

DAOforge Project Plan

Executive Summary

DAOforge will be a comprehensive platform designed to simplify the creation, management, and operation of Decentralized Autonomous Organizations (DAOs). This project plan outlines the detailed specifications, technical architecture, development roadmap, monetization implementation, and security considerations for building DAOforge.

The platform will address key pain points in the DAO ecosystem, including complex governance processes, treasury management challenges, contributor coordination inefficiencies, and community engagement limitations. By providing an intuitive, feature-rich solution with multi-chain support, DAOforge aims to become the leading platform for DAO tooling and governance in the Web3 space.

1. Detailed Feature Specifications

1.1 DAO Creation Wizard

Functionality Details

- **Template-Based Creation:** A step-by-step wizard with pre-configured templates for different DAO types (investment DAOs, service DAOs, social DAOs, protocol DAOs)
- **Governance Model Customization:** Options for voting mechanisms, proposal thresholds, quorum requirements, and voting periods
- **Multi-Chain Deployment:** Smart contract deployment on Ethereum, Polygon, Arbitrum, Optimism, and Solana
- **Legal Wrapper Integration:** Options for legal entity formation in crypto-friendly jurisdictions (Wyoming DAO LLC, Cayman Foundation, Swiss Association)
- **Token Creation:** ERC-20/SPL token generation with customizable tokenomics (supply, distribution, vesting)
- **Custom Branding:** Ability to customize the DAO's visual identity (logo, colors, domain)

User Stories

1. **As a DAO founder**, I want to create a DAO with minimal technical knowledge so that I can focus on my community and mission.
 - **Acceptance Criteria:**
 - User can complete DAO creation in less than 15 minutes
 - No coding knowledge required
 - Clear explanations for each decision point
 - Preview functionality before deployment
2. **As a protocol developer**, I want to set up a governance structure for my DeFi protocol so that token holders can participate in decision-making.
 - **Acceptance Criteria:**
 - Support for token-weighted voting
 - Ability to define proposal categories with different thresholds
 - Integration with existing token contracts
 - Customizable voting parameters
3. **As a legal compliance officer**, I want to ensure our DAO has appropriate legal protection so that contributors are shielded from liability.
 - **Acceptance Criteria:**

- Clear explanation of legal wrapper options
- Document generation for selected legal structure
- Compliance checklist for different jurisdictions
- Integration with legal service providers

UI/UX Considerations

- Intuitive progress indicator showing completion status
- Interactive tooltips explaining technical concepts
- Mobile-responsive design for creation on any device
- Real-time cost estimation for deployment
- Visual previews of the DAO dashboard during setup

1.2 Governance Hub

Functionality Details

- **Advanced Voting Mechanisms:**
 - Quadratic voting: Vote weight = square root of tokens held
 - Conviction voting: Vote strength increases over time
 - Holographic consensus: Multiple validation tracks
 - Delegation: Ability to delegate voting power to trusted representatives
 - Reputation-weighted voting: Votes weighted by on-chain reputation
- **Proposal System:**
 - Standardized templates for common proposal types
 - Rich text editor with markdown support
 - File attachment capabilities
 - Proposal tagging and categorization
 - Discussion threads linked to proposals
 - Version history and amendment tracking
- **Execution Framework:**
 - Off-chain voting with on-chain execution bridges
 - Timelock functionality for security
 - Multi-signature requirements for critical actions
 - Automated execution of approved proposals
 - Execution status tracking and verification
- **Analytics and Insights:**
 - Voter participation metrics
 - Proposal success/failure analysis
 - Governance health indicators
 - Voter behavior patterns
 - AI-powered governance recommendations

User Stories

1. **As a DAO member**, I want to easily understand and vote on proposals so that I can participate in governance without spending hours researching.
 - **Acceptance Criteria:**
 - AI-generated proposal summaries
 - Visual representation of proposal impacts
 - One-click voting process
 - Mobile notification for new proposals
 - Voting deadline reminders
2. **As a DAO administrator**, I want to create structured proposal templates so that proposals are consistent and contain all necessary information.
 - **Acceptance Criteria:**
 - Template editor with customizable fields
 - Ability to make certain fields required
 - Option to add conditional logic to templates

- Template library with sharing capabilities
- 3. **As a governance analyst**, I want to access comprehensive voting data so that I can improve our governance processes.
 - **Acceptance Criteria:**
 - Exportable voting records
 - Visual analytics dashboard
 - Comparative analysis between proposals
 - Voter segmentation analysis
 - Historical trend visualization

