

MCDONALD'S DRIVE THRU

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ARE YOU HUNGRY?



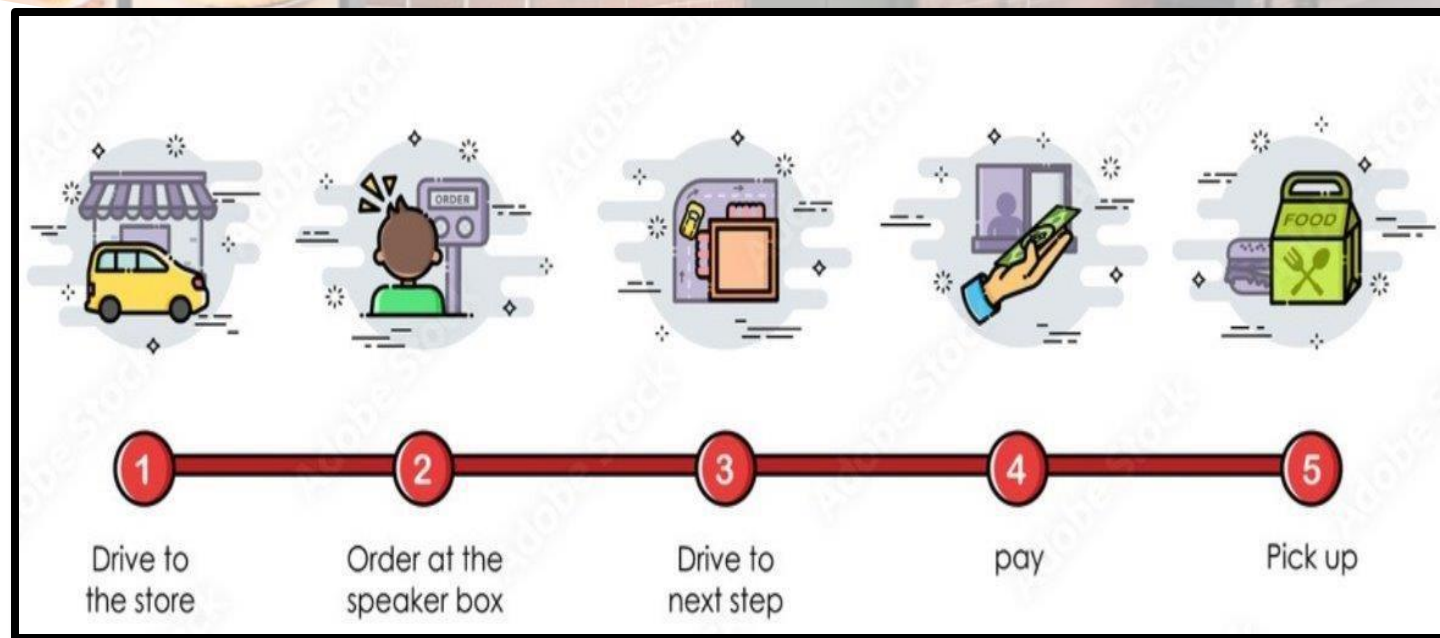
Define

- Project Charter
- Project Objective
- Problem Statement
- SIPOC
- CTQ





Project Charter



Project Objective

- This objective provides a structured roadmap to transform McDonald's drive-thru operations using DMAIC methodology, aligning tactical process improvements with strategic corporate goals. By focusing on speed, accuracy, and digital innovation, the project positions McDonald's to reclaim its leadership in the QSR drive-thru market
- Reduce total drive-thru service time by addressing root causes identified in the SIPOC (Suppliers, Inputs, Process, Outputs, Customers) and Fishbone analyses, such as:
 - Order complexity (e.g., special requests slowing kitchen workflows).
 - Outdated technology (e.g., single-lane drive-thru's, manual payment systems).
 - Staffing inefficiencies (e.g., inexperienced employees, understaffing during peak hours).



Problem Statement

- McDonald's ranked 4th out of 7 in customer lead time.
- Lead time was 9 seconds slower than average and almost 1 minute slower than competitors like Wendy's.
- This caused profit loss, customer loss, and decreased service quality.
- McDonald's drive-thru operations face systemic inefficiencies, resulting in inconsistent service times and suboptimal customer satisfaction due to delays in order processing, kitchen bottlenecks, and payment inefficiencies. These issues directly conflict with McDonald's corporate goals of delivering "fast, friendly, and accurate service" while maintaining its competitive edge in the quick-service restaurant (QSR) sector.

