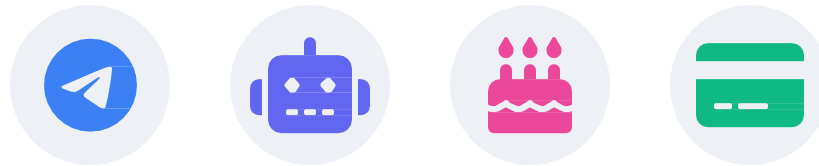


Telegram Sales Automation System

Heavenly Cakes UK

Comprehensive Automation for Cake Orders, Payments, and Customer Management



Project Team



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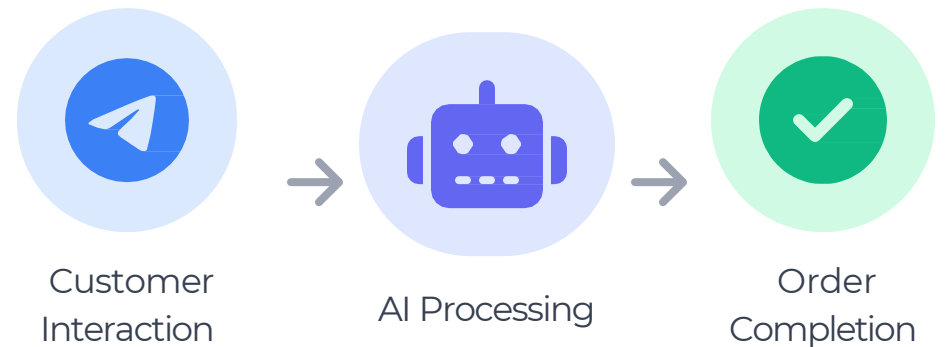


Project Overview

The Telegram Sales Automation system for Heavenly Cakes UK is an end-to-end solution that transforms customer interactions into seamless sales experiences.






This integrated system combines AI-powered conversations, automated order processing, secure payments, and inventory management in one workflow.

-  **AI-Powered Customer Service**
Walter, our AI assistant, handles customer inquiries and guides them through the ordering process
-  **Automated Order Processing**
Orders are automatically captured, validated, and processed without manual intervention
-  **Secure Payment Integration**
Seamless PayPal integration for deposit payments and transaction tracking



Business Goals

The Telegram Sales Automation system aims to transform Heavenly Cakes UK's business operations through intelligent workflow automation and seamless customer interactions.

-  **Increase Operational Efficiency**
Automate manual order processing to reduce staff workload and minimize human error
-  **Enhance Customer Experience**
Provide instant 24/7 responses and guided ordering through AI assistant DJ_WEV
-  **Boost Sales Conversion**
Streamline the path from inquiry to payment with integrated PayPal processing
-  **Improve Data Management**
Maintain accurate inventory and order records through Google Sheets integration
-  **Enable Business Scalability**
Handle increasing order volumes without proportional staff increase



Technical Stack & Integrations

Core technologies powering the Telegram Sales Automation system



n8n

Core workflow automation platform connecting all components with visual programming