UI/UX Considerations

- Clear visual distinction between active, pending, and completed proposals
- Intuitive voting interface with confirmation steps
- Accessible design for users with disabilities
- Dark/light mode options
- Customizable dashboard views based on user preferences

1.3 Treasury Management

Functionality Details

- **Multi-Signature Wallet Integration:**
 - Support for Gnosis Safe, Multisig, and custom multi-sig contracts
 - Configurable approval thresholds and signers
 - Transaction batching capabilities
 - Emergency recovery options
- **Treasury Diversification:**
 - Automated portfolio rebalancing
 - Dollar-cost averaging for asset acquisition
 - Integration with DeFi protocols for yield generation
 - Risk assessment tools for treasury assets
- **Financial Operations:**
 - Recurring payment scheduling
 - Expense categorization and tagging
 - Invoice generation and payment tracking
 - Payroll management for contributors
 - Fiat on/off ramps via partner integrations
- **Reporting and Analytics:**
 - Real-time treasury dashboard
 - Expense tracking by category
 - Income and expense projections
 - Tax reporting assistance
 - Custom report generation

User Stories

1. **As a DAO treasurer**, I want to automate routine treasury operations so that I can reduce manual work and potential errors.
 - **Acceptance Criteria:**
 - Scheduled transaction functionality
 - Approval workflow for automated transactions
 - Notification system for completed transactions
 - Audit logs for all automated activities
2. **As a DAO contributor**, I want to submit expense reports and receive compensation in my preferred currency so that I can be paid promptly for my work.
 - **Acceptance Criteria:**
 - Expense submission form with receipt upload

- Currency preference settings
 - Status tracking for payment requests
 - Integration with popular crypto wallets
3. **As a DAO stakeholder**, I want to understand how treasury funds are being utilized so that I can ensure responsible financial management.
- **Acceptance Criteria:**
 - Public treasury dashboard option
 - Categorized spending visualization
 - Historical spending patterns
 - Comparison against budget allocations

UI/UX Considerations

- Real-time balance updates and notifications
- Visual representations of treasury allocation
- Simplified transaction approval interface
- Clear security indicators for sensitive operations
- Responsive design for mobile treasury management

1.4 Contributor Coordination

Functionality Details

- **Task Management System:**
 - Project and task creation with detailed descriptions
 - Priority and deadline settings
 - Skill tagging and requirements specification
 - Progress tracking and status updates
 - Integration with GitHub, Trello, and Notion
- **Bounty Marketplace:**
 - Bounty creation with reward specification
 - Application and submission process
 - Review and approval workflow
 - Automated reward distribution
 - Dispute resolution mechanism
- **Contributor Profiles:**
 - Skill and experience documentation
 - On-chain reputation tracking
 - Work history and contribution metrics
 - Availability and rate information
 - Endorsement and review system
- **Compensation Management:**
 - Multiple payment methods (tokens, stablecoins, fiat)
 - Vesting schedule creation and management
 - Performance-based compensation models
 - Tax documentation generation
 - Payment history tracking

User Stories

1. **As a project coordinator**, I want to create and assign tasks to the most qualified contributors so that work is completed efficiently and effectively.
 - **Acceptance Criteria:**
 - Skill-based contributor matching
 - Task dependency mapping
 - Resource allocation visualization
 - Automated notifications for task assignments
 - Progress tracking dashboard
2. **As a contributor**, I want to discover opportunities that match my skills so that I

can contribute meaningfully and earn rewards.

- **Acceptance Criteria:**
 - Personalized opportunity feed
 - Skill-based filtering options
 - Clear compensation information
 - One-click application process
 - Work history portfolio generation
- 3. **As a DAO leader**, I want to track contributor performance so that I can ensure quality work and fair compensation.
 - **Acceptance Criteria:**
 - Contribution metrics dashboard
 - Performance review tools
 - Compensation adjustment interface
 - Contributor retention analytics
 - Team composition visualization

UI/UX Considerations

- Kanban-style task management interface
- Clear status indicators for tasks and bounties
- Intuitive skill matching visualization
- Streamlined onboarding flow for new contributors
- Mobile-optimized interface for on-the-go coordination

