**Waterfall Project Part 1**

**by Tarun Kumar Deshmukh**

**Document -1** **Business Case Document**

**Question -1 Why is this Project initiated?**

**Answer** – The current version (6.8) of the FLEXCUBE Universal Banking Solution is outdated and incompatible with modern financial systems and technological requirements. The integrated payments module in version 6.8 has become cumbersome and inefficient, highlighting the need for a more robust and scalable solution. By upgrading to version 11.8 and standalone payment module Oracle Banking Payments (OBPM), the bank can utilize the advanced capabilities of the new version to stay competitive in a rapidly evolving financial landscape, streamline operations and reduce the burden of legacy system constraints, achieve higher profitability, offer better services to customers.

**Question- 2 What are the current problems?**

**Answer** – Current problems in this project includes:

* The absence of an integrated KYC feature limits transparency and compliance with regulatory standards.
* The inability to integrate electronic signatures into the database affects secure and efficient customer identification processes.
* Customers do not have access to a seamless and dedicated application for account operations, leading to inconvenience and lack of digital engagement.
* The system does not support innovative features like cardless withdrawals via mobile numbers and PAN cards, reducing customer convenience.
* The current payment system lacks UPI ID integration, which is essential for modern and efficient transaction handling.
* Without a daily transaction limit for UPI payments, there are potential risks to customer security and financial control.

**Question- 3 With this project how many problems could be solved?**

**Answer** – By implementing this project, below problems can be resolved:

1. **Implementation of the KYC Facility**:
	* Ensures transparency and compliance with regulations, resolving the lack of an integrated KYC system.
2. **Integration of Electronic Signatures**:
	* Strengthens customer identification and resolves the issue of secure and efficient verification.
3. **Introduction of Mobile Banking Features**:
	* Provides seamless access to banking services, resolving the absence of a dedicated mobile banking application.
4. **Enablement of Cardless ATM Withdrawals**:
	* Adds convenience for customers, addressing the lack of innovative withdrawal options.
5. **Incorporation of UPI ID Functionality**:
	* Facilitates smooth transactions to UPI accounts, resolving the absence of this feature in the current payment system.
6. **Setting a UPI Daily Transaction Limit**:
	* Enhances security and compliance by restricting transactions beyond a predefined limit.

Ultimately, this project will align the bank with contemporary digital banking trends, fostering customer satisfaction, operational efficiency, and competitive advantage.

**Question – 4 What are the resources required?**

**Answer –** In current project, below resources may require achieving the task:

**1. Human Resources**

* **Technical Team**:
	+ Delivery Manager (Leadership and oversight)
	+ Project Manager (Planning, execution, and coordination)
	+ Java Developers (Development of custom features and functionalities)
	+ Senior Java Developer (Mentoring the team and resolving complex coding issues)
	+ Testers (Quality assurance and bug identification)
	+ Network Administrator (Infrastructure setup and maintenance)
	+ Database Administrator (Data migration and system optimization)
	+ Business Analyst (Requirement gathering, documentation, and communication with stakeholders)
* **External Auditors**:
	+ For compliance evaluations and validation.

**2. Financial Resources**

* Approved project budget: ₹2 Crores.
* Breakdown:
	+ Training personnel.
	+ Software and hardware procurement.
	+ Managed services (if required).
	+ Miscellaneous expenses (₹10,00,000 allocation for audits, compliance, financial reporting, team-building activities).

**3. Technical Resources**

* **Software**:
	+ FLEXCUBE Universal Banking Solution (Version 11.8).
	+ Oracle Banking Payments (OBPM) for payments module.
	+ Testing tools for QA.
	+ License for programming languages like Java and Plsql.
* **Hardware**:
	+ Upgraded server infrastructure.
	+ Systems and networking equipment for deployment.
	+ Backup and storage devices for data migration.

**4. Time Resources**

* A timeline of 12 months to cover:
	+ Requirement gathering and analysis.
	+ System design and development.
	+ Implementation, testing, and deployment.
* Regular progress tracking (e.g., monthly and quarterly reviews).

**5. Training Resources**

* Training programs for personnel to ensure familiarity with the new FLEXCUBE system and Oracle Banking Payments.

**6. Compliance Resources**

* External compliance checks and evaluations to meet government mandates and banking regulations.
* Preparation and validation of financial reports.

**7. Logistical Resources**

* Site visits and client interactions.
* Team-building activities to maintain morale and collaboration during the project.

**Question – 5 How much organizational change is required to adopt this technology?**

**Answer** – To adopt this technology, the company may require below organizational changes:

**1. Process and Workflow Adjustments**

* **Streamline Decision-Making Processes**:
	+ Empower the Project Manager and Delivery Manager to make quick decisions within the project's scope, reducing delays.
	+ Establish a weekly progress review committee to ensure alignment and remove bottlenecks.
* **Enhanced Collaboration Between Teams**:
	+ Create cross-functional task forces comprising Java developers, testers, and the Business Analyst to address specific objectives like KYC integration, electronic signature functionality, and UPI payments.
	+ Conduct regular daily standups meetings to ensure effective communication and progress tracking.

**2. Organizational Structural Changes**

* **Resource Allocation**:
	+ Assign dedicated sub-teams for each major objective (e.g., KYC integration, cardless withdrawals, UPI features).
	+ Appoint a Technical Lead (Senior Java Developer) to oversee development progress and ensure alignment with project goals.
* **Dedicated Compliance Unit**:
	+ Form a temporary compliance team comprising the Business Analyst and external auditors to handle regulatory evaluations, ensuring smooth approvals.
* **Testing Unit Strengthening**:
	+ Allocate additional resources (temporary QA testers) to ensure thorough testing of new functionalities and reduce post-deployment issues.

