

# Merchant Onboarding Flow

## Flow: Merchant Onboarding

**Document:** LLD-006 **Version:** 1.0 **Date:** 2026-02-21 **Author:** Frontend Architect (AI Agent)

**Status:** Draft **Scope:** Merchant registration, business verification, QR code generation, merchant dashboard, transaction monitoring, and settlement

---

### 1. Overview

Drop supports merchant onboarding for in-store QR payments. Any authenticated user can register as a merchant by providing business details and a valid Norwegian organization number. Upon registration, the user's role is upgraded from `user` to `merchant`, granting access to the merchant dashboard with transaction monitoring, daily summaries, and settlement views.

**Key facts:**

- Merchant registration requires authenticated BankID login
  - Organization number verified against Brønnøysundregistrene (production; format validation in demo)
  - QR code format: `drop://pay/{merchantId}`
  - Merchant fee: 1% per QR transaction (lower than card terminal 1.75-2.75%)
  - Settlement: T+1 (planned) — funds from transactions deposited to merchant's bank account
- 

### 2. Merchant Registration Flow

#### 2.1 Sequence Diagram — Registration to Active Merchant

```
sequenceDiagram
    actor User
```

participant App as Drop App  
participant API as Drop API<br/>(//api/merchants)  
participant Brreg as Brønnøysund<br/>Register (prod)  
participant DB as Database

User->>App: Navigate to merchant registration  
App->>App: useAuth() – verify authenticated

User->>App: Fill registration form<br/>(businessName, orgNumber, address, bankAccount)

App->>App: Client-side validation<br/>(name: validateName, orgNumber: 9 digits)

App->>API: POST /api/merchants/register<br/>{ businessName, orgNumber, address,  
bankAccount }

API->>API: JWT verification  
API->>API: Validate input fields

alt Production

API->>Brreg: GET /enhetsregisteret/api/enheter/{orgNumber}  
Brreg-->>API: { organisasjonsnummer, navn, organisasjonsform, ... }  
API->>API: Verify business exists and is active

else Demo

API->>API: Format validation only (9 digits, unique)

end

API->>DB: Check org\_number uniqueness

API->>DB: INSERT merchant (user\_id, business\_name, org\_number, bank\_account,  
fee\_rate=0.01)

API->>DB: UPDATE users SET role = 'merchant' WHERE id = ?

API->>API: Generate QR URI: drop://pay/{merchantId}

API-->>App: 201 { merchant: { id, businessName, orgNumber, qrUri } }

App->>App: Show success screen<br/>(QR code display, "Vis min QR-kode" button)

App->>App: Navigate to merchant dashboard

# 3. Merchant Dashboard Components

## 3.1 Component Diagram

```
graph TD
  subgraph "Merchant Dashboard"
    Header["Header<br/>'VELKOMMEN' + business name<br/>+ Settings button"]
    PeriodFilter["PeriodFilter<br/>(I dag / Uke / Maaned)"]
    RevenueCard["RevenueCard<br/>(green gradient)"]
    QRButton["QRButton<br/>'Vis min QR-kode'"]
    TransactionList["TransactionList<br/>'Dagens transaksjoner'"]
    BottomNav["BottomNav"]
  end

  subgraph "Revenue Card"
    TotalRevenue["Total omsetning<br/>(4xl Fraunces font)"]
    StatsGrid["Stats Grid (2 cols)"]
    TxCount["Transaksjoner<br/>(count)"]
    FeesInfo["Gebyrer betalt<br/>(NOK amount)"]
  end

  subgraph "Transaction Item"
    CustomerIcon["CheckCircle2<br/>(green)"]
    CustomerName["Customer Name<br/>(partially anonymized)"]
    TxTime["Timestamp"]
    TxAmount["Amount<br/>(+NOK, green)"]
  end

  RevenueCard --> TotalRevenue
  RevenueCard --> StatsGrid
  StatsGrid --> TxCount
  StatsGrid --> FeesInfo

  TransactionList --> CustomerIcon
  TransactionList --> CustomerName
  TransactionList --> TxTime
  TransactionList --> TxAmount
```

# 4. Business Verification Checklist

## 4.1 Registration Requirements

Requirement	Field	Validation	Demo	Production
Business name	<code>businessName</code>	<code>validateName()</code> — 1-100 chars, at least one letter, no HTML/script	Format check only	Format check
Organization number	<code>orgNumber</code>	Exactly 9 digits, unique in DB	Format + uniqueness	Brønnøysund API lookup
Business address	<code>address</code>	Optional, sanitized to 300 chars	Optional	Required for settlement
Payout bank account	<code>bankAccount</code>	Required, non-empty	Format check	IBAN/account validation
User authentication	JWT	Valid BankID session	Required	Required
KYC status	<code>user.kycStatus</code>	Must be <code>approved</code>	Auto-approved via BankID	BankID verification

## 4.2 Brønnøysundregistrene Verification (Production)

Check	API	Response Field	Pass Criteria
Business exists	<code>GET /enhetsregisteret/api/enheter/{orgNr}</code>	<code>organisasjonsnummer</code>	Matches input
Business is active	Same	<code>registreringsdatoEnhetsregisteret</code>	Not null
Business type	Same	<code>organisasjonsform.kode</code>	AS, ENK, NUF, DA, ANS
Business name match	Same	<code>navn</code>	Approximate match to submitted name

# 5. Settlement Schedule

## 5.1 Settlement Schedule Table

Period	Settlement Day	Payout Time	Details
Daily transactions	T+1	08:00 CET	Next business day after transaction
Weekend transactions	Monday	08:00 CET	Batched for Monday payout
Holiday transactions	Next business day	08:00 CET	Following Norwegian business day

