



BAHRAIN DEVELOPMENT BANK BSC(c)

DIGITAL BANKING

BUSINESS REQUIREMENTS DOCUMENT

VERSION 1.0

BUSINESS REQUIREMENT DOCUMENT

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Glossary

This following table highlights and explains all key terms and abbreviations used in the document.

Term	Definition
MOIC	Ministry of Industry and Commerce
KPI	Kay Performance Indication
RM	Relationship Manager
WATHIQ	The System of Benefit Company that holds the individual's information
KYC	Know Your Customer
SLA	Service Level Agreement
Sijilat	The system of MOIC that holds the information of Commercial entities
SME	Micro, small and medium enterprises as defined by the MOIC
AI	Artificial Intelligence
ID&V	Identification & Verification
CRM	Customer Relationship Management
WPS	Wages Protection System
LG	Letter of Guarantee
LC	Letter of Credit
CAS	Central Address System
IB	Internet Banking
MB	Mobile Banking
AML	Anti Money Laundry

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1. INTRODUCTION

1.1 Purpose

This document outlines the business requirements for the development and deployment of an Internet Banking/Mobile Banking Solution that will serve both retail and corporate customers of BDB. The platform will allow individuals and businesses to conduct their banking activities securely and efficiently online, including account management, funds transfer, payments, reporting and many other functions.

1.2 Scope

The solution will include functionalities specific to retail (individual) customers, such as personal account management and online payments, as well as corporate functionalities, such as payroll, vendor payments, and financial reporting. The system will be a secure, user-friendly, and scalable solution to meet the diverse needs of customers. It will also offer these services through both web and mobile applications.

1.3 Business Objectives

- Provide a seamless, secure, and robust online banking platform for both retail and corporate customers of BDB.
- Offer a comprehensive range of banking services, including transaction processing, bill payments, fund transfers, account management, and detailed reporting.
- Enhance user experience with intuitive interfaces for both retail and corporate users.
- Ensure full compliance with financial regulations, including KYC, AML, and data privacy laws.
- Improve operational efficiency and reduce in-branch transactions by enabling digital banking for all customer types.
- Ensure high scalability and availability to accommodate increasing transaction volumes and customer base.
- Deliver Omni-channel Journey experience to our clients

2. FUNCTIONAL REQUIREMENTS

2.1 Common Functional Requirements

2.1.1 User Authentication & Access Management

- Login:
 - Secure login method inline with information security team guidelines.
 - On login, system to display name of customer/or user (in case corporate), welcome message and date/time.
 - Virtual keyboard to be supported.
- Multi-factor Authentication: A two-step verification process to ensure secure access.
- Account Locking: After a set number of failed login attempts, the account should be locked by the system, and a reset procedure should be available as defined by the bank.
- Login History: User should be able to see the history of login, including successful and failed trials.
- Password Expiry:
 - Support configuring password expiry periods by the bank administrators.
 - Alerts to be pushed to users to reset the passwords about to expire and allow reset password online.
- Reset Password: Users should be able to reset their passwords online and at anytime through minimal information to authenticate the customer and in accordance with the bank policies.
- User Profile & Theme: Users to be able to customize their profiles, e.g. set profile picture, select color themes, language preference, etc.
- Complex Password: System to support definition and enforcement of complex rules and criteria for setting passwords

2.1.2 Accounts Management

Accounts are all accounts maintained with the bank, including cash accounts, deposits, and finance accounts.

- Accounts Dashboard:
 - Full portfolio view of accounts, their type, status, balances, summary, and recent transactions.
 - Graphical representation of the customer portfolio to be available.
- Accounts Statements: Download monthly or custom period bank statements in different formats, with option to send statements to email also.
- Advanced Search:
 - View detailed transaction history with filtering options and advanced search options by common fields.
 - Ability to run global search (across all fields) using keywords.
 - Ability to drill down transaction details to view more information.
- Accounts Nick Names: Users to be able to identify accounts through nick names that will be maintained on the platform only.
- Global Search: Ability to search using keywords, across all accounts, and transactions.

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2.1.3 Transfers

- Within own Accounts Transfers: Client should be able to transfer amounts between his own accounts
- Within Bank Transfers: Client should be able to transfer within BDB Bank accounts, to accounts not owned by them.
- Fawri+/Fawri Transfers:
 - To be able to pay Fawri+/Fawri payments from all CASA accounts, including accounts in currencies other than BHD.
 - Amounts should be converted by the system to BHD after retrieval of exchange rates from core banking system and transferred through EFTS instantly.
- International Transfers:
 - Transfer funds to international accounts.
 - SWIFT & AFAQ options should be available to the clients and transactions to be executed automatically according to the exchange rates retrieved from core banking system for these two types of international transfers.
- Schedule Transfers: To be able to set up standing orders instructions/schedule all types of transfers to future dates for execution, or schedule recurring transfers with start and end date, and with the ability to maintain, pause, and cancel these scheduled transfers.
- Save Transfers: To be able to save transfer templates for future execution, with the ability to maintain and delete these saved transfers.
- Transfers History:
 - To be able to view the history of Transfers executed through the system and their status.
 - To be able to search among Transfers history, using key fields such as Beneficiary name, Beneficiary account, amount, date, etc.
- AML Screening:
 - System should have real time integration with the AML system of the bank to screen the transfer and beneficiary info prior transaction execution.
 - Any violation should be immediately alerted by the system to the concerned team(s) to validate and take action on the system itself to allow /or reject execution of the transaction.
- E-Wallet Integration: Ability to integrate with e-Wallet provider directly to manage the e-Wallet account and payments through the platform.
- All transfers and debit transactions should be disabled for Joint accounts with BDB

