# 📦 Customer Upload & Identity Mapping Module (Add-On)

## ✅ Overview

This module allows brands to upload and manage their customer base to enable deeper personalization, UGC engagement tracking, inbox-to-order mapping, and omni-channel identity resolution. It works as a foundation layer for automations, reward attribution, and remarketing personalization.

## 🎯 Key Objectives

* Upload existing customer data from CSV/Excel
* Match social identities (Facebook, Instagram, WhatsApp) to known customers
* Track UGC engagement and link to known user profiles
* Enable rewards, campaigns, inbox follow-ups based on mapped customer actions
* Ensure GDPR-compliant secure handling and control

## 🔄 Core Features & Workflows

### 1. 🔼 Customer Upload & Validation

* Admin uploads CSV file containing customer data with fields like:
  + Name, Phone, Email, Address, Order History, Tags
* System validates file structure and formats
* Duplicate detection by phone/email
* Email/Phone normalization & deduplication
* Manual override for conflicts

### 2. 🔗 Identity Linking Engine

* Automatically attempts to match:
  + Phone numbers to WhatsApp contacts
  + Emails to customer database or order logs
  + Facebook/Instagram profile names from comment/inbox with past records
* Uses fuzzy logic and partial matches to link user activities with profile
* Manual override in case of ambiguity
* Webhooks from Inbox module auto-trigger mapping attempts

### 3. 👤 Profile Enrichment Layer

* Each customer gets a unified profile in DB:
  + Basic info (Name, Phone, Email, Address)
  + Social Links (FB Profile URL, IG Handle, WhatsApp ID)
  + Order History (from website sync or upload)
  + Campaign Participation Logs
  + Rewards / Tier Status

### 4. 🕸️ Unified Activity Log

* Every tracked action per customer is stored chronologically:
  + FB comment on campaign
  + WhatsApp question about a product
  + Order placed via website or offline
  + Email campaign clicked
* Allows precise segmentation and personalization

### 5. 🔐 GDPR Controls & Consent

* Admin must confirm consent before upload
* Checkbox per customer entry: “Consent to store and use data”
* Deletion API: removes all traces of a customer upon request
* UI setting to export all data linked to a customer (for compliance)

## ⚙️ Technical Design

### DB Tables:

* customers — unique profiles
* customer\_contacts — phones, emails, social IDs
* customer\_activities — timeline of events
* customer\_tags — admin-assigned labels like “VIP”, “From Group”

### APIs:

* POST /upload-customers — takes file, returns preview of imported entries
* POST /map-social-identity — links social activity to customer ID
* GET /customer/:id/activity — fetch complete profile and logs
* DELETE /customer/:id — delete + anonymize data (GDPR)

### Stack:

* Backend: Python + FastAPI
* DB: PostgreSQL
* File Parser: Pandas
* Fuzzy Mapping: RapidFuzz
* Identity Match Engine: Async Tasks + Redis Queue
* Frontend: ReactJS (for preview/merge UI)

## 🧠 Integration Points

* 📬 Inbox Assistant → auto-map chat contacts to CRM
* 🎯 Campaign Engine → assign points only to mapped profiles
* 📤 Email/SMS → send to matched users only
* 🏷️ Tag Engine → auto-tag based on interaction pattern (e.g., “Frequent Commenter”)

## 🔐 Superadmin Controls

* Enable/disable this module per brand
* Limit CSV upload size per plan
* Toggle identity match strength thresholds
* Set GDPR deletion frequency

## 📝 Future Upgrades

* AI matching for profile pictures (if privacy compliant)
* OTP-based customer verification to enrich profiles
* Integration with Meta Custom Audiences (for ad targeting)
* Smart merge tool for fuzzy duplicate records

## ✅ Why It Matters

* Enables unified customer view across inbox, campaign, store
* Powers personalized replies, remarketing, rewards
* Builds long-term relationship map per user, increasing LTV
* Unlocks advanced analytics and micro-segmentation

This module is essential to bridge offline + social + website data and create a seamless 360° customer view.