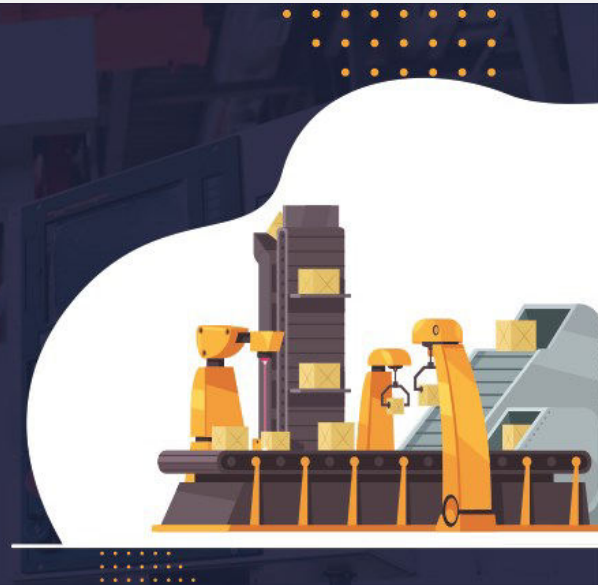# Renowned **FMCG Company** Automates Their Food Processing Lifecycle Using **Power Apps**

Client Business Description

As a leading provider of manufacturing food products, this FMCG company in USA offers an array of product categories. These include tea, coffee, ice cream & frozen desserts, health food drinks and other innovative products.

Being a manufacturer and distributor, their direct customers include professionals from various sectors, retail stores and chains, e-commerce websites, and distributors.

Challenges

» This company receives several **invoices for raw material** every day from multiple vendors for the preparation of their pet food. They had a manual process for receiving and validating raw material every day that consumed too much of the staff's time.

» Their standardized food processing lifecycle consisted of tedious, manual steps. The process was error-prone and led to challenges tracking their final packaged product. They were interested to get every detail like which vendor ingredients were present in which batch of the final product.

» Also, they wanted to see if employees on the shop floor were following every step of the process and user -wise activity.

Overall, they wanted an internal application that could perform end-to-end tracking of every activity on the shop floor. It was important that the application was mobile responsive and could handle multiple logins at the same time.
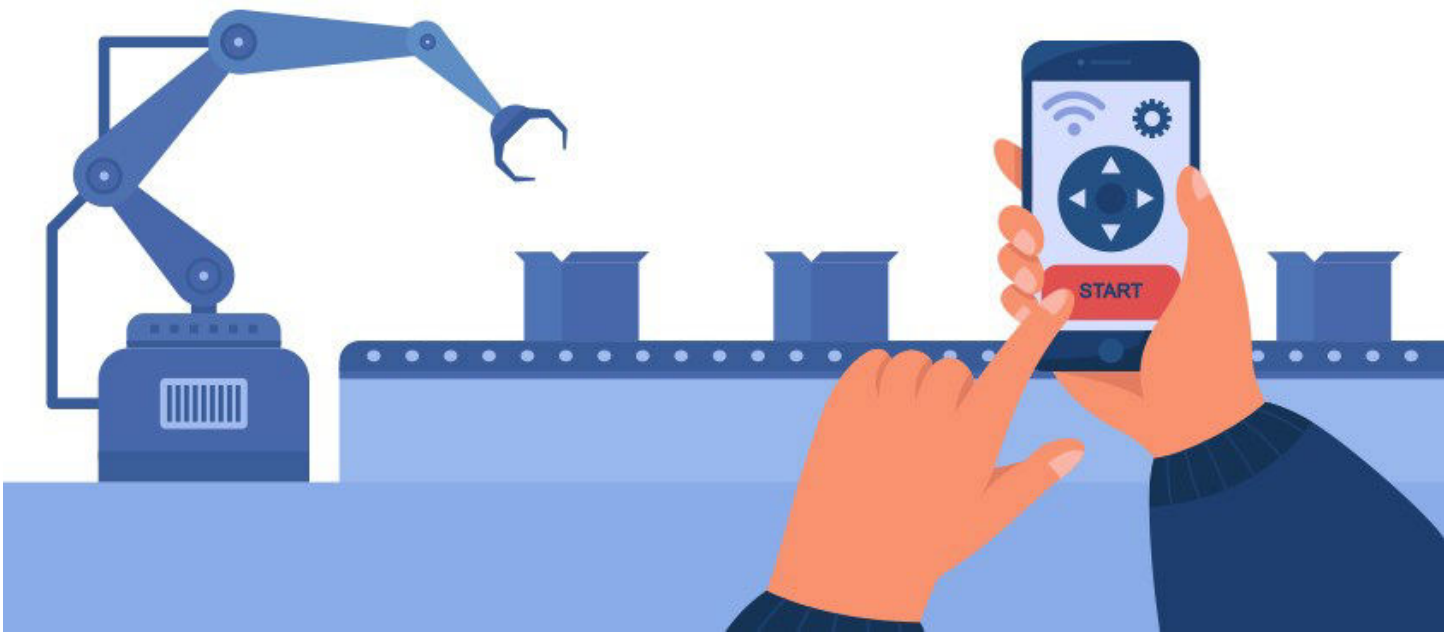
Solution