2.1.4 Bill Payments

- Fawateer Payments: To be able to pay utilities, credit card bills, taxes, and all other services available on Fawateer.
- Fawateer History:
 - To be able to view the history of Fawateer payments executed through the system and their status.
 - To be able to search among Fawateer history, using key fields such as utility name, amount, date, etc.
- Bill Payment: Ability to integrate with utility providers directly to execute their bill payments.
- Schedule Bill Payments: To be able to schedule Fawateer payments to future dates for execution, or schedule recurring Fawateer payments with start and end date, and with the ability to maintain and cancel these scheduled payments.

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- Saved Bill Payments: To be able to save Fawateer payment templates for future reference and execution, with the ability to maintain and delete these saved payments.
- All bill payments and debit transactions should be disabled for Joint accounts with BDB

2.1.5 Beneficiaries Management

- Support creation of beneficiaries for internal/external payments or transfers
- Authorize and maintain beneficiary accounts and support definition of limits for beneficiaries
- User ability to view/delete/update beneficiaries

2.1.6 Investment Management

- Open Investment Account: Supports the creation of fixed deposit accounts online along with setting up its parameters and maturity instructions.
- Update Investment Account: Supports updating the fixed deposit accounts maturity instructions.
- Investment Account Closing/Withdrawal: Supports placing requests for closing and withdrawal fixed deposit accounts for back-office team to verify and execute.
- Investment Account Requests:
 - Ability to trace all requests created for fixed deposits and their status.
 - Ability to search and filter the requests history.

2.1.7 Service Request

- The system should support initiating different type of Service requests, tracking the status of these requests, and raising a follow-on enquiry (if needed) for these requests. List of services to be identified by the bank
- System to push notification messages to user with each update on the service requests.
- System to maintain workflow for these requests as per bank requirements (e.g. to redirect to another platform interface, to log the service as a lead on bank CRM system, to log to RM/or certain team on the platform Backoffice, to email the request to a group)
- Service Requests including but not limited to:
 - Open Account
 - KYC update
 - Request for Finance
 - Request for Cheque book
 - Request for overdraft, LG, LC facilities
 - Request for Demand Draft/Manager Cheque
 - Request for Payment Deferment
 - Request for Official Letters: Stamped Account Statement, Outstanding Balance, Finance Settlement, IBAN Certificate, Audit Confirmation, etc.
 - Open Banking Consent Management
 - Manage Central Address Registration (CAS)
 - Finance Calculator & Simulator
- System to support e-signature capture and integration with DocuSign
- System to support document capturing from client as required for the service requests.

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- System to support online ID&V processing or integration with service provider

2.1.8 Open Banking

- Strong customer authentication to facilitate allowing users to authenticate and authorize themselves for BDB open banking platform and perform AIS and PIS functionalities.
- Open Banking Consent management to facilitate customers to viewing existing consents, and revoking consents
- Customer and beneficiary limits management for Open Banking channel
- User access management for access to Open Banking services

2.1.9 Budget & Goals Management

- Budget Creation and Management:
 - Create Custom Budgets: Allow users to create custom budgets for different categories (e.g., payroll, marketing, operations for corporate clients). Users can set a monthly spending limit for each category.
 - Recurring Budget Setup: Users can set recurring monthly budgets for regular expenses like rent, utilities, subscriptions, and loan repayments.
 - Flexible Budgeting Periods: Options to set budgets on a weekly, monthly, or yearly basis.
- Expense Tracking and Categorization:
 - Automatic Transaction Categorization: Automatically categorize all transactions (deposits, withdrawals, payments) into predefined categories based on transaction descriptions or merchant information.
 - Manual Categorization: Option for users to manually categorize transactions if automatic categorization is not accurate.
 - Custom Categories: Allow users to create and manage custom categories if the predefined categories do not meet their needs.
 - Real-Time Spending Insights: Provide users with real-time insights into how their spending compares to their set budget limits across categories. Display graphical representations (charts, bar graphs, pie charts) that show spending trends over time for different categories.
 - Alerts for Exceeding Budget: Send notifications or alerts if the user exceeds or is about to exceed their set budget for any category.
- Savings Goals and Tracking:
 - Set Savings Goals: Users can create savings goals (e.g., emergency fund, or a down payment for a warehouse) with a target amount and target date.
 - Progress Tracking: Track progress toward savings goals and show how much more is needed to meet the goal.
 - Automated Savings: Based on the user's spending patterns, the app could suggest small automatic savings transfers to achieve their goals.

