

**CLV**

## 1. Ask

How much revenue  
we can expect from a single customer  
based on historical data?

## 2. Prepare

Database: turing\_data\_analytics

Table: raw\_events

### 3. Process

SQL query that extracts data from the BigQuery

Code in the Spreadsheet

- correct columns identified
- correct logic created
- code formatted well and is readable

## 4. Analyze

cohort_week	no_customers	week_0	week_1	week_2	week_3	week_4	week_5	week_6	week_7	week_8	week_9	week_10	week_11	week_12
2020-11-01	20078	\$0.94	\$0.33	\$0.27	\$0.26	\$0.16	\$0.15	\$0.17	\$0.03	\$0.01	\$0.01	\$0.02	\$0.01	\$0.02
2020-11-08	16232	\$1.19	\$0.38	\$0.28	\$0.23	\$0.28	\$0.10	\$0.04	\$0.07		\$0.01	\$0.04	\$0.02	
2020-11-15	17845	\$1.38	\$0.30	\$0.22	\$0.23	\$0.17	\$0.03	\$0.03	\$0.02	\$0.02	\$0.01	\$0.01	\$0.00	
2020-11-22	19637	\$1.65	\$0.24	\$0.23	\$0.12	\$0.04	\$0.01	\$0.01	\$0.01	\$0.01	\$0.03	\$0.00		
2020-11-29	21991	\$1.32	\$0.36	\$0.24	\$0.05	\$0.01	\$0.02	\$0.01	\$0.01	\$0.01	\$0.01			
2020-12-06	28069	\$1.20	\$0.33	\$0.08	\$0.03	\$0.02	\$0.03	\$0.02						
2020-12-13	25153	\$1.01	\$0.11	\$0.04	\$0.03	\$0.04	\$0.03	\$0.00						
2020-12-20	17830	\$0.37	\$0.05	\$0.02	\$0.02	\$0.02	\$0.01							
2020-12-27	16539	\$0.34	\$0.05	\$0.00	\$0.02	\$0.01								
2021-01-03	22774	\$0.23	\$0.06	\$0.03	\$0.00									
2021-01-10	21452	\$0.40	\$0.06	\$0.01										
2021-01-17	20782	\$0.90	\$0.12											
2021-01-24	19560	\$0.19												
<b>Grand Total, USD</b>		<b>0.8554</b>	<b>0.1992</b>	<b>0.1293</b>	<b>0.0999</b>	<b>0.0821</b>	<b>0.0479</b>	<b>0.0387</b>	<b>0.0235</b>	<b>0.0172</b>	<b>0.0089</b>	<b>0.0210</b>	<b>0.0177</b>	<b>0.0182</b>

Cumulative	no_customers	week_0	week_1	week_2	week_3	week_4	week_5	week_6	week_7	week_8	week_9	week_10	week_11	week_12
2020-11-01	20078	\$0.94	\$1.26	\$1.53	\$1.79	\$1.95	\$2.11	\$2.27	\$2.30	\$2.30	\$2.32	\$2.34	\$2.36	\$2.37
2020-11-08	16232	\$1.19	\$1.57	\$1.85	\$2.08	\$2.36	\$2.46	\$2.50	\$2.57	\$2.57	\$2.59	\$2.62	\$2.64	\$2.64
2020-11-15	17845	\$1.38	\$1.68	\$1.90	\$2.12	\$2.29	\$2.32	\$2.35	\$2.37	\$2.39	\$2.40	\$2.40	\$2.40	
2020-11-22	19637	\$1.65	\$1.88	\$2.11	\$2.23	\$2.26	\$2.28	\$2.28	\$2.30	\$2.33	\$2.33			
2020-11-29	21991	\$1.32	\$1.68	\$1.93	\$1.97	\$1.99	\$2.01	\$2.01	\$2.03	\$2.03				
2020-12-06	28069	\$1.20	\$1.53	\$1.61	\$1.65	\$1.67	\$1.70	\$1.72	\$1.72					
2020-12-13	25153	\$1.01	\$1.12	\$1.16	\$1.19	\$1.23	\$1.26	\$1.26						
2020-12-20	17830	\$0.37	\$0.42	\$0.44	\$0.47	\$0.48	\$0.49							
2020-12-27	16539	\$0.34	\$0.39	\$0.39	\$0.41	\$0.42								
2021-01-03	22774	\$0.23	\$0.29	\$0.32	\$0.32									
2021-01-10	21452	\$0.40	\$0.46	\$0.47										
2021-01-17	20782	\$0.90	\$1.03											
2021-01-24	19560	\$0.19												
<b>Hint Average, USD</b>		<b>\$0.86</b>	<b>\$1.05</b>	<b>\$1.18</b>	<b>\$1.28</b>	<b>\$1.37</b>	<b>\$1.41</b>	<b>\$1.45</b>	<b>\$1.48</b>	<b>\$1.49</b>	<b>\$1.50</b>	<b>\$1.52</b>	<b>\$1.54</b>	<b>\$1.56</b>
<b>Cumulative growth</b>		<b>23.29%</b>	<b>12.26%</b>	<b>8.44%</b>	<b>6.39%</b>	<b>3.51%</b>	<b>2.74%</b>	<b>1.62%</b>	<b>1.16%</b>	<b>0.60%</b>	<b>1.40%</b>	<b>1.16%</b>	<b>1.18%</b>	