We developed a PowerApps based Lot tracking application which was deployed on their tenant and shared with relevant team members. The app was accessible on the mobile phones. The Production team on the shop floor and purchase department used the application to scan and track items across the stages of food preparation.
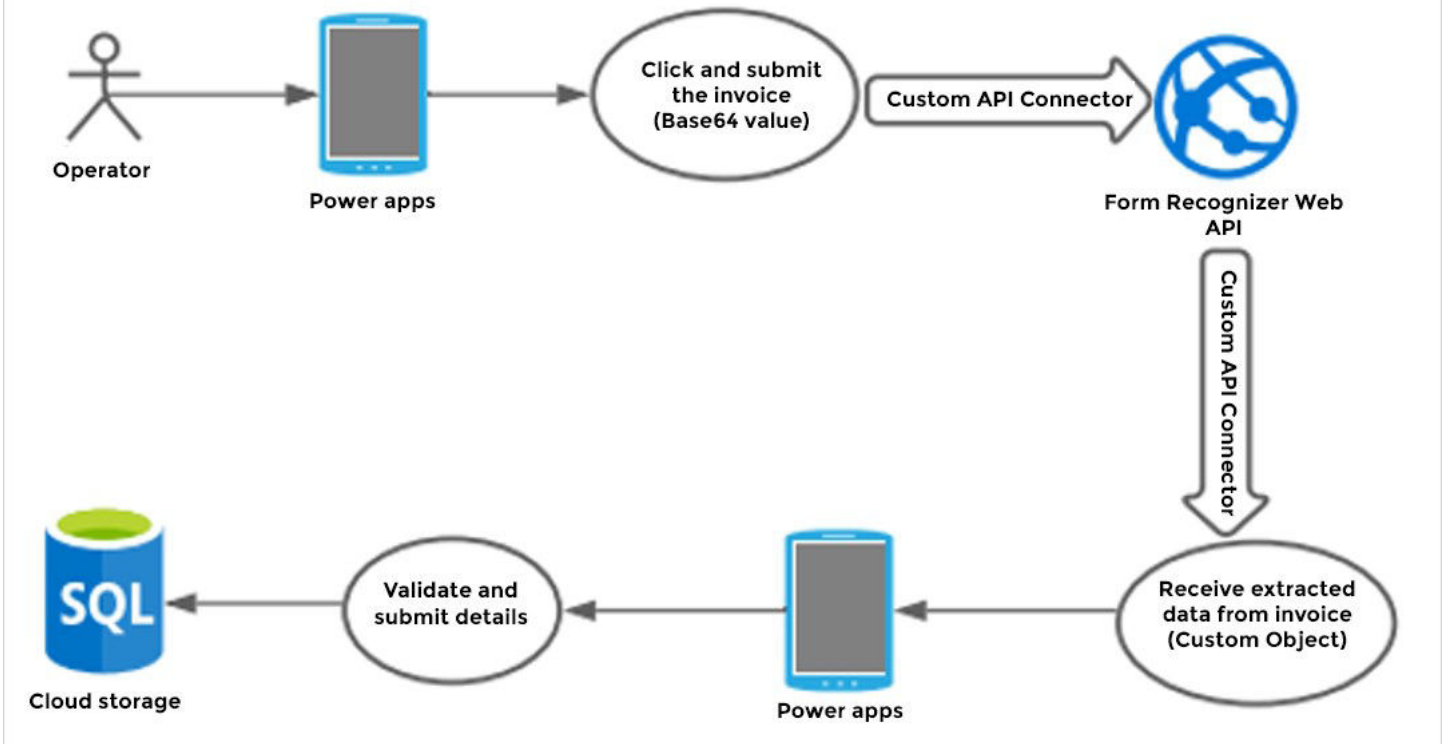
Employees used Power Apps on their mobile devices to observe strict food processes and product dates. The app helped with:

1. Invoice scanning:

Every day, the client team received raw ingredients from multiple vendors. Previously, their team manually checked and entered the number of ingredients in the system. This manual check-in process was cumbersome and took a lot of the time of the staff.

To automate this process, Beyond Key developed an AI-based OCR system, which scanned the vendor invoices. The system (model) saved time and effort because it was trained to read the required values from the invoice and copied the values in the system. The automated process also reduced human error because all the team members needed to do was verify if the boxes with the physical ingredients were prepared correctly. The extracted data tables from the invoice scanning are stored in the database.

Process Flow: Invoice date Extraction and save

Operator

Power apps

Click and submit the invoice (Base64 value)

Custom API Connector

Form Recognizer Web API

Custom API Connector

Receive extracted data from invoice (Custom Object)

Power apps

Validate and submit details
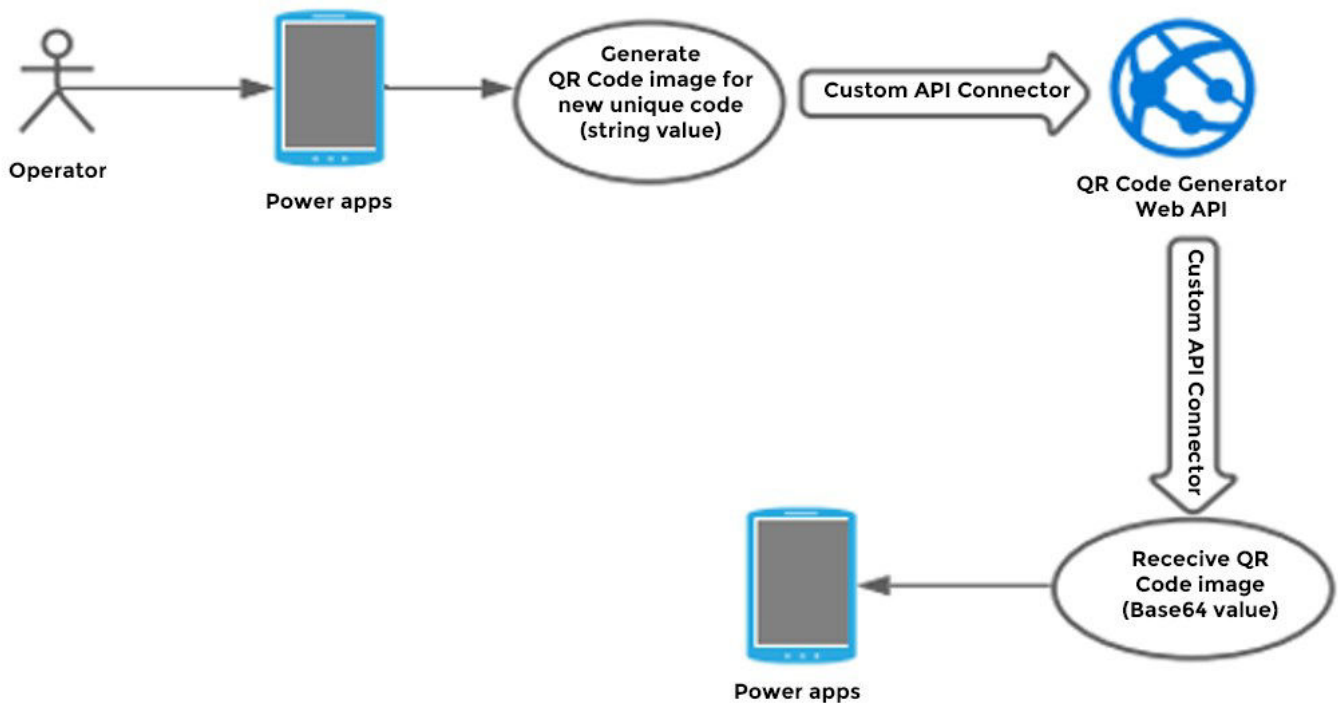
SQL

Cloud storage
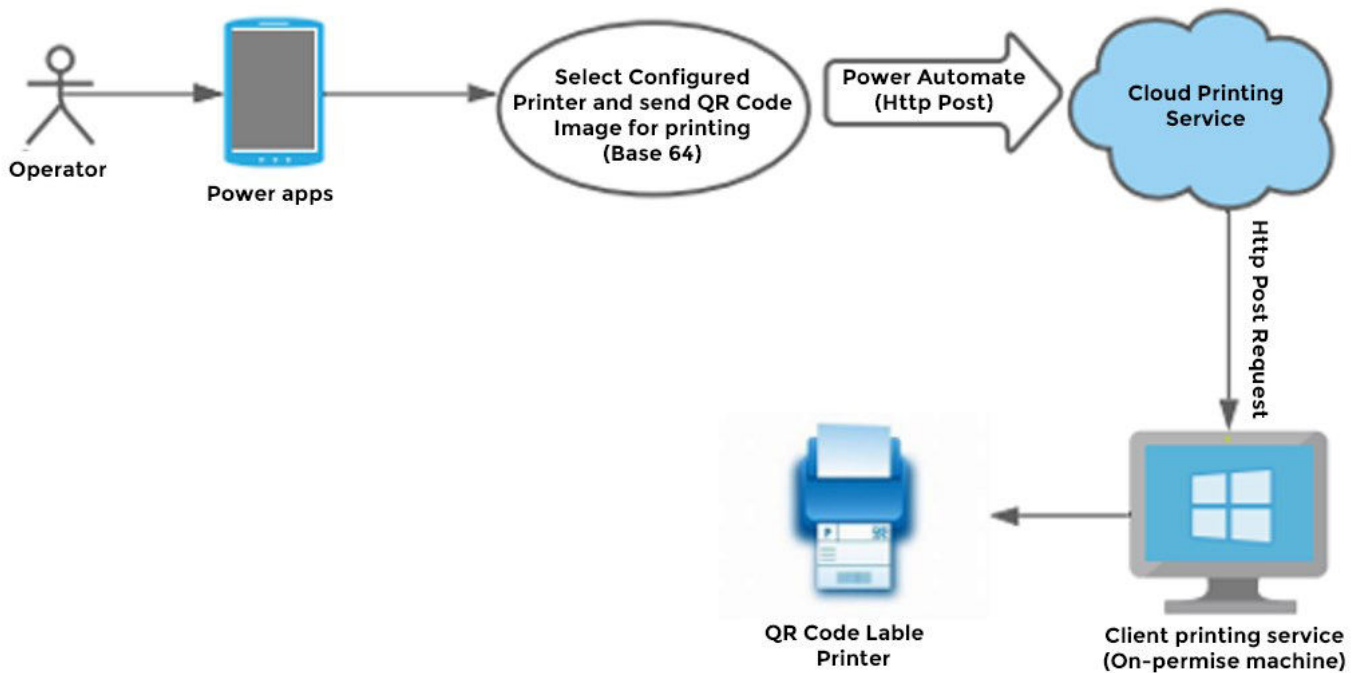
2. QR code generation & Cloud printing:

The application performs an important function of generating QR codes at every stage of food processing. This is real-time. At every stage, the user has the option to print out a new QR Label which is pasted on the boxes. Employees can track the details of the items in the box without opening them. The application shows the tracking details from the received invoice to final product creation. In the tracking details, the user can see the Activity Name, Activity Date, and Activity by the user.

A new QR code for each stage tracks the food quality if it was compromised at specific stages, and what was the cause. This takes the food safety and quality aspects to next level. Once the QR code is generated, the file is sent to the cloud printer machine which may be located remote.