Used for: Workflow orchestration, API integration, data processing



Telegram API

Customer-facing messaging platform providing real-time communication channel

Used for: Customer interactions, order notifications, payment links



OpenAI GPT-4

AI language model powering DJ_WEV, the intelligent customer service agent

Used for: Natural language processing, order taking, customer support



Google Sheets

Cloud-based database for inventory tracking and order management

Used for: Inventory checks, order records, pricing information



PayPal API

Secure payment processing system for handling customer deposits and payments

Used for: Payment links, transaction processing, deposit handling



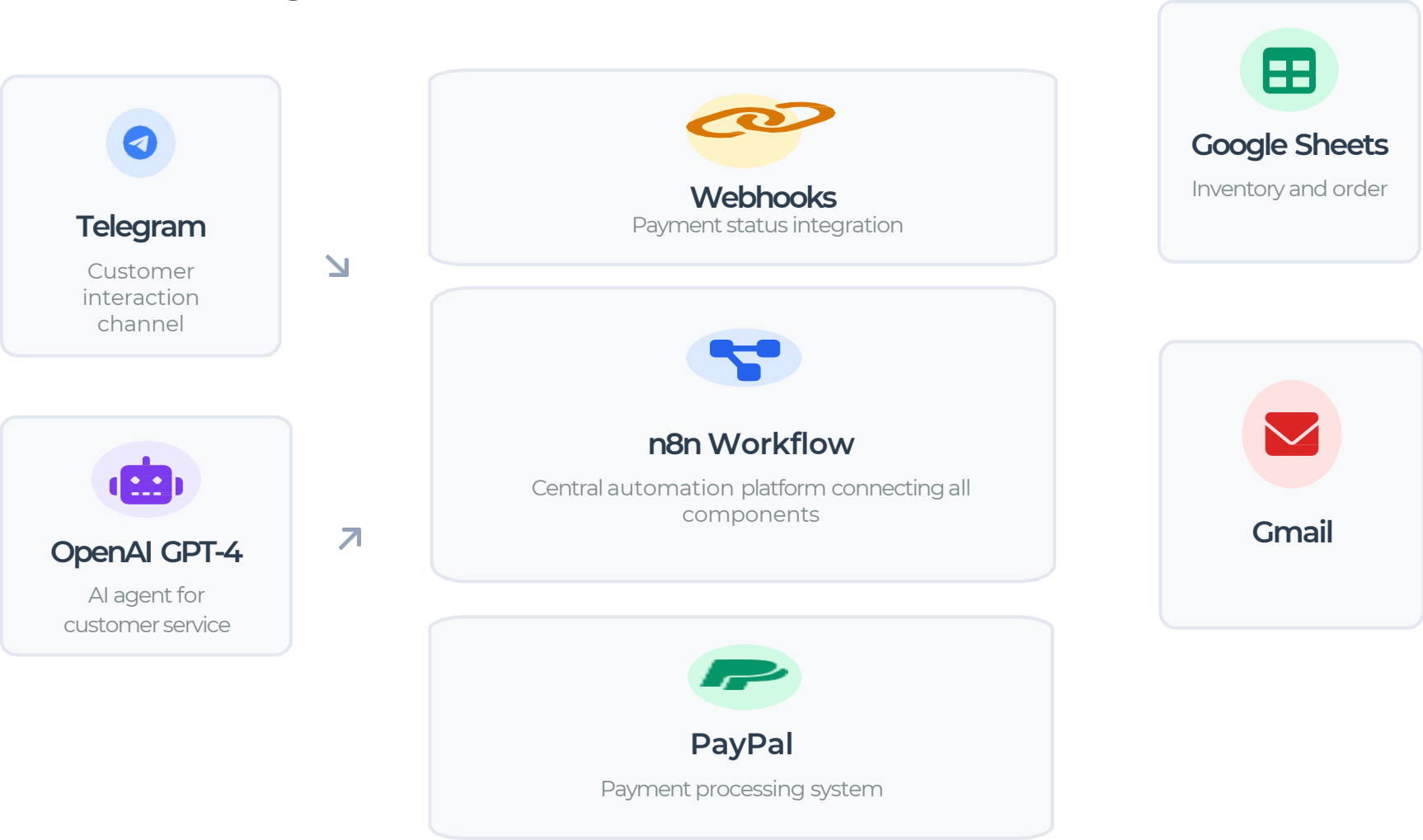
Webhooks

Event-based communication system handling asynchronous updates and notifications

Used for: Payment confirmations, cancellations, status updates

System Architecture Overview

How all components interact in the Telegram Sales Automation workflow



● Data Exchange ● Customer Data ● AI Processing ● Payment Processing

Workflow Summary

The Telegram Sales Automation workflow transforms customer chat messages into completed cake orders through a series of automated steps - from initial contact to payment confirmation and delivery scheduling.

