ABC-Ecom Customer Analytics & Growth Strategy

# Executive Summary

**Course :** MAH601 Marketing Analytics  
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**Dataset:** UK E-Commerce Transactions (2010-2011)

# Project Overview

ABC-Ecom, a UK-based online retailer, commissioned a comprehensive customer analytics study to optimize customer relationships and drive sustainable revenue growth. This analysis leverages advanced RFM (Recency, Frequency, Monetary) segmentation and machine learning-based Customer Lifetime Value (CLTV) prediction to provide actionable insights for strategic decision-making.

**Key Takeaways from RFM and CLTV Analysis:**

## Results of RFM Segmentation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Segment | Customer Count | % of Base | Total Revenue | % of Revenue | Avg. Revenue  /Customer |
| Goldmine | 967 (22%) | 22.1% | £5.62M | 68.0% | £5,811 |
| Steady Spenders | 1,211 (28%) | 27.7% | £1.84M | 22.3% | £1,523 |
| Other | 1,024 (23%) | 23.4% | £374K | 4.5% | £365 |
| Silent Leads | 805 (18%) | 18.4% | £161K | 2.0% | £200 |
| Slipping Stars | 226 (5%) | 5.2% | £61K | 0.7% | £269 |
| One-Time Wonders | 139 (3%) | 3.2% | £218K | 2.6% | £1,569 |

## CLTV Model Performance

* Algorithm: Gradient Boosting Regressor (100 estimators)
* Model Accuracy: R² = 0.848 (84.8% variance explained)
* Prediction Error: MAE = £350.69
* Features Used: 17 behavioral and transactional variables
* Top Predictors: Historical monetary value, purchase frequency, recency

## Critical Business Insights

1. Revenue Concentration Risk: Top 22% of customers (Goldmine) generate 68% of total revenue
2. Growth Opportunity: 46% of customers contribute only 7.2% of revenue
3. Churn Risk: 28% of customers show declining engagement patterns
4. High-Value Dormancy: 139 one-time high-value customers with reactivation potential

# Customer Segment Descriptions and Findings

## Goldmine Customers (967 customers, 68% revenue)

**Profile**: High recency, frequency, and monetary scores (R≥4, F≥4, M≥4)  
   
**Key Metrics:**

* **Avg Order Value**: £584.20
* **Purchase Frequency**: 2.3 purchases/month
* **Customer Tenure**: 8.7 months
* **Behavior**: Premium customers with established loyalty patterns
* **Strategic Importance**: Revenue backbone requiring VIP treatment

## Steady Spenders (1,211 customers, 22% revenue)

Profile: Moderate frequency and monetary, mixed recency (F≥3, M≥3)  
   
Key Metrics:  
• Avg Order Value: £152.30  
• Purchase Frequency: 1.1 purchases/month  
• Customer Tenure: 6.4 months  
• Behavior: Consistent moderate-value transactions with growth potential  
• Opportunity: Prime candidates for upselling and cross-selling

## One-Time Wonders (139 customers, 3% revenue)

Profile: High monetary, low frequency (M≥4, F≤2)  
   
Key Metrics:  
• Avg Order Value: £1,569.40  
• Purchase Frequency: 0.2 purchases/month  
• Customer Tenure: 2.1 months  
• Behavior: High initial investment but no repeat purchases  
• Challenge: Converting single-purchase behavior to loyalty

## Slipping Stars (226 customers, 1% revenue)

Profile: Low recency, high frequency (R≤2, F≥3)  
   
Key Metrics:  
• Avg Order Value: £269.00  
• Purchase Frequency: 0.8 purchases/month  
• Customer Tenure: 5.2 months  
• Behavior: Previously frequent customers showing decline  
• Risk: High churn probability requiring immediate intervention

## Silent Leads (805 customers, 2% revenue)

Profile: Low across all dimensions (R≤2, F≤2, M≤2)  
   
Key Metrics:  
• Avg Order Value: £200.10  
• Purchase Frequency: 0.3 purchases/month  
• Customer Tenure: 3.1 months  
• Behavior: Minimal engagement with activation potential  
• Opportunity: Dormant segment requiring nurturing campaigns

# Strategic Marketing Interventions

## Actionable Marketing Strategies by Segment

|  |  |  |
| --- | --- | --- |
| Segment | Strategy | Expected Outcome |
| Goldmine | Early access to premium products or perks  Offer benefits like early access to new products, free expedited shipping, and birthday perks—to the top customer segment (who already drive 80% of revenue). | This experience strengthens retention and increases spend from the highest-value segment. |
| Steady Spenders | Personalized cross-selling campaigns  Implement AI-driven product recommendations and tier-based rewards to encourage larger basket sizes and premium product adoption. | Increase average order value by 25% and cross-sell rate by 40%, converting consistent buyers into higher-value customers. |
| One-Time Wonders | Progressive re-engagement sequence  Deploy multi-channel win-back campaigns with escalating incentives, personalized offers, and abandoned cart recovery. | Achieve 35% reactivation rate, convert 50% to repeat customers, and reduce time to second purchase by 60 days. |
| Slipping Stars | Predictive churn prevention program  Proactive outreach with exclusive offers, satisfaction surveys, and personalized win-back incentives before churn occurs. | Reduce churn rate by 50%, achieve 25% win-back success rate, and prevent £240K annual revenue loss. |
| Silent Leads | Graduated onboarding program  Educational content series, starter discounts, product tutorials, and progressive engagement to activate dormant customers. | Increase activation rate by 200%, boost first purchase value by 35%, and improve 90-day retention by 80%. |

