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Project Title - SellerPath: Journey Optimization & Tag Diagnostics

Problem Statement

"Improve seller enrollment rates by identifying opt-in funnel gaps using impression/click tracking data, seller metadata, and file-based ingestion events."

Project Flow / Approach

1. Data Ingestion & Preprocessing

- Load data with key columns:

    - `impressions`, `clicks`, `enrolled`, `platform`, `category`, `kind`, `risk_rating`, `manual_file_ingested`, etc.

- Clean any inconsistencies in tagging fields (e.g., `optin_cta_tagged`, `impression_tag_valid`).

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2. Funnel Drop-off Analysis

- Define funnel stages:

    - **Stage 1**: Impressions → **Stage 2**: Clicks → **Stage 3**: Enrollment

- Calculate drop-off rates across:

    - Platform (App, Web, etc.)

    - Category & Kind (e.g., Small Business vs Enterprise)

    - Manual file ingestion (`manual_file_ingested = Yes/No`)

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3. Tag Validation Check

→ Analyze correlation of poor enrollments with:

- ○ `optin_cta_tagged = No`

- ○ `impression_tag_valid = No`

- Identify combinations where tagging failure is high.

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4. Seller Behavior Insights

- Assess `seller_tenure_months` vs enrollment conversion

- Analyze if higher `risk_rating` impacts enrollment likelihood

- Identify which products (`product_opted`) are more popular across seller types

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5. PowerBI Dashboard

Build a dashboard with:

- 📊 Funnel view: Impressions → Clicks → Enrolled

- 📉 Daily trends (click/enroll drop-offs)

- 📑 Filters: `platform`, `category`, `region`, `kind`, `campaign_id`

- ⚠️ Tagging error alert flags (e.g., invalid impression tags)

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6. Business Impact Measurement

- Highlight gaps in funnel conversions (e.g., low clicks despite high impressions)

- Recommend:

- ○ Engineering fixes for invalid tags

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- ○ UI placement audits for low-CTA categories

- ○ Separate strategy for sellers who rely on manual file ingestion

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Optional Modeling (Advanced)

- Predict enrollment likelihood using logistic regression / decision trees

- Features: `clicks`, `platform`, `risk_rating`, `file_ingestion`, etc

Summary: What's Involved?

Component	Present?	Role
Machine Learning	◆ Optional	Suggested for enrollment prediction (not implemented)
SQL	✅ Yes	Data joins, cleaning, tagging validation, segmentation
Business Intelligence (Power BI)	✅ Yes	Dashboard for funnel drop-offs, trends, tagging errors, ROI