Predictions	no_customers	week_0	week_1	week_2	week_3	week_4	week_5	week_6	week_7	week_8	week_9	week_10	week_11	week_12
2020-11-01	20078													\$2.37
2020-11-08	16232													\$2.67
2020-11-15	17845													\$2.46
2020-11-22	19637													\$2.42
2020-11-29	21991													\$2.12
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2020-12-13	25153													\$1.35
2020-12-20	17830													\$0.54
2020-12-27	16539													\$0.48
2021-01-03	22774													\$0.39
2021-01-10	21452													\$0.62
2021-01-17	20782													\$1.52
2021-01-24	19560													\$0.35
														\$1.47

**Matrix of CLV is for all users** who have been on website (including the ones who did not purchase anything).

**It shows customer behavior trends how much \$** an avg customer in each cohort is worth to business at different points in time (in 12 weeks when current date considered 2021-01-24).

We see that there's a lot of CLV variation both within and between each cohort, but we don't have many clues as to **what drives those differences**. What motivates them to spend more? We can create **separate matrices for our customers based on a new variable**. This could be any customer behavior metric - marketing channel source, first product purchased, country of origin, promo code, etc. When we run separate reports based on differences in this new variable, we essentially isolate its effect. That effect can be measured by focusing on the differences between each matrix.

Of course, none of these efforts are guaranteed to increase the average LTVs of present and future customers. To confirm that they're having an effect, you'll want to continue to track LTVs month-to-month, isolate different variables, and gauge whether your actions result in higher-value customers.

Second chart is based on cumulative sum.

Predictive model that dig for nuanced patterns in past customer behavior to come up with projection for **how newest customers are likely to spend \$ over time**.

**We can rely on future-focused metrics with potentially high margins of error.**

Even if the model produces projections much more reliable than a human could, no model will be completely foolproof.

