

Nova Pay Customer Segmentation Report

A practical look at customer behaviour and value using RFM analysis

Prepared by: Brume Pascal

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Executive Summary

NovaPay is a fast-growing digital payments and customer wallet platform, serving thousands of users with mobile transactions, transfers, and subscriptions. As the user base grew, it became harder to distinguish between high-value users, loyal transactors, and those likely to churn.

This project used RFM (Recency, Frequency, Monetary) analysis and Customer Lifetime Value (CLV) calculations to segment customers based on their transaction behaviour.

- Identify the most valuable and active customer groups
- Spot customers who were disengaging or at risk of churn
- Align messaging and offers to each customer group
- Improve campaign ROI through smart segmentation

As a result, Nova now has a data-driven foundation for customer retention, engagement, and smarter marketing decisions.

Problem Context

Nova had been experiencing a steady rise in customers and transactions, but beneath the surface, signs of churn and disengagement were becoming evident.

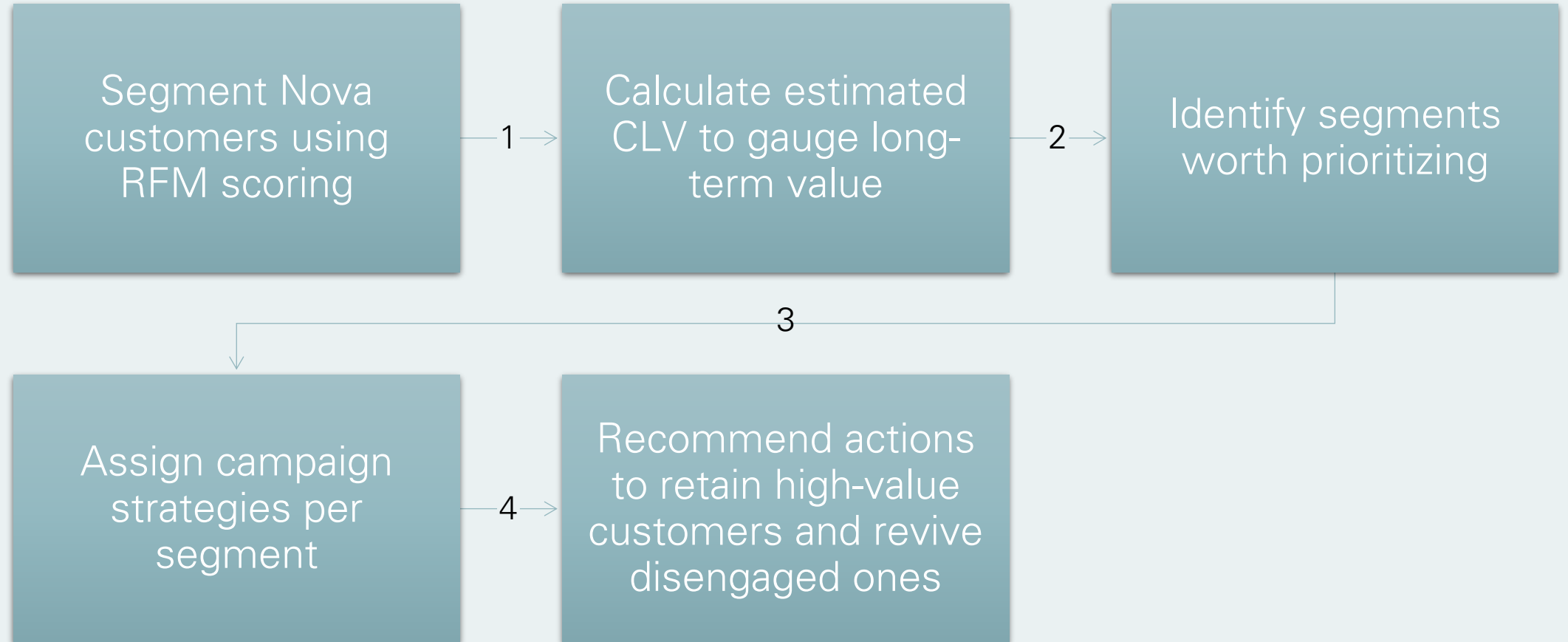
- Many customers were inactive or unresponsive to marketing efforts.
- Campaigns were generic, and resources were spread too thinly across all customer types.