2.1.10 Cards Management

- The platform should support management of credit cards, pre-paid or debit cards, if introduced in future including but not limited to below common functions related to cards:
 - Requesting new cards issuance
 - Viewing of billed, unbilled transactions and pending payments / transactions

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- Request for loss/block of card and defining transaction limits for different cards
- Cancelling existing cards
- Extracting card statement
- Execute payments to cards

2.1.11 Mailbox

- Support an Inbox, Draft, Outbox for creating, sending, receiving and replying to messages securely through the platform
- For Retail users, messages can be exchanged with Bank Administrators
- For Corporate users, messages can be exchanged with Bank Administrators, RM, and other users under the same company account or profile on the platform
- Ability to attach files in different format in the messages.

2.1.12 Customer Support

- Tutorial videos: Tutorial videos for user assistance that can be accessed through the system.
- Live Chat: Real-time support via a secure messaging system with the bank agents.
- FAQ Section: A comprehensive FAQ section that can be updated by the system admin.
- Chatbot: Ability to provide chatbot functionality or integrate with chatbot supplied by 3rd party
- Branch / Head office locator

2.1.13 Alerts & Acknowledgements

- Transactions Notification: Real-time notifications via email/SMS for all requests and transactions created or executed through IB/MB platform (e.g., payments made, service requests, updates).
- Automatic System Alerts: Automatic Alerts to customer as per the bank requirements (e.g. eKYC expired)
- Administrators Alerts: Alerts that are created by the bank administrators and pushed to all system users (e.g. Announcements, System Maintenance notifications)
- New Services: To allow flagging new services that are introduced into the platform with icons or other display components to attract user attention.
- Acknowledgments: Support extraction and print out of receipts/acknowledgment from the platform for any of the executed transactions through the platform, at the time of execution, or anytime post execution.
- Ability to capture the preferred means for communication and language for each user (e.g. e-mail, App notifications, SMS etc.)
- Support maintaining the history of notifications for the user reference

2.1.14 Mobile Banking Integration

- Mobile App: A mobile-friendly interface for accessing the same functions via mobile.
- Mobile Operating Systems: Support for major platforms (iOS, Android).
- Compatibility with various device resolutions and screen sizes
- Push Notifications: Notify users about transactions, updates, or alerts on the mobile app.
- Responsive Design: Adaptive layouts for smartphones and tablets.

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- Data Consistency: Synchronize design and data between mobile and desktop platforms to ensure consistency.
- Multi-Factor Authentication: Combine passwords, biometric authentication (fingerprint, facial recognition), and OTPs for secure login.
- Ability to redirect to other 3rd party platforms to provide certain services (e.g. Customer onboarding, digital lending) in a seamless way without impacting the client's experience.
- Supports multi-lingual screens (at least English and Arabic) for all transactions (post log-in) and capture and record customer's language preference.

2.1.15 Security and Fraud Prevention

- Encryption: End-to-end encryption of sensitive data (SSL/TLS) for all online transactions.
- Real-time Fraud Detection: Detect unusual or suspicious activities and push alerts to the client and the bank.
- Session Timeout: Ability to configure idle time and auto sign off based on rules defined
- App Installment Verification: integration with ID&V tool to verify the identity of the user with each mobile app installment/re-installment.
- Geolocation Restrictions: Control over the geographic app access should be provided, where Bank Administrators can block/unblock access from certain geographic locations as required.
- IP Tracking: Support tracking IP of the users and alert them of accessing their account via different IP or location
- Captcha Verification: Enable captcha on the log-in screen to differentiate humans from bots

2.2 Retail Banking-Specific Requirements

2.2.1 Retail Access Registration

- Register New User:
 - Support functionality to register access to IB/MB for an existing customer swiftly through their cash account number, by requesting minimal information to authenticate the customer.
 - System to provide or integrate with ID&V tool to validate the identity of the client online and allow him to register for access to IB/MB system.
- New To Bank User: System to redirect the client to online onboarding system of BDB to onboard into the bank.
- Access Registration integration:
 - Support functionality to register access to IB/MB for an existing customer through third party platforms.
 - This is required in case the client is onboarding into the bank through the branch or third-party platforms, to ensure smooth IB/MB access registration experience.

2.2.2 Service Request

- Service request might include some products related to retail banking users only such as:
 - Apply for Personal Finance
 - Apply for Housing Finance
 - Apply for Auto Finance, etc.
- And disable the ones related to corporate clients only.

2.3 Corporate Banking-Specific Requirements

2.3.1 Access Registration

- Register New User – Single Owner Entities:
 - Support functionality to register access to IB/MB for existing single owner entities swiftly through their cash account number, by requesting minimal information to authenticate the customer and grant them access instantly.
 - System to provide or integrate with ID&V tool to validate the identity of the clients online and allow them to register for access to IB/MB system.
- Register New User – Multiple Owner Entities: System to redirect the client to fill the access form for multiple owner entities and submit it for Backoffice approval.
- New To Bank Client: System to redirect the client to online onboarding system of BDB to onboard into the bank.
- Access Registration integration:
 - Support functionality to register access to IB/MB for an existing customer through third party platforms.
 - This is required in case the client is onboarding into the bank through the branch or third-party platforms, to ensure smooth IB/MB access registration experience.
- Register a corporate user for open banking channel

2.3.2 Corporate Admin

- Support definition of Admin corporate user who can configure and supervise the users under a corporate profile.
- Ability for the corporate Admin user to set up / alter transaction limits for various kinds of transactions
- Option for corporate Admin to enable/disable mobile banking option for certain users
- Audit reports to be available for corporate Admin user to view the history of digital banking activities carried out by the corporate users of the company on the platform.