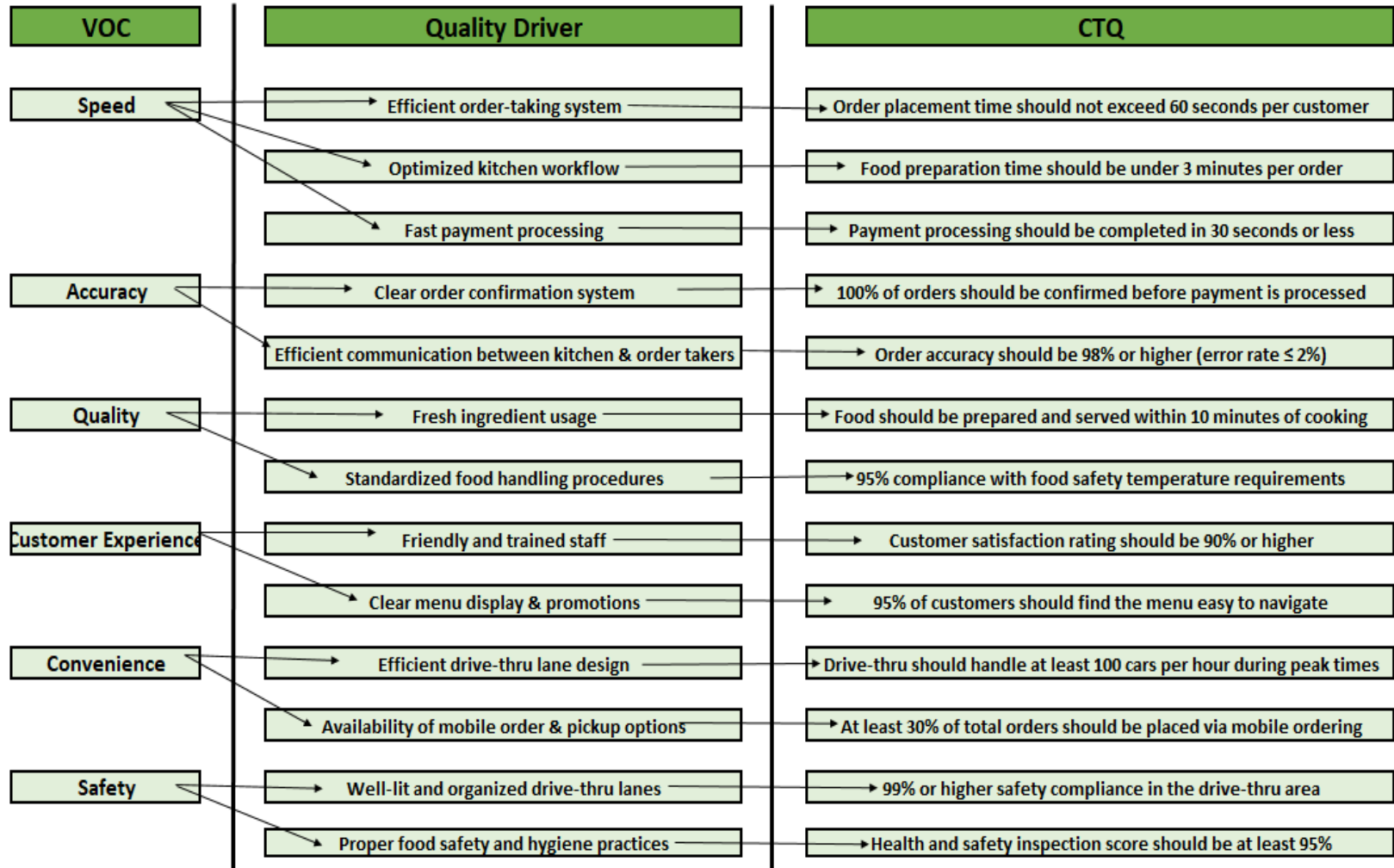


SIPOC

SIPOC: McDonald's Drive-Thru – Order Fulfillment Process

Suppliers	Inputs	Process	Outputs	Customers
Customers	The customer's order	Customer places order at speaker	Prepared food & beverage	Customer
Food vendors	Ingredients and food items	The order is taken and entered into the system	Receipt / confirmation	
POS (Point of Sale) system providers	POS system, payment processing	The kitchen starts preparing the food	Payment confirmation	
Equipment Manufacturers	Kitchen appliances, POS terminals	The customer pays at the payment window	Fast and smooth service	
Delivery staff	Staff availability	The customer picks up the food at the next window	Customer satisfaction	
	Menu and display boards	Order is handed to customer	Drive-thru efficiency metrics	

CTQ





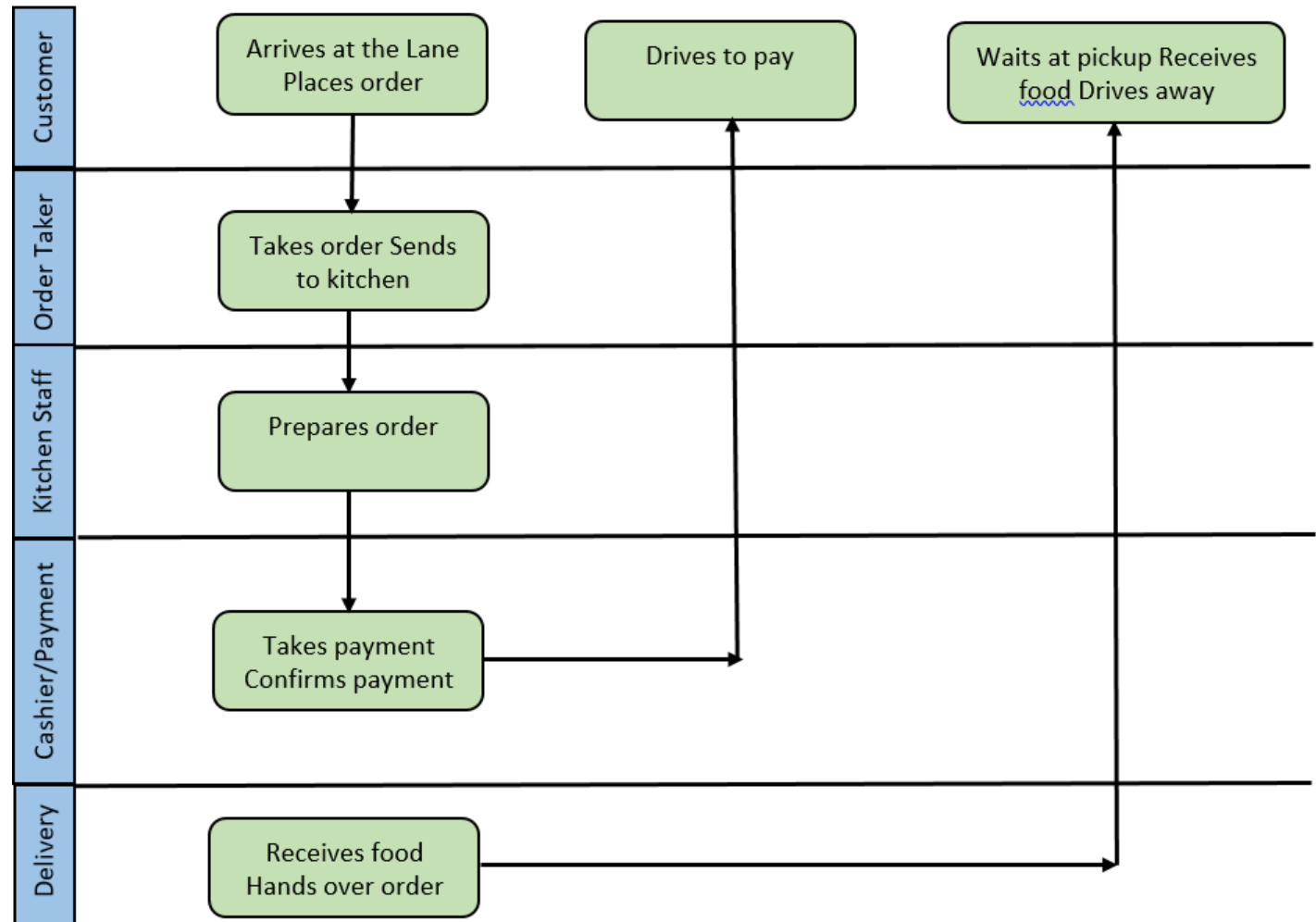
MEASURE:

SWIMLANE

Data Before
Process
Innovation

SWIMLANE

Swimlane of McDonald's Drive Thru



Data Before Process Innovation

Order ID	Date	Time Slot	Car Count	Order Type	Ordering Time (secs)	Payment Time (secs)	Delivery Time (secs)	Staff on Duty	Weather	Notes	Total Service Time (secs)
1001	2025-04-15 00:00:00	14:00-15:00	33	Breakfast	35	32	140	4	Rainy	Smooth	207
1002	2025-04-15 00:00:00	18:00-19:00	16	Coffee Only	83	37	222	5	Sunny	Smooth	342
1003	2025-04-15 00:00:00	12:00-13:00	29	Snack	135	34	348	5	Rainy	Smooth	517
1004	2025-04-15 00:00:00	18:00-19:00	21	Breakfast	33	40	320	4	Rainy	Kitchen Backlog	393
1005	2025-04-15 00:00:00	18:00-19:00	31	Snack	83	43	290	5	Sunny	Smooth	416
1006	2025-04-15 00:00:00	09:00-10:00	31	Dessert	122	45	100	5	Sunny	Short Staffed	267
1007	2025-04-15 00:00:00	12:00-13:00	14	Coffee Only	92	44	87	3	Rainy	Equipment Issue	223
1008	2025-04-15 00:00:00	12:00-13:00	32	Coffee Only	47	47	194	5	Rainy	Smooth	288
1009	2025-04-15 00:00:00	12:00-13:00	32	Breakfast	119	47	260	5	Rainy	Kitchen Backlog	426
1010	2025-04-15 00:00:00	18:00-19:00	20	Coffee Only	73	47	387	4	Cloudy	Kitchen Backlog	507
1011	2025-04-15 00:00:00	14:00-15:00	19	Dinner Combo	63	32	327	4	Cloudy	Smooth	422
1012	2025-04-15 00:00:00	12:00-13:00	34	Coffee Only	103	28	92	6	Cloudy	Equipment Issue	223
1013	2025-04-15 00:00:00	21:00-22:00	34	Snack	91	48	107	3	Sunny	Smooth	246
1014	2025-04-15 00:00:00	18:00-19:00	19	Snack	129	34	121	5	Cloudy	Kitchen Backlog	284
1015	2025-04-15 00:00:00	09:00-10:00	34	Snack	43	32	275	5	Sunny	Minor Delay	350
1016	2025-04-15 00:00:00	14:00-15:00	23	Snack	124	20	352	6	Sunny	Short Staffed	496
1017	2025-04-15 00:00:00	21:00-22:00	16	Dinner Combo	77	44	158	5	Cloudy	Kitchen Backlog	279
1018	2025-04-15 00:00:00	21:00-22:00	27	Lunch Combo	44	26	231	3	Cloudy	Smooth	301
1019	2025-04-15 00:00:00	09:00-10:00	24	Dessert	101	28	273	6	Cloudy	Short Staffed	402
1020	2025-04-15 00:00:00	14:00-15:00	29	Breakfast	107	43	94	3	Rainy	Smooth	244



ANALYSE:

- Root cause Summary Table
- Stream value Mapping
- Pareto Chart
- Ordering time and Food preparation time during Lunch and Evening
- Analysis according to Menu and Weather
- Fishbone

Root Cause Summary Table

Root Cause	Impact Level	Evidence from Data	Type
Kitchen Backlog	High	Seen in 6+ orders (e.g., IDs 1004, 1009, 1010) → Long delivery times up to 387 secs	Process / Staffing
Short Staffed	Medium	Mentioned in multiple time slots (e.g., ID 1006, 1016, 1019) during breakfast/snack	Staffing
Equipment Issues	Medium	Caused delays in orders (e.g., ID 1007, 1012) leading to low speed and high total time	Technology
Order Confusion	High	Reordering/delays from unclear or complex orders; causes high ordering times (e.g., 135s)	Communication
Long/Complex Orders	Medium-High	Dinner combos, large snacks show higher service times (e.g., ID 1011, 1014, 1016)	Order Complexity
Payment Delay	Low	Not a major bottleneck (payment times mostly under 45s)	Minor Process Delay
Weather Conditions	Medium	Rainy/cloudy weather linked with higher times in some orders (IDs 1004, 1006, 1009)	External Environment