# 5. Share

cohort_week	no_customers	week_0	week_1	week_2	week_3	week_4	week_5	week_6	week_7	week_8	week_9	week_10	week_11	week_12
2020-11-01	20078	\$0.94	\$0.33	\$0.27	\$0.26	\$0.16	\$0.15	\$0.17	\$0.03	\$0.01	\$0.01	\$0.02	\$0.01	\$0.02
2020-11-08	16232	\$1.19	\$0.38	\$0.28	\$0.23	\$0.28	\$0.10	\$0.04	\$0.07		\$0.01	\$0.04	\$0.02	
2020-11-15	17845	\$1.38	\$0.30	\$0.22	\$0.23	\$0.17	\$0.03	\$0.03	\$0.02	\$0.02	\$0.01	\$0.01	\$0.00	
2020-11-22	19637	\$1.65	\$0.24	\$0.23	\$0.12	\$0.04	\$0.01	\$0.01	\$0.01	\$0.03	\$0.01	\$0.00		
2020-11-29	21991	\$1.32	\$0.36	\$0.24	\$0.05	\$0.01	\$0.02	\$0.01	\$0.01	\$0.01	\$0.01			
2020-12-06	28069	\$1.20	\$0.33	\$0.08	\$0.03	\$0.02	\$0.03	\$0.02	\$0.02	\$0.01				
2020-12-13	25153	\$1.01	\$0.11	\$0.04	\$0.03	\$0.04	\$0.03	\$0.00						
2020-12-20	17830	\$0.37	\$0.05	\$0.02	\$0.02	\$0.02	\$0.01							
2020-12-27	16539	\$0.34	\$0.05	\$0.00	\$0.02	\$0.01								
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Cumulative														
cohort_week	no_customers	week_0	week_1	week_2	week_3	week_4	week_5	week_6	week_7	week_8	week_9	week_10	week_11	week_12
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2020-11-08	16232	\$1.19	\$1.57	\$1.85	\$2.08	\$2.36	\$2.46	\$2.50	\$2.57	\$2.57	\$2.59	\$2.62	\$2.64	\$2.64
2020-11-15	17845	\$1.38	\$1.68	\$1.90	\$2.12	\$2.29	\$2.32	\$2.35	\$2.37	\$2.39	\$2.40	\$2.40	\$2.40	
2020-11-22	19637	\$1.65	\$1.88	\$2.11	\$2.23	\$2.26	\$2.28	\$2.28	\$2.30	\$2.33	\$2.33			
2020-11-29	21991	\$1.32	\$1.68	\$1.93	\$1.97	\$1.99	\$2.01	\$2.01	\$2.03	\$2.03				
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<b>Cumulative growth</b>		<b>23.29%</b>	<b>12.26%</b>	<b>8.44%</b>	<b>6.39%</b>	<b>3.51%</b>	<b>2.74%</b>	<b>1.62%</b>	<b>1.16%</b>	<b>0.60%</b>	<b>1.40%</b>	<b>1.16%</b>	<b>1.18%</b>	

Predictions														
cohort_week	no_customers	week_0	week_1	week_2	week_3	week_4	week_5	week_6	week_7	week_8	week_9	week_10	week_11	week_12
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## Trends for weekly cohorts

- \$ decreases over time as customers tend to churn - it is common feature. Decreases from max 1.65 to min 0.00, 0 indicates maybe they are not satisfied with the product? Or we have small amount of data - only 3 months. Historical data would be valuable.
- The highest drop after onboarding stage - it is common feature as well, after decreases but not so steep.
- More information needed for deeper insights:  
Seasonality/Black friday/Other factors  
In 11.08 week\_8 there is no data maybe due to technical issues.

## Chart Revenue / registrations as a cumulative sum

As we have cumulative sum chart we can see that values tend to increase horizontally from left to right e.g. max 1.65 to 2.33 - opposite than in the first one. We see lower red and higher green value clusters, there is on 3 months of data. This chart is useful for later predictions calculation.

## Predictive projection how newest customers are likely to spend \$ over time

- It is based on previous cumulative chart
- Oldest - highest \$, recent - lowest \$
- **\$1.47 CLV** all weekly cohorts average

**CLV is important because it gives insight on how much money you can spend acquiring your customer.**

## 6. Act

### Actionable recommendations

It can inform nearly all most important business decisions and provide a major competitive advantage.

#### 1. Determine how much we can spend for customer acquisition

**Lower acquisition costs**  
(a good CLV/CAC ratio is 3:1 which signals efficiency of sales and marketing)

**Improve brand's bottom line**

#### 2. Discover which factors drive highest value customers

**Improve customer satisfaction**  
by understanding what products they enjoy and what products improve their lives

**Boost loyalty**  
by improving customer support, products, pricing, referrals, and loyalty programs. Retained customers buy more often and spend more than newer ones.

**Target them more accurately**  
with sophisticated acquisition and retention strategies

3. By tracking over time we can **understand how changes/strategy or anything else impact CLV** and whether we can grow it

#### 4. Predict future cashflows

While historical data is a crucial starting point and is certainly enough to help make more informed decisions

It's important to keep aware of the possibility of unexpected customer behavior

Because there's always the possibility that new customers might behave very differently from the patterns established by existing customers

Thank You