1  **Customer Interaction via Telegram**
Customer messages trigger the workflow through Telegram Bot API

2  **AI Agent (DJ_WEV) Processes Request**
GPT-4 powered assistant handles menu inquiries and collects order details

3  **Order Parsing & Validation**
System extracts order details and validates completeness of information

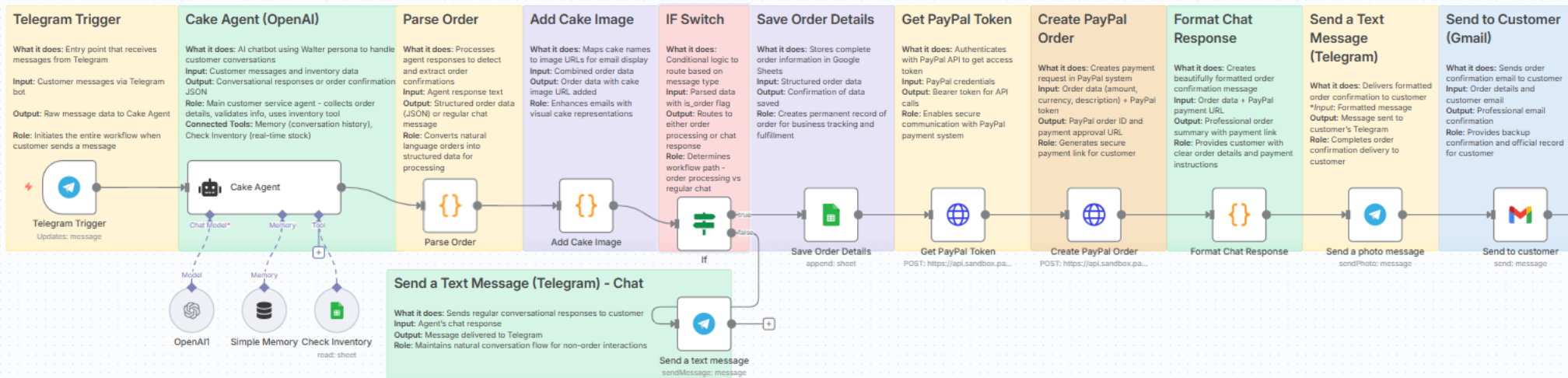
4  **Inventory & Pricing Check**
Google Sheets integration verifies cake availability and retrieves pricing

5  **Payment Processing**
System generates PayPal payment link for deposit and sends to customer

6  **Order Recording & Confirmation**
Successful payments trigger order updates in database and customer notifications