**3. Skills Development and Training**

* **Upskill Staff**:
	+ Conduct mandatory training sessions on FLEXCUBE Version 11.8 and Oracle Banking Payments (OBPM) for developers, testers, and administrators.
	+ Offer focused workshops for Java developers on integrating KYC, UPI payment modules, and cardless withdrawal features.
* **Change Management Training**:
	+ Train team members in change management to handle the transition effectively and adapt to new tools and processes.

**4. Investment in Technology**

* **Upgrade Technical Infrastructure**:
	+ Ensure that the hardware and software align with the system requirements of FLEXCUBE and OBPM.
	+ Implement robust network security and data backup solutions to prevent data loss and breaches.
	+ Acquire license for Java and Plsql programming language and Oracle Database to develop the code.
* **Enhanced Testing Tools**:
	+ Procure advanced automated testing tools to improve testing efficiency and detect issues early.

**5. Policy and Security Enhancements**

* **Update Internal Policies**:
	+ Introduce policies for UPI daily transaction limits, aligning with security requirements.
	+ Define clear guidelines for KYC and electronic signature usage to ensure compliance.
* **Data Protection Policies**:
	+ Enforce stricter data protection protocols, especially when integrating customer identification features like KYC and electronic signatures.

**6. Communication and Change Management**

* **Stakeholder Communication**:
	+ Ensure clear and consistent communication with stakeholders about project progress, issues, and milestones.
	+ Share regular updates with delivery managers, business analysts, and the bank’s leadership to align on expectations.
* **Change Management Framework**:
	+ Deploy a change management team to handle employee concerns, manage expectations, and guide them through the transition.

**7. Cultural and Team-Building Changes**

* **Encourage Team Collaboration**:
	+ Organize team-building activities (lunches, site visits) to foster collaboration and morale.
	+ Create a culture of accountability where each team member owns their deliverables.
* **Recognition and Motivation**:
	+ Recognize individual and team contributions with incentives, boosting morale and productivity.

**Question – 6 Time frame to recover ROI?**

**Answer –** The time frame to recover the return on investment (ROI) for this project would typically range from 18 to 24 months, depending on factors such as customer adoption rates, cost savings, and revenue generation from enhanced digital services. The integration of features like KYC compliance, electronic signatures, mobile banking, and UPI transactions will reduce operational costs, improve customer retention, and attract new users. Additionally, cardless ATM withdrawals and daily transaction limits will enhance security and convenience, fostering customer trust and engagement. These combined benefits are likely to drive increased transaction volumes and service efficiency, contributing to ROI recovery within the mentioned period.

**Question- 7 How to identify Stakeholders?**

**Answer –** Stakeholder Identification:

1. Primary Stakeholders

• Bank Executives: Oversee the implementation and ensure alignment with banking operations goals.

 • Bank Tellers: Main users of the application, responsible for adding customers, doing KYC, making transaction and providing services.

• Bank IT Staff: Manage technical aspects, including deployment, integration, and support.

2. Secondary Stakeholders

• Customers: Beneficiaries who will experience upgrade in services, transparency and more security in the banking.

• Industry Partners: Correspondent banks and partner financial institutions who are getting benefitted with the technology upgrade.

1. Tertiary Stakeholders

• Regulatory Authorities: Central Bank and compliance authorities with updated rules and regulations.

• Auditing Firms: Audit for financial reports by third party firms.

• Vendors: Third-party providers involved in payments, security, and maintenance.

1. Project Team

• Project Manager: Leads the project, ensuring it stays on schedule and within budget.

• Business Analyst: Gathers requirements and ensures they meet stakeholders' needs.

• Developers: Design, upgrade and implement the patch-set.

• Testers: Ensure the portal is functional and free of defects.

• Administrators: Network and Database admin to maintain the continuity in operations.

**Document -2** **Business Analyst Strategy**

As a Business Analyst, I would go with the following strategy:

1. Project Initiation:

* Understand the project objectives, scope, and constraints.
* Identify key stakeholders and establish communication channels.
* Conduct a preliminary assessment of business needs and requirements.
* Get approval from the corresponding stakeholders.

2. Elicitation Techniques:

* Interviews: Conduct one-on-one interviews with bank executives, tellers, and bank IT staff to gather detailed requirements and insights.
* Surveys and Questionnaires: Distribute surveys to a larger group of stakeholders, including customers and tellers, to collect quantitative data on needs and expectations.
* Focus Groups: Organize focus group sessions with customers and IT staffs to discuss challenges and potential solutions collaboratively.
* Workshops: Facilitate workshops with key stakeholders to brainstorm ideas, define requirements, and prioritize features.
* Observation: Observe customers and tellers during their banking operation process to understand their workflows, pain points, and areas for improvement.
* Document Analysis: Review existing documentation, such as banking policies, current systems, and workflow diagrams, to understand the current state and identify gaps.
* Prototyping: Develop and present prototypes of the Flexcube application to stakeholders for feedback and refinement of requirements.
* Brainstorming: Conduct brainstorming sessions with the project team and stakeholders to generate ideas and identify innovative solutions.

3. Stakeholder Analysis using RACI/ILS:

* Identify stakeholders and their roles using RACI (Responsible, Accountable, Consulted, Informed) or ILS (Influencer, Leader, Supporter) matrices.
* Determine each stakeholder's level of involvement and expectations regarding the project.
* Need to use this analysis to allocate responsibilities, manage expectations, and ensure effective communication.



