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Bachelor of Business Administration (BBA) | Fifth Semester | UK5DSCMGT304

Customer Relationship Management

Course Code: UK5DSCMGT304 • Module 2 Notes

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Module 2: Customer Retention and Customer Value Modelling

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Chapter 1: Economics of Customer Retention and Churn Dynamics

1.1 Customer Acquisition versus Retention Cost Dynamics

In competitive commercial markets, the economic leverage of customer retention represents the single most powerful driver of sustained corporate profitability. In groundbreaking empirical research conducted by Frederick Reichheld of Bain & Company and W. Earl Sasser of Harvard Business School, it was established that across diverse industries—including commercial banking, credit cards, industrial logistics, and insurance—a modest **5% increase in customer retention rates generates an astounding 25% to 95% expansion in net corporate profits**.

The profound financial multiplier of customer retention stems from six underlying economic forces:

1. **High Customer Acquisition Sunk Costs:** Acquiring new customers demands heavy expenditures on digital advertising, search engine bidding, sales commissions, onboarding orientation, credit vetting, and account setup. In early relationship intervals, new accounts are frequently cash-flow negative.
2. **Operating Cost Efficiencies:** As customers become familiar with an enterprise's products, ordering workflows, and service interfaces, their operational servicing costs decline dramatically. Seasoned customers require less technical support and place routine orders self-sufficiently.
3. **Base Profit Growth & Expanding Spending:** Retained customers experience natural economic growth; as their personal incomes rise or corporate operational footprints expand, their order volumes and purchasing frequency increase organically over time.
4. **Premium Pricing Tolerance:** Established customers who have experienced consistent service reliability develop high switching inertia and brand trust. They exhibit lower price sensitivity and are substantially less likely to defect for temporary discount promotions offered by untested competitors.
5. **Cross-Selling and Up-Selling Receptivity:** Familiarity with enterprise capabilities makes loyal customers highly receptive to complementary product categories and premium product upgrades, dramatically expanding customer margin.
6. **Free Organic Word-of-Mouth Referrals:** Delighted long-term customers act as non-commissioned brand evangelists, generating high-conversion organic referrals that lower aggregate enterprise customer acquisition expenditures.

1.2 Churn Analysis and Early Warning Indicators

Customer Churn (Defection): The loss of existing clients or subscribers who cease purchasing or cancel service contracts with an enterprise over a designated operational period. Marketing scientists

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partition churn into two fundamental categories:

- **Involuntary (Forced) Churn:** Occurs due to circumstances beyond the direct commercial relationship, such as customer bankruptcy, corporate liquidation, geographic relocation outside service territories, or permanent death.
- **Voluntary Churn:** The active, conscious decision by a customer to terminate the relationship and switch to a competitor. Voluntary churn is driven by perceived poor customer service, uncompetitive pricing, unresolved service failures, technological obsolescence, or aggressive competitor poaching.

Annual Customer Churn Rate Calculation:

