

CRM Analyst Case Study

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- RFM Model & Analysis
- Banner Design for 'Bestselling Games' Newsletter
- Newsletter Performance Analysis & Optimization Strategy

CASE 1. RFM MODEL & ANALYSIS



1. DATA PREPARATION

- Utilized a Python environment for model building and analysis.
- Filtering Transactions: Retained only successful purchases (Status = 'complete') to ensure accuracy in customer behavior analysis.
- Handling Duplicates: Removed redundant records based on Customer, Product, Purchase Date, Price, Quantity, and Status to maintain data integrity.
- Addressing Pricing Anomalies: Identified and corrected abnormally high Price/Quantity values by replacing them with the median price for the same product, ensuring consistency across transactions.
 - Affected products included:
 - Ghost of Tsushima DIRECTOR'S CUT PC*
 - Warhammer 40,000: Space Marine 2 PC*
 - ARMORED CORE VI FIRES OF RUBICON PC*
 - Panzer Corps 2: Axis Operations - 1944 PC - DLC*
 - Imperial Glory PC etc.*
- Standardizing Date-Time Formats: Ensured uniformity in date-time values for accurate Recency, Frequency, and Monetary (RFM) analysis.

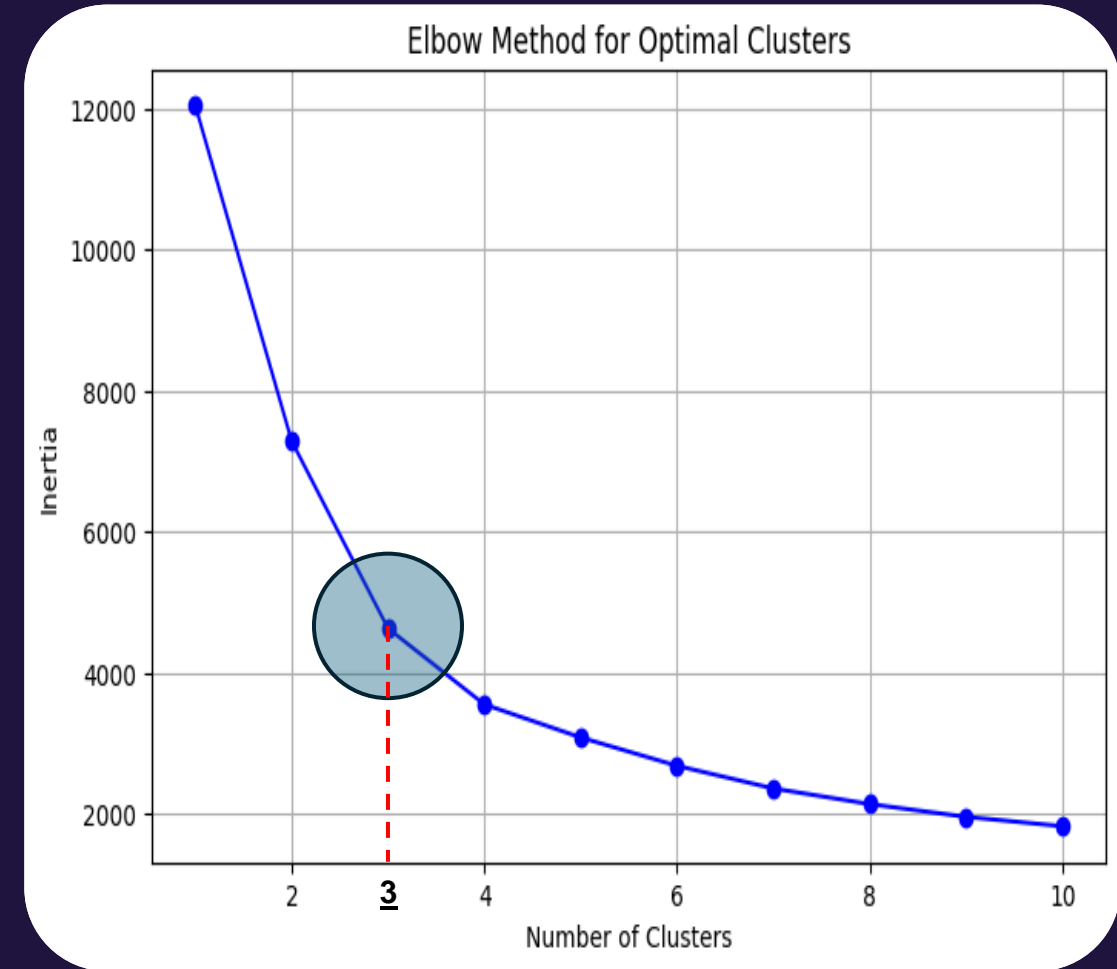
Customer	Purchase Date	Product	Price/Qty	Price	Quantity	Status
82672	19/05/2024 3:49	Ghost of Tsushima DIRECTOR'S CUT PC	197644.1	197644.09	1	complete
82672	28/07/2024 22:10	ARMORED CORE VI FIRES OF RUBICON PC	131561.7	131561.69	1	complete
73874	19/12/2024 8:33	Warhammer 40,000: Space Marine 2 PC	59679	59679	1	complete
73846	19/12/2024 4:05	Warhammer 40,000: Space Marine 2 PC	59679	59679	1	complete
73818	19/12/2024 3:28	Warhammer 40,000: Space Marine 2 PC	59679	59679	1	complete
73875	19/12/2024 8:05	Warhammer 40,000: Space Marine 2 PC	59679	59679	1	complete
39608	26/09/2024 11:16	Panzer Corps 2: Axis Operations - 1944 PC - DLC	47343.19	47343.19	1	complete