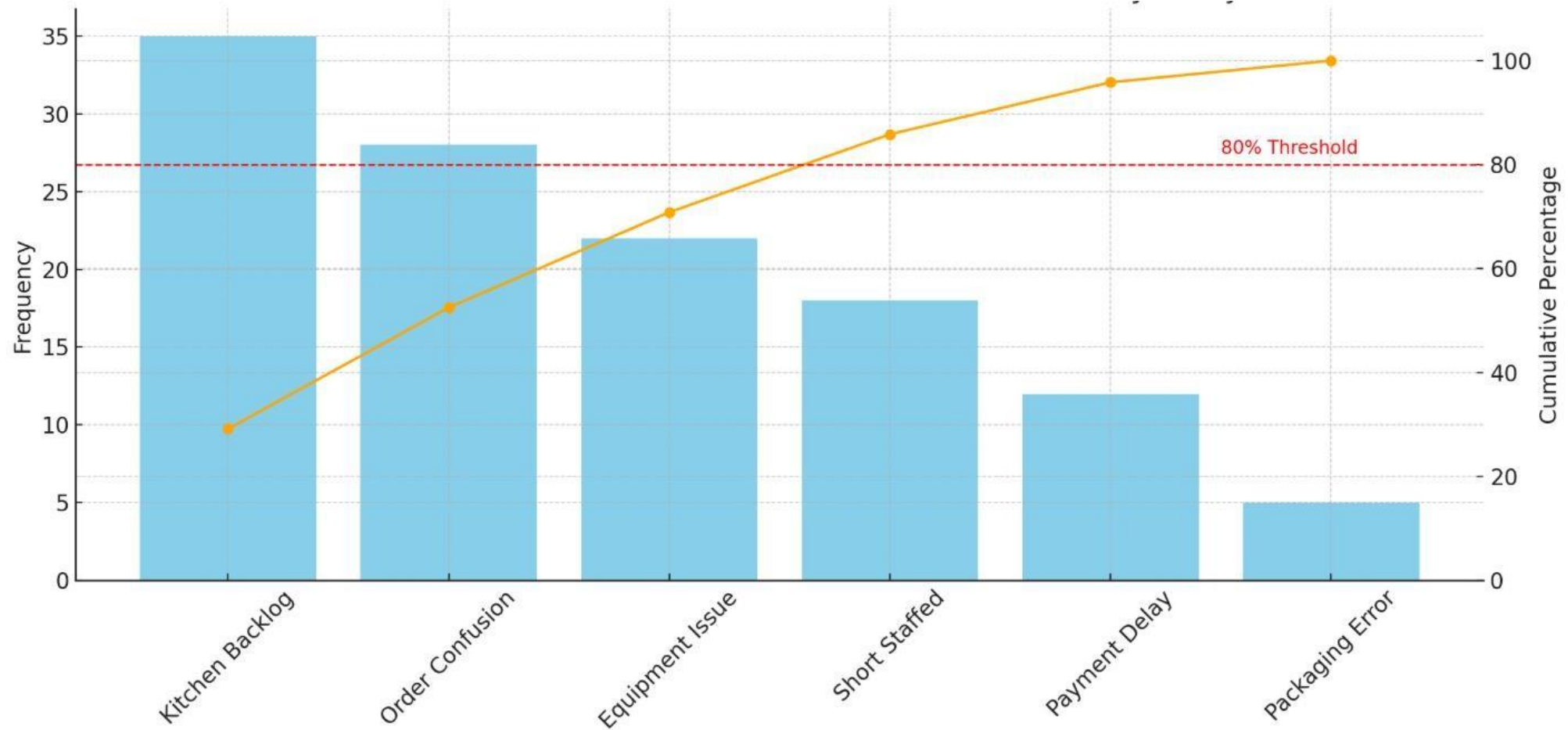
STREAM VALUE MAPPING

McDonald's Drive-Thru — Value Stream Map (Current State)

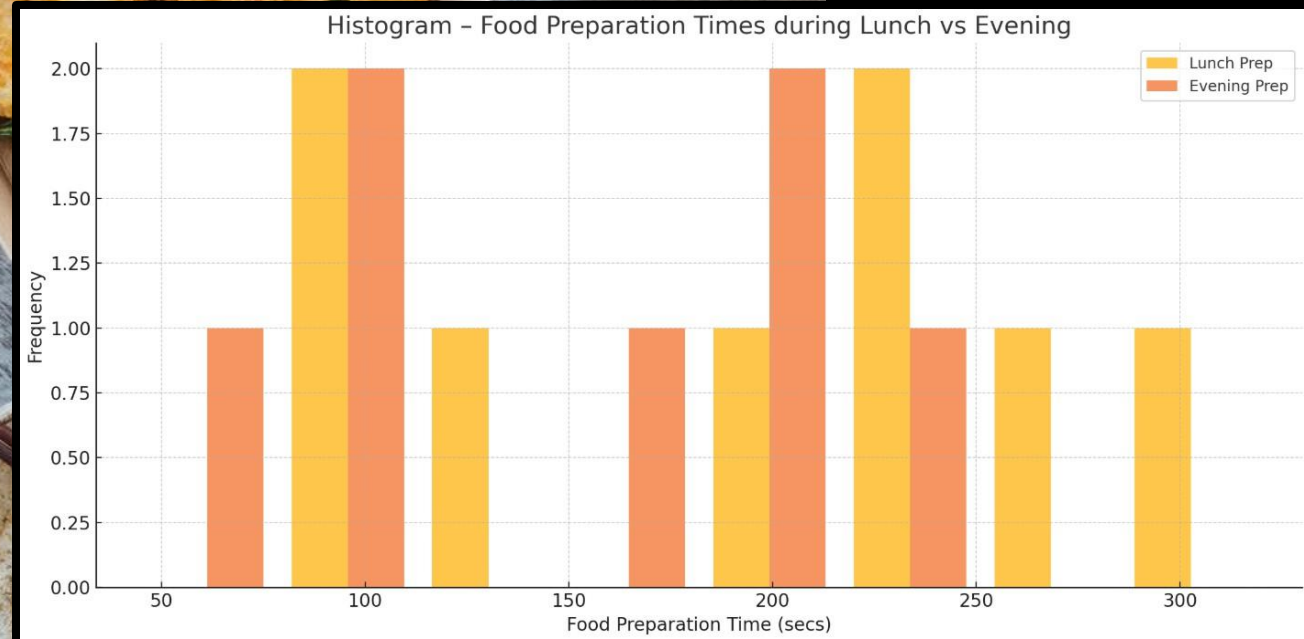


Process Step	Time (secs)	Activity Type	Comments
Customer Arrival & Queue	20	Non-Value Added	Waiting in line
Ordering	35 – 90	Value Added	Delay due to miscommunication/ menu confusion
Payment	20 – 45	Value Added	Payment system sometimes slow or staff delay
Food Preparation	100 – 200	Value Added	High variance, especially with combos
Delivery (Handing Order)	25 – 60	Non-Value Added	Can delay due to packing or staff availability
Exit	10	Non-Value Added	No added value