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Annual Churn Rate = (Number of Customers Lost During Year / Number of Customers at Start of Year) * 100
```

Legend: Annual customer defection percentage reflecting portfolio attrition velocity.

Key Early Warning Indicators of Impending Churn: Sophisticated analytical CRM systems track leading behavioral telemetry to identify at-risk accounts before defection occurs:

- *Declining Purchase Velocity:* Significant widening in the time interval between consecutive purchase orders compared to historical individual baselines.
- *Erosion in Basket Size & Categories:* Decreasing order monetary values or dropping specific product lines from routine monthly procurement.
- *Surge in Customer Service Grievances:* Frequent escalation of unresolved complaints regarding delivery delays, billing errors, or technical bugs.
- *Decreasing Digital Engagement:* Precipitous drop in mobile application logins, website sessions, or email newsletter open rates.
- *Credit Downgrades & Payment Friction:* Extending credit settlement terms, delayed invoice clearance, or disputed billing statements.

Chapter 2: Customer Profitability Analysis and CLV Modelling

2.1 Customer Profitability Analysis and the Whale Curve

A widespread corporate illusion is that high-revenue customers are automatically the most profitable customers. In classic managerial accounting research, Robert S. Kaplan and V. G. Narayanan demonstrated that when enterprises apply **Activity-Based Costing (ABC)** to track the true cost-to-serve individual accounts (including customized shipping, sales engineering support, small-order picking, and extended payment terms), customer profitability conforms to a **"Whale Curve"**:

- The top **20% of customers generate between 150% and 300% of total corporate net profit**.
- The middle **60% to 70% of customers roughly break even**, generating modest positive margins that cover their direct and servicing costs.

- The bottom **10% to 20% of customers actively destroy shareholder value**, consuming vast amounts of customized engineering, administrative handling, and expedited freight while demanding steep price discounts, eroding up to 200% of the profit earned from the top tier!

2.2 The Customer Profitability Matrix

Customer Tier	Economic Characteristics	Prescribed Strategic CRM Treatment
1. Platinum Tier (Star Customers)	High Gross Revenues & Low Servicing Costs. Highly profitable, loyal brand advocates.	Protect at all costs! Assign dedicated senior account executives, provide VIP loyalty perks, and engage in collaborative product development.
2. Gold Tier (Under-Leveraged)	Low Gross Revenues & Low Servicing Costs. Profitable on a percentage basis but small volume.	Growth opportunities. Deploy cross-selling and up-selling promotions to capture higher share of wallet; transition them into Platinum status.
3. Iron Tier (Service-Intensive)	High Gross Revenues & High Servicing Costs. High volume buyers who demand heavy discounts and costly support.	Aggressively streamline servicing workflows. Shift ordering to digital self-service portals, enforce strict minimum order quantities, and renegotiate discounting structures.
4. Lead Tier (Drain Customers)	Low Gross Revenues & High Servicing Costs. Chronic complainers who demand extensive customization and never pay full price.	Rehabilitate or strategically "fire" the customer! Impose full-cost fees for customized support, eliminate all discretionary discounts, or terminate unprofitable contracts.

2.3 Customer Lifetime Value (CLV) Mathematical Modelling

Customer Lifetime Value (CLV) is the projected present economic value of all future net profit contributions generated by a customer relationship over its entire expected lifespan, discounted back to the present at the corporate cost of capital. CLV provides an objective quantitative ceiling dictating the maximum capital an enterprise should rationally spend to acquire and retain a customer.

```
CLV = Sum from t=1 to n of [ ((Revenue_t - Cost_t) * (Retention_Rate)^t) / ((1 + Discount_Rate)^t) ] - Acquisition_Cost
```

Legend: Revenue_t = Projected revenue from customer in year t; Cost_t = Direct and servicing cost in year t; Retention_Rate = Probability customer remains active in year t; Discount_Rate = Annual corporate cost of capital / hurdle rate; Acquisition_Cost = Initial upfront marketing and onboarding cost.

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Comprehensive Worked Numerical Example: CLV Calculation

A telecommunications enterprise evaluates the CLV of a premium post-paid corporate subscriber under the following operational assumptions:

- Annual gross subscription revenue per user: **Rs 12,000**
- Annual direct servicing and network maintenance cost per user: **Rs 4,000**
- Annual net contribution margin per user: Rs 12,000 - Rs 4,000 = **Rs 8,000**
- Annual customer retention rate: **80% (r = 0.80)**
- Annual corporate discount rate (cost of capital): **10% (d = 0.10)**
- Initial customer acquisition cost (hardware subsidy + marketing): **Rs 5,000**

Simplified Perpetual CLV Formula: When annual margin (M), retention rate (r), and discount rate (d) remain stable over an extended horizon, CLV can be calculated using the closed-form Gordon growth-type perpetuity model:

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CLV = [ Margin * (Retention_Rate / (1 + Discount_Rate - Retention_Rate)) ] - Acquisition_Cost
```

Legend: Closed-form perpetual customer lifetime value formula.

Mathematical Computation:

1. Calculate Retention Multiplier: r / (1 + d - r) = 0.80 / (1 + 0.10 - 0.80) = 0.80 / 0.30 = **2.667**
2. Calculate Present Value of Cumulative Future Margins: Rs 8,000 × 2.667 = **Rs 21,336**
3. Deduct Initial Customer Acquisition Cost: Rs 21,336 - Rs 5,000 = **Rs 16,336**

Managerial Interpretation: The net economic lifetime value of this corporate subscriber is **Rs 16,336**. Corporate leadership can economically justify investing up to Rs 16,336 over the relationship lifecycle in targeted retention incentives, loyalty concierge services, or equipment upgrades before the relationship becomes value-destroying.

Chapter 3: Contact Center Management and Operations

3.1 Architecture of Modern Customer Interaction Centers

The traditional telephone call center has evolved into an integrated, multichannel **Customer Interaction Center (CIC)** or Contact Center, unifying voice telephony, email ticketing, web live chat, SMS, WhatsApp business messaging, and video support into a cohesive queue. Contact center operations rely upon three core technological pillars:

- **Automatic Call Distribution (ACD):** Specialized enterprise telephony hardware and software that ingests incoming customer interactions, parses queue priorities, and routes contacts to the most qualified available customer service agent based on skill-based routing rules.