1.5 Community Engagement

Functionality Details

- **Discussion Forums:**
 - Category-based organization
 - Rich text formatting with media embedding
 - Polling and voting integration
 - Moderation tools and reporting system
 - Thread pinning and highlighting
- **Member Management:**
 - Customizable onboarding workflows
 - Role-based access control
 - Member directory with filtering
 - Activity tracking and engagement metrics
 - Automated inactive member outreach
- **Educational Resources:**
 - Knowledge base with search functionality
 - Interactive tutorials and guides
 - Governance participation training
 - Role-specific educational paths
 - Resource contribution system
- **Engagement Mechanics:**
 - Contribution-based reputation system
 - Achievement badges and milestones
 - Leaderboards for various activities
 - Seasonal governance competitions
 - Reward mechanisms for consistent participation

User Stories

1. **As a new DAO member**, I want to understand how to participate effectively so that I can contribute value quickly.
 - **Acceptance Criteria:**
 - Personalized onboarding checklist

- Interactive tutorials for key platform features
 - Mentor matching option
 - Progress tracking for onboarding completion
 - Resource recommendations based on interests
- 2. **As a community manager**, I want to identify and recognize active contributors so that I can maintain high engagement levels.
 - **Acceptance Criteria:**
 - Engagement analytics dashboard
 - Automated recognition system
 - Custom badge creation tools
 - Engagement campaign management
 - Impact measurement for engagement initiatives
- 3. **As a DAO member**, I want to participate in discussions and decision-making so that my voice is heard in the community.
 - **Acceptance Criteria:**
 - Intuitive discussion interface
 - Notification system for relevant topics
 - Integrated voting on discussion points
 - Mobile-optimized participation options
 - Discussion summary generation

UI/UX Considerations

- Community activity feed with customizable filters
- Visual reputation and contribution indicators
- Gamified elements that encourage participation
- Accessibility features for diverse user needs
- Notification preferences and management

2. Technical Architecture

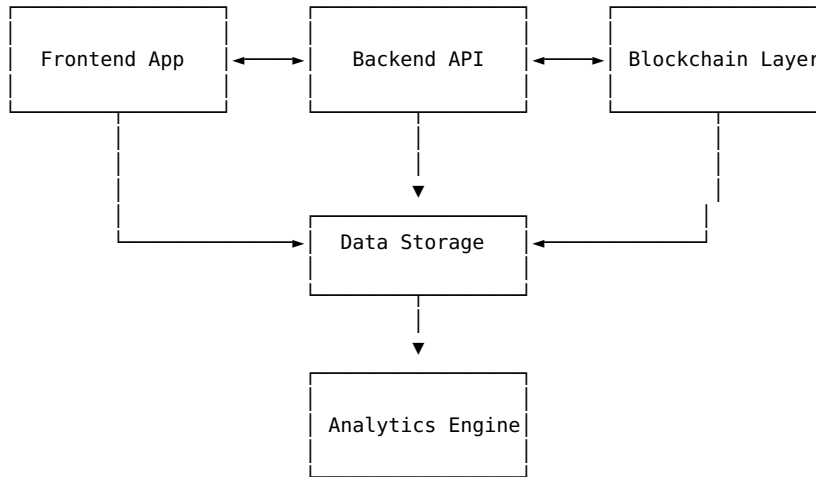
2.1 System Components and Interactions

Core System Components

1. **Frontend Application**
 - User interface for all platform features
 - Responsive design for desktop and mobile
 - Progressive web app capabilities
 - Internationalization support
2. **Backend API Service**
 - RESTful and GraphQL endpoints
 - Authentication and authorization
 - Business logic implementation
 - Third-party service integrations
3. **Blockchain Integration Layer**
 - Multi-chain connection management
 - Transaction construction and signing
 - Smart contract interaction
 - Event monitoring and processing
4. **Data Storage Layer**
 - Relational database for structured data
 - IPFS integration for decentralized storage
 - Caching system for performance optimization
 - Data backup and recovery mechanisms
5. **Analytics Engine**
 - Data collection and processing
 - Metrics calculation and aggregation

- Visualization data preparation
- Machine learning model integration

Component Interactions



External Integrations

- Wallet providers (MetaMask, WalletConnect, Phantom)
- Legal service providers for entity formation
- DeFi protocols for treasury management
- Identity verification services
- Payment processors for fiat on/off ramps
- Project management tools (GitHub, Trello, Notion)
- Communication platforms (Discord, Telegram)