Challenge: "How do we know who matters most?"

This project answers that question by giving structure to customer value.

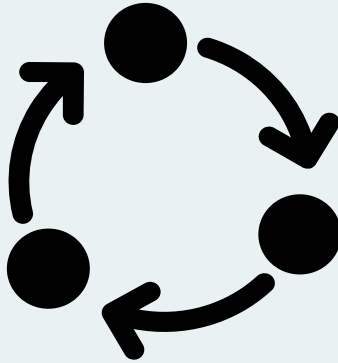


Project Objectives



Methodology

What is RFM?



RFM analysis groups customers based on

- Recency: How recently they transacted
- Frequency: How often they transact
- Monetary: How much they spend

- Each customer receives a score from 1–5 in each category. These scores form a segment profile (e.g., 555 = top performer in all three).
- We also calculated **Customer Lifetime Value (CLV)** as a future-facing metric using this formula:

$$\text{CLV} = \text{Avg Purchase Value} \times \text{Frequency} \times (365/\text{Recency})$$

- **Note:** Small values were added to avoid division by zero when needed.

RFM Segment Output Sample: From Raw Data to Targeted Campaigns

Customer ID	Recency	Frequency	Monetary	R Score	F Score	M Score	RFM Score	Segment	Campaign Target
C1010011	25	2	5106.0	5	5	5	555	Champions	VIP Program
C1010012	68	1	1499.0	2	1	4	214	Hibernating	Reactivation Email
C1010014	75	2	1455.0	1	5	4	154	At Risk	Win back Campaign
C1010018	36	1	30.0	5	1	1	511	New	Onboarding Sequence

Customer ID	Recency	Frequency	Monetary	R Score	F Score	M Score	RFM Score	Segment	Campaign Target
C1010024	64	1	5000.0	2	1	5	215	Hibernating	Reactivation_Email
C1010028	53	1	557.0	3	1	3	313	Others	Low Priority
C1010031	78	2	1864.0	1	5	4	154	At Risk	Wingback Campaign
C1010035	55	2	750.0	3	5	3	353	Loyal	Exclusive Deals

This sample demonstrates how individual customer transactions are converted into RFM scores (1-5 scale), automatically assigned to strategic segments, and linked to personalized marketing campaigns. Each customer's recency, frequency, and monetary behaviour determines their segment classification and corresponding retention or growth strategy.

