BUSINESS RECOMMENDATIONS

1. Optimize Pickup Delay (Primary Bottleneck)

Pickup Delay is the largest component of the total delivery time, indicating that restaurant preparation and packaging are the major constraints in the workflow.

Recommendation:

- Implement strict restaurant SLAs (Service Level Agreements).
- Introduce a predictive “food preparation time” model for each restaurant.
- Trigger auto-alerts for kitchens that frequently exceed pickup thresholds.
- Assign riders only when preparation is nearing completion.

Business Impact:

- Reduces total turnaround time by 20–40%.
- Decreases cancellations.
- Improves customer experience and reliability.

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2. Strengthen Peak-Hour Rider Allocation (7:00–10:00 PM)

Evening demand spikes create operational stress, leading to higher delays and cancellations.

Recommendation:

- Use micro-shifts of 2–3 hours for peak periods.
- Introduce targeted surge incentives for riders.
- Automatically reposition riders to high-demand zones during peaks.
- Increase fleet capacity in restaurant-dense clusters.

Business Impact:

- Stabilizes evening performance.
- Reduces peak-hour turnaround times.
- Minimizes customer churn and refund loss.

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3. Reduce Delivery Radius for Slow-Performing Kitchens

Long-distance orders (>4 km) consistently show higher turnaround times.

Recommendation:

- Restrict delivery radius to 3–4 km for slow kitchens.
- Dynamically reduce radius during peak hours.
- Allow extended radius only for high-production, fast kitchens.

Business Impact:

- Improves on-time delivery accuracy.
- Reduces operational risk and delays.
- Enhances customer trust.

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4. Implement Smart Distance-Based Batching

Inefficient batching increases time per order and rider fatigue.

Recommendation:

- Allow batching only when customer locations are within a short radius (e.g., <1.5 km apart).
- Ensure both pickup points are geographically close.
- Prioritize riders already positioned near restaurants.

Business Impact:

- Faster deliveries for both orders in the batch.
  Improved fleet productivity.
- Reduced operational strain on riders.

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5. Use Real-Time Heatmaps for Rider Deployment

Delay clusters indicate geographic imbalance between orders and rider availability.

Recommendation:

- Build heatmaps showing:
- ➔ high-order-density zones
- ➔ delay hotspots
- ➔ high restaurant-load zones
- Automatically shift riders towards predicted hotspots.

Business Impact:

- Better demand–supply alignment.
- Reduced time-to-accept and pickup delays.
- Stronger operational agility.

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6. Introduce Efficiency-Based Rider Incentives

High-performing riders should be rewarded for efficiency and consistency.

Recommendation:

- Create a performance-based bonus model.
- Include metrics such as delivery speed, turnaround time, and reliability.
- Publish weekly rider leaderboards to motivate performance.

Business Impact:

- Encourages high-quality service.
- Improves overall rider productivity.
- Reduces late deliveries and delays.

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7. Enhance Kitchen Load Forecasting

Overloaded kitchens directly contribute to pickup delays and order cancellations.

Recommendation:

- Use historical order data to forecast peak restaurant load.
- Notify kitchens in advance about expected surges.
- Temporarily limit order acceptance for consistently slow-performing kitchens.

Business Impact:

- Decreases restaurant-related delays.
- Improves delivery accuracy.
- Reduces customer dissatisfaction.

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8. Improve Rider Reassignment Logic

High undelivered orders indicate issues in rider reassignment or routing.

Recommendation:

- Auto-reassign the order if a rider does not accept within a defined time window.
- Avoid assigning riders located far from the restaurant (ex, those who are in less than 3 km).
- Prioritize riders in the nearest cluster or high-availability zone.

Business Impact:

- Reduces undelivered orders.
- Ensures faster acceptance and dispatch.
- Maintains the customer promise on time.