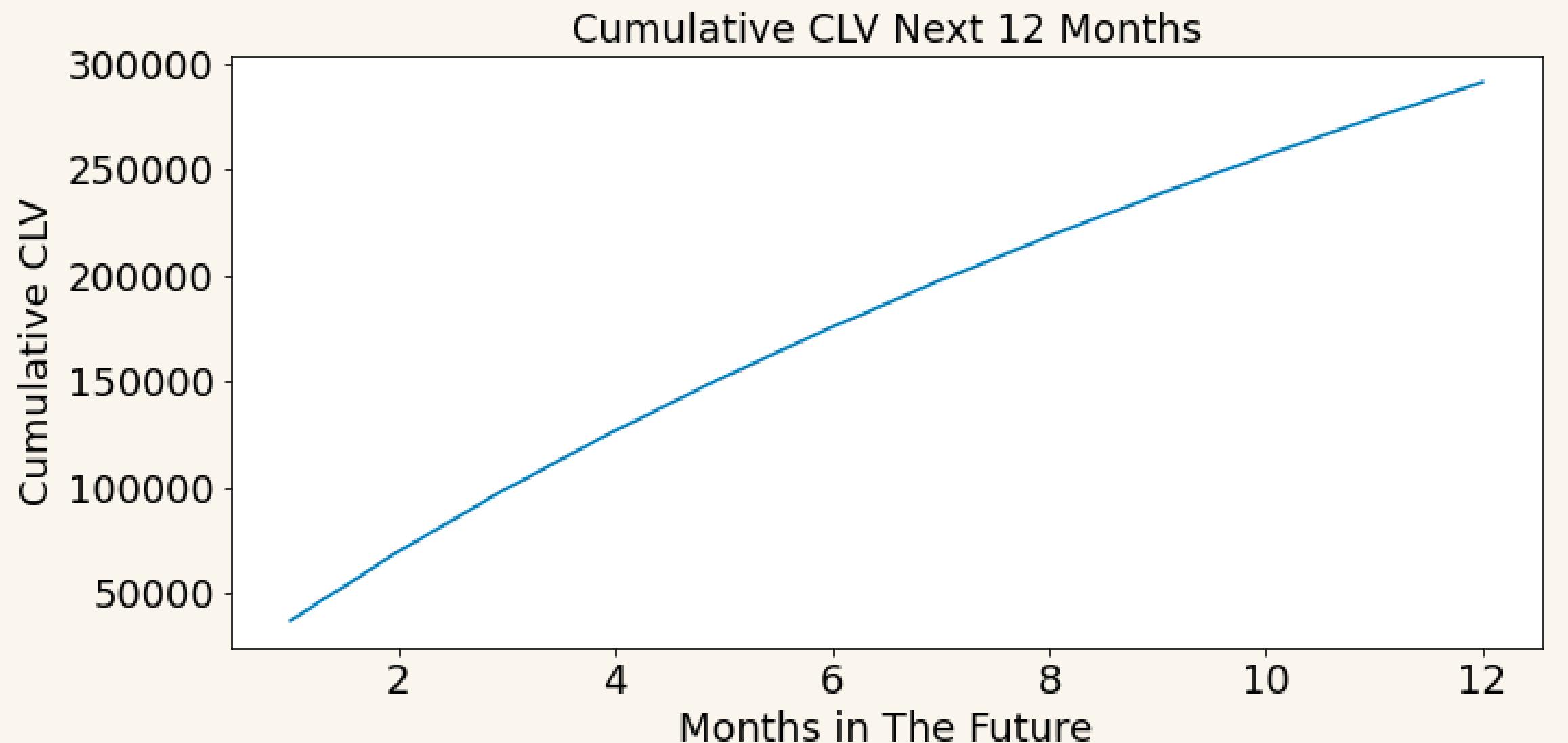


Model Is Highly Accurate

- Transactions
 - RMSE < 0.2
- Avg value of sale
 - RMSE < \$7



Returns Predicted CLV For Business and Individual Customers



Online App Scales CLV Predictions

The screenshot shows a web application for predicting customer lifetime value (CLV). At the top left is the Windjammer Consulting logo, which includes a stylized network graph icon. To the right of the logo is the text "CUSTOMER LIFETIME VALUE" and "CLV Prediction Engine". A large, stylized blue whale graphic is positioned to the right of the text. Below the header, there is a section with the heading "How much are your customers worth?". Underneath this heading is the instruction "Upload your transaction data". A file upload input field is present, with the placeholder "Select your transaction csv" and a "Drag and drop file here" button. A "Limit 200MB per file" note is also visible next to the input field. A "Browse files" button is located to the right of the input field. At the bottom of the page, a note reads "WAIT: Please upload transaction data that includes; transaction timestamp, transaction value, and unique customer ID associated with order". The bottom navigation bar contains a "Model Fitting" link.

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CUSTOMER LIFETIME VALUE
CLV Prediction Engine

How much are your customers
worth?