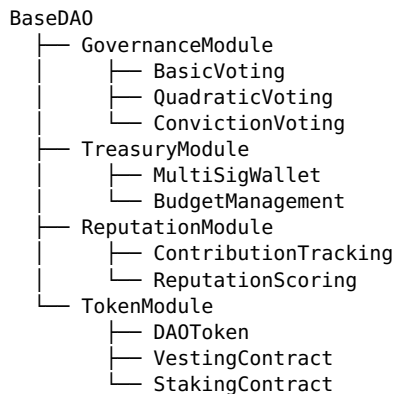
2.2 Smart Contract Architecture

Core Smart Contract Modules

- 1. DAO Factory**
 - Creates and deploys new DAO instances
 - Manages template registry
 - Handles initial configuration
 - Registers DAOs in global registry
- 2. Governance Module**
 - Implements voting mechanisms
 - Manages proposal lifecycle
 - Handles delegation logic
 - Executes approved transactions
- 3. Treasury Module**
 - Multi-signature functionality
 - Asset management capabilities
 - Payment processing
 - Budget allocation
- 4. Reputation System**
 - Tracks on-chain contributions
 - Calculates reputation scores
 - Manages reputation-based permissions
 - Implements reputation transfer rules
- 5. Token Module**
 - ERC-20/SPL token implementation

- Vesting contract functionality
- Staking mechanisms
- Fee distribution system

Smart Contract Inheritance Structure



Cross-Chain Implementation Strategy

- Ethereum: Solidity contracts with proxy pattern for upgradeability
- Polygon/Arbitrum/Optimism: Same contracts as Ethereum with chain-specific optimizations
- Solana: Native Rust programs with similar functionality
- Cross-chain messaging via LayerZero or Axelar for DAO-to-DAO interactions

2.3 Frontend and Backend Specifications

Frontend Architecture

- **Framework:** React.js with TypeScript
- **State Management:** Redux Toolkit with RTK Query
- **Styling:** Tailwind CSS with custom theming
- **Component Library:** Custom component system with accessibility focus
- **Web3 Integration:** ethers.js for Ethereum-compatible chains, @solana/web3.js for Solana
- **Key Libraries:**
 - react-router for navigation
 - formik and yup for form handling
 - recharts for data visualization
 - i18next for internationalization
 - jest and react-testing-library for testing

Backend Architecture

- **Framework:** Node.js with Express
- **API:** GraphQL with Apollo Server and REST endpoints
- **Authentication:** JWT with wallet signature verification
- **Database ORM:** Prisma
- **Task Processing:** Bull for background jobs
- **Key Libraries:**
 - web3.js for blockchain interactions
 - ipfs-http-client for IPFS integration
 - winston for logging
 - joi for validation
 - mocha and chai for testing

API Structure

- **GraphQL Schema Modules:**
 - User and authentication
 - DAO management
 - Governance and proposals
 - Treasury operations
 - Contributor coordination
 - Analytics and reporting
- **REST Endpoints:**
 - Authentication and user management
 - Blockchain transaction submission
 - File uploads and management
 - Webhook handlers for integrations
 - Health and status monitoring

2.4 Data Models and Storage Approach

Relational Database Models

1. **User Model**
 - Wallet addresses
 - Profile information
 - Notification preferences
 - Activity history
2. **DAO Model**
 - Configuration settings
 - Governance parameters
 - Member registry
 - Integration settings
3. **Proposal Model**
 - Content and metadata
 - Voting results
 - Execution status
 - Discussion references
4. **Treasury Model**
 - Transaction history
 - Asset balances
 - Budget allocations
 - Payment schedules
5. **Task Model**
 - Description and requirements
 - Assignment information
 - Status and progress
 - Compensation details

Decentralized Storage Strategy

- **IPFS Storage:**
 - Proposal content and attachments
 - Governance documentation
 - Community resources
 - Profile images and media
- **Arweave Integration:**
 - Permanent storage for critical governance records
 - Historical voting results
 - Treasury reports
 - Legal documentation

Caching Strategy

- Redis for high-performance caching
- In-memory caching for frequently accessed data
- CDN integration for static assets
- GraphQL caching with Apollo

Data Backup and Recovery

- Automated database backups (hourly, daily, weekly)
- Point-in-time recovery capabilities
- Geo-redundant storage for backups
- Disaster recovery procedures and testing

2.5 Integration Points with Blockchain Networks

Ethereum Ecosystem Integration

- JSON-RPC connections to Ethereum, Polygon, Arbitrum, and Optimism
- Gas estimation and optimization
- Transaction monitoring and receipt verification
- Event subscription and processing
- ENS resolution for human-readable addresses

