

Business Case: Marketing Analytics

Context & Business Problem

Cobre is scaling its growth marketing operations and needs a more data-driven approach to understanding which channels bring in the highest quality leads—and how those leads convert across the funnel. With marketing budgets increasing, it's critical to assess performance beyond clicks and impressions and focus on true business impact: conversions, cost-efficiency, and sales velocity.

To evaluate your technical, analytical, and problem-solving capabilities across data modeling, pipeline design, attribution modeling, forecasting, and stakeholder communication, we offer the following challenge based on a real-world B2B dataset.

Problem Statement

You are a Data Scientist - Growth Intelligence & RevOps at Cobre, Latin America's leading instant B2B payments platform. Your goal is to build AI-powered data infrastructure and predictive analytics solutions to optimize revenue operations and customer lifecycle management across our fintech platform. You'll work with marketing, sales, and customer success teams to:

- Build predictive models for lead scoring, conversion probability, and revenue forecasting to optimize customer acquisition
- Design AI-powered RevOps workflows that integrate CRM systems (Salesforce/HubSpot) with business intelligence tools
- Create automated alerting and recommendation systems for sales and marketing optimization
- Develop customer lifecycle analytics to identify expansion opportunities and churn risks

We provide a real-world dataset from **Olist (Brazil)**, representing a B2B lead-to-sale pipeline. Each record contains the channel of acquisition, lead metadata, and whether the lead converted into a paying customer.

The original dataset can be accessed here:

<https://www.kaggle.com/datasets/olistbr/marketing-funnel-olist>

Key Challenges

1. AI-Powered RevOps Data Architecture

Design a scalable data architecture that integrates marketing sources, CRM systems (Salesforce/HubSpot), and revenue data into a unified RevOps data model. Build dbt pipelines in Snowflake that support real-time analytics and ML model serving. Propose how you'd implement automated data quality monitoring and create APIs for model deployment.

2. Predictive Analytics & Customer Lifecycle Intelligence

Build machine learning models for lead scoring, conversion prediction, and customer lifetime value estimation. Implement cohort analysis and attribution modeling to understand customer acquisition efficiency. Create automated systems to identify expansion opportunities and churn risks. Demonstrate how you'd deploy these models into production RevOps workflows.

3. Revenue Forecasting & Growth Intelligence

Develop time-series forecasting models (Prophet, ARIMA) for revenue projections and capacity planning. Create dynamic dashboards that provide growth intelligence insights to sales and marketing teams. Implement statistical analysis and A/B testing frameworks to measure campaign effectiveness and guide strategic decisions.

4. Intelligent Automation & Stakeholder Communication

Design AI-powered alerting systems and recommendation engines that integrate with RevOps workflows. Create business-friendly dashboards (using tools like Streamlit) that democratize data science insights across revenue teams. Provide actionable recommendations for optimizing customer acquisition, retention, and expansion strategies.

Evaluation Criteria

AI-Powered Systems & MLOps

Assess the candidate's ability to design and deploy machine learning models in production RevOps environments. Evaluate their understanding of MLOps practices, model serving APIs, and integration with CRM workflows. Look for creativity in proposing AI-enhanced automation solutions and explainable AI implementations.

Revenue Intelligence & Customer Lifecycle Analytics

Review the depth of predictive modeling approaches for lead scoring, LTV prediction, and churn analysis. Evaluate the rigor of cohort analysis and attribution modeling. Assess how well candidates understand subscription/SaaS metrics and revenue operations KPIs relevant to fintech business models.

Growth Intelligence & Forecasting

Evaluate advanced time-series modeling techniques and their application to revenue forecasting and capacity planning. Assess the candidate's ability to implement statistical testing frameworks and communicate forecast uncertainty. Look for understanding of business cycles and seasonality in fintech/payments industry.

Cross-Functional Data Solutions & Communication

Judge how effectively candidates translate complex data science models into actionable business intelligence for Sales, Marketing, and Customer Success teams. Evaluate their ability to create self-service analytics tools and automated reporting systems. Assess communication skills for both technical and non-technical stakeholders in a RevOps context.

Data Engineering & RevOps Integration

Assess the overall technical architecture including data pipeline design, API development, and integration with RevOps platforms. Give extra credit for proposing innovative data enrichment strategies, customer data platform (CDP) implementations, or novel revenue intelligence metrics specific to fintech/payments businesses.

AI Use

The use of AI tools is not only allowed but encouraged. Mention all the tools you use to solve the problem and make sure you can show evidence of the prompts and how you refined the answers.

Submission Guidelines

Candidates should submit:

1. Executive Summary & Strategic Recommendations (1-2 pages) including:

- RevOps data architecture and AI system integration diagrams
- Key predictive insights and growth intelligence findings
- Revenue forecasting results with business impact projections
- Strategic recommendations for Sales, Marketing, and Customer Success optimization

2. Technical Implementation (Jupyter Notebook/Python Script + GitHub repo) featuring:

- MLOps pipeline design and model deployment architecture
- Predictive models with explainable AI components
- Automated analytics and alerting system prototypes
- RevOps workflow integration examples (API design, CRM connections)
- Data visualizations and business intelligence dashboards

Note: This case study is designed to assess both your technical expertise and your ability to communicate analytical findings effectively. We understand the time is tight and we expect the deliverable to be done with the best effort possible, outlining what you didn't have time to complete and how you would have solved it.