Upload your transaction data

Select your transaction csv

Drag and drop file here
Limit 200MB per file

Browse files

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Model Fitting

CLV Prediction Engine

Accurate

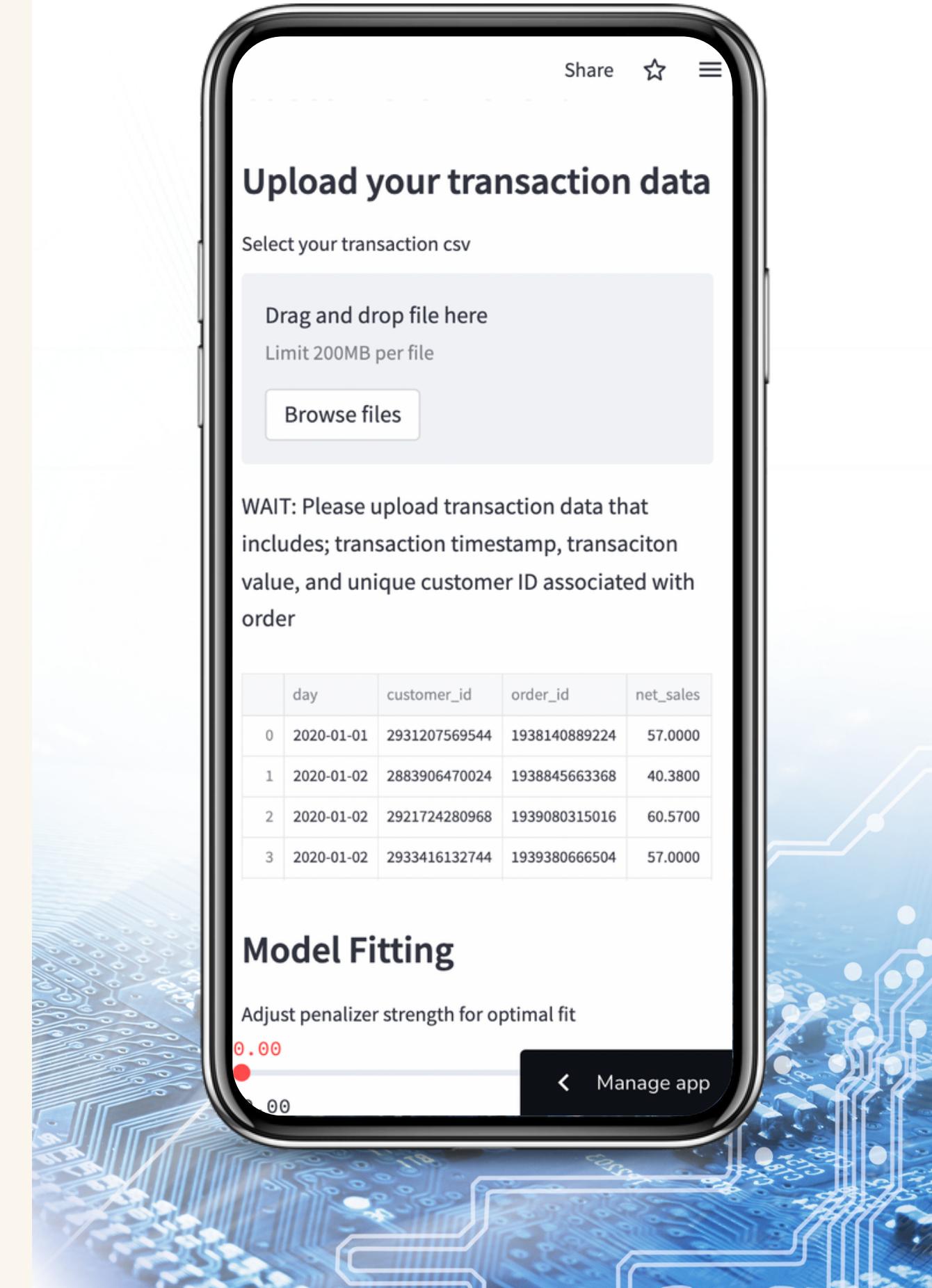
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Limitations & Next Steps



Limitations

01

Doesn't include product margin information

02

Applicability limited to non-contractual businesses with continuous purchases

03

Validated Gamma Gamma model on a limited subset of repeat customers

Next Steps

01

Include margin information get a true CLV metric

02

Roll out app to Olist customers with appropriate business context

03

Work on a subscription business CLV model

Thank you.

Any questions?

App Link

<https://bit.ly/3KfJho8>

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CEO, Windjammer Consulting

[LinkedIn](#), [GitHub](#), [Medium](#)



Appendix



Model Selected For The Olist Business Context

	Non-contractual Settings	Contractual Settings
Continuous Purchases	Olist marketplace Amazon.com Groceries	Costsco membership Credit card
Discrete Purchases	Percription refills Charity fund drives	Car insurance Gym memership