

B2B Cannabis Marketplace - Project Requirements Document

1. Project Overview

1.1 Project Name

B2B Cannabis Marketplace Platform

1.2 Project Description

A business-to-business web application that enables licensed cannabis sellers from multiple states (initially Ohio, Florida, and Vermont) to sell their products to other licensed businesses. The platform provides dual functionality for users to operate as either buyers or sellers, with robust user management and invitation capabilities.

1.3 Project Objectives

- Create a compliant B2B cannabis marketplace platform
- Enable multi-state cannabis business transactions
- Provide intuitive buyer and seller interfaces
- Implement secure user management and invitation system
- Establish scalable foundation for future state expansion

1.4 Success Criteria

- Platform successfully processes B2B transactions across three initial states
- User registration and authentication system supports both buyer and seller roles
- Invitation system allows businesses to manage sub-users effectively
- Compliance with state-specific cannabis regulations
- Responsive design works across desktop and mobile devices

2. Technical Architecture

2.1 Technology Stack

- **Backend/CMS:** PayloadCMS (latest version)
- **Frontend Framework:** Next.js (latest stable version)
- **Styling:** Tailwind CSS
- **UI Components:** Shadcn/ui

- **Database:** MongoDB (recommended by PayloadCMS)
- **Authentication:** PayloadCMS built-in auth system
- **Deployment:** Vercel or similar platform

2.2 System Architecture

- Headless CMS architecture with PayloadCMS as backend
- Next.js frontend consuming PayloadCMS APIs
- Server-side rendering for SEO and performance
- API-first approach for future mobile app development

3. Functional Requirements

3.1 User Management System

3.1.1 User Registration

- Business registration with company details
- License verification system
- State-specific registration requirements
- Email verification process
- Admin approval workflow for new businesses

3.1.2 User Authentication

- Secure login/logout functionality
- Password reset capability
- Multi-factor authentication (MFA) support
- Session management with appropriate timeouts

3.1.3 User Roles and Permissions

- **Super Admin:** Platform administration and oversight
- **Business Owner:** Primary account holder with full business access
- **Seller:** Can list and manage products, view orders
- **Buyer:** Can browse products, place orders, manage purchasing
- **Sub-User:** Invited users with limited permissions based on role assignment

3.1.4 User Invitation System

- Business owners can invite team members
- Role-based invitation system
- Email invitation workflow
- Invitation acceptance and onboarding process
- Permission management for invited users

3.2 Seller Functionality

3.2.1 Product Management

Native Product Management:

- Add, edit, and delete product listings manually
- Product categorization (flower, edibles, concentrates, etc.)
- Product image upload and management
- Native inventory tracking and management
- Pricing management with bulk pricing options
- Product availability by state/region

API Integration for Inventory Systems:

- Connect existing inventory management systems via REST APIs
- Real-time product synchronization from external systems
- Automatic inventory updates and stock level management
- Support for multiple API authentication methods (API keys, OAuth, etc.)
- Custom field mapping between external systems and platform
- Bulk product import and update capabilities
- Webhook support for real-time inventory changes
- API rate limiting and error handling
- Fallback mechanisms for API downtime or failures

3.2.2 Order Management

- View incoming orders
- Order status updates (pending, confirmed, shipped, delivered)
- Order fulfillment tracking

- Communication tools with buyers
- Order history and analytics

3.2.3 Business Profile

- Company information management
- License information and documentation
- Contact details and business hours
- Shipping and delivery preferences
- Payment method setup
- API integration configuration and management
- External system connection status monitoring

3.2.4 Integration Management

- API endpoint configuration interface
- Authentication credential management (secure storage)
- Data mapping and field customization tools
- Synchronization scheduling and frequency settings
- Integration health monitoring and alerts
- Error logging and troubleshooting tools
- Manual sync triggers and override capabilities
- Integration performance metrics and reporting

3.3 Buyer Functionality

3.3.1 Product Discovery

- Browse products by category
- Advanced search and filtering
- Product comparison tools
- Seller ratings and reviews
- Favorites and wishlist functionality

3.3.2 Ordering System

- Shopping cart functionality

- Bulk ordering capabilities
- Order placement and confirmation
- Order tracking and status updates
- Recurring order setup

3.3.3 Account Management

- Purchase history and reordering
- Invoice and payment history
- Delivery address management
- Team member management (sub-users)
- Budget and spending controls

3.4 Geographic and Compliance Features

3.4.1 Multi-State Support

- State-specific product availability
- Compliance with local regulations
- Tax calculation by jurisdiction
- Shipping restrictions and rules

3.4.2 Compliance Management

- License verification and tracking
- Age verification systems
- Transaction logging for regulatory compliance
- Audit trail maintenance

3.5 Communication Features

- In-app messaging between buyers and sellers
- Order-related communication threads
- Notification system (email, in-app)
- Support ticket system

4. Non-Functional Requirements

4.1 Performance

- Page load times under 3 seconds
- API response times under 500ms
- Support for concurrent users (minimum 1000)
- Database query optimization

4.2 Security

- HTTPS encryption for all communications
- Secure payment processing integration
- Data encryption at rest and in transit
- Regular security audits and updates
- GDPR and privacy compliance

4.3 Scalability

- Horizontal scaling capabilities
- CDN integration for media files
- Caching strategy implementation
- Database optimization for growth

4.4 Reliability

- 99.9% uptime availability
- Automated backup systems
- Disaster recovery procedures
- Error handling and logging

4.5 Usability

- Responsive design for all device types
- Intuitive user interface design
- Accessibility compliance (WCAG 2.1)
- Multi-browser compatibility

5. System Integrations

5.1 Payment Processing

- Integration with cannabis-friendly payment processors

- Support for ACH transfers
- Invoice generation and management
- Tax calculation services