Process Flow: Generate QR Code Image

Operator → Power apps → **Generate QR Code image for new unique code (string value)** → (Custom API Connector) → **QR Code Generator Web API**

QR Code Generator Web API → (Custom API Connector) → **Receive QR Code image (Base64 value)** → Power apps

Process Flow: Print QR code Image

Operator → Power apps → **Select Configured Printer and send QR Code Image for printing (Base 64)** → (Power Automate (Http Post)) → **Cloud Printing Service**

Cloud Printing Service → (Http Post Request) → **Client printing service (On-permise machine)** → **QR Code Lable Printer**

3. End-to-end tracking of Food processing lifecycle

Another main function is tracking the processes throughout the entire food processing lifecycle and the users who are responsible to conduct these processes. This helps if any stage is missed or there is less or more time taken during any step which could harm the quality of each product. The tracking is done on the raw material, each step's time duration, and output quality. Users can use the QR code generated on any previous stage and scan it. It will give the user activity, raw material information used, vendor details, date and time of processing, and several other details.

4. Integration with ERP system

The Lot Tracking app is also integrated to the third-party ERP system using Azure data sync services. The system contains all the master data of raw material, vendors, processed final products, customers, and more. Later after processing, some of the information is again updated in the system to ensure everything can be managed within one database.

Results

Saved Time

The lot tracking Power App helped the client team monitor production output more effectively and faster than their previous system. Raw material receiving was simplified and automated, which saved the time and efforts of the team.

Improved Food Safety & Quality

It is now easier to check the quality of the product and determine which stage did not have the right food quality.

Better Monitoring

They got an application that could provide end-to-end tracking of their entire food processing lifecycle. The stakeholders received easy reports and detailed tracking of processes that helped them make informed business decisions.

Improved Accuracy

The solution reduced human errors because they did not need to add information manually.

High Efficiency

OCR increased their employees' overall efficiency, which helped them focus on completing high-value task.

