

LinkIT 360 - Study Case

Project Based Learning

Data Analytics for Business

Batch 7

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Company Profile

LinkIT360, based in Indonesia, is a cutting-edge provider of mobile value-added services (VAS) and revenue-boosting solutions for telecommunication operators worldwide. With a presence in 42 countries, LinkIT360 has revolutionized the way telecom operators monetize their services, handling billions of transactions monthly through advanced carrier-grade services.

For over 14 years, LinkIT360 has been at the forefront of developing innovative digital solutions, delivering premium digital products to subscribers globally. The company serves a vast customer base, reaching over 189 million subscribers across 86 telecom operators. LinkIT360 offers a variety of digital products, including mobile entertainment, sports news, language learning, and health & wellness services, helping users enhance their everyday lives through accessible digital platforms.

Boasting offices in 14 countries, LinkIT360 is known for its technical expertise in areas such as cloud development, AI, machine learning, blockchain, and augmented reality (AR). The company is committed to continuous improvement, driven by a passionate team of over 100 collaborators worldwide.

With a strong international presence and a mission to continue developing forward-thinking digital solutions, LinkIT360 is positioned as a leader in the global telecom industry, offering innovative tools that empower operators to enhance their service offerings and grow their revenue streams. LinkIT360's headquarters are located in Jakarta, Indonesia, with additional offices in countries such as Cambodia, Vietnam, Singapore, Pakistan, Russia, and Dubai, among others.

Case Study Background

You are a senior data analyst at a Value Added Service (VAS) company that provides mobile-based services such as digital subscriptions, entertainment content, and special offers for Operators across multiple countries. The company is looking to analyze its subscription data to improve service engagement, reduce churn, and optimize revenue streams. Your task is to perform exploratory data analysis (EDA), generate insights from the data, and visualize the findings using interactive dashboards.

Data Provided

Here the params from Subscription Table :

Parameter Name	Mandatory	Type	Description
Country	Yes	Varchar(20)	Country Yes Varchar(20) Name of the country using ISO format. You can check here: https://www.nationsonline.org/oneworld/country_code_list.htm#O
Operator	Yes	Varchar (50)	Name of the operator.
Service	Yes	Varchar (50)	Service name that user subscribes.
Source	Yes	Varchar (50)	Channel from which the user subscribed. <ul style="list-style-type: none"> - Web - Sms - Ussd - Ivr - Dst Default value <ul style="list-style-type: none"> - Corresponding to the subscribed channel

Msisdn	Yes	Varchar (50)	User's Msisdn (phone number).
Status	Yes	Int	Status of user's subscription. 1 = active and has been renewed 0 = active but not yet renewed -1 = unsubscribed
Cycle	Yes	Varchar(50)	Subscription Duration - Daily - Weekly - Monthly - 2D - 3D
Adnet	Yes	Varchar(50)	Name of Adnet (Ad Network), a platform that connects advertisers with publishers. If empty, filled with "NA".
Revenue	Yes	Decimal	Total revenue from successful transactions.
Subs date	Yes	Timestamp	Date when the user subscribed.
Renewal date	Yes	Timestamp	Date when the user renewed.
Freemium End Date	No	Timestamp	Date when the freemium ends.
Unsubs From	No	Varchar(50)	Source of the subscription. Value can be: - Portal - Ussd - Sms - Lp - CS Tools If no subscription transaction, can send NULL instead.
Unsubs date	No	Timestamp	Date when the user unsubscribed.
Service price	Yes	Decimal	Fixed charging price.

Currency	Yes	Varchar(20)	Currency code used for charging
Profile status	Yes	Varchar(50)	MSISDN status. Value can be: <ul style="list-style-type: none"> · active = active subscription · inactive = user is not an active subscriber · Grace = 30 consecutive days of failed charges · Parking = 60 consecutive days of failed charges · Purging = 90 consecutive days of failed charges · Blacklist
Publisher	Yes	Varchar(100)	Publisher name from the campaign.
Trxid	No	Varchar(100)	Unique transaction id.
Pixel	No	Varchar(100)	Campaign pixel. (To identify the transaction is for which user and campaign.
Handset	No	Varchar(50)	User's handset used during the transaction. Device name or device code + OS.
Browser	Yes	Varchar(50)	Browser used by the user during the transaction.
Attempt charging	Yes	Int	Number of times the user was charged (failed/successful attempts are counted).
Success billing	Yes	Int	Number of successful charges by the user.

Task

Part 1: [Business] Business Modeling

Task 1: Product Canvas & BPMN Diagram

- Create a Data Product Canvas for Tracking Revenue Tools, including:
 - Objective Problems
 - Solution
 - Key Metrics
 - Methodology
 - User Segments
 - Business Benefit
- Create a Business Flow of customer journey through the subscription lifecycle (from subscription to renewal or churn) using BPMN Diagram.

Part 2: [Python] Data Analytics using Python

Task 2: Data Cleaning and Preprocessing

- Identify and handle outliers in numerical columns.
- Create derived features such as sales per customer, average order value, and inventory turnover ratio.
- Normalize and scale features for consistency.

Task 3: Comprehensive EDA using Python

- Load the consolidated data into a Pandas DataFrame.
- Perform detailed EDA to uncover patterns and relationships affecting business performance, including:
 - **Churn Risk Score Based on Engagement**
Question: Develop a churn risk score based on user engagement (number of charging attempts, successful billing, and subscription status). Higher engagement leads to a lower risk score. Compare the churn risk across different user segments.
 - **Subscription Tenure**

Question: Develop a subscription tenure feature that calculates the number of days a user has been subscribed, based on the subscription and renewal dates. Analyze how tenure correlates with revenue and subscription cycle.

- **Failed Charge Ratio**

Question: Create a failed charge ratio feature by dividing the number of failed charging attempts by the total charging attempts. Analyze how this ratio impacts user retention and revenue generation

- Visualize key insights using Matplotlib and Seaborn.

Part 3: [SQL] SQL Query

Task 4: Data Extraction

- Create an SQL Query to answer the following questions:
 - **Subscription Trends:**
Calculate the total revenue, subscription count, and churn rate by region and operator.
 - **Churn and Retention:**
Calculate churn rates for each subscription cycle and segment users by region and operator
 - **Campaign Performance:**
Analyze the performance of marketing campaigns by calculating the success rate of billing attempts for each campaign.

Part 4: [Visualization] Tableau for Data Visualization

Task 5: Dashboard Creation

- Import the cleaned data into Tableau.
- Create the interactive dashboard based on Task 4 (Subscription trends, Churn and Retention, and Campaign Performance)

Task 6: Insights and Action Plans

- Use the visualizations to provide actionable insights, such as:
 - Recommendations for improving customer retention by adjusting subscription cycles and targeting campaigns at high-churn segments.
 - Optimizing marketing strategies for better engagement and higher successful billing rates.