5.2 Shipping and Logistics

- Integration with shipping providers
- Track and trace functionality
- Delivery scheduling systems
- Compliance with cannabis shipping regulations

5.3 Third-Party Services

- Email service provider (SendGrid, Mailgun)
- SMS notification services
- Analytics and reporting tools
- Customer support platforms

5.4 Seller API Integrations

- RESTful API connectivity for external inventory systems
- Support for common inventory management platforms (Canix, BioTrackTHC, METRC, etc.)
- Custom API integration capabilities
- Real-time data synchronization services
- API middleware for data transformation and validation
- Webhook processing for bidirectional communication
- API monitoring and health check services

6. Data Models

6.1 Core Collections (PayloadCMS)

Users

- Personal information
- Business affiliation
- Role assignments
- Authentication details

- State licensing information

Businesses

- Company details
- License information
- Contact information
- State registrations
- Verification status

Products

- Product details and specifications
- Pricing and inventory
- Images and media
- Category classification
- State availability
- Integration source tracking (native vs API)
- External system product IDs and mapping
- Sync status and last update timestamps

Orders

- Order details and line items
- Buyer and seller information
- Status and tracking
- Payment information
- Shipping details

Messages

- Communication threads
- Participants
- Message content
- Timestamps and status

API Integrations

- Integration configuration details
- Authentication credentials (encrypted)
- Endpoint URLs and settings
- Field mapping configurations
- Sync schedules and frequency
- Status and health monitoring data
- Error logs and troubleshooting information

7. User Interface Requirements

7.1 Design Principles

- Clean, professional design aesthetic
- Cannabis industry-appropriate branding
- Consistent design system using Shadcn components
- Mobile-first responsive design

7.2 Key User Interfaces

Dashboard

- Role-specific dashboard layouts
- Quick access to key functions
- Analytics and reporting widgets
- Recent activity feeds

Product Catalog

- Grid and list view options
- Advanced filtering and search
- Product detail pages
- Image galleries and zoom functionality

Order Management

- Order status tracking
- Communication interfaces
- Document management

- Payment and invoice handling

8. Development Phases

Phase 1: Foundation (Weeks 1-4)

- PayloadCMS setup and configuration
- Next.js project initialization
- Basic authentication system
- Core data models implementation

Phase 2: Core Functionality (Weeks 5-8)

- User registration and management
- Product management system (native functionality)
- Basic ordering functionality
- State-specific compliance features

Phase 2.5: API Integration Framework (Weeks 9-10)

- API integration infrastructure development
- External system connectivity framework
- Data synchronization engine
- Integration management interface

Phase 3: Advanced Features (Weeks 11-14)

- Invitation system implementation
- Advanced search and filtering
- Communication system
- Payment integration
- API integration testing and refinement

Phase 4: Testing and Deployment (Weeks 15-18)

- Comprehensive testing (including API integrations)
- Security audits
- Performance optimization
- Production deployment

9. Compliance and Legal Considerations

9.1 Cannabis Regulations

- Compliance with state-specific cannabis laws
- Age verification requirements
- Transaction limits and restrictions
- Record keeping requirements

9.2 Business Compliance

- B2B transaction regulations
- Tax compliance across states
- Data privacy regulations
- Terms of service and privacy policies

10. Risk Assessment

10.1 Technical Risks

- PayloadCMS learning curve
- Integration complexity with external APIs
- API reliability and third-party system dependencies
- Data synchronization conflicts and consistency issues
- Performance scaling challenges
- Third-party service dependencies

10.2 Business Risks

- Regulatory changes
- Payment processing limitations
- Market competition
- Compliance violations
- External system downtime affecting seller operations

10.3 Mitigation Strategies

- Thorough documentation and training
- Phased development approach with API integration as separate phase

- Robust error handling and fallback mechanisms for API failures
- Regular compliance reviews
- Contingency planning for critical dependencies
- API monitoring and alerting systems

11. Testing Strategy

11.1 Testing Types

- Unit testing for core functions
- Integration testing for APIs
- User acceptance testing
- Security penetration testing
- Performance load testing

11.2 Compliance Testing

- State regulation compliance verification
- Age verification system testing
- Transaction logging accuracy
- Data privacy compliance

11.3 API Integration Testing

- External system connectivity testing
- Data synchronization accuracy verification
- API error handling and recovery testing
- Performance testing under high API load
- Security testing for API credentials and data transmission

12. Deployment and Maintenance

12.1 Deployment Strategy

- Staging environment setup
- Production deployment procedures
- Database migration strategies
- Rollback procedures

12.2 Ongoing Maintenance

- Regular security updates
- Performance monitoring
- Bug fix procedures
- Feature enhancement process

13. Documentation Requirements

13.1 Technical Documentation

- API documentation
- Database schema documentation
- Deployment procedures
- System architecture diagrams

13.2 User Documentation

- User guides for buyers and sellers
- Admin documentation
- FAQ and troubleshooting guides
- Video tutorials

14. Success Metrics

14.1 Technical Metrics

- System uptime percentage
- Page load time averages
- API response times
- Error rates and resolution times

14.2 Business Metrics

- User registration rates
- Transaction volume
- User engagement metrics
- Customer satisfaction scores

15. Budget and Resource Allocation

15.1 Development Resources

- Full-stack developers (2-3)
- UI/UX designer (1)
- DevOps engineer (1)
- Project manager (1)
- QA tester (1)

15.2 Technology Costs

- PayloadCMS licensing
- Hosting and infrastructure
- Third-party service subscriptions
- Security and compliance tools

This document serves as the foundation for the B2B Cannabis Marketplace project and should be reviewed and updated throughout the development process to ensure alignment with business objectives and technical requirements.