Mobile Service App - Technical Business Analysis Document

Project Overview

Project aimed to enhance the Mobile Service App, improving user experience, security, and overall service efficiency. The project focused on **refining existing modules and integrating new functionalities, ensuring seamless customer interactions through an intuitive mobile interface.**

Problem Statement

As-Is State:

- Fragmented user experience with limited self-service options.
- Inefficient authentication and account management systems.
- Lack of seamless digital transaction tracking.
- Performance issues in service modules and API integrations.

To-Be State:

- Unified and optimized mobile experience.
- Secure and efficient authentication mechanisms.
- Enhanced self-service features for billing, top-up, and plan management.
- Improved API response times and backend optimization.

Solution Provided

Technologies Used:

- **Mobile App:** Android (Kotlin), iOS (Swift)
- **Backend:** Java Spring Boot, Node.js
- **Database:** MySQL, Redis (for caching)
- **Cloud Hosting:** AWS
- **Authentication:** OAuth 2.0, JWT
- **Payments & Billing:** Maybank API, BLC API

- **Notifications:** Firebase Cloud Messaging (FCM)
- **Security:** Two-Factor Authentication (2FA), Encrypted Transactions

Key Functionalities Implemented:

1. Authentication & Security Enhancements

- **Login Module:** MSISDN-based authentication with OTP validation.
- **Forgot PIN & Reset PIN:** Secure PIN retrieval using OTP authentication.
- **Biometric Authentication:** Fingerprint and Face ID login integration.

2. Account & Subscription Management

- **Profile Management:** Role-based access control and user preferences.
- **Switch Plan:** Seamless prepaid-to-postpaid migration.
- **Account Validity Extension:** Automated plan renewal reminders.
- **Credit Share:** Peer-to-peer balance transfers.

3. Payment & Transaction Management

- **Bill Payment & History:** Real-time tracking and past invoice retrieval.
- **Top-Up Module:** Multiple top-up options, including PIN-based top-ups.
- **Auto Debit Integration:** Secure recurring payments with user consent.
- **Digital Transaction History:** Hybrid page tracking all financial activities.

4. Reward System & Promotions

- **Rewards & Vouchers:** Automated reward redemption and management.
- **Social Sharing Integration:** Share deals and offers within the user network.
- **Geofencing-Based Offers:** Location-based promotions and notifications.

5. Performance & UI/UX Improvements

- **Optimized API Calls:** Reduced redundancy by migrating SOA to BLC.
- **Push Notifications:** Rich notifications with multimedia support.
- **CMS Dashboard Integration:** Centralized control over UI components and dynamic content.

Implementation Strategy

Agile Methodology

- **Bi-weekly sprints** with backlog prioritization.
- **Continuous integration** and automated testing.
- Incremental **feature rollouts** for early user feedback.
- All tasks and progress tracked in **Jira**.
- Weekly **check-in status meetings** to discuss sprint progress and roadblocks.
- Monthly **small CR releases** to ensure continuous improvement and minor fixes.

Project Phases

1. **Requirement Gathering & Wireframing** – Defined project scope, identified business needs, and designed wireframes using **Figma**. Business analysts gathered feedback through stakeholder meetings, and all requirements were documented in **Confluence**.
2. **Development & System Integration** – Implemented a modular, scalable architecture with well-defined **RESTful APIs**. Integrated with external services like payment gateways and notification services. Development progress was continuously tracked on **Jira**, ensuring each task followed Agile sprint cycles.
3. **Testing & Quality Assurance** – Conducted **unit tests**, **integration tests**, and **security audits** before deployment. Performance testing was carried out to identify API response bottlenecks. All defects were logged and resolved within Jira sprints.
4. **Deployment & Migration** – Seamlessly transitioned from the legacy system to the new application. Implemented phased rollouts to minimize downtime. DevOps pipelines were used for **CI/CD automation**, ensuring smooth deployment across **staging and production environments**.
5. **Go-Live & Monitoring** – Provided post-deployment support with **real-time performance monitoring** through **AWS CloudWatch** and **New Relic**. Continuous optimization was performed through **monthly CR releases**, ensuring ongoing improvements in performance, security, and user experience.

Project Deliverables

- Fully integrated **Mobile Service App** (Android & iOS)
- Centralized **CMS Dashboard** for content and menu management
- API Documentation & Security Compliance Report
- Performance Optimization Metrics
- User Training & Knowledge Base

Risk Mitigation Strategies

- **Authentication Security:** Implemented two-way authentication to prevent unauthorized access.
- **API Performance Optimization:** Reduced latency by migrating to a high-speed caching system.
- **Data Consistency & Validation:** Implemented structured validation in API calls to prevent erroneous transactions.
- **Fail-Safe Payment Mechanisms:** Integrated backup transaction logging to handle failed payment attempts.

Conclusion

The **Mobile Service App** project successfully transformed the digital experience for users, offering a **secure, efficient, and user-friendly** mobile solution. With enhanced API performance, seamless transaction handling, and an intuitive UI, the platform ensures a modern and scalable mobile service.