39608	5/8/2024 4:30	Imperial Glory PC	16727.69	16727.69	1	complete
43672	20/08/2024 4:46	Black Myth: Wukong PC	8109	8109	1	complete
43672	17/05/2024 10:45	Ghost of Tsushima DIRECTOR'S CUT PC	8049	8049	1	complete
39608	23/09/2024 2:04	Destroyer: The U-Boat Hunter PC	8035.69	8035.69	1	complete
43672	18/09/2024 12:15	God of War Ragnar�k PC (Europe & UK)	7419	7419	1	complete
61161	19/02/2024 5:53	HELLDIVERS 2 PC	5349	5349	1	complete
592	26/09/2024 5:41	Ghost of Tsushima DIRECTOR'S CUT PC	71.69	71.69	1	canceled
43672	29/02/2024 12:09	HELLDIVERS 2 PC	5199	5199	1	complete
82672	26/09/2024 4:15	Loddlenaut PC	4478.49	4478.49	1	complete
43672	16/03/2024 10:11	UNCHARTED: Legacy of Thieves Collection PC	3279	3279	1	complete
19860	29/08/2024 14:13	Hogwarts Legacy Deluxe Edition PC (WW)	2829	2829	1	complete
19860	29/08/2024 14:13	Red Dead Redemption 2 PC - Rockstar Games Lau	2789	2789	1	complete
646	18/01/2024 1:47	Monster Hunter World: Iceborne PC	1901	1901	1	complete
36473	7/7/2024 9:12	The Last of Us Part I PC	1803.49	1803.49	1	complete
43672	13/08/2024 9:35	Detroit: Become Human PC (Steam)	1799	1799	1	complete
61161	25/04/2024 11:12	Fallout 4: Game of the Year Edition PC	1259	1259	1	complete
7088	5/8/2024 7:25	Hogwarts Legacy Deluxe Edition PC (WW)	881.59	881.59	1	complete
43672	13/08/2024 9:36	Saints Row: The Third Remastered PC	759	759	1	complete
87294	3/10/2024 20:07	Minecraft: Java & Bedrock Edition Deluxe Collectio	672.59	672.59	1	complete
852	24/02/2024 19:37	HELLDIVERS 2 Super Citizen Edition PC	538.29	538.29	1	complete
43672	1/9/2024 7:24	Borderlands The Pre-sequel PC (WW)	489	489	1	complete
48007	21/01/2024 2:17	Worms Armageddon (PC)	455	455	1	complete
10260	7/10/2024 1:46	Sid Meier's Civilization VII Founders Edition PC	186.89	186.89	1	complete
28496	1/7/2024 7:47	Elden Ring PC (AUS/NZ)	176.99	176.99	1	complete
86581	26/04/2024 5:18	WWE 2K24 40 Years of Wrestlemania Edition PC	165.59	165.59	1	complete