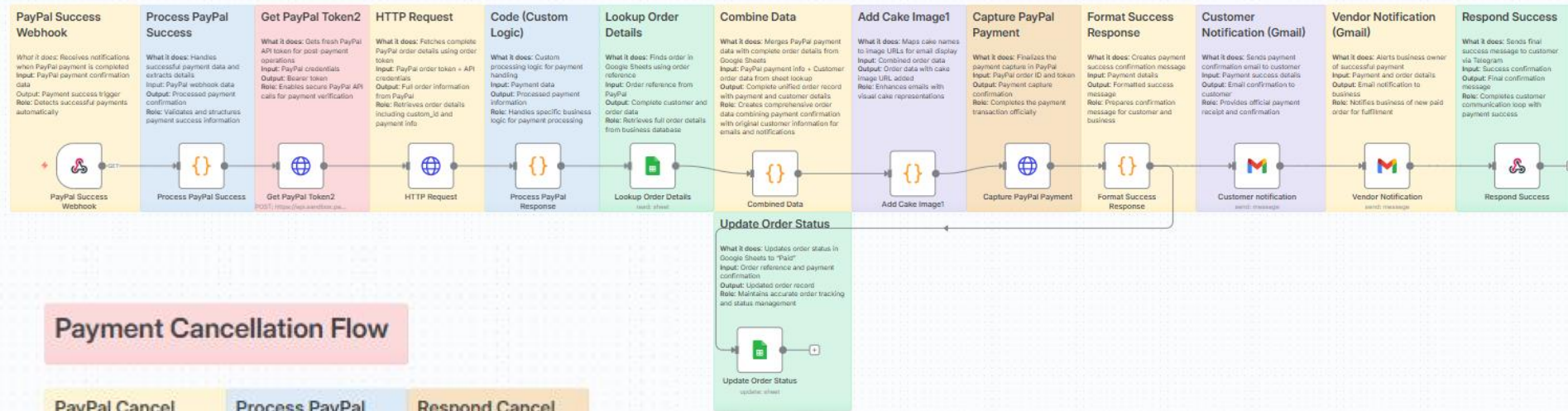
N8N workflow Diagram

Main Order Processing Flow

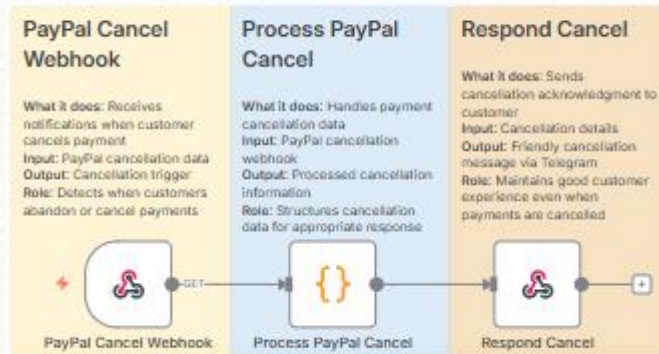


N8N workflow Diagram II

Payment Success Flow



Payment Cancellation Flow



Workflow Step 1: Telegram Bot Integration

Customers interact with Heavenly Cakes UK via a dedicated Telegram bot, providing a familiar and convenient messaging interface for placing cake orders.

Every customer message triggers the n8n workflow, initiating the automated sales process and enabling real-time responses.



Instant Engagement

Real-time conversation with immediate responses regardless of time of day



Mobile-Friendly Interface

Customers can place orders from anywhere using the familiar Telegram app



Conversation History

Complete chat history is maintained for context awareness and order tracking



Workflow Trigger

Each Message automatically triggers the n8n workflow via web hook



Heavenly Cakes Bot

Online | Automated Assistant

Hello! Welcome to Heavenly Cakes UK. I'm DJ_WEV, your cake assistant. How can I help you today?

Hi, I need a cake for my daughter's birthday next week.

Great! I'd be happy to help with that. Could you tell me what type of cake

Workflow Step 2: AI Agent (DJ_WEV) – Customer Interaction

DJ_WEV is our AI-powered customer service agent built with OpenAI's GPT-4 technology, designed to handle the entire cake ordering process through natural conversation.



Contextual Understanding

Maintains conversation history with Memory Buffer Window to provide personalized responses



Product Knowledge

Trained on bakery catalog with 7 cake varieties and 3 size options



Order Management

Collects customer details, creates order summaries, and confirms orders in standardized format



Integration Ready

Structured output formatting for seamless integration with inventory and payment systems



JANE

Heavenly Cakes UK Assistant

Hi! Do you have chocolate cake available for a birthday?

Hello! Welcome to Heavenly Cakes UK. Yes, we have our delicious Chocolate Indulgence cake that would be perfect for a birthday! Would you like information about the sizes available?

Yes please, how many people does each size serve?

Our Chocolate Indulgence comes in three sizes:

- Small: serves 4-6 people (£28)
- Medium: serves 8-10 people (£42)
- Large: serves 12-15 people (£58)

Which size would work best for your celebration?

JANE'S BACKEND PROCESSING:

1. Checks inventory via Google Sheets integration
2. Retrieves real-time pricing information
3. Maintains conversation context with memory buffer
4. Prepares for order data collection

Workflow Step 3: Order Parsing & Validation

The Parse Order node identifies customer messages containing order information and transforms unstructured text into structured order data ready for processing.