Solana Integration

- RPC connections to Solana mainnet and testnet
- Transaction construction and signing
- Program account data parsing
- Commitment level management
- SPL token interactions

Wallet Integration

- MetaMask and browser extension wallets
- WalletConnect for mobile wallet support
- Phantom and Solflare for Solana
- Hardware wallet support (Ledger, Trezor)
- Multi-wallet account management

Blockchain Data Indexing

- TheGraph integration for Ethereum ecosystem data
- Custom indexers for Solana data
- Real-time event processing
- Historical data access and analysis

Oracle Integrations

- Chainlink for external data feeds
- Pyth Network for Solana price data
- UMA for optimistic oracle functionality
- API3 for direct API connections

3. Development Roadmap

3.1 Phased Implementation Approach

Phase 1: Foundation (Months 1-3)

- **Objectives:**
 - Establish core platform architecture
 - Implement basic DAO creation functionality
 - Develop simple governance mechanisms
 - Create initial user interface
- **Key Deliverables:**
 - System architecture documentation
 - Development environment setup
 - Core smart contracts (Ethereum only)
 - Basic frontend with wallet connection
 - Simple DAO creation wizard
 - Fundamental voting functionality
- **Milestones:**
 - M1.1: Architecture design approval (Week 2)
 - M1.2: Smart contract development complete (Week 8)
 - M1.3: Basic frontend implementation (Week 10)
 - M1.4: Internal alpha testing (Week 12)

Phase 2: Core Functionality (Months 4-6)

- **Objectives:**
 - Implement treasury management features
 - Develop contributor coordination system
 - Enhance governance capabilities
 - Improve user experience
- **Key Deliverables:**
 - Multi-signature treasury implementation
 - Task and bounty management system
 - Advanced proposal templates
 - Enhanced voting mechanisms
 - Improved UI/UX with user feedback
 - Initial analytics dashboard
- **Milestones:**
 - M2.1: Treasury management release (Week 16)
 - M2.2: Contributor system implementation (Week 20)
 - M2.3: Enhanced governance features (Week 22)
 - M2.4: Beta testing with select partners (Week 24)

Phase 3: Advanced Features (Months 7-9)

- **Objectives:**
 - Implement advanced governance features
 - Develop comprehensive analytics
 - Create community engagement tools
 - Launch token and monetization features
- **Key Deliverables:**
 - AI-powered governance tools
 - Comprehensive analytics system
 - Community forum and engagement features
 - FORGE token implementation
 - Subscription tier infrastructure
 - Payment processing integration
- **Milestones:**
 - M3.1: Analytics system launch (Week 28)
 - M3.2: Community features release (Week 30)
 - M3.3: FORGE token deployment (Week 32)
 - M3.4: Subscription system implementation (Week 36)

Phase 4: Expansion (Months 10-12)

- **Objectives:**
 - Implement multi-chain support
 - Develop ecosystem integrations
 - Enhance security and scalability
 - Prepare for full public launch
- **Key Deliverables:**
 - Multi-chain deployment capabilities
 - Integration marketplace
 - API documentation and developer tools
 - Performance optimization
 - Comprehensive security audits
 - Marketing and launch materials
- **Milestones:**
 - M4.1: Multi-chain support release (Week 40)
 - M4.2: Integration marketplace launch (Week 44)
 - M4.3: Security audit completion (Week 46)
 - M4.4: Public launch (Week 48)

3.2 MVP Definition and Scope

MVP Core Features

1. **DAO Creation**
 - Basic template selection
 - Ethereum deployment only
 - Simple configuration options
 - Custom token creation
2. **Governance Essentials**
 - Basic proposal creation and voting
 - Simple majority voting mechanism
 - Proposal discussion threads
 - Vote delegation
3. **Treasury Basics**
 - Multi-signature wallet integration
 - Basic transaction execution
 - Treasury balance dashboard
 - Simple payment processing
4. **User Experience**
 - Intuitive user interface
 - Wallet connection
 - Basic user profiles
 - Mobile-responsive design

MVP Technical Scope

- Ethereum mainnet and testnet support only
- Core smart contracts with basic functionality
- Simplified frontend with essential features
- Basic API with fundamental endpoints
- IPFS integration for proposal storage
- Essential security measures

MVP Success Criteria

- Successful creation of at least 10 DAOs during beta
- Minimum of 100 governance proposals processed
- User satisfaction rating of 7/10 or higher

- Less than 5% error rate in transactions
- Average task completion time under 5 minutes