Price Anomalies

CASE 1. RFM MODEL & ANALYSIS

2. DEFINING THE RFM METRICS

1. Setting Reference Date: Defined reference date as one day after the latest purchase date in the dataset.
2. Calculating Recency: Measured days since the last purchase for each customer.
3. Computing Frequency: Counted total purchases per customer to track engagement.
4. Calculating Monetary Value: Summed up total spend per customer (Price \times Quantity).
5. Standardizing RFM Values: Applied Standard Scaling to normalize the dataset for clustering or further analysis.
6. Optimal Cluster Selection: Used the Elbow Method to determine the best number of clusters based on inertia.
7. K-Means Clustering: Applied K-Means (**k=3**) on the standardized RFM dataset. (why 3? Because 3 has the sharpest dip hence forming an Elbow)
8. *The reason to opt for K-Means clustering is to have a more natural segmentation around the RFM metrics, rather than relying on rigid quartile-based segmentation.*



Elbow Method for Optimal Clusters

CASE 1. RFM MODEL & ANALYSIS

3. CUSTOMER SEGMENTATION USING MEAN RFM METRICS

# Clusters	# Recency	# Frequency	# Monetary
1	66.54790419161677	10.82934131736527	338.08170658682633
2	92.57251136937847	2.2986356745831227	71.98807478524508
3	268.9518496770405	1.4497944803288314	49.65351732237229

Cluster 1

- Low Recency
- High Frequency
- High Monetary

→ Likely Loyal Customers
or High Value Customers

Cluster 2

- Medium Recency
- Moderate Frequency
- Moderate Monetary

→ Likely Potential Loyalists
or Regular Customers

Cluster 3

- High Recency
- Low Frequency
- Low Monetary

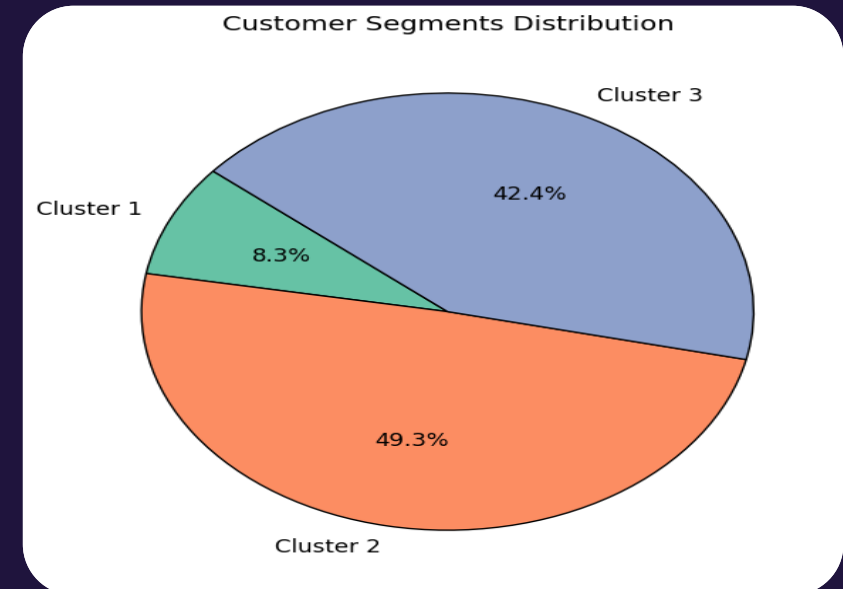
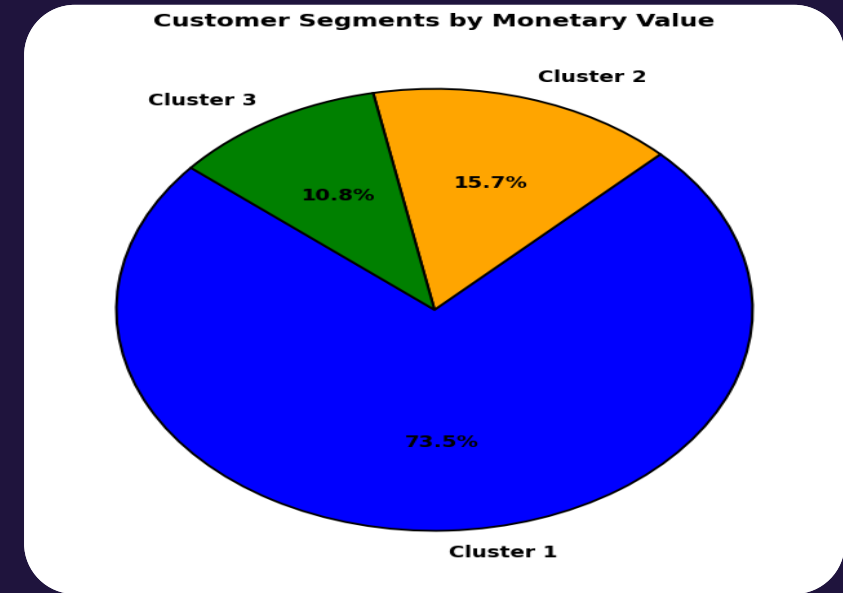
→ Likely Lost Customers
or At-Risk Customers