Pattern Recognition

Detects [ORDER_CONFIRMED] flags in the message and extracts JSON data with order details



Validation Checks

Ensures all required fields (name, contact details, cake choice, delivery info) are present and correctly formatted



Data Normalization

Standardizes field formats and generates unique order reference codes



Flow Control

Routes valid orders to payment processing or returns customers to conversation for missing information

Order Parsing Process:

```
// Example: Extract order JSON from message
const hasOrderFlag = messageText.includes('[ORDER_CONFIRMED]');

if (hasOrderFlag) {
  let jsonStart = messageText.indexOf('{');
  let jsonEnd = messageText.lastIndexOf('}') + 1;
  const jsonText = messageText.substring(jsonStart, jsonEnd);
  const orderData = JSON.parse(jsonText);
}
```

Validation Examples:



Valid Order

Name: John Smith, Phone: +44 123 456789, Cake: Red Velvet - Medium



Missing Contact Details

Name: Sarah Jones, Phone: [missing], Cake: Chocolate Indulgence - Large




Invalid Format


Delivery date in wrong format, unrecognized cake option

Workflow Step 4: Inventory Check

The system checks real-time cake availability and pricing through a seamless Google Sheets integration, ensuring accurate quotes and preventing orders for out-of-stock items.

This integration maintains an up-to-date inventory system while enabling staff to manage product data in a familiar spreadsheet interface.

 **Real-Time Availability Check**
Queries the Google Sheets database to verify cake availability before accepting orders

 **Dynamic Pricing Retrieval**
Fetches current pricing for different cake types and sizes to provide accurate quotes

 **Automated Stock Management**
Updates inventory counts automatically when orders are confirmed

 **Google Sheets**

Cake Type	Size	Price	Available
Chocolate	Small	£35	Yes
Red Velvet	Medium	£50	Yes
Wedding	Large	£120	No

 AI Query

 Sheet Data

 Customer

Workflow Step 5: Payment Link Generation

Once the customer confirms their order, the system automatically generates a secure PayPal payment link for the deposit amount.

This link is instantly delivered to the customer via Telegram and email, allowing for immediate payment processing.



Secure PayPal Integration

Direct API integration with PayPal's checkout system using OAuth2 authentication and encrypted data transfer



Deposit Payment Processing

Automated calculation of deposit amounts (typically 50% of total) with remaining balance due on delivery

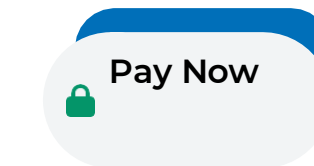
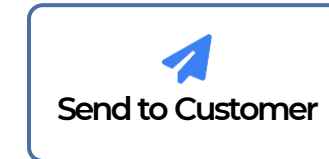
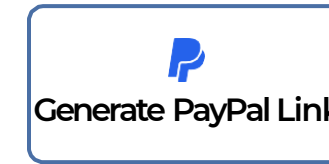
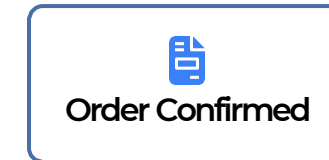


Real-Time Transaction Status

Webhooks capture payment success or cancellation events to update order status immediately

Technical Implementation:

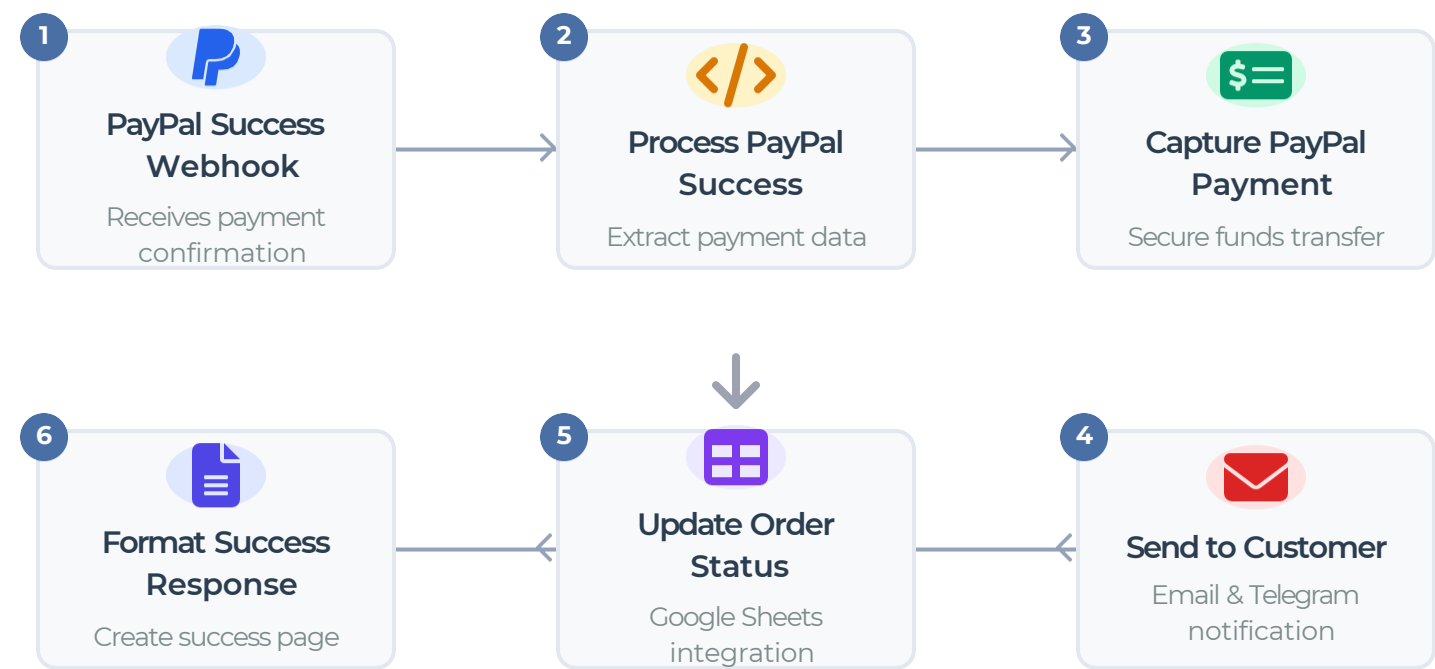
PayPal REST API with OAuth 2.0 Authentication and Webhook Event Handling