3.3 Post-MVP Feature Roadmap

Q1 Post-Launch

- **Advanced Governance**
 - Quadratic voting implementation
 - Conviction voting mechanism
 - Proposal categories and templates
 - Governance analytics
- **Enhanced Treasury**
 - Automated treasury diversification
 - Yield generation strategies
 - Budget allocation tools
 - Financial reporting

Q2 Post-Launch

- **Contributor System**
 - Task management system
 - Bounty marketplace
 - Reputation tracking
 - Compensation management
- **Multi-Chain Expansion**
 - Polygon integration
 - Arbitrum integration
 - Cross-chain governance capabilities
 - Chain-specific optimizations

Q3 Post-Launch

- **Community Features**
 - Discussion forums
 - Member management
 - Educational resources
 - Engagement mechanics
- **Integration Ecosystem**
 - Developer API
 - Integration marketplace
 - Partner program
 - Custom integration services

Q4 Post-Launch

- **Enterprise Features**
 - Legal compliance tools
 - Advanced security options
 - Custom governance models
 - White-label solutions
- **AI Enhancements**
 - Proposal analysis and recommendations
 - Treasury optimization suggestions
 - Contributor matching algorithms
 - Governance health monitoring

4. Monetization Implementation

4.1 Detailed Token Economics for FORGE Token

Token Fundamentals

- **Token Standard:** ERC-20 (Ethereum), with wrapped versions for other chains
- **Total Supply:** 100,000,000 FORGE
- **Token Utility:**
 - Governance participation
 - Fee discounts
 - Premium feature access
 - Staking rewards
 - DAO-to-DAO coordination

Token Distribution

- **Team and Advisors:** 15% (15,000,000 FORGE)
 - 4-year vesting with 1-year cliff
 - Quarterly unlocks after cliff
- **Investors:** 20% (20,000,000 FORGE)
 - 3-year vesting with 6-month cliff
 - Monthly unlocks after cliff
- **Ecosystem Development:** 25% (25,000,000 FORGE)
 - Controlled by DAOforge DAO
 - Used for grants, partnerships, and incentives
 - 5-year release schedule
- **Community Rewards:** 30% (30,000,000 FORGE)
 - User acquisition and retention incentives
 - Contributor rewards
 - Governance participation incentives
 - 5-year distribution schedule
- **Treasury Reserve:** 10% (10,000,000 FORGE)
 - Controlled by multi-sig
 - Strategic reserves for platform development
 - Market operations if necessary

Staking Mechanism

- **Staking Tiers:**
 - Bronze: 1,000 FORGE
 - Silver: 5,000 FORGE
 - Gold: 25,000 FORGE
 - Platinum: 100,000 FORGE
- **Staking Benefits:**
 - Fee discounts (10-50% based on tier)
 - Revenue sharing (proportional to stake)
 - Governance weight multipliers (1.1x-1.5x)
 - Premium feature access
 - Early access to new features
- **Staking Periods:**
 - Flexible: No lock, base benefits
 - 3-month: 1.2x rewards multiplier
 - 6-month: 1.5x rewards multiplier
 - 12-month: 2x rewards multiplier

Token Utility Implementation

- **Fee Discount System:**
 - Smart contract verification of staked tokens

- Automatic discount application
- Tiered discount structure
- **Revenue Sharing:**
 - 30% of platform revenue allocated to stakers
 - Weekly distribution via smart contract
 - Proportional to stake amount and duration
- **Governance Weighting:**
 - On-chain verification of staked tokens
 - Voting power calculation based on stake
 - Delegation capabilities with staked tokens

4.2 Subscription Tier Specifications

Free Tier

- **Features:**
 - Basic DAO creation (1 DAO per account)
 - Standard templates only
 - Simple majority voting
 - Basic treasury management
 - Limited proposal history (30 days)
 - Community forum access
 - Standard support (email only)
- **Limitations:**
 - No custom branding
 - No advanced governance features
 - Maximum of 100 members
 - No API access
 - Basic analytics only

Pro Tier (\$99/month)

- **Features:**
 - Multiple DAOs (up to 5)
 - All governance mechanisms
 - Advanced treasury tools
 - Custom branding options
 - Unlimited proposal history
 - Task management system
 - Priority support (email + chat)
 - Basic API access
 - Comprehensive analytics
- **FORGE Token Integration:**
 - 20% discount when paid in FORGE
 - 3-month subscription: 100 FORGE bonus
 - 6-month subscription: 250 FORGE bonus
 - 12-month subscription: 600 FORGE bonus