- **Interactive Voice Response (IVR):** Automated speech recognition and DTMF keypad systems that authenticate callers, provide automated self-service resolution for routine inquiries (such as account balance lookups), and capture intent before routing to live human agents.
- **Computer Telephony Integration (CTI):** Middleware that bridges telephony switches with the central CRM database. When an incoming call connects, CTI initiates a **"Screen Pop"** on the agent's workstation, instantly displaying the caller's complete profile, purchase history, previous service tickets, and sentiment scores before the agent utters a single word.

3.2 Key Contact Center Operational Metrics and KPIs

Operational KPI Metric	Standard Industry Benchmark	Managerial & Quality Significance
First Contact Resolution (FCR)	70% to 75% of inquiries resolved on initial interaction.	The premier metric driving customer satisfaction. High FCR eliminates repeat call volume and prevents customer frustration.
Average Handle Time (AHT)	4 to 6 minutes (Talk time + Hold time + After-call work).	Measures operational efficiency. Excessive AHT indicates agent knowledge gaps; overly aggressive AHT targets force agents to rush callers.
Service Level Agreement (SLA)	80/20 Rule: 80% of incoming contacts answered within 20 seconds.	Measures inbound queue responsiveness and workforce scheduling adequacy.
Abandonment Rate	Below 5% of total incoming call volume.	Percentage of callers who disconnect while waiting in queue due to excessive hold times; directly correlates with lost sales and customer defection.
Customer Satisfaction Score (CSAT)	Exceeding 85% positive ratings on post-call surveys.	Direct transactional measurement of service quality and agent empathy.

Chapter 4: Customer Satisfaction Measurement and the Net Promoter Score (NPS)

4.1 The Net Promoter Score (NPS) Methodology

Formulated by Fred Reichheld of Bain & Company in 2003, the Net Promoter Score (NPS) is the globally accepted metric for quantifying customer brand loyalty and advocacy. Unlike complex multi-question satisfaction surveys that suffer from low completion rates, NPS is built upon a single, unambiguous "Ultimate Question":

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> *"On a scale of 0 to 10, how likely are you to recommend our company/product/service to a friend, family member, or business colleague?"*

Based on their numerical rating on the 11-point scale, respondents are partitioned into three distinct psychological segments:

- **Promoters (Scores 9–10):** Highly enthusiastic, loyal brand champions who exhibit repeat buying behaviors, generate authentic organic referrals, and possess the lowest price sensitivity and churn rates.
- **Passives (Scores 7–8):** Satisfied but unenthusiastic buyers who are economically vulnerable to competitive poaching and aggressive promotional offers; they do not generate word-of-mouth advocacy.
- **Detractors (Scores 0–6):** Disaffected, unhappy customers trapped in negative relationships. Detractors account for high support costs, exhibit high churn velocity, and inflict severe commercial damage through toxic negative word-of-mouth and viral social media criticism.

4.2 NPS Mathematical Calculation and Strategic Implementation

The Net Promoter Score is calculated by subtracting the percentage of Detractors from the percentage of Promoters:

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Net Promoter Score (NPS) = Percentage of Promoters - Percentage of Detractors
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Legend: The resulting score ranges from -100 (every customer is a Detractor) to +100 (every customer is a Promoter). Passives are excluded from the net score but count in the total respondent base.

Worked Numerical Illustration of NPS

A regional commercial bank surveys 1,000 retail banking customers following digital mobile application onboarding. Survey results show: 620 respondents provide scores of 9 or 10; 230 respondents give scores of 7 or 8; and 150 respondents provide scores of 0 through 6.

1. Percentage of Promoters = (620 / 1,000) × 100 = **62.0%**
2. Percentage of Passives = (230 / 1,000) × 100 = **23.0%**
3. Percentage of Detractors = (150 / 1,000) × 100 = **15.0%**
4. Net Promoter Score = 62.0% - 15.0% = **+47**

Managerial Interpretation: An NPS of +47 is considered "Excellent" in commercial retail banking (where industry averages hover around +30). However, the enterprise must implement an automated **"Closed-Loop Feedback System"**: customer experience managers must contact the 150 Detractors within 24 hours of survey submission to investigate root causes, rectify service breakdowns, and transform disaffected clients into loyal advocates.

