# Requirement Life Cycle for Customer Segmentation Model for a Telecommunications Company

**Elicitation:**

- **Identify stakeholders:** Stakeholders include marketing teams, product managers, customer relationship managers, and data analysts.
- **Conduct interviews and workshops:** Engage with these teams to understand what segmentation goals they have — such as targeting churn-prone customers, customizing offers, or understanding user behavior patterns.
- **Explore current data landscape:** Identify customer-related data sources like call logs, recharge patterns, internet usage, complaints, and demographics.
- **Initial requirement gathering:** Document the business questions stakeholders want to answer, such as "Who are our high-value customers?" or "Which customers are most likely to churn?"

**Analysis and Documentation:**

- **Define segmentation criteria:** Analyze which variables (e.g., usage behavior, geography, payment history) are important for segmentation.
- **Write user stories:** For example, "As a marketing analyst, I want to segment customers based on usage patterns so that I can run targeted campaigns."
- **Design process flow:** Define how data will be collected, cleaned, and used to build the segmentation model.
- **Specify model expectations:** Document required model features — such as number of segments, desired accuracy, and interpretability.

**Validation and Verification:**

- **Review segmentation approach:** Discuss chosen methods (e.g., K-means, decision trees, clustering) with stakeholders to ensure it aligns with business goals.
- **Validate assumptions:** Confirm that selected variables and algorithms reflect real customer behavior and business use cases.
- **Prototype testing:** Run small-scale tests and review the output segments with stakeholders to ensure they are meaningful and actionable.

**Prioritization and Negotiation:**

- **Rank goals and use cases:** Prioritize use cases like churn prediction, upselling, and loyalty targeting based on business impact.
- **Define MVP:** Agree on a minimum viable model that provides basic segmentation while keeping complexity manageable.
- **Negotiate trade-offs:** Balance between model accuracy, interpretability, and computation time based on project deadlines and resource constraints.

**Change Management:**

- **Handle new inputs:** If new customer behavior metrics (like app usage or regional promos) are introduced, evaluate their effect on the model.
- **Manage model scope:** Adjust segmentation depth or techniques based on changing needs, such as new marketing strategies or regulations.

**Communication and Collaboration:**

- **Work with data teams:** Collaborate with data engineers to access, clean, and prepare customer data.
- **Sync with marketing and sales:** Ensure the segmented customer groups align with actionable campaign strategies.
- **Bridge between business and tech:** Regularly update stakeholders with progress using non-technical language while keeping developers aligned on logic and timelines.

**Traceability and Impact Analysis:**

- **Trace each segment:** Maintain a clear record of which data points contributed to each customer segment and why.
- **Impact of change:** Analyze how changes in customer data (e.g., policy changes, service upgrades) may affect segmentation outcomes and business interpretations.

**Implementation and Testing:**

- **Develop segmentation model:** Implement the model using appropriate machine learning techniques (like clustering or classification).
- **Test segments:** Validate that each segment represents distinct behavior patterns and business personas.
- **Evaluate performance:** Use metrics like silhouette score, precision-recall, or A/B testing results to ensure segmentation is meaningful.

**Validation and Acceptance:**

- **Stakeholder testing:** Let business teams explore the segmentation output through dashboards or reports.
- **Final validation:** Confirm that the segmentation aligns with real-world patterns and can drive actionable strategies like personalized offers or churn reduction campaigns.

**Deployment and Maintenance:**

- **Deploy model:** Integrate the segmentation model into CRM or campaign management systems.
- **Monitor performance:** Regularly evaluate model drift and update segments based on new data trends or feedback from business teams.
- **Handle feedback loops:** Use business outcomes (e.g., campaign success rates) to refine and improve segmentation logic.

**Retirement and Archival:**

- **Retire outdated models:** When a new segmentation model is adopted or business priorities shift, decommission the old model systematically.
- **Archive documentation:** Store historical segmentation logic, assumptions, and performance reports for compliance, learning, and audits.