Enterprise Tier (\$499/month)

- **Features:**
 - Unlimited DAOs
 - Custom governance models
 - Advanced treasury strategies
 - White-label options
 - Legal compliance tools
 - Dedicated support manager
 - Full API access
 - Custom analytics

- SLA guarantees
- Training and onboarding
- **FORGE Token Integration:**
 - 30% discount when paid in FORGE
 - 3-month subscription: 600 FORGE bonus
 - 6-month subscription: 1,500 FORGE bonus
 - 12-month subscription: 4,000 FORGE bonus

Implementation Details

- **Subscription Management System:**
 - Recurring billing integration
 - Upgrade/downgrade functionality
 - Proration for plan changes
 - Multiple payment methods (crypto and fiat)
- **Feature Access Control:**
 - Role-based access control system
 - Feature flagging based on subscription
 - Graceful degradation when downgrading
 - Trial period for premium features
- **Billing and Invoicing:**
 - Automated invoice generation
 - Payment reminder system
 - Receipt and tax documentation
 - Account management dashboard

4.3 Fee Structure and Implementation

Transaction Fees

- **Treasury Transactions:**
 - 0.1% fee on outgoing transactions
 - Minimum fee: \$1 equivalent
 - Maximum fee: \$500 equivalent
 - Fee waived for internal transfers
- **Governance Actions:**
 - Proposal creation: \$5 equivalent
 - Execution of approved proposals: 0.2% of value (for value transfer proposals)
 - Fee waived for non-financial proposals
- **Integration Marketplace:**
 - 5% commission on paid integrations
 - Revenue sharing with integration developers (70/30 split)

Fee Collection Mechanism

- **Smart Contract Implementation:**
 - Fee calculation logic in treasury contracts
 - Automatic fee deduction on transactions
 - Fee splitting to designated wallets
- **Off-Chain Implementation:**
 - Fee tracking in database
 - Periodic settlement for subscription fees
 - Invoice generation and payment tracking
- **Fee Discount System:**
 - FORGE token staking verification
 - Automatic discount application
 - Discount tier management

Fee Adjustment Mechanism

- **Governance-Controlled Parameters:**
 - Fee percentages adjustable via governance
 - Discount rates modifiable by governance
 - New fee types can be added or removed
- **Market-Based Adjustments:**
 - Automatic adjustment based on gas prices
 - Currency conversion for stable fee value
 - Competitive analysis-based adjustments

4.4 Revenue Distribution Mechanisms

Revenue Streams

- **Subscription Fees:** Monthly/annual subscription payments
- **Transaction Fees:** Percentage fees on treasury transactions
- **Governance Fees:** Fees for proposal creation and execution
- **Integration Fees:** Revenue from marketplace integrations
- **Service Fees:** Custom development and consulting

Distribution Allocation

- **Staker Rewards:** 30% of all revenue
 - Distributed weekly to FORGE stakers
 - Proportional to stake amount and duration
- **Platform Development:** 40% of all revenue
 - Engineering and product development
 - Infrastructure and operational costs
 - Security audits and improvements
- **Marketing and Growth:** 20% of all revenue
 - User acquisition campaigns
 - Community building initiatives
 - Partnership development
 - Educational content creation
- **Treasury Reserve:** 10% of all revenue
 - Strategic investments
 - Emergency fund
 - Market operations

Implementation Details

- **Revenue Collection:**
 - Multi-currency treasury wallet
 - Automated conversion to stablecoins
 - Accounting system for revenue tracking
- **Distribution Smart Contract:**
 - Weekly snapshot of eligible stakers
 - Proportional calculation of rewards
 - Automated distribution to stakers
- **Treasury Management:**
 - Multi-signature control of treasury
 - Transparent allocation tracking
 - Regular financial reporting
 - Governance oversight of spending

5. Security Considerations

5.1 Smart Contract Security Measures

Development Practices

- **Secure Coding Standards:**
 - Adherence to Solidity best practices
 - Comprehensive test coverage (>95%)
 - Static analysis tool integration
 - Formal verification for critical functions
- **Code Review Process:**
 - Multi-level peer review
 - Security-focused code reviews
 - External expert reviews
 - Public code repositories for transparency
- **Testing Framework:**
 - Unit tests for all functions
 - Integration tests for contract interactions
 - Fuzz testing for unexpected inputs
 - Scenario testing for complex workflows