4. Documents to Write:

* Business Requirements Document (BRD)
* Functional Requirements Specification (FRS)
* Use Case Documents
* User Stories
* Test Plan
* User Acceptance Testing (UAT) Plan
* Training Materials
* Project Management Plan

5. Document Sign-off Process:

* Share draft documents with stakeholders for review and feedback.
* Incorporate feedback and revisions as necessary.
* Obtain formal sign-off from stakeholders indicating their acceptance of the documents.
* Maintain version control to track changes and updates.

6. Client Approvals:

* Present finalized documents to the client for approval.
* Provide explanations and clarifications as needed to ensure understanding.
* Obtain formal approval from the client through signed agreements or email confirmation.

7. Communication Channels:

* Establish regular meetings with stakeholders to discuss project progress, issues, and updates.
* Utilize email, project management software, chat tools and collaboration tools for asynchronous communication.
* Maintain an open-door policy for stakeholders to raise concerns or provide feedback.

8. Change Request Handling:

* Establish a formal change management process to capture, assess, and prioritize change requests.
* Evaluate the impact of proposed changes on scope, timeline, and budget.
* Obtain approval from the Change Control Board before implementing changes.

9. Progress Reporting to Stakeholders:

* Provide regular updates on project milestones, deliverables, and risks.
* Use status reports, dashboards, and presentations to communicate progress effectively.
* Highlight achievements, challenges, and upcoming tasks to keep stakeholders informed.

10. UAT - Client Project Acceptance:

* Coordinate User Acceptance Testing (UAT) with the client to validate that the software meets requirements.
* Provide clear instructions and test cases for the client to execute during UAT.
* Obtain sign-off on the UAT - Client Project Acceptance Form once the client confirms satisfaction with the software functionality.

**Document -3 Functional Specifications**

|  |  |
| --- | --- |
| Project Name | Update version of Universal Banking Solution FLEXCUBE and implement Oracle Banking Payments (OBPM) |
| Customer Name | ABC Bank |
| Project Version | 1.0 |
| Project Sponsor | ABC Bank |
| Project Manager | Mrs. Kalyani Singh |
| Project Initiation Date | 29-DEC-2024 |

Functional Requirement Specifications:

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Priority** |
| FR0001 | Customer Registration | User should be able to register in the application | 9 |
| FR0002 | Customer login into the application |  Customer should be able to login into the application | 8 |
| FR0003 | Bank Teller Registration | Bank Teller should be able to register with the application | 9 |
| FR0004 | Bank services listing | Bank services must be listed in the website | 7 |
| FR0005 | Adding electronic signature | Bank teller should be able add customers signature in the database | 9 |
| FR0006 | Interest and Charges calculation | Application must calculate interest and charges for products | 8 |
| FR0007 | Transaction Management | Bank Teller should be able to view and manage the transaction of customer on basis of status.  | 8 |
| FR0008 | CustomerManagement | Teller should be able to manage customers based on their account statement | 7 |
| FR0009 | Multiple Payment Gateways | The platform should integrate with multiple payment gateways to facilitate secure and convenient transactions | 9 |
| FR0010 | Unified Payment Interface (UPI) Placement | Customer should be able to make payment via UPI payment services | 9 |
| FR0011 | KYC adding facility | Bank teller should be able to add customers identity as KYC facility  | 9 |
| FR0012 | KYC Confirmation | Once KYC is completed by bank, customer should get notification in the text and mail form | 9 |
| FR0013 | Payment History | Customer should be able to see their payment history in the application as statement | 7 |
| FR0014 | Cashless withdrawal | Customer should be able to withdraw cash without card but with the help of mobile number and pan card details | 8 |
| FR0015 | Upper limit of UPI outgoing payment | System should make 1 lakh as upper limit of daily UPI transaction for common customer | 7 |
| FR0016 | OTP enabled transaction | Customer should get One Time Password (OTP) as factor of authentication for safe transaction | 8 |
| FR0017 | Compliant Status | Bank norms must be aligned to rules and regulations prescribed by Central Bank | 7 |
| FR0018 | Secure Transactions | The platform should ensure secure transactions by implementing appropriate encryption and security measures | 9 |
| FR0019 | Feedback collection | Application must ensure to take feedback from customers regarding service and experience | 8 |
| FR0020 | Reminder for regular update of application | Customer should get regular reminder for the update of mobile application to accommodate latest features  | 7 |

**Document 4- Requirement Traceability Matrix**

Requirement Traceability Matrix (RTM) - A Requirement Traceability Matrix (RTM) is a document that helps ensure all project requirements are accounted for, addressed, and tested during the project lifecycle. It establishes a link between requirements and their corresponding deliverables, development, and testing stages.

Note- 1. Completed status is represented by “Comp.”