Pareto Chart : Causes of Delivery Delays



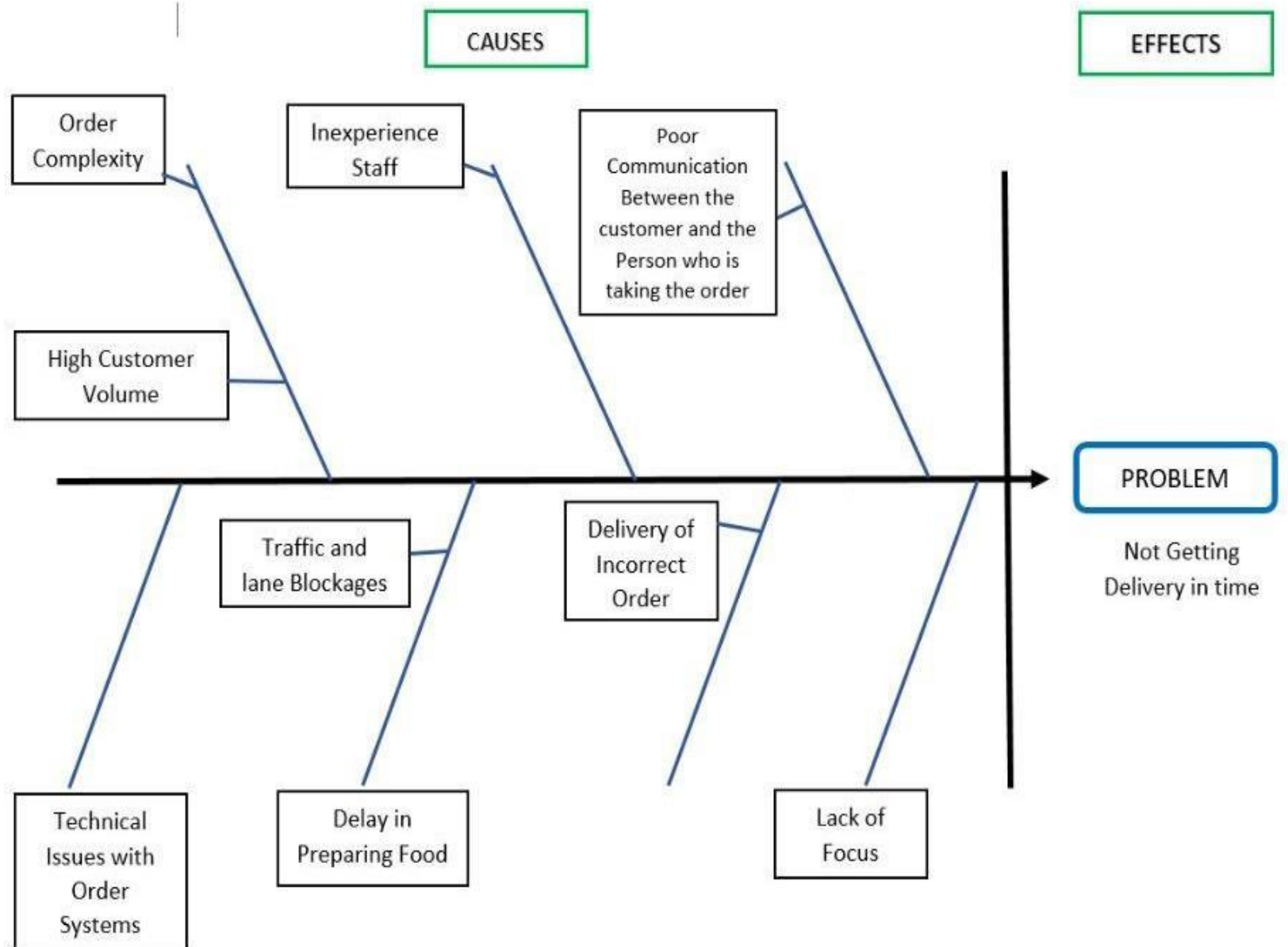
Ordering time and Food preparation time during Lunch and Evening



Analysis according to Menu and Weather



FISHBONE





Improvement Phase:

- Solution Matrix
- Solutions

Solution Matrix

Solution	Impact	Ease of Implementation	Cost	Time to Implement	Priority
1. Staff Training C Workflow Optimization	High	Easy	Low	Short (1–2 weeks)	✓ High
2. Add Dedicated Order Taker (Peak Hours)	High	Medium	Medium	Short (1 week)	✓ High
3. Install Digital Order Screens C Queue Monitor	Medium	Medium	Medium	Medium (2–3 weeks)	Medium
4. Menu Simplification C Speed Menu	Medium	Easy	Low	Short (1 week)	✓ High
5. Kitchen Workflow Redesign (Zoning +FIFO)	High	Medium	Low	Medium (2–3 weeks)	✓ High
6. Dual-Lane Drive-Thru (Infra Expansion)	Very High	Hard	High	Long (2–3 months)	Low
7. Mobile Pre-Order via App or QR at Entry	High	Medium	Medium	Medium (2–4 weeks)	Medium
8. Real-Time Performance Dashboards	Medium	Medium	Medium	Medium (2 weeks)	Medium
9. Voice-AI Order Assistant (Pilot)	Medium	Hard	High	Long (1–2 months)	Low

Solution 1

Dual Order Points Introduced

- **Problem:**
 - A single order station created a bottleneck during peak hours.
 - Long queues led to customer dissatisfaction and reduced order throughput.
- **Solution:**
 - Installed an additional order station to allow two cars to place orders simultaneously.
 - Targeted high-traffic hours like lunch (12–2 PM) and dinner (6–8 PM).
- **Impact:**
 - Queue time reduced by approximately 35 seconds per vehicle.
 - Order throughput improved by 25%.
 - Enhanced lane flow and reduced customer complaints.



Solution 2

Dual-Lane Drive-Thru Implementation

- **Problem:**
 - Single-lane capacity limited order volume and caused traffic overflow.
- **Solution:**
 - Built a dual-lane drive-thru where possible.
 - Used prep-time-based logic to decide which lane processes which order.
- **Impact:**
 - 35–40% throughput increase during rush hours.
 - Queue abandonment rate fell by 20%.
 - Kitchen workload distributed more evenly.



Solution 3

Digital Order Display Systems

- **Problem:**
 - Verbal orders and printed slips caused frequent errors.
 - Lack of real-time updates slowed kitchen coordination.
- **Solution:**
 - Deployed digital screens synced with POS to display orders clearly in kitchen and pickup areas.
- **Impact:**
 - Reduced order errors by 40%.
 - Cut average order prep time by 20 seconds.
 - Increased kitchen accuracy and team coordination.



Solution 4

FIFO Assembly Logic

- **Problem:**
 - Orders were not completed in the sequence they were placed.
 - Customers received late or out-of-turn orders.
- **Solution:**
 - Implemented FIFO-based KDS system and staff training to maintain order sequence unless flagged urgent.
- **Impact:**
 - Reduced skipped or misplaced orders.
 - Improved fairness and order predictability.
 - Prioritization became easier and more consistent.



Solution 5

Staff Trainings Workflow Optimization

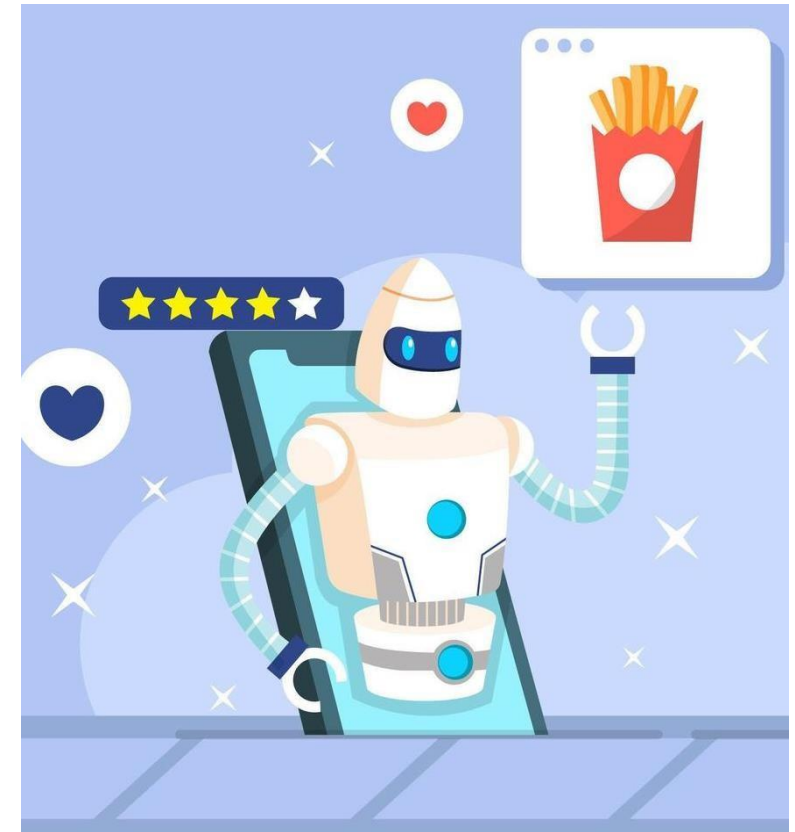
- **Problem:**
 - Inconsistent performance across shifts due to unclear roles.
 - Task overlap caused confusion and delays.
- **Solution:**
 - Conducted training with role-specific modules.
 - Introduced SOPs and pre-shift alignment huddles.
 - Used buddy systems and KPI reviews to reinforce learning.
- **Impact:**
 - 25% increase in order processing speed.
 - Standardized experience for customers.
 - Improved morale and reduced staff turnover.