Audit Strategy

- **Pre-Deployment Audits:**
 - Minimum of two independent security audits
 - Specialized audits for cryptographic functions
 - Economic attack vector analysis
 - Formal verification where applicable
- **Continuous Security:**
 - Regular follow-up audits for updates
 - Automated monitoring for suspicious activity
 - Vulnerability scanning and reporting
 - Quarterly security assessments

Security Features

- **Timelock Mechanisms:**
 - Mandatory delay for critical operations
 - Cancellation capability during timelock
 - Graduated timelocks based on risk level
- **Emergency Procedures:**
 - Pause functionality for critical functions
 - Emergency shutdown capabilities
 - Secure upgrade mechanisms
 - Disaster recovery procedures
- **Access Controls:**
 - Role-based permission system
 - Multi-signature requirements for critical actions
 - Privilege separation principles
 - Least privilege implementation

5.2 User Data Protection

Data Privacy Framework

- **Data Classification:**
 - Public data: On-chain information
 - Protected data: User profiles and preferences
 - Sensitive data: Private keys and credentials

- **Data Storage Policies:**
 - Minimization of off-chain personal data
 - Encryption for all sensitive information
 - Decentralized storage where appropriate
 - Regular data purging for unnecessary information
- **User Consent Management:**
 - Transparent data usage policies
 - Granular consent options
 - Data export capabilities
 - Right to be forgotten implementation

Authentication Security

- **Wallet Authentication:**
 - Message signing for authentication
 - Session management with secure tokens
 - Automatic session expiration
 - Device tracking and management
- **Two-Factor Authentication:**
 - Optional 2FA for sensitive operations
 - Multiple 2FA method support
 - Recovery mechanisms
 - Anti-phishing protections
- **Access Monitoring:**
 - Login notification system
 - Suspicious activity detection
 - IP and location tracking
 - Account activity logs

Compliance Measures

- **Regulatory Alignment:**
 - GDPR compliance for European users
 - CCPA compliance for California residents
 - KYC integration where legally required
 - Regular compliance reviews and updates
- **Privacy by Design:**
 - Privacy impact assessments
 - Data protection impact assessments
 - Regular privacy audits
 - Privacy-enhancing technologies

5.3 Treasury Security

Multi-Signature Implementation

- **Signature Threshold:**
 - Configurable M-of-N signature requirement
 - Recommended minimum of 3-of-5 for main treasury
 - Tiered thresholds based on transaction value
 - Emergency override procedures
- **Signer Management:**
 - Secure signer addition and removal
 - Regular rotation of signers
 - Backup signer designation
 - Signer activity monitoring
- **Hardware Security:**
 - Hardware wallet integration
 - Cold storage options for large treasuries

- Air-gapped signing procedures
- Physical security recommendations

Treasury Monitoring

- **Automated Alerts:**
 - Large transaction notifications
 - Unusual activity detection
 - Balance change alerts
 - Failed transaction monitoring
- **Regular Auditing:**
 - Daily balance reconciliation
 - Transaction verification procedures
 - External treasury audits
 - Transparent reporting to stakeholders
- **Risk Management:**
 - Asset diversification recommendations
 - Exposure limits for different assets
 - Counterparty risk assessment
 - Insurance options for treasury assets

Recovery Mechanisms

- **Social Recovery:**
 - Distributed key recovery system
 - Trusted guardian designation
 - Time-locked recovery procedures
 - Regular recovery testing
- **Backup Procedures:**
 - Secure backup of critical information
 - Geographically distributed backups
 - Encrypted backup storage
 - Regular restoration testing
- **Contingency Planning:**
 - Treasury migration procedures
 - Emergency response playbooks
 - Incident response team designation
 - Regular drills and simulations

6. Conclusion

The DAOforge project plan outlines a comprehensive approach to building a leading DAO tooling and governance platform. By focusing on user experience, robust technical architecture, and sustainable monetization, DAOforge aims to address the key pain points in the current DAO ecosystem.

The phased implementation approach allows for iterative development and continuous feedback incorporation, ensuring that the platform evolves to meet user needs. With a strong emphasis on security, scalability, and multi-chain support, DAOforge is positioned to become the go-to solution for DAO creation and management in the Web3 space.

The success of DAOforge will be measured by its adoption rate, user satisfaction, and the growth of its ecosystem. By providing a comprehensive suite of tools that simplify DAO operations, DAOforge will empower communities to effectively coordinate and govern in a decentralized manner, furthering the adoption and impact of DAOs in the broader ecosystem.