## Detailed Strategic Interventions

### 1. Goldmine Segment: VIP Loyalty Program

Strategy: Early access to premium products, exclusive perks, dedicated support  
  
Rationale: Protect and enhance value from highest-contributing segment  
Investment: Premium customer experience infrastructure  
  
Predicted KPIs:  
• Retention Rate: +5% (95% → 100%)  
• Average Order Value: +15% (£584 → £672)  
• Purchase Frequency: +20% (2.3 → 2.8 purchases/month)  
• Annual Revenue Impact: +£3.2M  
  
Implementation:  
• VIP member portal with early product access  
• Dedicated customer service line  
• Free expedited shipping and returns  
• Birthday and anniversary perks  
• Exclusive product launches and events

### 2. Steady Spenders: AI-Powered Personalization Engine

Strategy: Dynamic product recommendations, tier-based rewards, bundling incentives  
  
Rationale: Convert consistent buyers into higher-value customers through personalization  
Investment: Recommendation engine and targeted campaign automation  
  
Predicted KPIs:  
• Average Order Value: +25% (£152 → £190)  
• Cross-sell Rate: +40% (2.3 → 3.2 products/transaction)  
• Customer Lifetime Value: +30%  
• Annual Revenue Impact: +£1.1M  
  
Implementation:  
• Machine learning recommendation system  
• Progressive tier rewards (Bronze → Silver → Gold)  
• Bundle deals and complementary product suggestions  
• Personalized email campaigns  
• Dynamic website content based on purchase history

### 3. One-Time Wonders: Progressive Re-engagement Sequence

Strategy: Multi-channel win-back campaigns with escalating incentives and personal outreach  
  
Rationale: Reactivate dormant high-value customers with targeted value propositions  
Investment: Marketing automation platform and dedicated retention budget  
  
Predicted KPIs:  
• Reactivation Rate: +35% (10% → 45%)  
• Second Purchase Conversion: +50%  
• Time to Second Purchase: -60 days  
• Annual Revenue Impact: +£380K  
  
Implementation:  
• 30-60-90 day automated email sequence  
• Progressive discount offers (10% → 15% → 20%)  
• Personalized product recommendations based on first purchase  
• SMS and social media retargeting  
• Personal phone calls for highest-value customers

### 4. Slipping Stars: Predictive Churn Prevention

Strategy: Proactive outreach with exclusive offers, satisfaction surveys, and win-back incentives  
  
Rationale: Prevent churn of previously engaged customers showing warning signals  
Investment: Customer success team expansion and retention technology  
  
Predicted KPIs:  
• Churn Rate Reduction: -50% (80% → 40%)  
• Win-back Success Rate: +25%  
• Average Reactivation Value: £500  
• Annual Revenue Impact: +£240K (churn prevention)  
  
Implementation:  
• Predictive churn scoring model  
• Proactive customer success outreach  
• Exclusive "We miss you" offers  
• Customer satisfaction surveys and feedback loops  
• Personalized problem resolution

### 5. Silent Leads: Graduated Onboarding Program

Strategy: Educational content series, starter discounts, usage tutorials, and progressive engagement  
  
Rationale: Activate low-engagement customers through structured nurturing  
Investment: Content creation, email automation, and onboarding infrastructure  
  
Predicted KPIs:  
• Activation Rate: +200% (5% → 15%)  
• First Purchase Value: +35% (£200 → £270)  
• 90-day Retention: +80%  
• Annual Revenue Impact: +£195K  
  
Implementation:  
• Welcome email series with product education  
• Starter discount codes and free shipping offers  
• How-to guides and product usage tutorials  
• Gradual engagement through valuable content  
• Retargeting campaigns with social proof

# Implementation Roadmap & ROI Projections

Phase 1 (Months 1-3): High-Impact Quick Wins  
• VIP Program Launch for Goldmine customers  
• Automated Re-engagement for One-Time Wonders  
• Expected Revenue Impact: £1.8M  
  
Phase 2 (Months 4-6): Advanced Personalization  
• AI Recommendation Engine for Steady Spenders  
• Predictive Churn Prevention for Slipping Stars  
• Expected Revenue Impact: £1.4M  
  
Phase 3 (Months 7-12): Full-Scale Optimization  
• Comprehensive Onboarding for Silent Leads  
• Campaign Optimization based on performance data  
• Expected Revenue Impact: £950K  
  
Total Projected Annual Revenue Impact: £4.15M (+50% growth)

## Strategic Rationale Summary

**•** Customer-Centric Approach: Tailored strategies based on behavioral data

**•** Data-Driven Decision Making: ML-powered insights for resource allocation

**•** Risk Mitigation: Proactive churn prevention for high-value segments

**•** Growth Optimization: Systematic approach to customer lifetime value enhancement

# Model Limitations & Recommendations

## Current Limitations

1. Data Scope: Limited to transactional data without demographic context

2. Temporal Constraints: 6-month prediction window may miss long-term patterns

3. External Factors: Economic conditions and competitive dynamics not incorporated

4. Simulation-Based CLTV: Target variable derived from patterns, not actual outcomes

## Future Enhancements

1. Data Integration: Customer demographics, satisfaction scores, channel attribution

2. Advanced Modeling: Deep learning, survival analysis, ensemble methods

3. Real-Time Analytics: Streaming data for dynamic segmentation

4. A/B Testing Framework: Validate predictions through controlled experiments

# Conclusion

This comprehensive customer analytics study provides ABC-Ecom with a data-driven foundation for sustainable growth. The RFM segmentation and CLTV prediction models offer actionable insights that can drive significant revenue improvements through targeted marketing interventions.  
  
Expected Outcomes: 50% revenue growth, 25% improvement in CLTV, 15% churn reduction within 12 months.

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Generated: July 2025 | Model Performance: R² = 0.848*