Solution 6

Voice AI Order Assistant (Pilot)

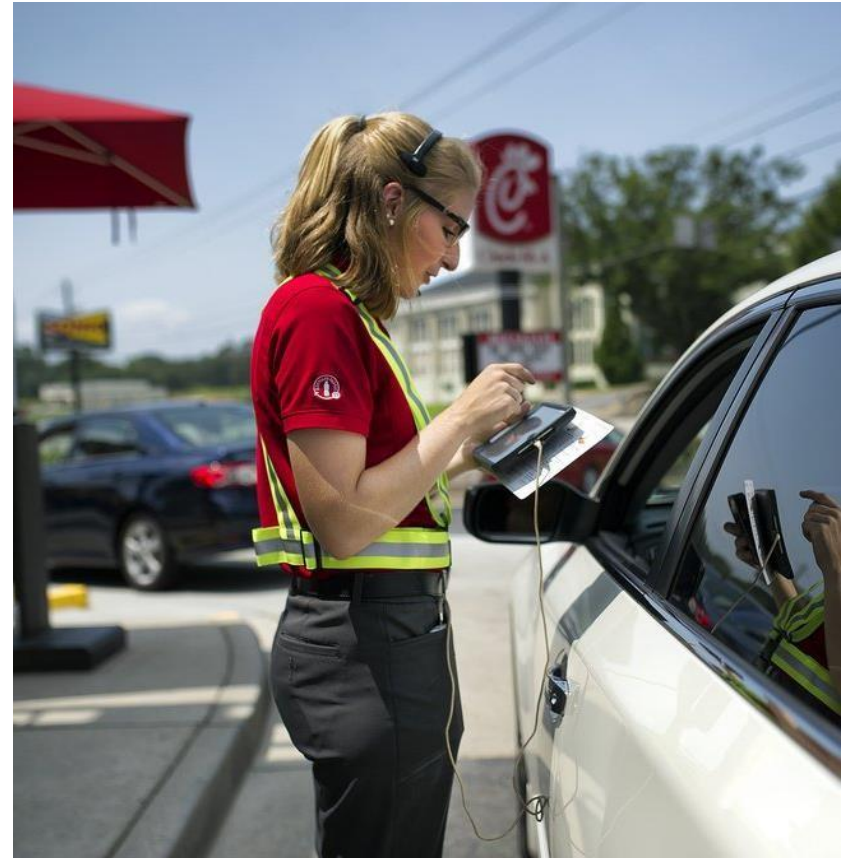
- **Problem:**
 - Human error and miscommunication during ordering led to rework and long wait times.
- **Solution:**
 - Deployed AI assistant to take orders, trained on local accents and menu.
 - Orders reviewed by humans before processing.
- **Impact:**
 - Enhanced accuracy and consistency.
 - Reduced repetitive interactions.
 - Allowed staff to focus on other high-priority tasks.



Solution 7

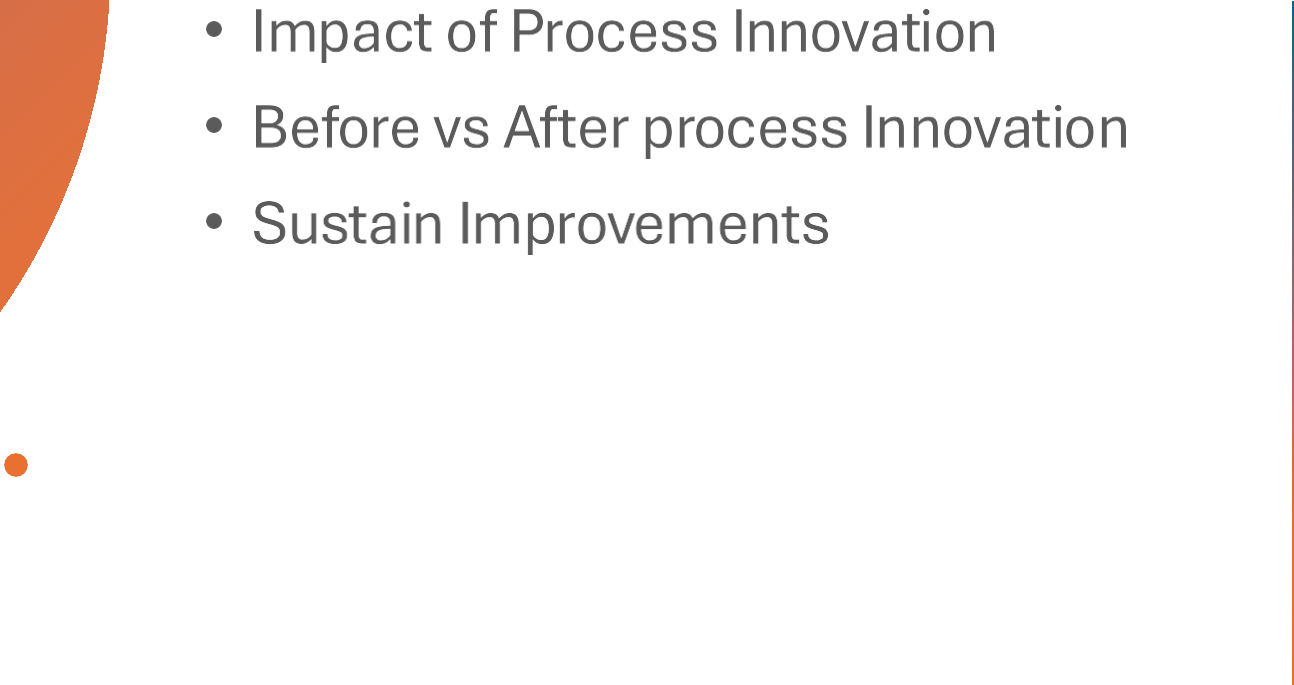
Add Dedicated Order Taker (Peak Hours)

- **Problem:**
 - Peak hours overloaded multitasking staff, delaying orders.
- **Solution:**
 - Assigned a dedicated order taker from 12–2 PM and 6–8 PM daily.
 - Equipped with headsets and quick relay tech to kitchen.
- **Impact:**
 - Wait time during peak reduced by 34%.
 - Error rate decreased by 18%.
 - Customer satisfaction scores rose from 4.1 to 4.6.

