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DATA ANALYST



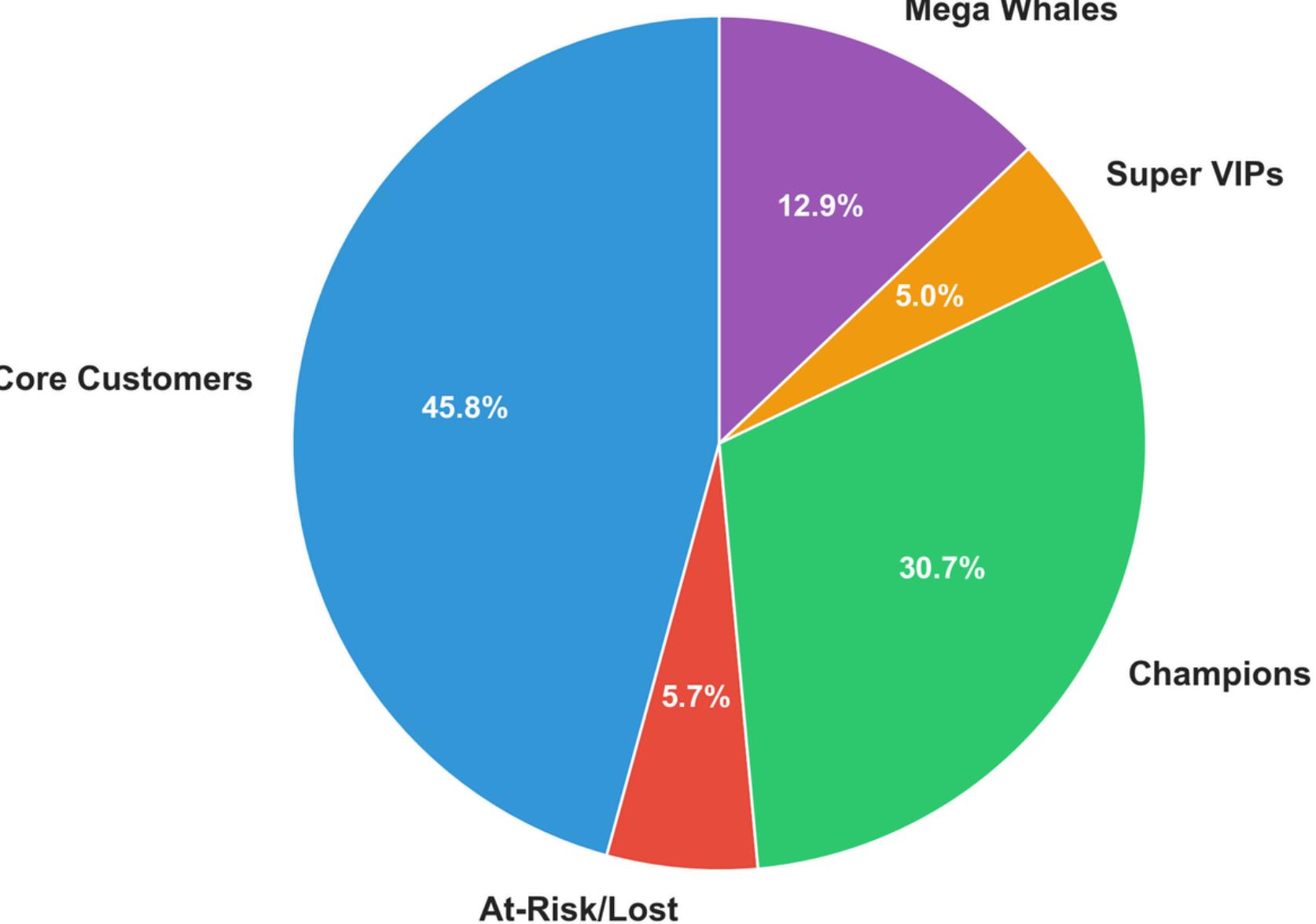
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# PROJECT PORTFOLIO 2026

# PROJECT OVERVIEW

Analyzed 4,338 customers from a UK-based e-commerce retailer using RFM (Recency, Frequency, Monetary) methodology and K-Means clustering to identify 5 distinct customer segments. Discovered that just 5% of customers (Champions + VIPs) generate 48.6% of total revenue, while 24.5% are at-risk of churn. Quantified \$1.2M in annual revenue opportunities through targeted retention and engagement strategies.