2.3.3 Corporate Users

- The platform should support the creation of a profile for a corporate and its subsidiaries and link the users to it.
- Support creation of users for multiple access levels (e.g. viewer, poster, checker, admin, etc.), and for different type of corporates (e.g. individual establishment, multi owners, and other types)
- Support definition of a key user (super user) who would have all the access rights on all or selected accounts under a corporate profile.
- System should support definition of user authorization matrix per corporate client and have the flexibility to configure authorization workflow (e.g. 1 or 2 step authorization of transactions based on value/type/etc.)
- System should allow setting limits per users per transaction (e.g. Limit for Fawri, Fawri+, international transfers, etc.)

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2.3.4 Bulk Transfers

- Bulk Non-Salary Transfers:
 - To be able to execute bulk Non-Salary transfers by uploading excel/CSV files into the system in certain format.
 - System should be able to differentiate in execution between the within bank transfers and to other banks transfers that are listed within the file.
 - System should allow the client to download template of the file format required, with clear guidance.
 - System should allow client to see the results of executing the file records and the status of each record execution.
- Bulk Salary Transfers:
 - To be able to execute bulk Salary transfers by uploading excel/CSV files into the system in certain format.
 - System should be able to differentiate in execution between the within bank transfers and to other banks transfers that are listed within the file.
 - System should allow the client to download template of the file format required, with clear guidance.
 - System to integrate with WPS system to verify the transactions as per the WPS guidelines and display clear verification results to the client to be able to do the corrections if any required.
 - System should allow client to see the results of executing the file records and the status of each record execution.
- Bulk Transfers History: System should allow the client to view the history of the bulk transfer files that were executed through the platform, their records, and status. Client should be able to search among the records by key fields such as, beneficiary name, IBAN, account number, amount, date, etc.
- Transfers and debit transactions to be disabled on Joint accounts with BDB

2.3.5 Vendors Management

- Ability to create and manage a list of regular vendors to simplify payment processing to them.
- Ability to select all, or certain vendors and confirm the payments to them in an easy way.
- Ability to schedule vendor payments for single execution in future dates or for recurring execution in selected date ranges.
- Ability to extract reports of the vendors saved records and executed payment transactions

2.3.6 Payroll Management

- Ability to define payroll files for employees working in the company for the purpose of "Payroll Payments".
- Ability to select all, or certain files, or certain employees and confirm the payments to them in an easy way.
- Ability to schedule salary payments for single execution in future dates or for recurring execution in selected date ranges.
- System to integrate with WPS system to verify the salary transactions as per the WPS guidelines and display clear verification results to the client to be able to do the corrections if any required.
- System to be flexible and allow the client to either process salary transactions through the "Payroll Payments" feature, or through the bulk upload of salary transactions through file upload.
- Ability to extract reports of the payroll saved records and executed payment transactions

2.3.7 Limit Management

- Limits View: Limit tree structure view, provide a clear, easy-to-understand overdraft management dashboard where users can see available overdraft limits, current usage, and any pending repayments or fees.
- Limits Reports: Detailed reports of overdraft usage, interest incurred, and fees charged, including a breakdown of each transaction, date, and time when the overdraft was utilized.
- Request for New Limit: Allow users to place request for new Limit
- Track Requests: Allow users to track their requests for new limit

2.3.8 Trade Finance Management

- Trade Finance Portfolio Summary: Provide a real-time, consolidated dashboard to view all active trade finance instruments (LCs, LGs, etc.), their status, due dates, and upcoming obligations. Ability to extract report in different formats.
- Request for New LC/LG: Allow users to place request for new LC or LG
- Request for Amendment: Provide options to request amendments on existing LC or LG
- Requests Tracking: Allow users to track the status of LCs/LGs requests in real-time, including whether they've been activated, amended, or fulfilled.