 2. Work in Progress status is represented by “WIP”

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Descripti-on** | **Desi-gn** | **D1** | **T1** | **D2** | **T2** | **UAT** |
| FR0001 | Customer Registration | User should be able to register in the application | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0002 | Customer login into the application | Customer should be able to login into the application | Comp. | Comp. | Comp. | WIP | Comp. | WIP. |
| FR0003 | Bank Teller Registration | Bank Teller should be able to register with the application | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0004 | Bank services listing | Bank services must be listed in the website | Comp. | WIP. | Comp. | Comp. | Comp. | WIP. |
| FR0005 | Adding electronic signature | Bank teller should be able add customers signature in the database | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0006 | Interest and Charges calculation | Application must calculate interest and charges for products | Comp. | Comp. | Comp. | Comp. | WIP. | WIP. |
| FR0007 | Transaction Management | Bank Teller should be able to view and manage the transaction of customer on basis of status.  | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0008 | CustomerManagement | Teller should be able to manage customers on the basis of their account statement | Comp. | Comp. | Comp. | WIP. | Comp. | WIP. |
| FR0009 | Multiple Payment Gateways | The platform should integrate with multiple payment gateways to facilitate secure and convenient transactions | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0010 | Unified Payment Interface (UPI) Placement | Customer should be able to make payment via UPI payment services | Comp. | Comp. | WIP. | Comp. | Comp. | WIP. |
| FR0011 | KYC adding facility | Bank teller should be able to add customers identity as KYC facility  | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0012 | KYC Confirmation | Once KYC is completed by bank, customer should get notification in the text and mail form | Comp. | WIP. | Comp. | Comp. | Comp. | WIP. |
| FR0013 | Payment History | Customer should be able to see their payment history in the application as statement | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0014 | Cashless withdrawal | Customer should be able to withdraw cash without card but with the help of mobile number and pan card details | Comp. | Comp. | Comp. | Comp. | WIP. | WIP. |
| FR0015 | Upper limit of UPI outgoing payment | System should make 1 lakh as upper limit of daily UPI transaction for common customer | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0016 | OTP enabled transaction | Customer should get One Time Password (OTP) as factor of authentication for safe transaction | Comp. | WIP. | Comp. | Comp. | Comp. | WIP. |
| FR0017 | Compliant Status | Bank norms must be aligned to rules and regulations prescribed by Central Bank | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0018 | Secure Transactions | The platform should ensure secure transactions by implementing appropriate encryption and security measures | Comp. | Comp. | Comp. | Comp. | Comp. | WIP. |
| FR0019 | Feedback collection | Application must ensure to take feedback from customers regarding service and experience | Comp. | Comp. | Comp. | Comp. | Comp. | Comp. |
| FR0020 | Reminder for regular update of application | Customer should get regular reminder for the update of mobile application to accommodate latest features  | Comp. | Comp. | Comp. | Comp. | WIP. | WIP. |

**Document 5 Business Requirement Document (BRD) Template**

**Answer-** Business Requirement Document - A Business Requirement Document (BRD) is a key document that outlines the business objectives, needs, and expectations of a project. It acts as a bridge between stakeholders and the technical team, ensuring that everyone understands what the project aims to achieve. The BRD typically includes the project's purpose, scope, functional and non-functional requirements, key stakeholders, and any constraints or assumptions. It provides clarity, alignment, and a basis for project planning, ensuring that the delivered solution meets the organization's business goals.

For current project, BRD is prepared below:

**Update version of Universal Banking Solution FLEXCUBE and implement Oracle Banking Payments (OBPM)**

**Project\_Waterfall\_2024**

**Version 1.0**

**Mr. Tarun Kumar Deshmukh**

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**1. Document Revisions:**

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| --- | --- | --- |
| **Date** | **Version No** | **Document Changes** |
| 04/12/2024 | 1.0 | Initial Draft |
| 09/12/2024 | 2.0 | Added project objectives and success criteria |
| 13/12/2024 | 3.0 | Included stakeholder analysis and elicitation technique |
| 17/12/2024 | 4.0 | Completed functional requirements and requirement traceability matrix |
| 20/12/2024 | 5.0 | Updated priority and status in requirement traceability matrix |
| 25/12/2024 | 6.0 | Incorporated Appendices and finalized document |
| 28/12/2024 | 7.0 | Final review and formatting adjustments |

**2. Approvals:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role** | **Name** | **Title** | **Signature** | **Date** |
| Project Sponsor | Mr. Rama | Bank Executive | [Signature] | 25/12/2024 |
| Business Owner | Mr. Sachin | Head of Board of Governors | [Signature] | 25/12/2024 |
| Project Manager | Mrs. Kalyani Singh | Project Manager | [Signature] | 25/12/2024 |
| System Architect | Mr. Jay Shetty | Sr. Java Developer | [Signature] | 25/12/2024 |
| Development Lead | Mr. Jay Shetty | Sr. Java Developer | [Signature] | 28/12/2024 |
| User Experience Lead | Ms. Richa Salve | Java Developer | [Signature] | 28/12/2024 |
| Quality Lead | Mr. Rohan Dubey | Automation Tester | [Signature] | 28/12/2024 |
| Content Lead | Mr. Tarun Deshmukh | Business Analyst | [Signature] | 28/12/2024 |

**3. RACI Chart for This Document:**

RACI Matrix – A RACI matrix is a project management tool used to define and clarify the roles and responsibilities of team members and stakeholders involved in a project. The RACI matrix helps prevent confusion, overlaps, or gaps in responsibilities, promoting clear communication and effective project execution. It is often presented as a table mapping tasks or deliverables against team roles.

Here ‘R’ stands for Responsible, ‘A’ stands for Accountable, ‘C’ stands for Consulted, ‘I’ stands for Informed and ‘NA’ stands for Not Applicable.



**4. Introduction:**

**4.1 Business Goals**

Current project is related to upgrade the version of legacy system with standalone separate payment module which has below organizational goals & organizational needs:

**Organizational Goals:**

1. **Enhance Operational Efficiency**: By upgrading the FLEXCUBE Universal Banking Solution to version 11.8 and implementing Oracle Banking Payments, the organization aims to streamline operations and reduce system inefficiencies.
2. **Improve Customer Experience**: Introducing mobile banking, cardless ATM withdrawals, and UPI functionality directly improves user convenience and satisfaction.
3. **Ensure Compliance and Security**: Implementing KYC, electronic signatures, and daily transaction limits ensures adherence to regulatory standards and strengthens security measures.
4. **Support Scalability**: Migrating to the latest banking solutions enables the organization to handle increased customer volumes and transaction loads effectively.
5. **Optimize Payment Systems**: Balancing the load from the current payment interface with Oracle Banking Payments ensures smooth and uninterrupted transaction processes.