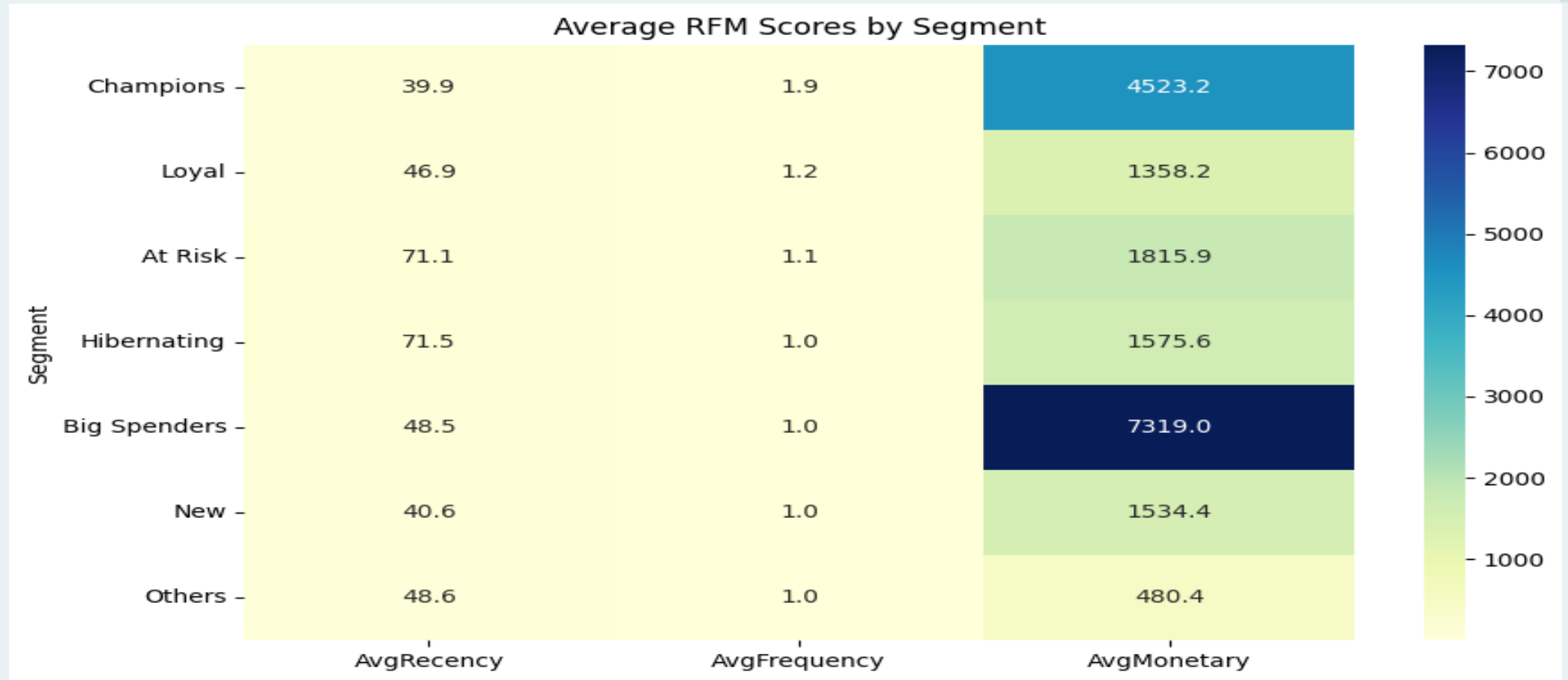
Segment Definitions Based on RFM Scores

- Champions (R=5, F=5, M=5): Customers who have purchased very recently, purchase very frequently, and spend the most money. These are your ideal high-value customers with top scores across all RFM dimensions.
- Loyal (F=4–5, R=3–4, M=3–4): They buy often and consistently but may not have purchased very recently or spent the highest amounts. High frequency is their strongest trait, with moderate scores in recency and monetary.
- At Risk & Hibernating (R=1–2, F=3–5, M=3–4): These customers used to be active (moderate-to-high F and M) but haven't purchased in a long time (low R). The difference is often in how long ago their last transaction was. Hibernating may be colder than At Risk.
- New (R=5, F=1, M=1–2): Customers who made their first or only recent purchase. Their high R score shows they're very recent, but they haven't yet developed frequency or spend history.
- Others (R=1–2, F=1–2, M=1–2): These customers rank low across all RFM dimensions. They buy rarely, spend little, and haven't been active in a long time, usually low-value or disengaged users.