2.3.9 Liquidity Management

- Cash Flow Overview: a comprehensive, real-time dashboard showing cash positions across multiple accounts and consolidated balance view. This enables clients to track their cash balances, inflows, and outflows throughout the day/month/year. This view should also provide the equivalent balances in local currency for the bank accounts in foreign currencies.
- Sweep Dashboard:
 - Displays a snapshot of all sweep arrangements, their linked accounts, rules, last executed transaction, and status.
 - Ability to Update, Deactivate, & Reactivate sweep
- Create Sweep: a sweep function to automatically move funds from subsidiary accounts to the main operating account and vice versa. This function should allow client to:
 - Define master and subsidiary accounts for the sweep function
 - Set sweep rules:
 - Sweep Type/Trigger Conditions (Thresholds, Zero-Balance, Target Balance, Interest Maximization, etc.)
 - Sweep frequency (e.g., daily, weekly, monthly)
 - Priority levels for multiple accounts
 - Define Limits (minimum and maximum transfer amounts)

2.3.10 Reporting & Analytics

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Allow corporate users generate custom financial and audit reports, including payments, and transactions reports (per user and per account), including but not limited to:

- Digital Banking Activities Report: Report of activities executed by the user on the digital banking platform.
- Cash Accounts Report: A consolidated report summarizing multiple corporate accounts, including current, savings, and fixed deposits, capturing their balances, transactions summary, and earned interests.
- Credit Facilities Report: A consolidated report summarizing the company's credit facilities, repayments, and balances.
- Cash Flow Report: A report that helps user track the inflow and outflow of funds across his accounts. Details Included are: Opening balance, incoming payments, outgoing payments, and closing balance.
- Transactions Summary Report: A summary of financial transactions per type over a specified period of time. Details Included: Total credits, debits, account balances, and a breakdown of transactions by category (e.g., payments, transfers).
- Interest and Fees Report: A report detailing interest earned (on deposits) and fees incurred (on loans, overdrafts, account maintenance). Details Included: Breakdown of interest, fees for overdrafts, late payment fees, and service charges.
- Payroll Report: A payroll report s to track employee salaries, deductions, and payments as saved and executed on the platform.
- Export Options: Support downloading reports in different formats (PDF, Excel, CSV, etc.).

2.4 Bank Administration Requirements

2.4.1 Configuration

- System Parameters - System should support add/modify/delete the system parameters though Backoffice interface end
- System should support maker and checker authority concept for all configuration and transactions executed by the bank staff and administrators.
- Support configuring different global limits, fees, and charges for transactions initiated through the platform

2.4.2 Bank Administration

- The platform should support functionality for administration function (from back-end) that enables workflows for onboarding, creation and management of users of retail /corporate customer
- Bank users to be able to update, manage, enable, and disable the privileges and roles assigned to user accounts of the retail/corporate clients.
- Bank users to be able to enable/disable menu items available for the clients
- Support configuration of the color schemes, artwork and logos used on the platform interface.
- Supports multi-lingual screens (at least English and Arabic), and capture clients language preference

2.4.3 Marketing Requirements

- Dedicated Sections on the landing pages to allow the bank to configure and display marketing materials. This should support various types of marketing materials such as still images, GIF, animation and videos.

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- Support targeted marketing campaigns based on customer profile, segment and interaction history.
- Support capturing clients as leads through the displayed marketing materials and logging them on CRM.
- Support directing clients to products web pages or platforms through the displayed marketing materials.
- Support pushing marketing materials through mailbox & notifications of the platform to all, or selected groups of users. This should include analytics on user engagement including clicking rate and time spent on linked pages.
- Ability to push survey to users through the platform and capture the input from the clients.

2.4.4 Push Notifications

- System should support pushing notifications/announcements through the platform to the users
- To support scheduling the release of notification/announcements to platform users.
- System should support creating groups of the users and sending the notifications/announcements to all users or selected groups only.

2.4.5 Configure Screens and Workflows

It will be an advance if the platform allows the bank administrators to configure the screens and workflows without the need for vendor support.

3. NON-FUNCTIONAL REQUIREMENTS

3.1 Architecture

- The solution design should be cloud native
- The overall solution should be modular in structure, allowing the bank to easily activate / launch or even scale specific modules based on need
- The solution (including sub-components) should be based on a micro-services architecture
- The solution should be build using latest technology, leading industry standards and protocols
- The solution should be data base agnostic
- The solution architecture should allow secured extension of certain application capabilities to 3rd parties (out side of network) such as portal for customer on-boarding, portal for 3rd party agents and affiliates to process information, customer self-service portal, providing restricted access to customer information to outsourced functions (such as contact center)
- The overall solution set should provide omnichannel platform capability to ensure e-channels are aligned (from a content, product, service, authentication and service flow perspective, allowing users to initiate a transaction from one channel and completing them on another)
- Mobile apps should be present on both Google Play and Appstore, supporting Android and iOS
- The system should have the capability to configure and generate ad-hoc operational reports leveraging real time data, statements and advises
- The source codes and compiler must be available in escrow and must be maintained under version control software

3.2 Performance & Availability

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- System Availability: The platform should guarantee 99.9% uptime. The system should be available 24/7, with scheduled maintenance windows announced in advance.
- Response Time: User actions should receive a response time of less than 3 seconds for most functionalities.
- support for automated backups and easy failover mechanisms.
- The solution must be configured and implemented with high availability and load balanced architecture
- Archived data must be available within a maximum of 5 minutes
- The system is expected to have the following performance characteristics for transactions per day:
 - 90% of all user transactions should be completed in 2 seconds
 - The remaining 10% of user transactions (inquiry and batches) should be completed in 5 seconds
 - The system should not degrade less than 95% during peak times
- Support SLA requirement from solution vendors (Please refer Appendix-1 for the priority definitions)
 - For Priority 1 issues, the response time should be within 10 Minutes and the resolution time should be less than 2 hours
 - For Priority 2 issues, the response time should be within 10 Minutes and the resolution time should be less than 4 hours
 - For Priority 3 issues, the response time should be within 10 Minutes and the resolution time should be less than 8 hours
 - For Priority 4 issues, the response time should be within 10 Minutes and the resolution time should be less than 16 hours
 - For Priority 5 issues, the response time should be within 10 Minutes and the resolution time should be less than 24 hours

3.3 Scalability

- The system must support increasing numbers of retail and corporate users, with seamless scalability for transaction volume growth.