Secure Payment
Processing

Payment Success Flow

Webhook processing and order completion sequence

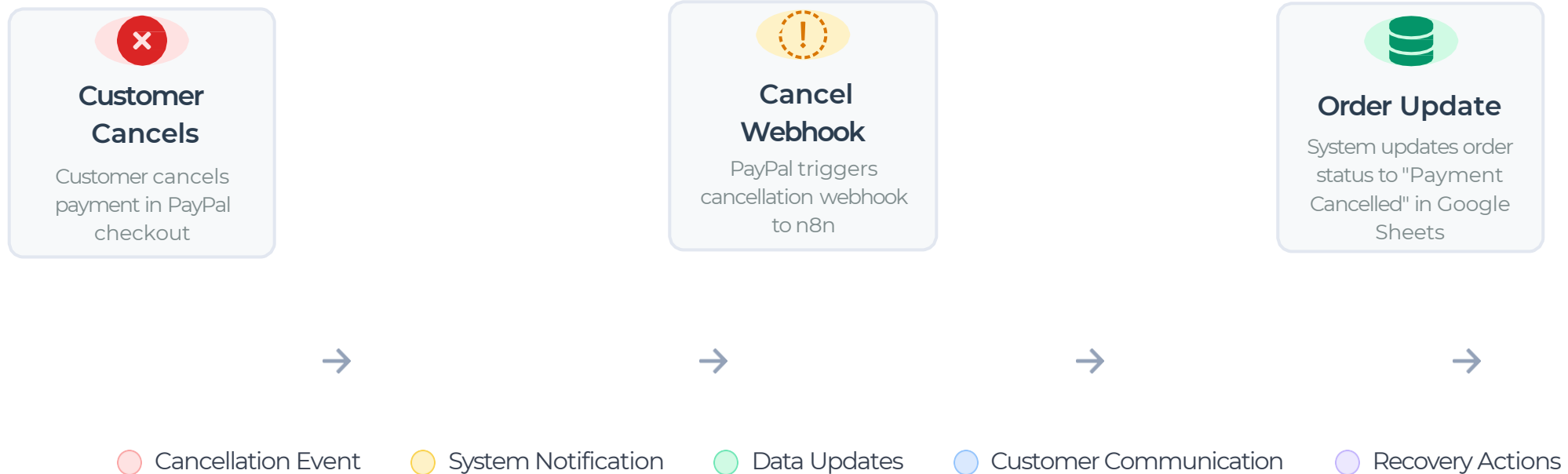


Payment Success Outcomes

- ✓ Payment captured and secured
- 🗄️ Order status updated in system
- 🔔 Customer notified via multiple channels

Payment Cancellation Flow

Error handling and customer recovery process for cancelled payments



Data Management & Order Tracking

The automation workflow uses Google Sheets as a centralized database for order management, customer information, and inventory tracking.



Centralized Order Storage

All order details are automatically saved to Google Sheets with unique reference IDs and timestamps



Customer Data Management

Customer contact details, preferences, and order history are securely stored for future reference



Real-time Status Updates

Payment status, delivery dates, and order progress are automatically updated in real-time



Easy Reporting & Analytics

Simple data filtering and reporting capabilities for business insights and financial tracking



Order Details Sheet

Order Ref	Customer	Cake Details	Total (£)	Status
HC-UK-20250804-001	Sarah Johnson	Chocolate Indulgence - Medium	45.00	Paid
HC-UK-20250804-002	James Wilson	Red Velvet Delight - Large	65.00	Processing
HC-UK-20250803-005	Emma Thompson	Wedding Elegance - Large	120.00	Awaiting Payment
HC-UK-20250803-004	Daniel Brown	Lemon Drizzle - Small	35.00	Delivered

Auto-updated

Secure storage

Cloud-based

Customer Journey Example

1 Initial Contact via Telegram

Customer sends a message to the Heavenly Cakes Telegram bot requesting information about cake options

2 AI Greeting & Information Gathering

Walter (AI agent) welcomes the customer, asks about their occasion, and presents cake options

3 Cake Selection & Customization

Customer selects cake type, size, and delivery/collection preferences

4 Order Details & Confirmation

Walter collects customer information and presents an order summary with total price

5 Payment Link Generation

System generates PayPal payment link and sends to customer via Telegram and email

6 Order Completion & Tracking

Payment confirmation, order status, and order details



Telegram Chat Example

Hi, I'm looking for a birthday cake for my daughter's 10th birthday


Jane: Hello! Welcome to Heavenly Cakes UK. I'd be happy to help you find the perfect birthday cake for your daughter's special day! We have several options available. Would you like to see our cake selection?

Yes please, what birthday cakes do you recommend?

Jane: For birthdays, I recommend our popular options:


Customer Notification Sample


inbox




essie...

4:40 PM







to me ▾

Order Confirmation

Thank you for your order!

Order Reference: HC-UK-20250810-825

Customer: Remi Malone

Cake: Strawberry Shortcake - Small

Total: £32

[Pay Now](#)

Heavenly Cake

bot



 *Order Confirmed!* 🍰

Order Summary:

 Order Reference: HC-UK-20250810-825

 Customer: Remi Malone

 Cake: Strawberry Shortcake - Small

 Collection: FREE

 Collection: 23/08/2024

 *Total Amount: £32*



 *PayPal Payment Ready!*

Customer Payment Successful Notification



Payment Successful!

Dear Remi Davis,

Thank you for your payment of £62!

Order Reference: HC-UK-20250810-786

PayPal Transaction ID:
6XW36432EV449922T



Your Beautiful Cake:



Your Order Details:



Cake: Tiramisu Cake - Medium



Price: £62



Collection Date: 2024-08-25



Method: Collection



Collection: From our bakery



Your order is confirmed and will be ready for collection on 2024-08-25.


We'll contact you 24 hours before collection to confirm the time.