Customer Segmentation Results

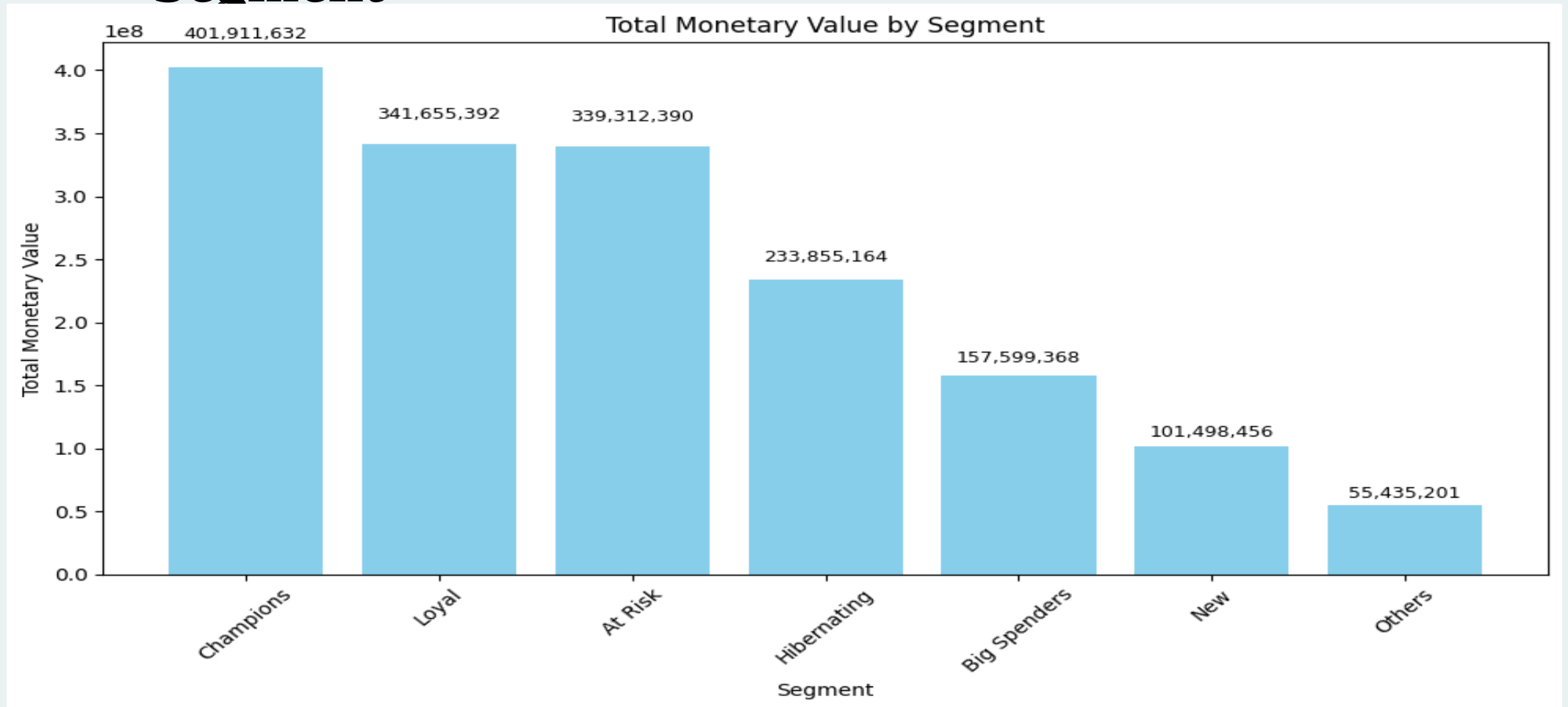
Segment	Customer Numbers	Avg Order Value	Total Revenue (Monetary)	Days Since Last Purchase (Recency)	Avg Orders per Customer (Frequency)
Champions	88856	4523.18	401.9M	39.9	1.85
Loyal	251544	1358.23	341.7M	46.9	1.24
At Risk	186858	1815.88	339.3M	71.1	1.13
Hibernating	148421	1575.62	233.9M	71.5	1.00
Big Spenders	21533	7318.97	158.0M	48.5	1.00
New	66150	1534.37	101.5M	40.6	1.00
Others	115401	480.37	55.4M	48.6	1.00

Heatmap : RFM Performance by Customer Segment



Champions excel in monetary value (\$4,523 avg) with recent activity, while At Risk and Hibernating segments show critical warning signs with 71+ days since last purchase despite decent spending power.

Bar Chart - Total Monetary Value by Segment



Champions, Loyal, and At-Risk segments each contribute ~\$340-400M in revenue. Protecting the At-Risk segment is crucial and losing them would eliminate 25% of total revenue.