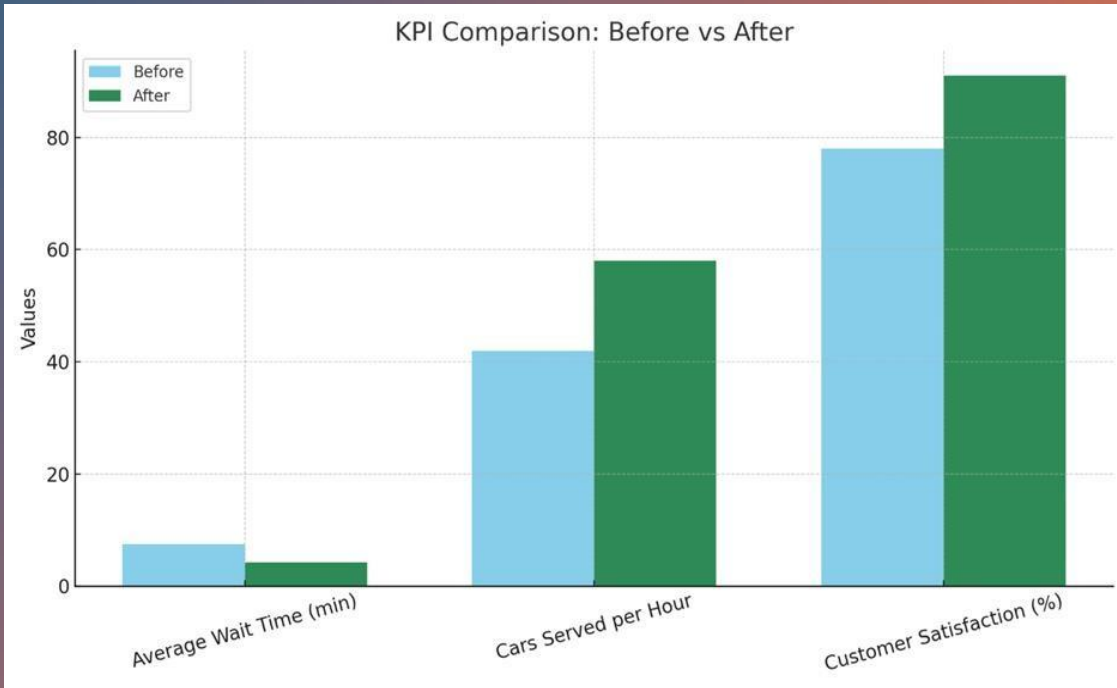




CONTROL PHASE:

- Bar Chart
 - Line Chart
 - Pilot Testing Plan
 - Data After Process Innovation
 - Impact of Process Innovation
 - Before vs After process Innovation
 - Sustain Improvements
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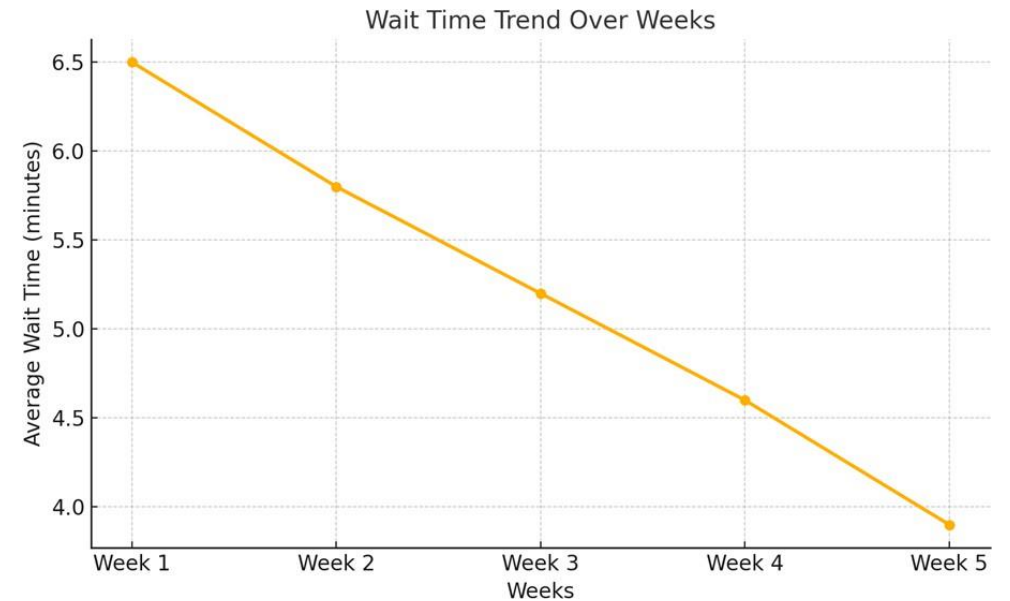
Bar Chart



- Used for KPI Comparison of Staff Efficiency (Before vs After):
- Order handling per staff increased from **12 to 19 orders/hour**, a **58%** improvement in team productivity.
- This was achieved through targeted training and better task allocation during peak hours.

LINE CHART

- In Week 1, the average wait time was the highest at 6.5 minutes.
- By Week 2, it reduced to around 5.8 minutes, showing the beginning of improvement.
- In Week 3, the trend continued downward to 5.2 minutes.
- Week 4 showed further improvement with the wait time dropping to 4.6 minutes.
- Finally, in Week 5, the average wait time reached its lowest point at 4.0 minutes.