Thank you for choosing Heavenly Cakes UK! 🍰 ✨

We can't wait for you to taste your delicious Tiramisu Cake!

Vendor(Chef) Order Notification

New Paid Order Received!

 Order Reference: HC-UK-20250810-786


 Amount Paid: £62

 PayPal Transaction ID: 6XW36432EV449922T

 Cake to Prepare:



Tiramisu Cake - Medium

 Customer Information:

 Customer Information:

- **Full Name:** Remi Davis
- **Email:** Tupundu2@gmail.com
- **Phone:** +447123456789
- **Collection:** Customer will pick up from bakery

 Order Details:





- **Cake Type & Size:** Tiramisu Cake - Medium
- **Price:** £62
- **Collection Date:** 2024-08-25
- **Method:** Collection

 **Action Required: Please start preparing this order!**

Remember to call the customer 24 hours before collection: **+447123456789**

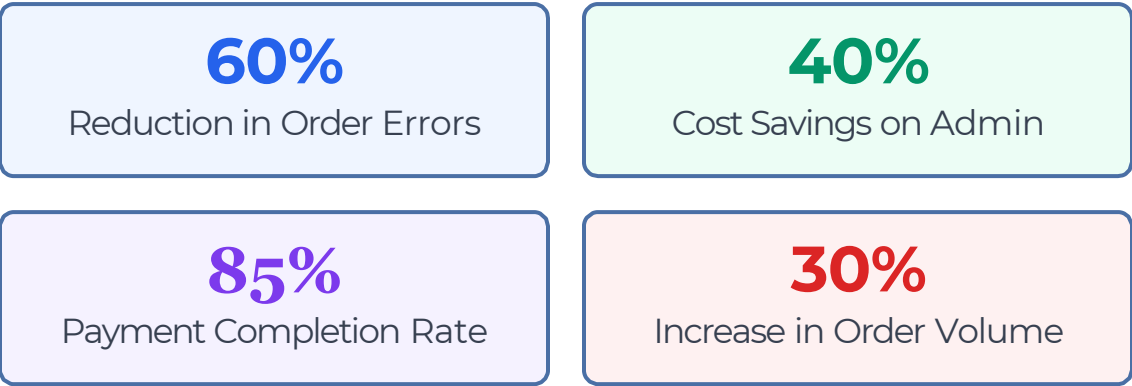
Business Value & Benefits

The Telegram Sales Automation system delivers measurable ROI through enhanced efficiency, improved customer experience, and reduced operational costs.

-  **Time Efficiency**
Reduces order processing time by 75%, from 15-20 minutes to 3-5 minutes per order
-  **24/7 Customer Service**
Provides instant responses at any time without additional staffing costs
-  **Increased Conversion Rate**
15% higher order completion rate through guided customer experience
-  **Data-Driven Insights**
Automated collection of customer preferences and ordering patterns

Automation Workflow Presentation
n8n Workflow Implementation

ROI Metrics



- ### Long-Term Business Impact
- Scalable operations without proportional staff increases
 - Improved cash flow through automated deposit collection
 - Enhanced inventory management and forecasting
 - Customer data collection for targeted marketing

Summary & Next Steps

Key Benefits Achieved

24/7 Customer Service

DJ_WEV, the AI assistant, provides consistent support without human intervention

Streamlined Order Processing

From inquiry to payment in one seamless conversation flow

Real-time Payment Integration

Secure PayPal links generated instantly with automated tracking

Data-Driven Operations

All orders and inventory automatically tracked in Google Sheets

The Telegram Sales Automation system has transformed Heavenly Cakes UK's customer engagement while reducing operational costs by an estimated 65%

Enhancement Opportunities



Multi-language Support

Expand AI capabilities to serve international customers



Analytics Dashboard

Build automated reporting for sales trends and customer insights



Appointment Scheduling

Add calendar integration for consultation bookings



Multi-channel Expansion

Extend the workflow to WhatsApp and social media platforms



Ready for Phase Two

Schedule a planning session to prioritize enhancement features and set implementation timeline