Key Take ways from RFM

- ❖ **Champions** (88K customers) are our most valuable segment - high order values (4,523) and frequent purchases (1.85x/customer)
- ❖ **Loyal customers** (251K) represent our largest group with consistent behaviour and strong total revenue (341.7M)
- ❖ **At Risk** and **Hibernating** customers show concerning patterns with 71+ days since last purchase - requiring immediate retention efforts
- ❖ **Big Spenders** have the highest order values (7,319) but low frequency, indicating premium but occasional buyers
- ❖ **New customers** show promise with recent activity (40.6 days) and potential for growth

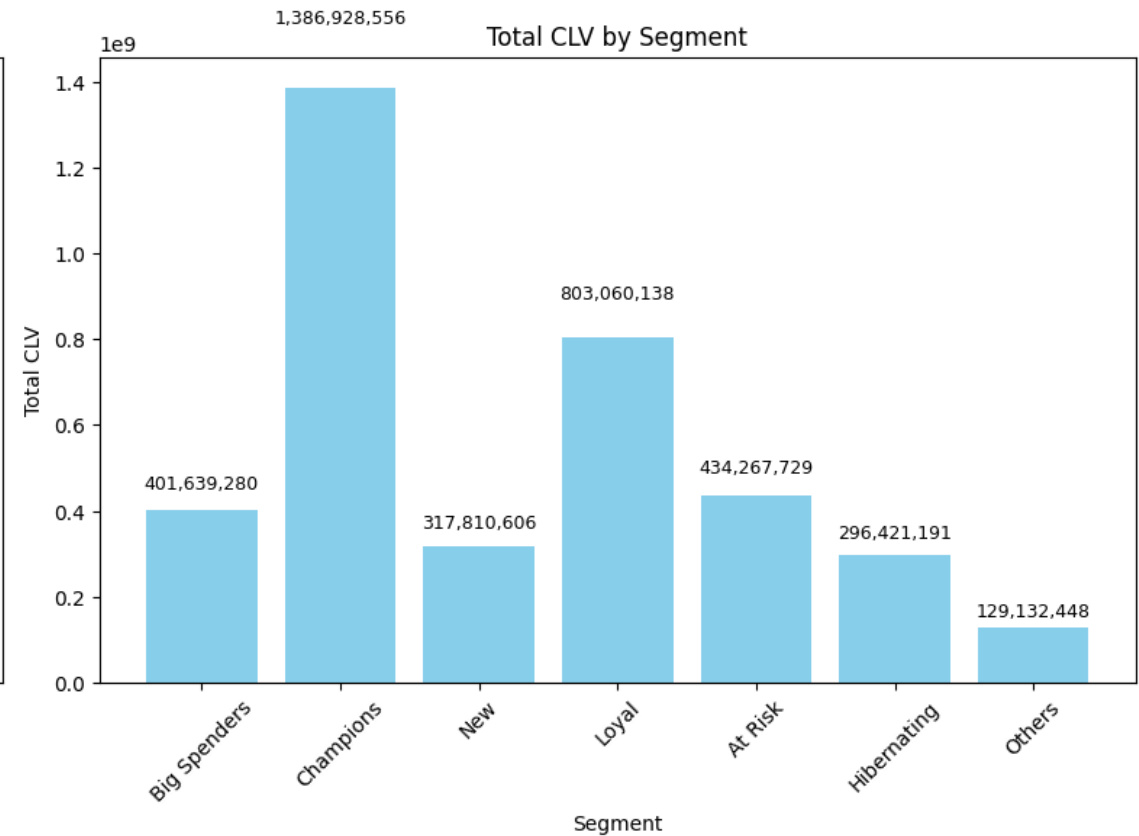
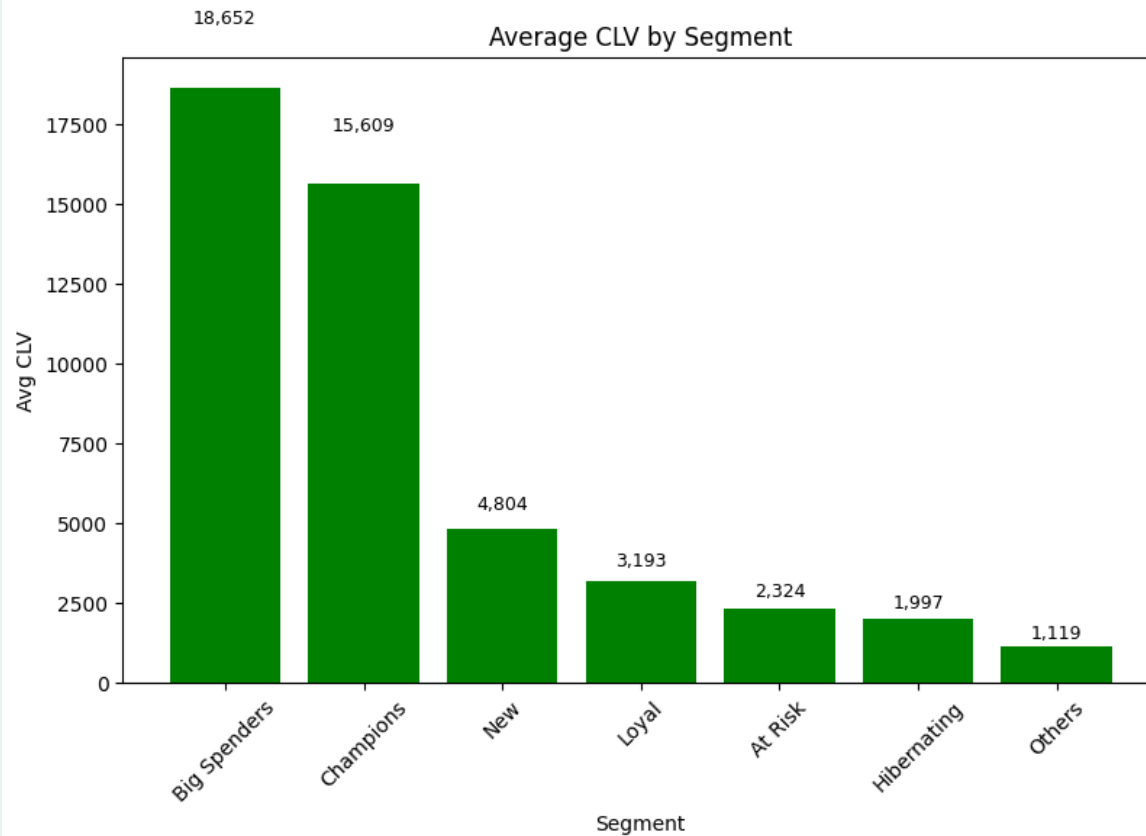
Action Priority: Focus retention campaigns on At Risk/Hibernating segments while nurturing Champions and converting New customers to Loyal status.

