

Customer Lifetime Value – A Retail Banking Case Study

SUNIL SOARES
CEO, YDC

May 3, 2022

Summary

Customer Lifetime Value (CLV) is the net present value of the profit that accrues from a customer over the course of their relationship with a company. CLV calculation methodologies vary in complexity from simple rules to predictive analytics.

This case study will cover the CLV methodology for the retail customers of a small U.S. based regional bank with just over \$1 billion in tangible book value. Although this analysis uses only public information, we have sanitized the numbers and the identity of the bank.



Figure 1: CLV components for retail customers

The CLV for existing retail customers of the bank was \$3,380. Because the Cost to Acquire (CTA) new customers was \$824 per customer, the CLV for new customers was \$2,556 (see Figure 1). This analysis excludes commercial banking customers.

CLV Implications

The CLV analysis is a useful tool to drive customer segmentation and to define the Next Best Action (NBA) for specific customers (see Figure 2). For example, the bank might want to transition customers with high Cost to Serve (CTS) and low CLV to remote channels. CLV is critical to determine the appropriate level of customer acquisition spend. For example, the CTA should never exceed the CLV for a customer.



Figure 2: CLV Implications

CLV Methodology

CLV is driven by Loan Margin, Deposit Margin, Charge-Offs, Collections Expense, Cost to Serve (CTS) and Cost to Retain (CTR). The CLV is computed as the Net Present Value (NPV) of Operating Margin over the lifetime of the customer. In our analysis, we have assumed the average customer tenure is 10 years, the average churn rate is five percent and the discount rate is five percent (see Figure 3).

OPERATING MARGIN = LOAN MARGIN + DEPOSIT MARGIN – CHARGE-OFFS – COLLECTIONS EXPENSE – COST TO SERVE – COST TO RETAIN

COST TO RETAIN (CTR) = \$0 (ASSUMED)

YEAR 1 = OPERATING MARGIN

YEAR 2 = YEAR 1 * (1-CHURN)

CHURN = 5% (ASSUMED)

AVG CUSTOMER TENURE = 10 YEARS (ASSUMED)

NPV DISCOUNT RATE = 5% (ASSUMED)

CLV = NPV (5%, Y1:Y10), where NPV =
$$\sum_{i=1}^n \frac{cashflow_i}{(1 + discounterate)^i}$$

Figure 3: CLV Calculation Methodology

Gathering Source Data

Gathering source data is often the most painstaking part of the CLV process. For example, Total Retail Credit balances were \$6.1 billion, or an average of \$17,126 per customer. The average loan yield was 3.91% and the average 2021 USD 12-month LIBOR rate was 0.30%. This yields an average margin or 3.61%, or \$618 per customer. Any fee income is added directly to the overall margin to yield an average margin of \$948 per customer (see Figure 4).

Segment	Product Category	Product	No. of Customers	Income of Expense	Loan or Deposit Balance	Per Customer	Margin Per Customer
Retail			357,837				\$948
	Retail Credit		357,837		\$6,128,243,000	\$17,126	\$618
		Residential mortgage loans			\$2,969,564,000		
		Home equity loans			\$1,319,931,000		
		Consumer loans			\$1,838,748,000		
		Mortgage banking income			\$15,892,000		\$44
		Collection Expense			(\$1,932,000)		
	Retail Deposits		357,837		\$12,301,165,000	\$34,376	\$49
		Noninterest-bearing demand deposits			\$3,099,526,000		
		Interest-bearing demand deposits			\$2,940,442,000		
		Money market deposit accounts			\$2,629,882,000		
		Savings deposits			\$2,303,760,000		
		Time deposits			\$1,327,555,000		
		Federal deposit insurance premiums			(\$4,975,000)		(\$14)
Trust	Trust and other financial services income			\$27,921,000		\$78	
Service Charges	Services charges and other fees			\$51,837,000		\$145	
insurance	Insurance commissions			\$3,633,000		\$10	
Life Insurance	Income from bank-owned life insurance			\$6,050,000		\$17	
Commercial	Commercial Credit				\$3,863,093,000		
		Commercial real estate loan			\$3,015,484,000		
		Commercial loans			\$847,609,000		

Figure 4: Source data for CLV calculation

Rounding out the CLV Calculation

Finally, the Operating Margin of \$534 for Year 1 is based on deducting Charge-Offs, Collections Expense, CTS and CTR. CTS includes costs to serve customers including calls to the customer service department. The CTA of \$824 per customer should be excluded for existing customers. The Operating Margin for Year 2 and beyond assumes five percent churn. The CLV for existing customers is \$3,380 based on the NPV of the Operating Margin over ten years at a five percent discount rate (see Figure 5).

Segment	Margin per customer	Cost of Acquire (CTA)	Charge-offs	Collection Expense	Cost to Serve (CTS)	Cost to Retain (CTR)	CLV
Retail	\$948	\$824	(\$62)	(\$5)	(\$346)	\$0	\$3,380

CLV	OM Year 1	OM Year 2	OM Year 3	OM Year 4	OM Year 5	OM Year 6	OM Year 7	OM Year 8	OM Year 9	OM Year 10
\$3,380	\$534	\$508	\$482	\$458	\$435	\$414	\$393	\$373	\$355	\$337

Figure 5: Completing the CLV Calculation

Summary

The CLV analysis is a useful tool to drive customer segmentation. CLV for existing customers is driven by Loan Margin, Deposit Margin, Charge-Offs, Collections Expense, CTS and CTR. The CLV is computed as the NPV of Operating Margin over the lifetime of the customer. The CLV for new customers also considers CTA.

For more information or to receive a demo, visit www.yourdataconnect.com
or email us at info@yourdataconnect.com.

YourDataConnect, LLC
www.yourdataconnect.com

