Project Requirements Document (PRD)

Project Overview

Title: Order Channel Performance and Market Share Analytics for SkyCity Auckland Restaurants & Bars

Domain: Hospitality Analytics / Food Delivery Market Intelligence

Collaborating Organizations:

- Unified Mentor
- SkyCity Auckland Restaurants & Bars

Background and Context:
The Auckland hospitality market has seen rapid growth in multi-channel ordering, driven by:

- Expansion of food delivery aggregators (Uber Eats, DoorDash)
- Changing consumer preferences for convenience
- Urban density differences across Auckland subregions

Restaurants now operate across four parallel order channels:

1. In-Store
2. Uber Eats
3. DoorDash
4. Self-Delivery

Each channel plays a different strategic role in customer reach, brand visibility, and volume generation.

Problem Statement

Despite having detailed channel-level data, restaurant operators and analysts lack:

- Clear visibility into **channel dependence**
- Understanding of **which channels dominate in which subregions**
- Insight into how **cuisine type and restaurant segment** influence channel mix

Without this knowledge:

- Restaurants become over-dependent on aggregators
- Channel strategy decisions are intuition-based
- Market risks remain hidden

.

Primary Objectives

- Quantify total order volume by channel
- Measure channel share distribution across restaurants
- Identify dominant ordering channels by geography

Secondary Objectives

- Compare channel mix across cuisine types
- Assess channel diversity vs dependency
- Support strategic channel planning

Dataset Description

Field Name	Description
RestaurantID	Unique identifier for each restaurant branch
RestaurantName	Name of the restaurant establishment
CuisineType	Category of food served (e.g., Burgers, Pizza)
Segment	Business model classification (e.g., Cafe, QSR)
Subregion	Geographical area within Auckland (e.g., North Shore)
GrowthFactor	Month-over-month growth multiplier (0.99–1.05)
AOV	Average order value per transaction ($29.79–$47.23)
MonthlyOrders	Total number of transactions across all channels per month
InStoreOrdersCount	Total number of on-premises (walk-in) orders.
UberEatsOrdersCount	Total number of orders placed via Uber Eats.

DoorDashOrdersCount	Total number of orders placed via DoorDash.
SelfDeliveryOrdersCount	Orders delivered by restaurant-managed delivery staff.
InStoreRevenue	Gross revenue generated from in-store dining
UberEatsRevenue	Gross revenue generated through Uber Eats orders.
DoorDashRevenue	Gross revenue generated through DoorDash orders.
SelfDeliveryRevenue	Gross revenue generated through self-managed delivery orders.
COGSRate	Cost of Goods Sold as a percentage of revenue (20%–40%).
OPEXRate	Operating expenses as a percentage of revenue (20%–55%).
CommissionRate	Commission charged by third-party delivery platforms
DeliveryRadiusKM	Maximum delivery distance offered by the restaurant (3–18 km).
DeliveryCostOrder	Fixed cost incurred per self-delivery order ($0.89–$5.31).
SD_DeliveryTotalCost	Total monthly cost for self-delivery logistics.
InStoreNetProfit	Net profit from in-store sales (Revenue − COGS − OPEX).
UberEatsNetProfit	Net profit from Uber Eats orders (Revenue − COGS − OPEX − Commission).
DoorDashNetProfit	Net profit from DoorDash orders (Revenue − COGS − OPEX − Commission).
SelfDeliveryNetProfit	Net profit from self-delivery orders (Revenue − COGS − OPEX − Delivery Cost).
InStoreShare	Percentage of total orders that are in-store.
UE_share	Share of delivery orders coming from Uber Eats.
DD_share	Share of delivery orders coming from DoorDash.
SD_share	Share of delivery orders fulfilled via self-delivery.

Analytical Methodology (Step-by-Step)

Step 1: Data Validation & Consistency Checks

- Verify that channel order counts sum to `MonthlyOrders`
- Validate that channel share percentages sum to ~100%
- Identify anomalies or outliers for transparency

Step 2: Channel Volume Aggregation

- Aggregate total orders by:
  - Channel
  - Subregion
  - Cuisine type
  - Restaurant segment

Step 3: Channel Market Share Analysis

- Compute overall channel market share
- Compare delivery vs in-store dominance
- Rank channels by order contribution

Step 4: Geographic Channel Preference Analysis

- Channel share comparison across:
  - North Shore
  - West Auckland
  - Central Auckland
- Identify urban vs suburban ordering behavior

Step 5: Cuisine & Segment Channel Patterns

- Channel mix by cuisine (e.g., Burgers vs Pizza)
- Channel reliance by business segment (Cafe, QSR)
- Identification of aggregator-heavy cuisine categories

Step 6: Channel Dependency Risk Identification

- Flag restaurants with:
    - 70% reliance on a single aggregator
- Identify balanced vs high-risk channel profiles
- Define channel diversification benchmarks

Key Performance Indicators (KPIs)

KPI	Description
Channel Order Share (%)	Volume contribution by channel
Aggregator Dependence Index	Reliance on Uber Eats / DoorDash
In-Store Reliance Ratio	Walk-in strength
Channel Diversification Score	Operational resilience
Subregion Channel Dominance	Geographic ordering behavior

Streamlit Web Application Requirements

Core Modules

- Channel mix overview dashboard
- Subregion-wise channel heatmaps

- Cuisine vs channel distribution charts
- Dependency risk indicator panels

User Capabilities

- Subregion filter
- Cuisine and segment selectors
- Channel toggle (In-Store vs Delivery)

Deliverables and Submission

- Research paper (EDA, insights, recommendations)
- Streamlit dashboard (live analytics)
- Executive summary for government stakeholders

Conclusion

This project delivers a **clear, structured understanding of channel performance and market share** in Auckland’s hospitality ecosystem. By revealing how ordering behavior varies across channels, cuisines, and regions, it empowers restaurants to design **balanced, resilient, and informed channel strategies** in an increasingly delivery-driven market.

Access Dataset