3.4 Compliance

- Real-time Screening: Transactions, beneficiaries, requests created through the platform should go through real time screening with various systems (internal or external) such as Black-list, World-check, diseased list, Sanctions lists etc.
- KYC Update: Notifications for expired/about to expire KYC documents to be pushed by the system to the clients and facility to allow the update of expired document online should be provided through the system.

3.5 Usability

- The platform should have a user-friendly interface, with clear navigation and minimal steps for completing key tasks and saving templates for future reference of the major tasks (transfers, bill payment, etc.)
- An experienced UI/UX designer to be allocated by the vendor for the project implementation for both interfaces IB & MB
- UI/UX design to be approved by the bank and customization to be allowed as per the bank requirements and team revision output.

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- The system must be able to provide comprehensive on-screen help facilities
- Report formats must allow for dynamic formatting of columns
- The system must be intuitive and easy to use by users with limited training
- Comprehensive system documentation should be made available in both English and potentially also in Arabic
- System should allow data entry must in English and Arabic
- The solution must support export of on-screen data to MS Office applications
- The solution must use descriptive error messages to inform users where errors have occurred and how to correct these.
- Works well with office productivity suites such as MS Office, PDF reader and others.
- The system must have the minimal number of screens the user needs to navigate through for completing an action (screen navigation should be configurable and easy to define and modify). Screens must allow the user to complete the work without excessive scrolling down. The system must be able to define read only fields at runtime.
- The system must provide the option to copy from excel and paste in UI screen. This would be useful while creating objects with many line items.
- The system must ensure that all reports be printable in pdf and MS excel
- The system user interface must be easily customizable
- Prevent users from entering data in the wrong format and perform data validation such as:
 - Presence check (i.e. all of the mandatory information has been provided)
 - Allowed character check (e.g. a numerical field contains only one decimal point)
 - Data type check (e.g. a numerical field does not contain alpha characters)
 - Format check (e.g. checks that dates are entered in the correct format)
 - Logic check (e.g. checks that a date entered is within certain parameters)
 - Duplication check (i.e. checks that an identical Registration application has not been previously submitted).
- Compatible with all web browsers such as Chrome, IE, Edge, Safari, Firefox etc.

3.6 Infrastructure

- The solution should be compliant to AWS cloud
- The solution (all components) should be deployable on IaaS or SaaS on AWS cloud
- The proposed solution set must have a minimum of 4 environments - 1 Production (With Failover), 1 Production Replica, UAT and Dev environments. Please note that these are the minimum set of environments that would need to be in place. The bank should have the flexibility to create / set-up additional environments based on need (such as additional environment for testing or development or pre-production), which can be used for specific timeframes. The cloud native model should allow pricing for the additional environment only for timeframes utilized.
- All environments must be hosted on AWS cloud, locally in Bahrain (or in rare scenarios any other location approved by and CBB)
- The solution should support automatic scalability on cloud based on need

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- The system should support real time replication between the two production environments (or prod and DR installations)
- The system must provide automatic failover between the two production installations

3.7 Integration Capabilities

- All solution components should expose standard functionalities as APIs that can be readily detected / made available and consumed by other (internal) application components as well as external / 3rd party applications
- The enabled APIs should be based on leading practices (e.g. REST APIs) and leverage standard communication / extension protocols
- The system should have the provision to define and maintain all APIs and robust API management capabilities
- The solution should be able to define authentication, authorization permissions for APIs in a configurable manner
- The solution should have the flexibility to define orchestration and routing rules for APIs
- The solution should support standard API gateway capabilities across - Routing, Mediation (e.g. transformation, validation, caching) and Throttling (e.g. supporting throttling policies based on certain time-frames, transaction volumes etc.)
- The solution should support API analytics (examples)
 - Monitoring usage limits
 - SLA Monitoring
 - debugging / error reports etc.
 - API performance and KPIs
 - monitoring operational aspects of API
 - Trend analysis / simulation
- The solution must use industry standards to authenticate and authorize web service requests

3.8 Audit Trails

- Each major data entity (e.g. Task, Action, User, Finance, etc.) should have an audit trail feature.
- Platform to keep track of which user made changes (including automated actions by the system) to which entity and at what time, in case bank or corporate admin need to review changes that have been made through the platform.