CASE 1. RFM MODEL & ANALYSIS

4. CUSTOMER SEGMENTATION ANALYSIS

Cluster	Share in Business	Share in Customer Base
1	73.5%	8.3%
2	15.7%	49.3%
3	10.8%	42.4%

- Here we can observe,
 - **Cluster 1** customers generates majority of the business revenue even though they are the smallest group.
 - **Cluster 2** is the largest customer segment, making up almost half of the customer base, but they contribute only a moderate portion to revenue.
 - **Cluster 3** segment is large but contributes very little to revenue.



CASE 1. RFM MODEL & ANALYSIS



5. CUSTOMER RETENTION STRATEGIES

Cluster	Cluster Label	Insights	Retention Strategies
Cluster 1	High Value Customers	<ul style="list-style-type: none">These are likely the most valuable customers, possibly frequent buyers or high spenders.Retaining and nurturing them is critical for profitability.	Strategy - <u>Loyalty & VIP Treatment</u> They generate most of the revenue. We should implement loyalty programs to retain them like exclusive perks (early access, premium support, VIP discounts).
Cluster 2	Mid-Tier or Mass Customers	<ul style="list-style-type: none">These could be regular buyers with lower spending power or moderate-frequency customers.	Strategy – <u>Increase Frequency</u> Low frequency shows they have potential but contribute less to revenue. We should try increasing their frequency. By implementing dynamic pricing and subscription models, bundled discounts
Cluster 3	Low-Value or Dormant Customers	<ul style="list-style-type: none">These could be infrequent or low-spending customers or dormant users.	Strategy – <u>Win-Back</u> We should engage them with targeted promotions, reminders, or personalized offers to boost spending.