Chapter 5: Advanced Customer Equity and Relationship Portfolio Dynamics

5.1 The Customer Equity Framework (Rust, Lemon, and Zeithaml)

In strategic financial marketing, **Customer Equity** is defined as the total combined customer lifetime values of all current and prospective customers of an enterprise. Roland Rust, Katherine Lemon, and Valarie Zeithaml established that customer equity is driven by three distinct sub-equities:

- **Value Equity:** The customer's objective evaluation of the utility of a product or service based on perceptions of what is given up for what is received. Key drivers include competitive price, physical product quality, and convenience. Dominates in commodity B2B markets.
- **Brand Equity:** The customer's subjective, emotional evaluation of the brand above and beyond its objective value. Key drivers include brand awareness, corporate reputation, emotional advertising, and perceived prestige. Dominates in luxury retail and consumer packaged goods.
- **Relationship Equity:** The customer's tendency to stick with the brand, above and beyond objective value and brand perceptions, driven by relationship-building programs. Key drivers include loyalty reward programs, special recognition treatments, community affinity, and structural knowledge-sharing bonds. Dominates in contractual industries (banking, telecom, SaaS software).

Chapter 6: Advanced Churn Analytics and Machine Learning Prediction

6.1 Predictive Modeling Pipelines for Churn Prevention

Modern analytical CRM deploys supervised machine learning models to score customer defection probabilities weeks before customers actively cancel service contracts:

1. **Feature Engineering:** Extracting historical telemetry features:
   - *Recency Metrics:* Days since last transaction, days since last mobile app login.
   - *Trend Velocity Metrics:* Ratio of last 30-day spending compared to trailing 90-day spending baseline (detecting spending deceleration).
   - *Sentiment Telemetry:* Natural language processing (NLP) analysis of customer service chat transcripts to detect negative emotional tone, anger, or frustration.
2. **Algorithmic Scoring:** Deploying **Gradient Boosted Decision Trees (XGBoost)** and **Logistic Regression** to assign a dynamic **Churn Risk Score (0.0 to 1.0)** to every active customer account in real time.
3. **Automated Intervention Triggering:** High-risk accounts ($Score > 0.75$) with high CLV are automatically routed to a specialized **Customer Retention Taskforce**, triggering personalized proactive retention offers (such as subscription discounts, complimentary feature upgrades, or executive outreach) before defection occurs.

6.2 Designing High-Impact Win-Back Campaigns

When high-value accounts defect, enterprises execute systematic **Customer Win-Back Programs**:

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Win-Back Phase	Operational Activity	Managerial & Economic Objective
Phase 1: Exit Diagnostic Audit	Conducting structured post-cancellation exit interviews to classify root causes of defection (price, service failure, product defect, competitor poaching).	Isolating salvageable customers from permanently lost accounts (e.g., customers who left due to relocation).
Phase 2: Segmented Rehabilitation	Formulating customized win-back offers tailored to the specific defection cause (e.g., waiving service fees for service failure victims; offering flexible contracts for budget-constrained clients).	Empirical research proves that past customers exhibit win-back conversion rates of 20% to 35%—significantly higher than cold prospect conversion rates (1% to 3%)!
Phase 3: Service Recovery Paradox	Resolving underlying operational grievances decisively and providing compensatory gestures.	Exploiting the **Service Recovery Paradox**: customers who experience a service failure that is resolved quickly and generously often display higher long-term loyalty and brand advocacy than customers who never experienced a failure!

Chapter 7: Contact Center Workforce Management and Erlang Traffic Engineering

7.1 Workforce Management (WFM) Lifecycle

In enterprise contact centers, personnel labor costs account for over 65% to 75% of total operating budgets. Workforce Management (WFM) is the analytical science of ensuring that the exact right number of skilled customer service agents are scheduled at the right workstations at the right time to satisfy statutory Service Level Agreements without incurring massive overtime payroll waste.

7.2 The Erlang-C Queuing Model in Contact Centers

Contact center inbound traffic arrival is stochastic, characterized by Poisson arrival distributions and exponential service times. Operations managers apply the classic **Erlang-C Formula** (developed by Danish mathematician A. K. Erlang) to determine the exact number of agents (m) required to handle inbound call volume (λ) with average call duration ($1/\mu$) such that the probability of customer waiting time exceeding target threshold (t) is below acceptable limits.

Applying automated WFM software allows managers to generate optimized 15-minute interval shift schedules, accounting for agent schedule adherence, anticipated absenteeism, meal breaks, and seasonal call surges.