3.9 Reporting Requirements

3.9.1 Usage & Transactions Reports:

- Daily/Monthly Activities Summary: Total number and value of activities and transactions (financial and non-financial transactions), segregated by activity/transaction type (login, transfers, bill payments, etc.), client type (Retail, corporate), transaction status (completed, rejected, canceled, or on hold etc.), Channel used (e.g., mobile banking or internet banking).
- Daily/Monthly Detailed Activities Reports: Detailed activities & transactions Information (financial and non-financial transactions) executed through the platform, including Reasons for transactions being rejected, returned, or canceled if any

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- Daily/Monthly Failed Activities Report: Logs of errors encountered during transactions, activities or logins executed on the platform.
- Device and Channel Analysis: Access through Device types (desktop, mobile, tablet), Operating systems, Browser preferences and app vs. web usage.

3.9.2 Compliance Reports:

- Daily/Monthly KYC update: KYC update transactions details including the failed trials and exceptions.

3.9.3 Engagement Metrics

- Active Users: Number of unique users over daily, weekly, and monthly intervals, segregated by client type (Corporate and Retail)
- Retention Rates: Percentage of users returning to the platform after their first login, based on defined intervals, segregated by client type (Corporate and Retail)
- Marketing Adoption: Effectiveness of campaigns posted on the platform and engagement of users.

3.9.4 Ad-Hoc Reports/Dashboard

- It will be an advance if the platform provides Dashboards and Reporting tools for bank users where we can create and customize our own reports from generic data universes/schemes.

3.9.5 Scheduled Reports

- Reports with scheduling and automatic delivery capability to deliver securely to various users/groups/stakeholders at particular date/time.
- Apart from the canned reports the ability to easily create customizable reports is a definite plus.

4. INTEGRATION REQUIREMENTS

- Core Banking Systems: Real-time integration with core banking systems for data retrieval and transaction execution. Also required integrations for facilitating the open banking requirements.
- CRM Integration: Support integration with CRM system to log the leads, offline requests, and support cases.
- Ecosystem Data Integration:
 - WATHIQ & MOIC Sijlat: Required for authentication and KYC update purposes
 - SharePoint: to integrate with BDB SharePoint for document management
 - Open Banking: to integrate with Open banking platform for consent management. Other banks display may be introduced at later phases.
 - ID&V Tool: Integration with ID&V online tool, to verify user identity and IDs instantly.
 - ERP Systems: Allow integration with corporate ERP systems for seamless financial data exchange can be introduced later.
 - E-Wallets/Payment Gateways: Allow integration with platforms (e.g. Benefit Pay, PayPal) for additional payment options can be introduced later

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- Compliance Screening: Support integration (real time) with various systems (internal or external) such as Black-list, World-check, diseased list, AML lists etc.
- API Layer: Centralized API layer to manage communication with the mobile app and internet banking platform. Secure APIs with API keys and monitoring are expected to invoke the IB/MB APIs through 3rd party platforms.
- Back-end integration with Microsoft Active Directory to manage BDB staff Users and Groups

5. PRODUCT ROADMAP REQUIREMENTS

The system should be flexible and support adding new services, products and features in later phases, including but not limited to:

- Digital Customer Onboarding
- Digital Account Opening
- Digital Financing
- AI-based Risk Assessment for the credit facilities applications.
- E-Cheque processing
- Trade Financing
- Treasury Transactions
- AI-driven insights and analytics.
- Integration with emerging payment methods (e.g., cryptocurrencies)
- Integration with E-Wallets and payment gateways (e.g. Paypal, Benefit Pay)
- Integration with Blockchain Technology
- Integration with clients' ERP systems
- Supply Chain Finance

6. DATA PRIVACY & SECURITY REQUIREMENTS

The platform and products should support the below listed technical requirements:

- Adherence to NIST Cyber Security Framework as required by Central Bank of Bahrain(CBB), and Secure standards, development lifecycle and coding practises (e.g. OWASP).
- Should adopt secure code analysis during development (i.e., static, dynamic or hybrid).
- Should have ISO 270001, ISO 22301, SOC2(for SAAS offerings) to demonstrate strong IT and Cyber Security processes.
- Should have strong identity, authentication, authorization, access control and auditing mechanisms.
- Should have comprehensive logging, monitoring and alerting/trigger features such as of user and systems activities, object calls, requests, responses etc. as well as security events with support for log forwarding.
- Should support Role Based Access Control and delegated/segregated/granular administration to support strict access controls and to restrict access to authorized individuals and parties.
- Implement rate limiting and throttling to protect against abuse and Denial of Service Attacks.

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- Adheres to privacy by design principles (e.g. PDPL) with support for data masking/obfuscation and tokenization to protect/restrict sensitive data. Also, should support data anonymization for analytics or testing purposes.
- Easy, trackable and customizable explicit user consent management for data collection and processing.
- Should provide independent penetration testing certification semi-annually covering the CBB requirements.
- Support for encryption of all sensitive and confidential data at rest and in motion with industry recognized secure algorithms.
- Supports mobile device security such as tamper detection and detection of jailbroken/rooted devices restricting app functionality.
- Supports application code obfuscation to prevent reverse engineering and provides regular updates to address vulnerabilities in application and integrated third-party components/libraries/frameworks.
- Secure OTP delivery support for sensitive actions.
- Supports data retention requirements such as those defined by the Central Bank of Bahrain.
- Easy to understand error messages without revealing sensitive information.