CASE 1. RFM MODEL & ANALYSIS



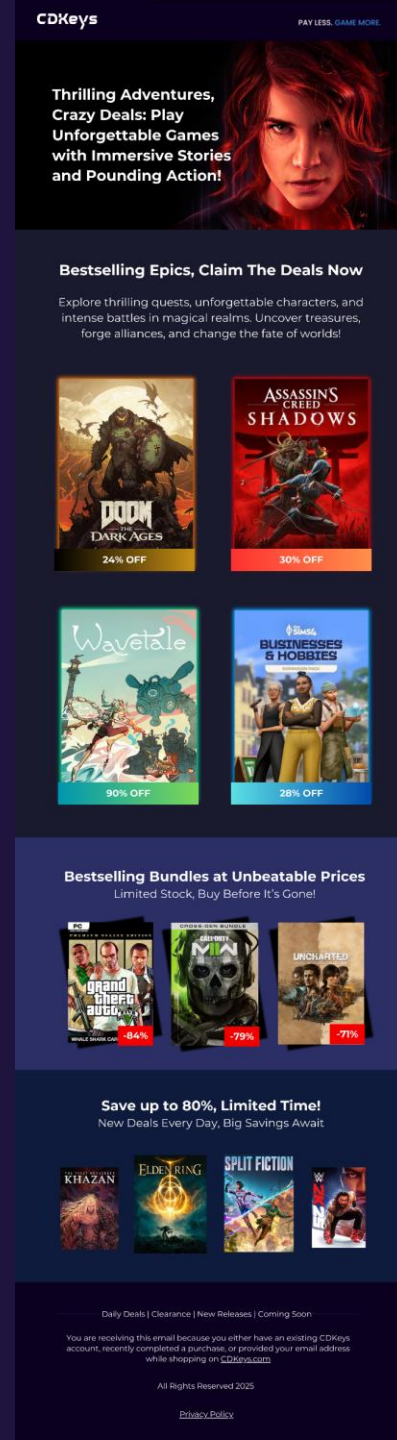
6. CONCLUSION

- Concluding the RFM Model Analysis, our goal should be to convert Mid-Tier Customers (Cluster 2) to High Value Customers (Cluster 1), which can be done by offering Cluster 2 customer incentives that encourage higher Frequency and Monetary values.
- Another objective should be to revive the Dormant Customers (Cluster 3), which can be achieved by Personalized Marketing and re-targeting this customer base.
 - Few examples of Personalized Marketing can be,
 - "We Miss You" promotions with personalized discounts.
 - Mystery rewards (randomized discounts or free gifts).
 - Run exit surveys to identify barriers & offer solutions.

CASE 2. MAKING 'BESTSELLING GAMES' NEWSLETTER

1. DESIGN CHOICE AND THOUGHT PROCESS

- **Complying with Company's Branding Assets:**
 - I made sure to comply and resonate with the company's branding guidelines and assets like font, colors and branding ideology.
- **Accurate Best-Selling & Deals from CDKeys:**
 - I have carefully selected the top-selling and best deal offers from the CDKeys website to ensure that the banner reflects real, up-to-date promotions.
- **Bold & Impactful Headline:**
 - I wanted the headline to immediately grab attention, so I used a bold, high-contrast font with phrases like "Thrilling Adventures, Crazy Deals" to create excitement. I kept the subtext short but powerful, emphasizing "Unforgettable Games" and "Pounding Action" to resonate with gamers.
- **Engaging Visuals:**
 - I made sure the hero image (*red haired female - Jesse Faden from 'Control', one of my personal favourite game title*) was intense and eye-catching, setting the tone for the banner. The game covers (Doom, Assassin's Creed, etc.) highlight popular, bestselling titles, making the banner instantly recognizable to PC gamers.
- **Strong Call-to-Action & Urgency:**
 - I included phrases like "Claim the Deals Now" and "Limited Stock, Buy Before It's Gone!" to push for immediate action. I also highlighted discounts (24%-90% OFF) in bright colors to make them impossible to miss.
- **Color Contrast & Readability:**
 - I went for a dark background to make the colors and text pop, ensuring easy readability. The use of white and bright accent colors made sure I catch attention without overwhelming the reader.