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Chapter 8: The Kano Model of Customer Needs and Satisfaction

8.1 Five Categories of Customer Requirements

Developed by Japanese quality expert Noriaki Kano in 1984, the **Kano Model** classifies customer preferences and quality attributes into five distinct psychological categories based on their ability to create customer satisfaction or dissatisfaction:

Kano Quality Dimension	Psychological Nature & Expectation	Impact on Customer Satisfaction
1. Must-Be (Threshold) Qualities	Basic, taken-for-granted expectations. Customers do not explicitly request them because their presence is assumed.	Their presence does NOT increase satisfaction, but their absence triggers instant extreme customer outrage (e.g., clean bedsheets in a hotel; brakes on a car).
2. One-Dimensional (Performance) Qualities	Explicitly articulated requirements where customer satisfaction is linearly proportional to the level of execution.	The more delivered, the happier the customer (e.g., automobile fuel efficiency; smartphone battery lifespan; internet download speed).
3. Attractive (Delighters) Qualities	Unexpected, innovative features that surprise and delight the customer.	Their absence causes ZERO dissatisfaction (because customers never expected them), but their presence triggers immense customer delight and viral word-of-mouth (e.g., free room upgrade).
4. Indifferent Qualities	Features toward which customers exhibit complete indifference.	Neither satisfaction nor dissatisfaction is affected regardless of how much capital the enterprise invests (e.g., internal software code formatting).
5. Reverse Qualities	High execution actually triggers customer dissatisfaction because different segments hold contradictory preferences.	Adding more of the feature annoys customers (e.g., over-complicated automated phone menus for users seeking a live human agent).

Chapter 9: Customer Effort Score (CES) and Frictionless Experience Design

9.1 The Effortless Experience Paradigm

In groundbreaking research published by Matthew Dixon, Karen Freeman, and Nicholas Toman in the Harvard Business Review, the traditional belief that corporate customer service should strive to

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"delight" customers was decisively refuted. The authors proved that **delighting customers does not build loyalty; minimizing customer effort does**.

Customer loyalty erodes when customers encounter friction: having to repeat account details to multiple service agents, being transferred between departments, having to switch communication channels, and navigating Byzantine return policies.

The Customer Effort Score (CES) Question:

> *"To what extent do you agree with the following statement: The company made it easy for me to handle my issue?" (Rated on a 7-point scale from 1 = Strongly Disagree to 7 = Strongly Agree).*

Empirical findings reveal that 94% of customers reporting low effort indicate an intention to repurchase, compared to only 4% of customers who experienced high operational effort. Enterprise CRM systems must automate self-service routing, maintain cross-channel interaction continuity, and empower front-line agents to resolve issues on first contact.

Chapter 10: Multi-Tier Loyalty Program Design and Breakage Economics

10.1 Behavioral Psychology of Loyalty Rewards

Enterprise customer loyalty programs represent structured marketing interventions designed to incentivize recurring purchase frequency and emotional brand commitment. Marketing science identifies three psychological mechanisms governing loyalty program effectiveness:

- **The Goal-Gradient Effect:** Psychological motivation escalates as individuals perceive themselves approaching a designated goal milestone. Loyalty programs exploit this by visualizing progress bars (e.g., "You are only 150 points away from Gold Elite status!"), driving accelerated transaction velocity.
- **Tiered Status Psychology:** Elite status tiers (Silver, Gold, Platinum, Diamond) deliver social recognition, exclusivity, and elevated self-esteem. Customers frequently purchase unnecessary products simply to maintain their elite tier designation.
- **Endowed Progress Effect:** Providing customers with artificial initial progress toward a goal (such as gifting 100 free bonus points on a 500-point card) dramatically increases completion velocity compared to a card starting from absolute zero.

10.2 Loyalty Program Financial Architecture and Breakage

Corporate financial controllers evaluate loyalty programs through two critical economic variables:

Economic Variable	Financial Accounting Definition	Managerial & Actuarial Significance
Redemption Rate	Percentage of issued loyalty reward points that are actively	Measures customer engagement. High redemption rates correlate strongly with

Economic Variable	Financial Accounting Definition	Managerial & Actuarial Significance
	redeemed for goods or services by customers.	customer retention and brand advocacy.
Breakage Rate	Percentage of issued loyalty reward points that expire or are abandoned by customers without redemption.	Generates direct accounting profit for the enterprise. However, excessive breakage indicates low customer engagement and confusing redemption policies.

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