**Product Requirements Document (PRD): Middleware Solution for o3 Capital**

**Version:1.1**

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**1. Introduction**

**1.1 Background**

O3 Capital, a pioneering fintech company and Nigeria's first non-bank credit card issuer, aims to expand its business operations by offering **Card Management as a Service (CMaaS)** to corporate businesses and other financial institutions. This middleware solution will act as a strategic junction to bridge O3 Capital’s robust infrastructure with client systems, enabling seamless card issuance, management, and customization.

The middleware will cater to corporate organizations and other financial institutions, allowing them to manage their own card programs while O3 Capital maintains control of overarching operations.

**2. Objectives**

1. Provide a centralized middleware platform for corporate organizations and other financial institutions to leverage O3 Capital’s card services.
2. Enable seamless integration via APIs for card issuance, customization, and management.
3. Offer a sandbox environment for testing and a secure transition to live APIs.
4. Allow corporate organizations to manage their staff portfolios, track expenses, and integrate with third-party tools like accounting software.
5. Ensure robust tracking, compliance, and support mechanisms for both O3 Capital and its clients.

**3. User Types**

1. Corporate Administrators: Employees within corporate organizations responsible for managing company cards, approving expenses, and overseeing card programs.
2. Cardholders: Employees within corporate organizations who receive and use company-issued cards.
3. O3 Capital Administrators: Employees within O3 Capital responsible for managing the middleware platform, onboarding clients, and providing support.

**4. User Persona**

1. The Budget-Conscious CFO": A Chief Financial Officer concerned with cost optimization and efficient expense management.
   1. Needs: Easy-to-use dashboards for expense tracking, real-time alerts for budget overruns, and seamless integration with accounting software
2. The Tech-Savvy HR Manager": An HR Manager who values automation and efficiency. Needs:
   1. A user-friendly interface for employee card provisioning, quick resolution of card issues, and access to employee spending data
3. The On-the-Go Employee": An employee who frequently travels for business and requires a convenient and secure payment solution. Needs
   1. Easy access to card information, convenient mobile app for transactions, and 24/7 customer support

**5. Core Deliverables**

1. API Gateway
2. Client Portal
3. O3 Capital portal

**6. Key Features and Functionalities**

**6.1 API Management**

1. **Sandbox Environment:**
   * Enable corporate clients to test APIs with mock data.
   * Simulate card issuance, transaction tracking, and expense reporting.
   * Provide real-time feedback and debugging logs for API testing.
2. **Live Environment:**
   * Seamlessly transition from sandbox to live APIs upon successful testing.
   * Secure endpoints with authentication mechanisms (e.g., OAuth 2.0).
   * Enable real-time processing for card issuance and management.
3. **API Documentation:**
   * Comprehensive, interactive API documentation using platforms like Swagger.
   * Include code snippets, request/response samples, and usage limits.

**6.2 Corporate Entity Portal**

1. **Dashboard**:
   * Real-Time Client Activity Dashboard: Display key metrics such as card issuance, transaction trends, and active users.
   * Support Request Management**:** Log and track client support requests with status indicators (e.g., "Open," "In Progress," "Resolved").
2. **Card Issuance and Management:**
   * Enable clients to request credits from o3 capital
   * Enable the clients to distribute credits to their staff
   * Allow corporate clients to issue prepaid or postpaid cards to employees.
   * Allow corporate clients to customize cards with logos, colors, and designs.
   * Enable functionalities like blocking/unblocking cards.
   * Enable card activations/deactivations
   * Enable pin activation/deactivation and change of pins
3. **Expense Management:**
   * Track all card transactions across their portfolio.
   * Budget controls and spending limits.
     1. Customize daily/monthly spend for users
   * Generate detailed expense reports.
   * Integrate with accounting software (e.g., QuickBooks).
4. **Contact Support**
   * Allow clients to log issues and track resolution
5. **Role-Based Access Control (RBAC):**
   * Define roles for administrators, finance teams, and staff.
   * Restrict or grant permissions based on role hierarchies.
6. **KYC Management:**
   * Support Level 1 and Level 2 KYC processes.
   * Allow corporate clients to upload and manage required documents for their staff.
   * Provide real-time verification feedback.
7. **Transaction Statements:**
   * Allow corporate organizations to view transaction statements for all cards under their portfolio.
   * Provide staff-specific statements for internal tracking.
8. **Audit Logs**
   * Track activities of users on the corporate entity portal