Technology Stack

POWER APPS

POWER AUTOMATE
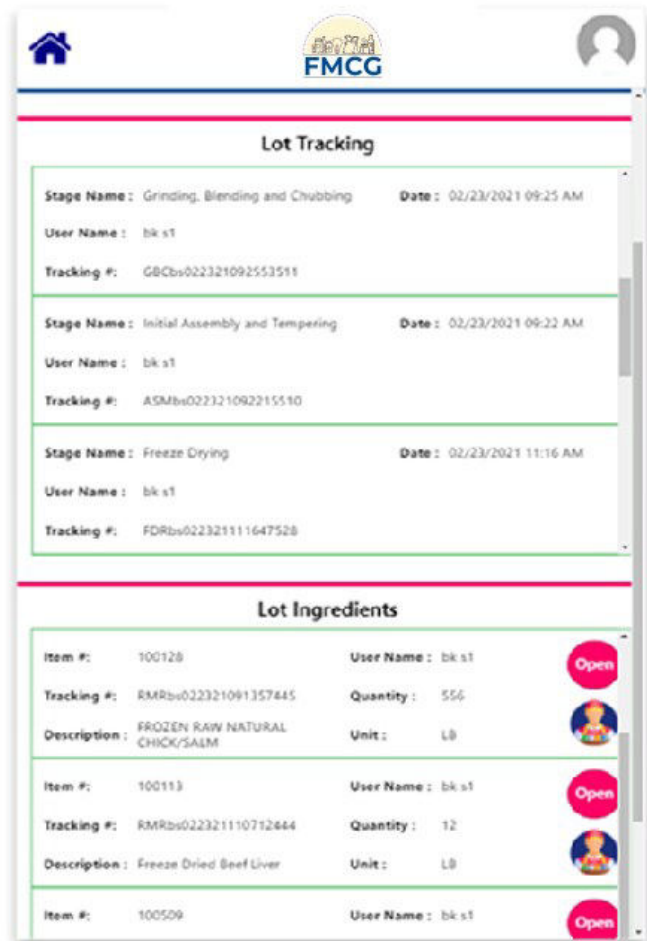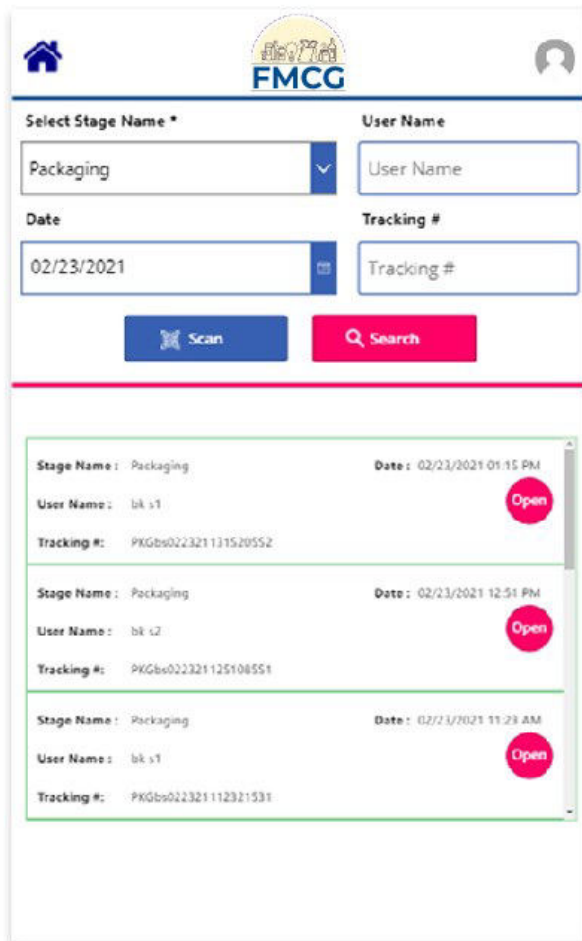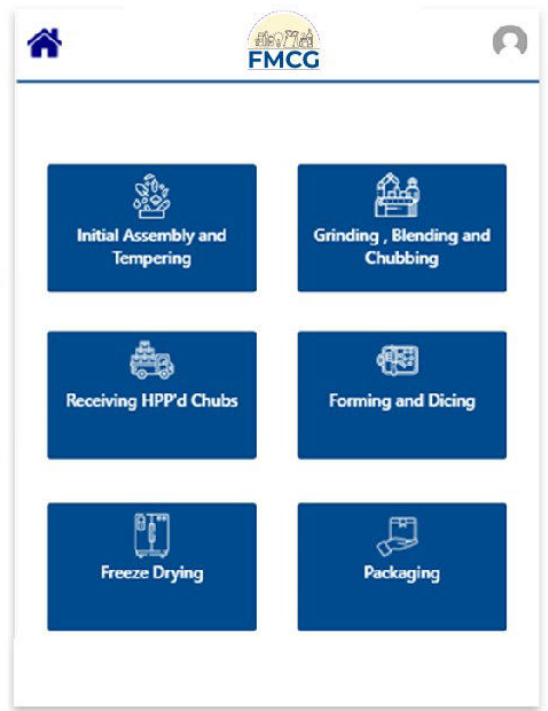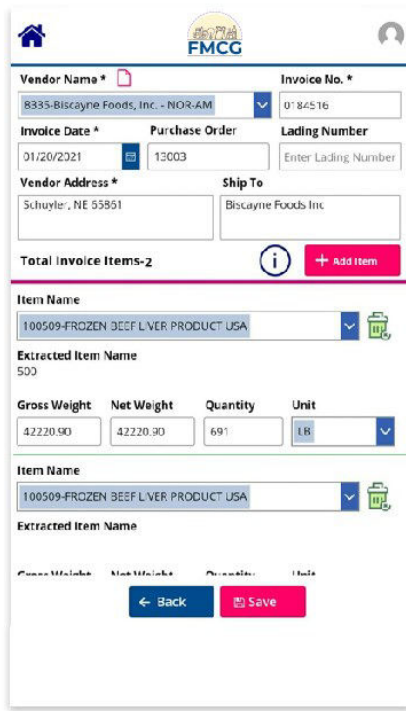
FORM RECOGNIZER (REST API V2.0)

AZURE BLOB STORAGE

AZURE SQL

ASP .NET WEB API (AZURE HOSTED)

CLOUD PRINTING

Screenshots