**Organizational Needs:**

1. **Technological Upgrades**: The organization requires advanced hardware, software, and IT infrastructure to support the FLEXCUBE and Oracle Banking Payments systems.
2. **Skilled Workforce**: Adequate training for staff to operate the upgraded systems effectively, ensuring seamless adoption of new processes.
3. **Data Migration Expertise**: Expertise in securely migrating customer data from version 6.8 to 11.8 without any data loss or downtime.
4. **Compliance and Security Frameworks**: Strengthened compliance checks and robust security measures to safeguard customer data and prevent fraud.
5. **Customer-Centric Solutions**: Tools and functionalities like mobile banking apps, UPI ID integration, and cardless ATM withdrawals to meet modern customer expectations.
6. **Financial Investment**: A substantial budget allocation for system upgrades, training, audits, and implementation to meet the project's technical and operational requirements.

**4.2 Business Objectives**

In the current project, we have following business objectives to achieve:

* Implementing the Know Your Customer (KYC) facility to enhance transparency and compliance.
* Integrating electronic signature functionality into the database to strengthen customer identification.
* Introducing mobile banking features to enable seamless account access and operations through a dedicated application.
* Enabling cardless ATM withdrawals using mobile numbers and PAN cards for added convenience.
* Incorporating UPI ID functionality on the payment screen to facilitate transactions to UPI accounts.
* Setting an upper daily transaction limit for UPI payments to ensure security and control.

**4.3 Business Rules**

In the current project, we have following business rules to implement:

**KYC Compliance:**

* All customer accounts must comply with the KYC requirements as per regulatory standards.
* Customer KYC records must be stored securely in the system and updated periodically.

**Electronic Signature Integration:**

* Customer identification must involve verifying the registered electronic signature against stored data.
* Only verified electronic signatures can authorize high-value transactions or changes to sensitive account details.

**Mobile Banking Functionality:**

* The mobile banking app must enable secure login with multi-factor authentication.
* Customers should have access to all account-related information and basic banking functionalities through the app.
* App services should include fund transfers, bill payments, and transaction history views.

**Cardless ATM Withdrawals:**

* Customers must provide their registered mobile number and PAN to initiate cardless ATM withdrawals.
* A secure OTP or PIN must be sent to the registered mobile number for verification before withdrawal.

**UPI Transactions:**

* Customers must be able to generate and link UPI IDs to their accounts via the bank's application.
* UPI IDs must be used for seamless payments and fund transfers.
* Each transaction must follow strict authentication protocols.

**Daily UPI Transaction Limit:**

* A configurable daily transaction limit for UPI payments must be enforced.
* Alerts must be sent to customers when they approach or exceed the daily transaction limit.
* Transactions exceeding the limit should be automatically declined.

**Data Migration Accuracy:**

* All existing customer data must be migrated accurately from FLEXCUBE version 6.8 to version 11.8 without data loss.
* A data validation check must be performed post-migration to ensure completeness and consistency.

**Compliance and Security:**

* All system changes, including new features, must meet regulatory and compliance standards.
* Regular audits must be conducted to ensure data security and system integrity.

**System Performance and Load Balancing:**

* The Oracle Banking Payments system must handle peak transaction loads without downtime or latency.
* A fallback mechanism must be implemented to ensure continuity in case of system failures.

**4.4 Background**

Currently, ABC Bank has been utilizing the FLEXCUBE Universal Banking Solution, version 6.8 with integrated payment module, since its implementation in December 2011. With the rapid pace of technological advancements, version 6.8 is no longer compatible with many modern financial systems and technological requirements and became heavy for payments module. This limitation necessitates an upgrade to version 11.8 and the migration of legacy data to the new system with separate payments module. Upgrading to the latest version will enable the bank to leverage advanced technologies, streamline operations, enhance customer satisfaction, and potentially increase revenue through improved efficiency and service delivery.

**4.5 Project Objectives**

In the current project, we have following project objectives to achieve:

**Upgrade and Migration:**

* Upgrade the FLEXCUBE Universal Banking Solution from version 6.8 to version 11.8 to enhance system capabilities.
* Migrate all customer data seamlessly and accurately from the existing system to the upgraded version while ensuring data integrity.

**Implementation of Advanced Features:**

* Integrate the Know Your Customer (KYC) functionality to enhance compliance and transparency.
* Incorporate electronic signature verification for secure and reliable customer identification processes.

**Enhanced Digital Banking Services:**

* Develop and deploy a dedicated mobile banking application for customers, ensuring seamless and secure account access and operations.
* Enable cardless ATM withdrawals using mobile numbers and PAN cards for improved convenience and accessibility.

**Modernized Payment Systems:**

* Implement the Oracle Banking Payments module as a standalone system to handle high transaction loads and improve efficiency.
* Incorporate UPI ID functionality for effortless and secure digital payments.
* Establish a configurable daily transaction limit for UPI payments to enhance security and financial control.

**Customer and System Security:**

* Ensure compliance with regulatory standards and security protocols in all system upgrades and new implementations.
* Validate the accuracy of data migration and maintain system performance during peak transaction periods.