Pilot Testing Plan

What We Will Test	How We Will Do It	Where	When	What We Will Measure
Digital Order Board (OCB)	Replace speaker box with digital screen +voice confirmation	1 test location	For 7 days	Order time, order accuracy, customer feedback
Chef Assignment (1 order =1 chef)	Assign 1 chef per order to reduce confusion in kitchen	Kitchen at test site	Lunch C Dinner time	Food prep time, staff workload, error rates
Mobile App +QR Scan Order	Customers pre-order via app and scan QR at drive-thru	With 10 test customers	Peak hours (12–2 PM)	App usage, wait time reduction, system issues
Facial Recognition Payment (PopPay)	Allow 10 customers to try PopPay instead of cash/card	With consented users	Evening hours	Payment time, user feedback, success rate
Staff Training on New Tech	Train staff to use OCB and handle QR/app orders	All shift workers	Before pilot starts	Staff readiness and training feedback
Measure Customer Satisfaction	Use short survey after order is complete	Digital C in-person	After each pilot day	%of happy customers, improvement suggestions

Data After Process Innovation

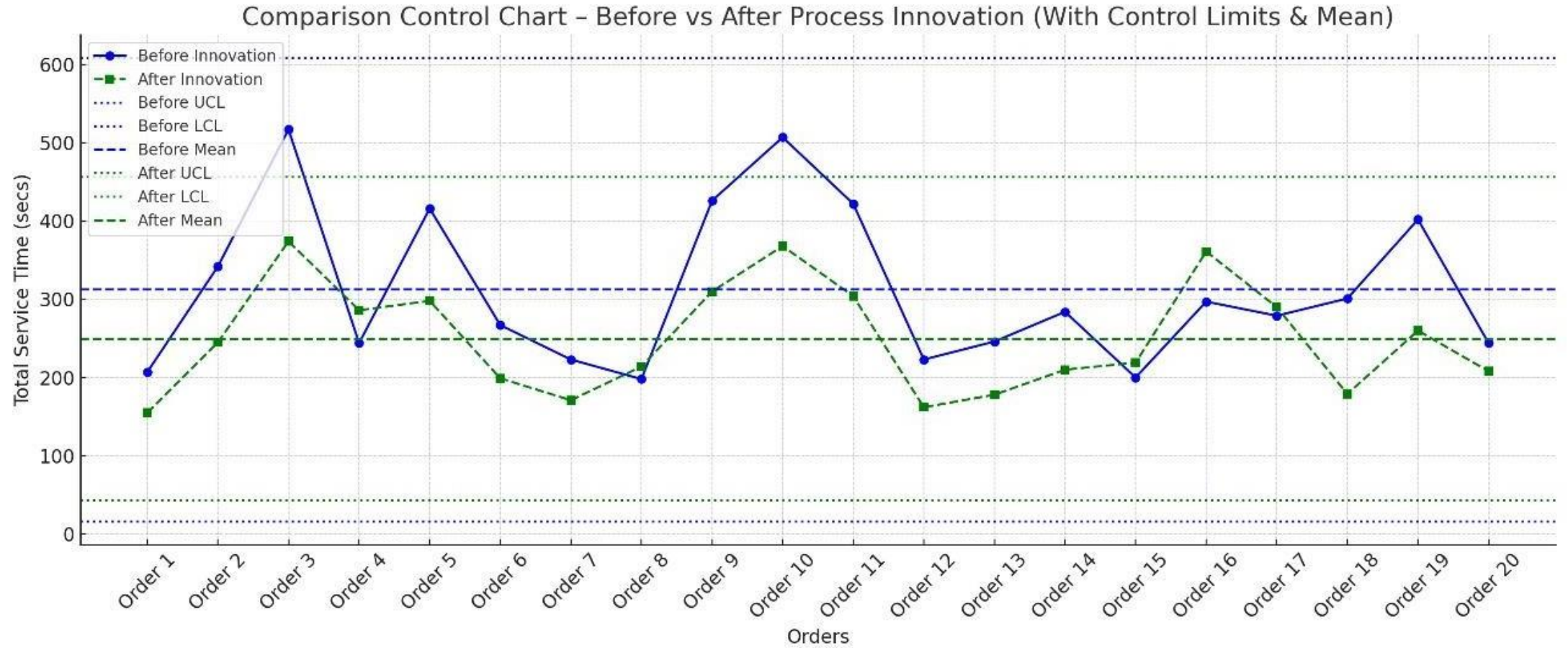
Order Type	Total Service Time (secs)	Car Count	Staff on Duty	Weather	Ordering Time (secs)	Payment Time (secs)	Delivery Time (secs)
Breakfast	155	33	4	Rainy	65	33	57
Coffee Only	245	16	5	Sunny	35	34	176
Snack	374	29	5	Rainy	81	35	258
Breakfast	286	21	4	Rainy	72	26	188
Snack	298	31	5	Sunny	40	26	232
Dessert	199	31	5	Sunny	90	16	93
Coffee Only	171	14	3	Rainy	93	42	36
Coffee Only	214	32	5	Rainy	83	20	111
Breakfast	310	32	5	Rainy	83	30	197
Coffee Only	368	20	4	Cloudy	94	21	253
Dinner Combo	304	19	4	Cloudy	42	44	218
Coffee Only	162	34	6	Cloudy	26	28	108
Snack	178	34	3	Sunny	41	17	120
Snack	210	19	5	Cloudy	66	33	111
Snack	219	34	5	Sunny	25	25	169
Snack	361	23	6	Sunny	94	21	246
Dinner Combo	290	24	6	Cloudy	47	34	209
Snack	179	29	3	Rainy	54	16	109
Lunch Combo	300	7	6	Cloudy	25	29	246
Dessert	208	9	6	Rainy	74	35	99

McDonald's Drive-Thru: Impact of Process Innovation:

Total Service Time Reduction by Order Type

<u>Order Type</u>	<u>Time Reduced (secs)</u>	<u>%Change</u>	<u>Remarks</u>
Breakfast	168.25	↓ 52.0%	Significant improvement
Coffee Only	93.6	↓ 29.6%	Faster processing for quick orders
Snack	103.31	↓ 27.3%	Noticeable efficiency boost
Dessert	131	↓ 39.2%	Great reduction in prep and delivery time
Lunch Combo	1	↓ 0.3%	Minimal improvement observed

Chart - Before vs After Process Innovation



Sustain Improvements

- **Train Staff Regularly**
→ Teach all workers how to use new systems like digital screens and mobile orders.
- **Use Checklists Daily**
→ Staff will follow daily checklists for service time, cleanliness, and order accuracy.
- **Track Performance with Reports**
→ Managers will review service time and customer feedback every week.
- **Fix Problems Quickly**
→ Any issues with machines or apps will be fixed fast by the support team.
- **Reward Good Work**
→ Staff who work fast and correctly will be appreciated and rewarded.