## 5.2 Settlement Calculation

Field	Formula	Example
Gross revenue	Sum of all QR payment amounts	4 350 NOK
Merchant fee	Gross x 1% (fee_rate)	43.50 NOK
Net payout	Gross - fee	4 306.50 NOK
Payout account	<code>merchant.bankAccount</code>	IBAN or Norwegian account

## 5.3 Merchant Dashboard API

**Endpoint:** `GET /api/merchants/dashboard?period={today|week|month}`

**Response:**

```
{
  "data": {
    "revenue": 4350,
    "transactionCount": 12,
    "fees": 43.5,
    "netRevenue": 4306.5,
    "nextPayout": "2026-02-22T07:00:00.000Z",
    "payoutTime": "Neste virkedag kl. 08:00"
  }
}
```

## 6. QR Code Generation

Property	Value
Format	URI: <code>drop://pay/{merchantId}</code>

Property	Value
Encoding	Standard QR code (alphanumeric)
Generation	Client-side (from returned <code>qrUri</code> )
Display	"Vis min QR-kode" button on merchant dashboard
Printing	Merchant can screenshot or print for in-store display

**QR endpoint:** `GET /api/merchants/qr`

```
{
  "data": {
    "merchantId": "mer_a1b2c3d4e5f6g7h8",
    "businessName": "Ahmetov Kebab",
    "qrValue": "drop://pay/mer_a1b2c3d4e5f6g7h8",
    "address": "Gronlandsleiret 44, 0190 Oslo"
  }
}
```

## 7. Merchant Transaction Monitoring

### 7.1 Transaction List

**Endpoint:** `GET /api/merchants/transactions?page=1&limit=20`

Field	Value	Privacy
Customer name	First name + last initial	Partially anonymized (e.g., "Ola N.")
Amount	Positive NOK value	Full amount shown
Status	"Vellykket" (green)	Color-coded
Timestamp	HH:MM format	Time only for today's transactions

### 7.2 Period Filtering

Period	API Value	Dashboard Label	Aggregation
Today	<code>today</code>	I dag	Sum of today's transactions
This week	<code>week</code>	Uke	Mon-Sun aggregation

Period	API Value	Dashboard Label	Aggregation
This month	<code>month</code>	Maaned	Calendar month aggregation

## 8. UI Components (Web)

### 8.1 Merchant Dashboard Layout

Section	Component	Description
Header	Business name (Fraunces) + Settings icon	Welcome greeting + gear icon
Period tabs	Button group (I dag, Uke, Maaned)	Green active, gray inactive
Revenue card	Green gradient card (#0B6E35 to #095a2b)	Total omsetning (4xl), stats grid
QR button	Full-width green button with QrCode icon	"Vis min QR-kode"
Transaction list	Card list with CheckCircle2 icons	Customer name, time, +amount (green)
Navigation	BottomNav (5 tabs)	Standard bottom navigation

### 8.2 Figma Reference

Source of truth: `mockups/figma-make-export/src/app/screens/MerchantDashboard.tsx`

- Welcome header with business name
- Period filter tabs (I dag / Uke / Maaned)
- Green gradient revenue card with stats
- QR code button
- Transaction list with customer names

## 9. Role Upgrade Flow

Step	Before	After
1	User has <code>role = 'user'</code>	Same
2	User submits merchant registration	Same

Step	Before	After
3	API validates and creates merchant record	<code>role = 'merchant'</code>
4	User's JWT still has old role	Valid until refresh
5	On next token refresh / re-login	New JWT has <code>role = 'merchant'</code>

### Authorization gates:

- `GET /api/merchants/dashboard` — requires `role = 'merchant'`
- `GET /api/merchants/qr` — requires `role = 'merchant'`
- `GET /api/merchants/transactions` — requires `role = 'merchant'`

## 10. Platform Differences

Feature	Web	Mobile
Merchant registration	Full form via web UI	Not implemented
Merchant dashboard	Dedicated screen with stats	Not implemented
QR code display	Button to show QR	Not implemented
Transaction monitoring	List with period filter	Not implemented
Settlement view	Inline in dashboard stats	Not implemented

## 11. Accessibility Considerations (WCAG 2.1 AA)

Requirement	Implementation
Form validation	Registration form shows inline error messages
Revenue card	Uses both visual (bold text) and semantic (heading) for amounts
Period tabs	Active tab indicated by color AND aria-selected
Transaction list	Each item has descriptive text (customer, amount, status)
QR code	Alt text: "QR-kode for {businessName}"
Color contrast	White text on green gradient meets 4.5:1
Settings icon	Has aria-label "Innstillinger"

---

# 12. Cross-References

- **Merchant registration API:** `POST /api/merchants/register` — See [API Reference](#)
- **Merchant dashboard API:** `GET /api/merchants/dashboard` — See [API Reference](#)
- **Merchant QR API:** `GET /api/merchants/qr` — See [API Reference](#)
- **Merchant transactions API:** `GET /api/merchants/transactions` — See [API Reference](#)
- **Merchants schema:** `merchants` table — See [Database Schema](#)
- **Transactions schema:** `transactions` table — See [Database Schema](#)
- **Component overview:** See [component-overview.md](#)
- **Figma merchant dashboard:** `mockups/figma-make-export/src/app/screens/MerchantDashboard.tsx`
- **QR payment flow:** See [flow-qr-payment.md](#)
- **Authentication flow:** See [flow-login-authentication.md](#)

---

Revision #4

Created 2026-02-21 05:58:54 UTC by John

Updated 2026-05-23 10:52:01 UTC by John