Customer Lifetime Value (CLV) Analysis

Two Critical Perspectives on Customer Value: Individual Value vs. Collective Impact

- **Average CLV:** How much each customer is worth on average

- **Total CLV:** The combined value potential of the entire segment

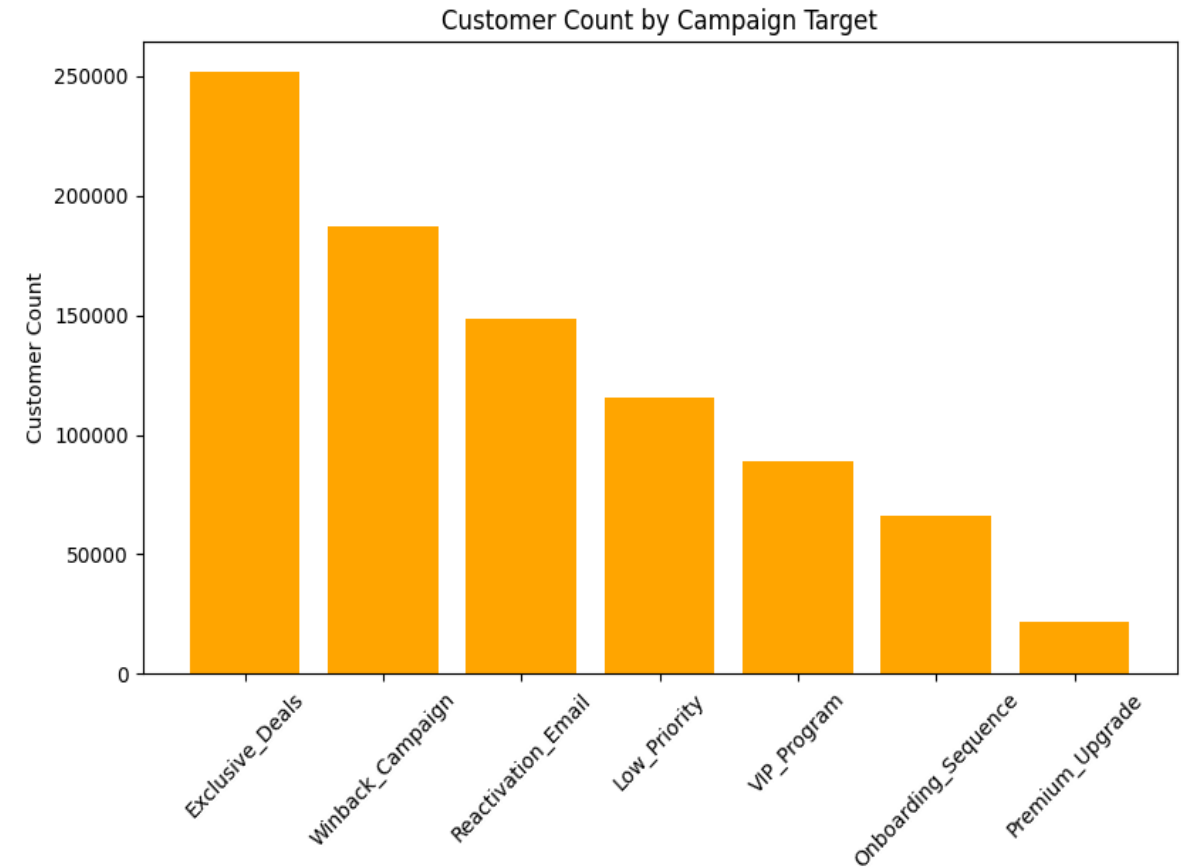
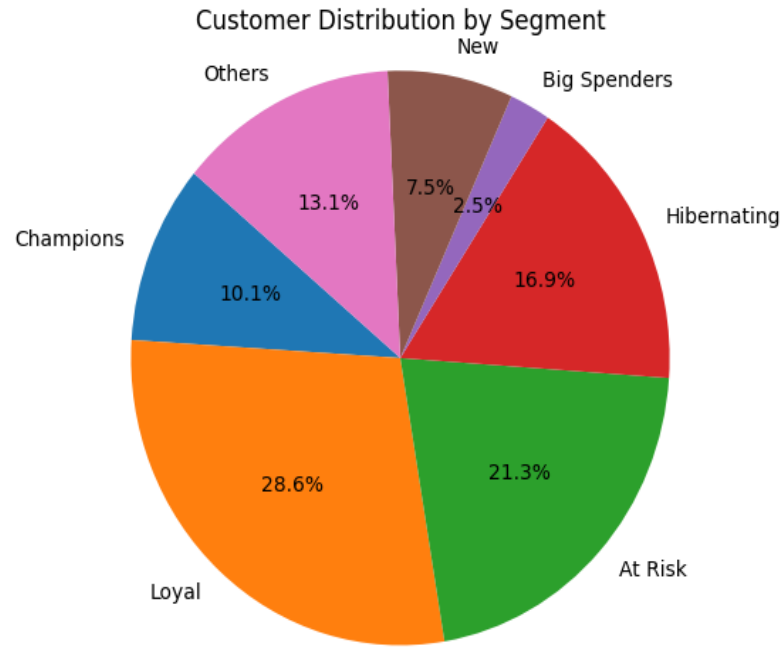