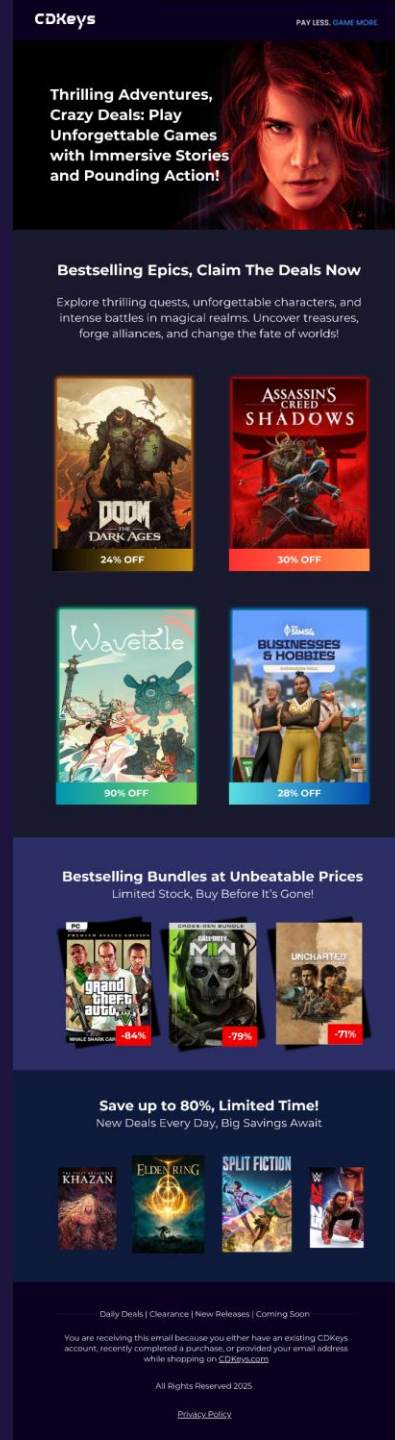
CASE 2. MAKING 'BESTSELLING GAMES' NEWSLETTER

2. HOW THIS DESIGN INCREASES ENGAGEMENT & OPEN RATES

- **First Impressions Matter:** The banner is bold, clear, and visually exciting, ensuring that readers notice it right away.
- **FOMO:** Highlighting time-limited discounts will encourages immediate action and clicks.
- **Scroll-Stopping Graphics:** Using bestselling game covers increases familiarity and draws in gamers looking for deals.
- **Clear & Actionable Messaging:** The banner gets straight to the point with minimum text and more focus on the gaming titles, making it effortless to scan and click-through without overwhelming the reader.

3. IMPLEMENTING RFM ANALYTICS IN THE NEWSLETTER

1. **For High-Value Customers:** I made sure to highlight premium bestselling games that appeal to loyal, high-spending gamers who are always looking for premium content.
2. **For Mid-Tier or Mass Customers:** To encourage higher-value purchases, I showcased discounted & bundle deals, giving them great value without breaking their budget.
3. **For Low-Value or Dormant Customers:** I included limited-time offers in the banner to create a sense of urgency and bring them back with irresistible deals.



CASE 3. PAST NEWSLETTER ANALYSIS & STRATEGY

After going through the newsletter, I noticed a few gaps that, if fixed, could make a huge difference in engagement and conversions.

1. The Call-to-Action is Weak

- **Problem:** The newsletter gives great information but doesn't really push people to act. If there's no urgency, most readers will not convert.
- **Solution:** We need strong, attention-grabbers that make people want to click NOW.
 - Something like: "Flash Sale, Ends at Midnight"
- **Impact:** These small tweaks can boost click-through rates.

2. A lot of Text with less focus on Games

- **Problem:** Too much text, I got confused and didn't know where to look first.
- **Solution:** Simplifying the layout, will keep descriptions short and to the point.
- **Impact:** A cleaner layout makes it easier to read and helps the best deals stand out. More clarity = more conversions

3. No Urgency, No FOMO = No Rush to Buy

- **Problem:** There's no real reason for readers to buy now instead of later, which often means never.
- **Solution:** To add elements that drive urgency, by mentioning Limited Stocks
- **Impact:** Creating urgency pushes people to act immediately instead of procrastinating.

4. The Subject Line needs to grab attention

- **Problem:** one of the reasons for poor KPI performance could be the email subject line doesn't grab attention, hence the emails weren't opened.
- **Solution:** we will need to test subject lines through A/B Testing that create urgency and excitement:
- **Impact:** A strong subject line increases open rates, meaning more people actually see what's inside.