**6.3 O3 Capital Admin Portal**

1. **Dashboard**:
   * New Client Signup Workflow: Display a list of pending client signups requiring approval
   * Real-Time Client Activity Dashboard: Display key metrics such as card issuance, transaction trends, and active clients.
   * Client Performance Metrics**:** Show client-specific performance data, including transaction volume, revenue generated, and card usage
   * Support Request Management**:** Log and track client support requests with status indicators (e.g., "Open," "In Progress," "Resolved").
2. **Corporate Entity Management:**
   * Manage client onboarding, approvals, and configurations.
   * 2-level approval workflow for new clint signup
   * Monitor client activities, including card issuance and transaction trends.
3. **Client Management:**
   * Monitoring client activity and performance.
   * Generating reports on client usage and revenue.
   * Managing client support requests.
4. **Expense Management and Reporting:**
   * Generate aggregated reports on client usage, revenue, and card performance.
   * Track expenses and statements across all corporate organizations.
5. **Customer Support Module:**
   * Log and track complaints from corporate clients.
   * Allow O3 Capital to respond and resolve issues efficiently.
6. **Integration with Odoo CRM:**
   * Sync client data with Odoo CRM for streamlined customer management.
   * Enable CRM to fetch real-time insights into client activities.
7. **Audit Logs**
   * Track and log all user activities on the portal (e.g., logins, approvals, configuration changes).
   * Display audit logs in a searchable and filterable table
8. **User Management:**
   * Allow administrators to block or unblock users.
   * Manage user roles and permissions (e.g., approvers, support staff, admins).
9. **Real-Time Notifications**:
   * Notify users of pending approvals, resolved support requests, or unusual client activity.
   * Provide email and in-app notifications for important updates.

**6.4 General Middleware Features**

1. **Security:**
   * Implement robust encryption for all data in transit and at rest (e.g., TLS, AES).
   * Provide role-based access control for both corporate clients and O3 Capital admins.
2. **Scalability:**
   * Ensure the middleware supports increasing numbers of users, clients, and transactions.
   * Use cloud-based solutions (e.g., AWS, Azure) for elastic scalability.
3. **Monitoring and Logging:**
   * Real-time monitoring of API usage, transactions, and system health.
   * Maintain audit logs for compliance and troubleshooting.
4. **Custom Branding:**
   * Allow corporate organizations to brand their portals with their logos and colors.
   * Provide customization options for reporting templates and dashboards.

**7. Non-Functional Requirements**

1. **Performance:**
   * Ensure the middleware can handle up to 10,000 concurrent API requests.
   * Response time for APIs should be under 200ms.
   * Ensure auto-refresh of application
2. **Availability:**
   * Guarantee 99.9% uptime with failover mechanisms in place.
3. **Compliance:**
   * Adhere to PCI-DSS standards for handling card-related data.
   * Comply with NDPR (Nigeria Data Protection Regulation).
4. **Scalability:**
   * Design the system to onboard up to 500 corporate clients and 1 million end-users.

**8. Implementation Plan**

1. **Phase 1:**
   * Build core middleware architecture with sandbox and live API environments.
   * Develop O3 admin portal for client management.
2. **Phase 2:**
   * Launch the corporate entity portal with card issuance and expense tracking features.
   * Integrate KYC workflows and reporting functionalities.
3. **Phase 3:**
   * Roll out advanced features like CRM integration and detailed analytics.
   * Conduct beta testing with a select group of clients.
4. **Phase 4:**
   * Full deployment and onboarding of all corporate clients.
   * Provide training and support for corporate users.

**9. Success Metrics**

1. **Adoption Rate:**
   * 70% of corporate clients boarded within the first 6 months.
2. **API Usage:**
   * Achieve an average of 1,000 API calls/day within the first quarter post-launch.
3. **Customer Satisfaction:**
   * Maintain a 90% satisfaction rate through feedback surveys.
4. **Revenue Growth:**
   * Increase revenue from card issuance services by 50% within the first year.

**10. Risks and Mitigation**

1. **Data Security Breach:**
   * Mitigation: Implement encryption, firewalls, and regular security audits.
2. **Integration Issues:**
   * Mitigation: Provide detailed API documentation and dedicated integration support.
3. **Scalability Challenges:**
   * Mitigation: Use cloud-based infrastructure for elastic scaling