**Success Measurement and User Adoption:**

* Achieve user adoption of mobile banking and UPI payment systems by providing user-friendly interfaces and robust support.
* Ensure all success criteria are met, including full KYC compliance, secure electronic signature verification, seamless digital transactions, and enhanced customer convenience through innovative features.

**4.6 Project Scope**

In the current project, we have following In Scope and Out Scope Functionality:

**In-Scope Functionality:**

1. **FLEXCUBE Upgrade and Migration:**
	* Upgrade FLEXCUBE Universal Banking Solution from version 6.8 to 11.8.
	* Migrate customer data from version 6.8 to 11.8 with ensured data integrity and accuracy.
2. **Compliance Enhancements:**
	* Implement KYC (Know Your Customer) functionality for improved transparency and regulatory compliance.
	* Integrate electronic signature functionality to verify customer identity securely.
3. **Mobile Banking Enhancements:**
	* Develop and deploy a mobile banking application to allow customers seamless access to account operations.
	* Enable cardless ATM withdrawals using mobile numbers and PAN cards for enhanced customer convenience.
4. **UPI and Payment System Features:**
	* Implement Oracle Banking Payments as a standalone module to improve payment system performance.
	* Add UPI ID functionality for secure and seamless transactions to UPI accounts.
	* Enforce daily transaction limits for UPI payments to ensure security and compliance.
5. **Testing and Validation:**
	* Perform testing for system functionality, data migration, and new feature implementation.
	* Ensure end-to-end testing of all upgraded and newly added functionalities.
6. **Customer and System Support:**
	* Provide necessary training, documentation, and support for customers and internal stakeholders.

**Out-of-Scope Functionality:**

1. **FLEXCUBE Enhancements Beyond Version 11.8:**
	* Any additional upgrade or patch implementation beyond version 11.8.
2. **Non-Oracle Banking Systems:**
	* Integration with third-party systems or software outside of Oracle’s ecosystem.
3. **Custom Development:**
	* Development of customized modules outside of the listed scope, such as non-standard features or services not aligned with the goals and objectives.
4. **Legacy System Modifications:**
	* Further development or enhancements to FLEXCUBE version 6.8 or other legacy systems.
5. **Other Payment Methods:**
	* Implementation of non-UPI payment methods or channels not mentioned in the project objectives (e.g., cryptocurrency payments, international remittance services).
6. **Branch-Specific Features:**
	* Development or enhancement of branch-only banking services or non-digital banking features.
7. **Marketing or Customer Outreach:**
	* Activities related to customer onboarding, marketing campaigns, or user training sessions (beyond technical documentation and support).
8. **Future Upgrades:**
	* Plans for future upgrades, enhancements, or system migrations beyond the immediate project scope.

**5.Assumptions:**

For the current project, list of assumptions are following:

* Adequate testing environments and tools are available to validate the system upgrade, data migration, and newly implemented features.
* All customer data in FLEXCUBE version 6.8 is accurate, consistent, and complete, enabling a smooth migration to version 11.8.
* All necessary stakeholders will provide timely input and approvals during the project lifecycle.
* Regulatory bodies and auditors will cooperate to validate the KYC and compliance-related functionalities.
* Oracle Banking Payments module will integrate seamlessly with the upgraded FLEXCUBE system without compatibility issues.
* Customers will have access to the necessary devices (smartphones) and skills to adopt mobile banking features, UPI transactions, and cardless ATM withdrawals.
* No unforeseen delays will significantly impact the project timeline.
* Sufficient training materials and documentation will be developed and provided to both internal staff and customers to ensure a smooth transition.
* There would be digital literacy among the customer and teller to operate the system.

**6.Constraints:**

For the current project, the list of constraints are following:

* Time Constraints - The project must be completed within a predefined timeline, including the upgrade, migration, testing, and deployment phases.
* Budgetary Constraints - The project budget is fixed and must cover all aspects, including licensing costs for FLEXCUBE version 11.8, Oracle Banking Payments module, hardware upgrades, and training.
* Regulatory and Compliance Constraints - The electronic signature, KYC, UPI functionality and data privacy must meet legal standards for digital authentication.
* Technical Constraints - The existing infrastructure must support the upgraded FLEXCUBE version 11.8 and Oracle Banking Payments module without significant disruptions.
* Resource Constraints - Availability of skilled personnel, including IT staff, testers, and trainers, may be limited.
* User Constraints - Adoption of new mobile banking features and cardless ATM withdrawals may depend on customers’ willingness and ability to adapt to the changes.

**7.Risks:**

Based on the current project, the project is vulnerable to following risks:

**Technological Risks**

* + **Integration Issues:** Difficulties in integrating the upgraded FLEXCUBE version 11.8 and Oracle Banking Payments with legacy systems and external APIs (e.g., UPI, e-signature systems).
	+ **Data Migration Challenges:** Risk of data corruption, loss, or incomplete migration during the transfer from FLEXCUBE version 6.8 to version 11.8.
	+ **System Downtime:** Extended system downtime during the upgrade or migration process may disrupt banking operations, impacting customer trust and satisfaction.
	+ **Outdated Technology:**Delays in project delivery may lead to the selected technologies (e.g., Oracle Banking Payments) becoming outdated.
	+ **Cybersecurity Threats:** The introduction of new mobile banking features and cardless ATM withdrawals may expose vulnerabilities that cybercriminals could exploit.

**Skills Risks**

* + **Lack of Expertise:** Limited availability of staff with expertise in FLEXCUBE version 11.8, Oracle Banking Payments, and KYC implementation.
	+ **Training Needs:** Inadequate training for IT staff and business users to operate and maintain the new systems.
	+ **Dependence on External Vendors:** Dependence on Oracle and other vendors for technical support may result in delays if vendor resources are not readily available.