Key Takeaways from CLV Analysis

- Champions have the highest total CLV, making them the most valuable segment overall.
- Big Spenders led in average CLV per customer, despite being fewer in number, each customer here is extremely valuable.
- Loyal customers generate significant total value due to their volume, even if their individual CLV is moderate.
- At Risk and Hibernating segments still contribute considerable revenue and with targeted reactivation, their potential can grow.
- New customers show promise, especially with onboarding strategies.
- Others have the lowest CLV and may not be worth heavy marketing investment.

 Note: CLV was estimated using a simplified model assuming a 3-month lifespan. While not exact, it offers a strong comparative view across segments and helps guide strategic decisions

Customer Distribution



- The majority of customers belong to the Loyal, At Risk, and Hibernating segments, making them critical for retention and reactivation efforts.
- Campaign targeting generally aligns with segment size, although high-value segments like Big Spenders remain small and require focused, personalized strategies.

Campaign Targeting Strategy

We matched each segment to a specific campaign strategy:

Segment	Campaign Target
Champions	VIP Program
Loyal	Exclusive Deals
At Risk	Win back Campaign
Hibernating	Reactivation Email
Big Spenders	Premium Upgrade
New	Onboarding Sequence
Others	Low Priority

Final Insights

- Champions and Big Spenders are recent, frequent, and high-spending customers. They drive the highest value per person and should be prioritized with VIP treatment and retention strategies.
- The Loyal segment includes customers who buy often, even if their spending is moderate, they're reliable revenue contributors due to their volume.
- At Risk and Hibernating customers have not purchased in a while. Although they were once valuable, they now require targeted win-back or reactivation campaigns.
- New customers show early potential. With the right onboarding and engagement, they could evolve into Loyal or even Champion status.
- The Others segment consists of low-frequency, low-value customers, marketing efforts here should be minimal and cost-effective.

Final Recommendations

1. Focus on Top Customers

The **Champions** and **Big Spenders** are driving the most value so don't just thank them, **reward their loyalty** with VIP experiences, early product access, or personalized support. These are the people the business can't afford to lose.

2. Keep Loyal Customers Coming Back

The **Loyal** segment shops frequently and steadily adds to revenue. Keep them engaged with exclusive deals, bundles, or even a referral program because small nudges go a long way here.

3. Recover Lost Value from Inactive Customers

At Risk and **Hibernating** customers used to be active but haven't returned in a while. Target them with **win-back offers**, reminders, or personalized messages. They've spent before so there's still potential.

Continuation

4. Grow New Relationships the Right Way

New customers need direction. A simple **onboarding flow**, welcome email, or first-time discount can turn them into long-term loyal users. Don't let early momentum go to waste.

5. Be Strategic with Low-Value Segments

The **Others** group shows very low engagement and value. It's okay to **pull back here**. time, budget, and campaigns are better spent elsewhere.

6. Use CLV to Guide Marketing Investment

Instead of guessing who to spend on, use **Customer Lifetime Value (CLV)** to shape budget. Spend more where there's long-term payoff.

7. Automate workflow to Make This Ongoing, Not One-Off

Customer behaviour changes. Set up a basic **monthly refresh** of RFM and CLV scores to keep strategies up to date without starting from scratch every time.



Wrap-Up

Nova now has a clearer picture of its customer base not just by who they are, but how they behave, engage, and contribute value. With combining **RFM segmentation** with **CLV analysis**, we've unlocked:

- ✓ A data-driven way to prioritize marketing and retention
- ✓ Smart campaign targeting that reflects real customer behaviour
- ✓ Clear strategies to retain high-value customers, revive lapsed ones, and nurture new relationships

The next step? **Automate, and repeat.**

Thank you

Opitien Brume Pascal

<https://www.linkedin.com/in/pascalbrume/>

<https://pascalbrume.netlify.app/>