**Revenue Distribution by Customer Segment**



## PROJECT DETAILS

TOOLS USED: PYTHON (PANDAS, SCIKIT-LEARN, MATPLOTLIB, SEABORN), RFM ANALYSIS, K-MEANS CLUSTERING, STANDARDSCALER, JUPYTER NOTEBOOK  
 DATA SOURCE: UCI ONLINE RETAIL DATASET (KAGGLE)  
 BUSINESS PROBLEM: E-COMMERCE COMPANY NEEDED TO OPTIMIZE MARKETING SPEND ACROSS DIVERSE CUSTOMER BASE WITH NO CLEAR SEGMENTATION STRATEGY

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# KEY FINDINGS

## 1. The Power Law in Action

- 5% OF CUSTOMERS (227 PEOPLE) = 48.6% OF REVENUE (\$4.32M)
- TOP 14 CUSTOMERS ALONE GENERATE 17.9% OF TOTAL REVENUE
- AVERAGE MEGA WHALE VALUE: \$190,863 PER CUSTOMER

## 2. Significant Churn Risk

- 1,062 CUSTOMERS (24.5%) DORMANT FOR 8+ MONTHS
- ONLY GENERATING 5.7% OF CURRENT REVENUE
- REPRESENTS \$507K IN AT-RISK LIFETIME VALUE

## 3. Five Distinct Behavioral Segments

- CORE CUSTOMERS (70%): REGULAR BUYERS, 45.8% OF REVENUE
- CHAMPIONS (5%): HIGH-VALUE LOYALISTS, 30.7% OF REVENUE
- AT-RISK/LOST (24%): DORMANT CUSTOMERS, 5.7% OF REVENUE
- SUPER VIPS (0.2%): ULTRA-FREQUENT BUYERS, 5.0% OF REVENUE
- MEGA WHALES (0.1%): TOP-TIER ACCOUNTS, 12.9% OF REVENUE

# BUSINESS IMPACT

**Revenue Opportunities Identified:** \$1,197,309 Total Annual Opportunity

- WIN-BACK CAMPAIGN: \$76,019 - 15% RECOVERY OF AT-RISK SEGMENT - ROI: 660% (ON \$10K CAMPAIGN COST)
- FREQUENCY INCREASE: \$816,563 - 20% BOOST IN CORE CUSTOMER PURCHASES - EMAIL CAMPAIGNS + LOYALTY REWARDS
- CHAMPIONS RETENTION: \$191,321 - VIP PROGRAM REDUCES CHURN 12% → 5% - ROI: 283% (ON \$50K PROGRAM COST)
- WHALE PROTECTION: \$113,406 - DEDICATED ACCOUNT MANAGER PREVENTS 1 CHURN - ROI: 42% (ON \$80K ANNUAL COST)

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# SKILLS DEMONSTRATED

## 1. Technical

- PYTHON (PANDAS, SCIKIT-LEARN, MATPLOTLIB)
- RFM ANALYSIS, K-MEANS CLUSTERING
- DATA NORMALIZATION
- STANDARDSCALER, ELBOW METHOD, SILHOUETTE ANALYSIS

## 2. Analytical

- CUSTOMER SEGMENTATION
- BEHAVIORAL ANALYSIS
- REVENUE ATTRIBUTION
- CHURN RISK ASSESSMENT, CUSTOMER LIFETIME VALUE, OPPORTUNITY QUANTIFICATION

## 3. Business Impact

- IDENTIFIED \$1.2M REVENUE OPPORTUNITY,
- PRIORITIZED HIGH-VALUE SEGMENTS,
- QUANTIFIED ROI FOR EACH STRATEGY,
- CREATED ACTIONABLE MARKETING RECOMMENDATIONS

# STRATEGIC RECOMMENDATION

- ✓ ALLOCATE 40% OF MARKETING BUDGET TO CORE CUSTOMERS
- ✓ LAUNCH VIP LOYALTY PROGRAM FOR CHAMPIONS (25% BUDGET)
- ✓ ASSIGN DEDICATED MANAGERS TO TOP 14 ACCOUNTS
- ✓ TEST ONE-TIME WIN-BACK CAMPAIGN FOR AT-RISK
- ✓ DEPRIORITIZE NON-RESPONSIVE LOST CUSTOMERS

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