**Political Risks**

* + **Regulatory Changes:** Changes in government regulations or compliance standards (e.g., KYC, UPI transaction limits) during the project could require rework.
	+ **Stakeholder Misalignment:** Conflicts between internal stakeholders (e.g., business units, IT teams) or between the bank and third-party vendors over priorities and project scope.
	+ **Customer Resistance:** Public or customer backlash against mandatory KYC updates, mobile banking features, or changes to ATM withdrawal processes.

**Business Risks**

* + **Project Cancellation:** If the project is cancelled, the bank will face:
		- Continued operational inefficiencies due to outdated FLEXCUBE version 6.8.
		- Increased costs for maintaining legacy systems.
		- Potential loss of customers to competitors offering modern banking features.
	+ **Operational Disruptions:** Failure to successfully migrate to FLEXCUBE 11.8 or implement Oracle Banking Payments could disrupt daily banking operations, resulting in reputational damage and financial loss.
	+ **Customer Churn:** Delays or errors in implementing customer-facing features (e.g., mobile banking, cardless ATM withdrawals) may lead to dissatisfaction and customer attrition.

**Requirement Risks**

* + **Incomplete or Ambiguous Requirements:** The initial phase may fail to capture all technical and business requirements for the FLEXCUBE upgrade, Oracle Banking Payments, or mobile banking features.
	+ **Scope Creep:** Mid-project changes to requirements could disrupt timelines, increase costs, and create gaps in implementation.
	+ **Customer Needs:** Failure to fully understand and incorporate customer needs for new features like mobile banking and UPI payments could result in low adoption.

**Other Risks**

* + **Change Management Risks:** Resistance from employees to adapt to the upgraded system and new processes.
	+ **Budget Overruns:** Unanticipated costs, such as additional hardware, software licenses, or external consultancy services.
	+ **Testing Challenges:** Insufficient time or resources allocated for thorough testing of the upgraded system and new functionalities.
	+ **Third-Party Dependencies:** Delays or non-compliance by third-party vendors providing essential components like UPI integration, electronic signatures, or Oracle support.
	+ **Market Competition:** Competitors launching advanced banking features earlier may reduce the impact or relevance of the project upon completion.

**8.Business Process Overview:**

**8.1 Legacy System (AS-IS)**

The legacy system at ABC Bank is a decade-old platform that has served the bank's core banking and payment processing needs since its implementation in 2011. However, due to its outdated technology and limitations in handling modern financial requirements, the system no longer aligns with the bank's strategic goals or operational demands. Below is a detailed overview of the AS-IS system:

**1. Core Banking System: FLEXCUBE Version 6.8**

* Primary Functionality:
	+ Handles core banking operations, customer account management, and transaction processing.
* Limitations:
	+ Outdated Architecture: The system is incompatible with modern financial technology standards and lacks support for advanced functionalities like KYC automation, UPI payments, or electronic signatures.
	+ Scalability Challenges: Designed for the banking needs of 2011, it struggles to accommodate the growing volume and complexity of transactions in 2023.
	+ Maintenance and Support Issues: Limited support from the vendor for version 6.8, resulting in increased maintenance costs and difficulty addressing critical bugs or vulnerabilities.

**2. Integrated Payment Module**

* Functionality: An embedded payments system manages internal and external transactions.
* Challenges:
	+ Overburdened Module: The module is unable to efficiently handle the growing transaction load, leading to performance bottlenecks.
	+ Lack of Advanced Features:
		- No UPI ID functionality or daily transaction limit enforcement.
		- Inadequate support for new payment channels and methods.
	+ Integration Issues: Limited ability to connect with external payment platforms or APIs, creating operational inefficiencies.

**3. Customer Identification and Compliance**

* + Manual processes for onboarding and verifying customer identity, prone to errors and delays.
	+ Inefficiencies in maintaining compliance with evolving regulatory standards.
	+ Absent, requiring reliance on physical documentation and manual verification, which slows down processes and impacts the customer experience.

**4. Digital Banking Features**

* + No support for mobile banking or smartphone applications.
	+ Customers must rely on branch visits or desktop web applications for basic banking operations.
	+ This functionality is unavailable, requiring physical cards for cash withdrawals.
	+ The user interface is outdated and not optimized for modern banking practices, resulting in lower customer satisfaction and engagement.

**5. Data Management and Security**

* + Customer data is stored in outdated formats, creating challenges for data migration and analytics.
	+ The system struggles to handle large-scale data queries, slowing down transaction processing.
	+ The system lacks modern cybersecurity protocols and may not comply with current data protection regulations, exposing the bank to risks of breaches and penalties.

**6. Change Management and Staff Expertise**

* + Staff are trained only on version 6.8, with limited exposure to newer technologies or practices.
	+ The IT and operational teams may lack the expertise needed to implement or support an upgraded system without additional training.

**7. Compliance and Regulation**

* + The system does not fully support automated compliance processes, such as KYC, electronic signature verification, or transaction monitoring.
	+ Non-adherence to government or financial regulatory requirements may lead to penalties and reputational damage.

**8.2 Proposed Recommendations (TO-BE):**

Based on the situation, problem, opportunity, goals, objectives, success criteria, and identified risks, the TO-BE system should address current limitations, leverage opportunities for technological and operational improvements, and mitigate associated risks. The following recommendations outline the proposed recommendations (TO-BE) for ABC Bank.

