

## Assignment 1

# Requirement life cycle for Customer segmentation model for a telecommunications company

### 1. Elicitation

**The goal of elicitation is that we need to understand the need for segmentation. It is practice of researching and discovering requirements of users, customers and stakeholders.**

**Actions:**

- For telecommunication company data, we need to conduct interview and workshops with customers, users, marketing team etc. and as per their experience take note on how can we provide convenient services.
  - We need to check for other alternatives, check existing data on internet, existing users, KPI for specific industry can play major role in identifying requirements.
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### 2. Analysis and Documentation

**The goal of Analysis and Documentation step is to analyse requirements and convert them into a structured format.**

**Actions:**

- We can identify the features to group customers. Revenue (monthly, yearly) per user, their usage like data consumption, call duration and message frequency, also we can group them in churn risk can evaluate inactivity days, missed payment.
  - We can document the functional and non-functional requirements.
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### 3. Validation and Verification

**The goal of Validation and Verification is to ensure requirements are correct and feasible. Gathered data need to verify as we need authentic information for project.**

**Action:**

- We need to discuss segmentation model with teams like marketing and product to ensure it meets their need. Clients/stakeholder's input helps to refine goals and ensure business relevance.
  - We need to define each customer segment and verify necessary data (usage billing and demographics) is reliable. This ensures accurate and meaningful segmentation.
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#### **4. Prioritization and Negotiation**

**The Goal is to decide which segments or features to build first.**

**Activities:**

- Prioritization depends on customer reach, impact on values, how sure you are about data and time and resources needed to implementation of the project.
  - For Telecommunication, we need to prioritize good user base area, quality all over locations and make sure zero downtime.
  - Negotiate between teams: e.g., marketing may want customer value segmentation first, while care team may want churn prediction.
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#### **5. Change Management**

**The goal for Change Management is to manage evolving requirements. AS we need system to be update as per latest technology, Change is crucial and part of process.**

**Actions:**

- Tracking changes helps you to clear record of evolving business needs and ensures everyone stay updated. For e.g., if marketing guy wants to add new segment like competitors say "5G technology", change need to perform and everyone needs to be informed.
  - It assesses how change can affect timelines, costs and scope
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#### **6. Communication & Collaboration**

**The Goal communication and collaboration is to ensure all stakeholders are aligned. Communication is the most important skills if you someone part of initial phase of process. Clear and good communication skills is required to be collaborate with Clients and Stakeholders.**

**Actions:**

- We need to ensure all teams stay aligned on progress, goals, and issues. For example, Data Science team shares model updates, clusters and data challenges. Business team shares feedback on how segments are performing or being used and IT team ensures infrastructure and data pipelines are functioning and secure.
  - These meetings help quickly resolve blockers and maintain clarity across departments.
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## **7. Traceability and Impact Analysis**

**The goal is to link requirements to outcomes and assess impacts.**

**Actions:**

- We need to connect every model requirement to measure business outcomes. Need to understand requirements and how business benefit from this.
  - Evaluate the potential effect of any change in features, data inputs, or model logic before applying it. It prevents consequences in segmentation quality or business decisions based on these segments.
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## **8. Implementation and Testing**

**Goal:** Build and test the model.

**Actions:**

- It helps to group customers based on similar behaviour or characteristics like data usage, call frequency, recharge habits, etc. and helps uncover patterns and create meaningful customer groups without manual labelling.
  - It ensures the input data is clean, complete, and correct before feeding it to the model. E.g., no missing recharge amounts or invalid age entries and voids errors in segmentation logic and ensures the segments are reliable and accurate.
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## **9. Validation and Acceptance**

**Goal:** Ensure business approves the solution.

**Actions:**

- Share the output of the model in a clear and business-friendly format. Describe each segment using metrics like Average revenue, Average data/call usage, Churn rate, Customer age group, region, etc.

- After validation, present final model and segments in a formal meeting. Prepare documentation (segment logic, impact, use cases), Business leads (e.g., marketing or customer retention team) give approval.
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## 10. Deployment and Maintenance

**Goal:** Launch and maintain the model.

**Actions:**

- Dashboards in **Power BI or Tableau** visually show customer segment distribution, behaviour patterns, and KPIs to enable decision-making.
  - The segmentation model should be **retrained on updated data** periodically (weekly/monthly) to stay accurate.
  - Continuously evaluate how effective the segmentation is in driving business outcomes.
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## 11. Retirement and Archival

**Goal:** End-of-life for outdated models or segments.

**Actions:**

- When customer behaviours, preferences, or market dynamics shift (e.g., due to new plans, digital adoption, 5G usage), older segmentation models may no longer reflect current customer patterns. By using outdated segments can lead to ineffective marketing, poor personalization, or missed revenue opportunities.
  - Archive model scripts, documentation, and business reports in a version-controlled system (e.g., Git, SharePoint). It helps compare **past vs. current** segmentation strategies.
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