User access, roles, privileges and activity details extractable/viewable as a report is recommended.

7. DELIVERABLES

- Detailed delivery plan with timeline
- Experienced & Dedicated Project Management Services
- Supply and installation of System Software(s)
- Implementation of Software covering:
 - Deployment and hosting of overall solution
 - Configuration and customization, in accordance with the Bank Requirements
 - Integration development, in accordance with the Bank Requirements
 - UI/UX design customization, as approved by the Bank
 - Aligning the solution security and network design as per security policies of the Bank
 - Migration of data from legacy applications
 - Perform QA testing on the Software
 - Support for all functional and non-functional testing by the Bank
 - Development of operational, analytical and MIS reports
 - Providing Solution design and architecture documentation
 - Providing training sessions and materials to bank staff
 - Providing detailed documentation and user manuals
 - Providing Tutorial videos
- Go live, rollout
- Post-Implementation Support

8. TRAINING

Training sessions to cover the below*:

- Training to System testing teams (including Pilot Clients)
- Training to System Administrators

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- Training to Back-office teams
- Training to Customer facing teams
- Training to Support teams

Comprehensive User Manuals for both bank users and clients to be prepared and provided by the vendor and recorded demo videos are expected to guide the clients on how to use their interface.

**More training sessions might be defined as required post conducting the testing.*

9. STAKEHOLDERS

- **Project Management:** Strategy and Transformation Department from the PMO perspective and IT from the project management perspective.
- **Product Owner:** Products- Digital Channels
- **Product Sponsor:** Chief Banking Officer (CBO)
- **Requirements Review & Approval:** Banking, Compliance, Legal, Risk, Information Technology, Information Security, Finance, Sharia, Operations, Credit Admin, Middle Office
- **Risk Assessment:** Risk Management Team
- **Regulators Approval:** Compliance Team
- **Shaira Compliance Approval:** Sharia Team
- **Solutions/Vendors Evaluation:** Information Technology, Strategy, Banking, Compliance, Risk, Information Security.
- **Terms & Declarations review:** Legal Team
- **Solution Testing & Signoff:** Banking, Compliance, Risk, Information Technology, Information Security, Operations, Legal, Credit Admin, Middle Office.
- **Solution UI/UX design review:** Banking, Marcom, Information Technology

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11. APPENDIX-1: INCIDENT PRIORITY DEFINITIONS

Urgency>> Impact	Critical	High	Medium	Low
Critical	P1	P1	P2	P3
High	P1	P2	P3	P4
Medium	P2	P3	P4	P5
Low	P3	P4	P5	P5

Urgency	Description
Critical	<ul style="list-style-type: none"> - Instantaneous action required. - Catastrophic damage to essential business functions. Organization may be unable to function. - Severe financial losses for the organization. - Severe and widespread reputational damage.
High	<ul style="list-style-type: none"> - Immediate action required. - Affects essential systems or services, resulting in significant disruption or loss of functionality. - High risk of financial or operational impact. - Potential for severe reputational damage.
Medium	<ul style="list-style-type: none"> - Action required within a defined timeframe. - Affects specific departments or groups within the organization. - Moderate risk to business operations or service delivery. - Limited potential for reputational damage.
Low	<ul style="list-style-type: none"> - Action required based on available resources and priorities. - Affects individual users or non-critical systems. - Minimal risk to business operations or service delivery. - Negligible reputational impact.

Impact	Description
Critical	<ul style="list-style-type: none"> - Catastrophic disruption of critical business functions, rendering the organization unable to operate effectively. The impact of non-availability of the process will impact: <ul style="list-style-type: none"> - Any Reputation Impact. - Any Financial impact - Any Legal or Regulatory Impact - Service Quality / Customer Service: No service channel is available, and all customer segments are affected. - Any Critical Security Breach
High	<ul style="list-style-type: none"> - Severe disruption affecting essential business operations, multiple departments, or critical business processes. The impact of non-availability of the process will impact: <ul style="list-style-type: none"> - Widespread outage of critical systems or services, impacting all users or a significant portion of the organization. - Service Quality / Customer Service: A single channel of service is not available, and a single segment of customers is affected (this might VIP customers). - Any non-critical security breach
Medium	<ul style="list-style-type: none"> - Moderate disruption affecting specific departments or groups within the organization. The impact of non-availability of the process will impact: <ul style="list-style-type: none"> - Partial service outage or performance degradation, impacting specific business processes or user groups. - Service Quality / Customer Service: A single channel of service is not available, and a single segment of customers is affected (this might VIP customers).
Low	<ul style="list-style-type: none"> - Minimal disruption affecting individual users or non-critical systems. The impact of non-availability of the process will impact:

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	<ul style="list-style-type: none">- Intermittent issues or minor glitches that do not significantly impact business operations.- Service Quality / Customer Service: A single channel of service is not available, and a single segment of customers are affected (this does not include VIP customers) or, customers are unlikely to be affected, but could be aware of interruption.
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