**1. System Upgrade and Data Migration**

**Upgrade FLEXCUBE to Version 11.8**

* Implement the latest FLEXCUBE Universal Banking Solution patch-set to replace version 6.8, ensuring compatibility with modern technologies.

**Migrate Legacy Data**

* Conduct a comprehensive data migration from version 6.8 to 11.8, ensuring:
	+ **Data Accuracy:** Perform rigorous validation to maintain data integrity.
	+ **Compliance:** Align migration processes with data privacy regulations.
	+ **Data Cleaning:** Eliminate redundant or outdated records during migration.

**Standalone Oracle Banking Payments Module**: Benefits include:

* + Increased transaction processing speed and efficiency.
	+ Improved scalability to handle high transaction volumes.
	+ Flexibility to integrate with external payment platforms (e.g., UPI, mobile wallets).

**2. Customer-Focused Enhancements**

**KYC Process Automation**

* Automate the Know Your Customer (KYC) process to enhance efficiency and regulatory compliance.

**Electronic Signature Integration**

* Enable the capture and verification of electronic signatures for transactions and onboarding.

**Mobile Banking Application**

* Develop and deploy a robust mobile banking application with the following features:
	+ Secure account access using biometric authentication (fingerprint, facial recognition).
	+ Instant account management (e.g., balance checks, fund transfers, bill payments).
	+ UPI integration for seamless digital transactions.

**Cardless ATM Withdrawals**

* Enable cardless cash withdrawals through:
	+ Authentication using mobile numbers and PAN cards.
	+ Real-time generation of secure one-time passwords (OTPs) for withdrawals.

**UPI Payment Functionality**

* Integrate UPI payment capabilities into the core and standalone payment modules.
* Features include:
	+ Direct payments to UPI IDs via a simplified interface.
	+ Enforcement of daily transaction limits for security.

**3. Technical and Operational Improvements**

**Modernized Infrastructure**

* Upgrade underlying IT infrastructure to support the new system’s requirements:
	+ Cloud-based or hybrid hosting solutions for better scalability.
	+ Implementation of high-speed servers and optimized database systems.

**Improved Security Measures**

* Incorporate advanced cybersecurity protocols:
	+ Data encryption during storage and transmission.
	+ Multifactor authentication (MFA) for critical operations.
	+ Regular vulnerability assessments and penetration testing.

**4. Change Management and Training**

**Employee Training Programs**

* Conduct training sessions for staff to familiarize them with the new system.

**Customer Awareness Campaigns**

* Educate customers on:
	+ Mobile banking application usage.
	+ Benefits of cardless withdrawals and digital payments.
	+ Security practices to protect against phishing and fraud.

**9.Business Requirements:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Priority** |
| BR0001 | Customer Registration | User should be able to register in the application | Highest |
| BR0002 | Customer login into the application |  Customer should be able to login into the application | High |
| BR0003 | Bank Teller Registration | Bank Teller should be able to register with the application | Highest |
| BR0004 | Bank services listing | Bank services must be listed in the website | Medium |
| BR0005 | Adding electronic signature | Bank teller should be able add customers signature in the database | Highest |
| BR0006 | Interest and Charges calculation | Application must calculate interest and charges for products | High |
| BR0007 | Transaction Management | Bank Teller should be able to view and manage the transaction of customer on basis of status.  | High |
| BR0008 | CustomerManagement | Teller should be able to manage customers based on their account statement | Medium |
| BR0009 | Multiple Payment Gateways | The platform should integrate with multiple payment gateways to facilitate secure and convenient transactions | Highest |
| BR0010 | Unified Payment Interface (UPI) Placement | Customer should be able to make payment via UPI payment services | Highest |
| BR0011 | KYC adding facility | Bank teller should be able to add customers identity as KYC facility  | Highest |
| BR0012 | KYC Confirmation | Once KYC is completed by bank, customer should get notification in the text and mail form | High |
| BR0013 | Payment History | Customer should be able to see their payment history in the application as statement | Medium |
| BR0014 | Cashless withdrawal | Customer should be able to withdraw cash without card but with the help of mobile number and pan card details | Medium |
| BR0015 | Upper limit of UPI outgoing payment | System should make 1 lakh as upper limit of daily UPI transaction for common customer | Medium |
| BR0016 | OTP enabled transaction | Customer should get One Time Password (OTP) as factor of authentication for safe transaction | High |
| BR0017 | Compliant Status | Bank norms must be aligned to rules and regulations prescribed by Central Bank | Medium |
| BR0018 | Secure Transactions | The platform should ensure secure transactions by implementing appropriate encryption and security measures | Highest |
| BR0019 | Feedback collection | Application must ensure to take feedback from customers regarding service and experience | Medium |
| BR0020 | Reminder for regular update of application | Customer should get regular reminder for the update of mobile application to accommodate latest features  | Medium |

**Use Case Diagram:**

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**10.Appendices**

**10.1 List of Acronyms**

* UAT-User Acceptance Testing
* BRD- Business Requirement Document
* BR- Business Requirement
* UX- User Experience
* SRS- Solution Requirement Specifications
* UI- User Interface
* FR – Functional Requirements

**10.2 Glossary of Terms**

* Flexcube – Universal Banking Solution product used by the bank.
* OBPM – Standalone Payment application for payments.
* Data Validation: Procedures implemented to ensure the accuracy, consistency, and quality of data entered into the system.
* User Role: A set of permissions that define what actions a user can perform within the system.

**10.3 Related Documents**

* Functional Specifications
* Technical Design Document
* This Business Requirements Document (BRD) provides a comprehensive overview of the objectives, scope, requirements, and other relevant aspects of the project.