CREATE PROCESS MODELS AND VISUALIZATION

Core Digital Transformation for Retail Banking
Customer Onboarding & KYC Verification Process

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Introduction

Flowcharts are vital tools for solutions and systems architects, enabling the visualization of complex processes such as customer onboarding and KYC verification. This document maps the complete process from account request to account creation confirmation, highlighting decision points and data trends such as KYC document validation. A well-designed flowchart enhances stakeholder understanding, identifies inefficiencies, and supports process optimization aligned with PMI standards.

Task 1: Understand the Appointment Scheduling Process

Analyze and document the complete journey of scheduling a customer onboarding appointment — from the moment a customer requests an account to KYC completion and account confirmation. Consider key stages, departments, actions, and decision points that influence the process flow.

Stage	Description	Department Involved	Key Actions	Decision Points
Request Account Opening	Customer initiates a new account request via the online portal or mobile app. Customer logs in or creates a profile and selects the preferred account type and branch.	Customer Services	Log in / register; select account type (savings, current, business); choose preferred branch	Is the customer an existing or new user?
Submit KYC Documents	Customer uploads identity and address verification documents as required by KYC regulations (passport, national ID, proof of address).	Compliance / Operations	Upload documents; perform OCR extraction; initial format validation check	Are documents in the correct format and legible?
KYC Verification & Credit Check	System performs automated KYC verification against government databases and sanctions watchlists. Credit Bureau API is invoked to assess credit history.	Compliance / IT / Risk	AML screening; sanctions watchlist check; Credit Bureau API call; identity match validation	Is KYC verification successful? Is the credit score acceptable?
Account Creation	Upon successful KYC and credit verification, the system creates the customer account, assigns an account	IT / Banking Operations	Generate account number; configure access controls (RBAC); set up	Is account creation completed without errors?

| | number, and sets up RBAC permissions. | | online banking credentials | |
| Notify Customer | System sends automated confirmation notifications (email and SMS) containing account credentials, next steps, and welcome information. | Customer Services / IT | Send email confirmation; send SMS alert; provide login link and onboarding guide | Has the notification been delivered successfully? |

Task 2: Identify the Key Components

Define the key stages of the customer onboarding process. Focus on stages from request to confirmation and real-time data updates. Think critically about what might be missing or oversimplified, and add stages based on your understanding of a real-world retail banking onboarding system.

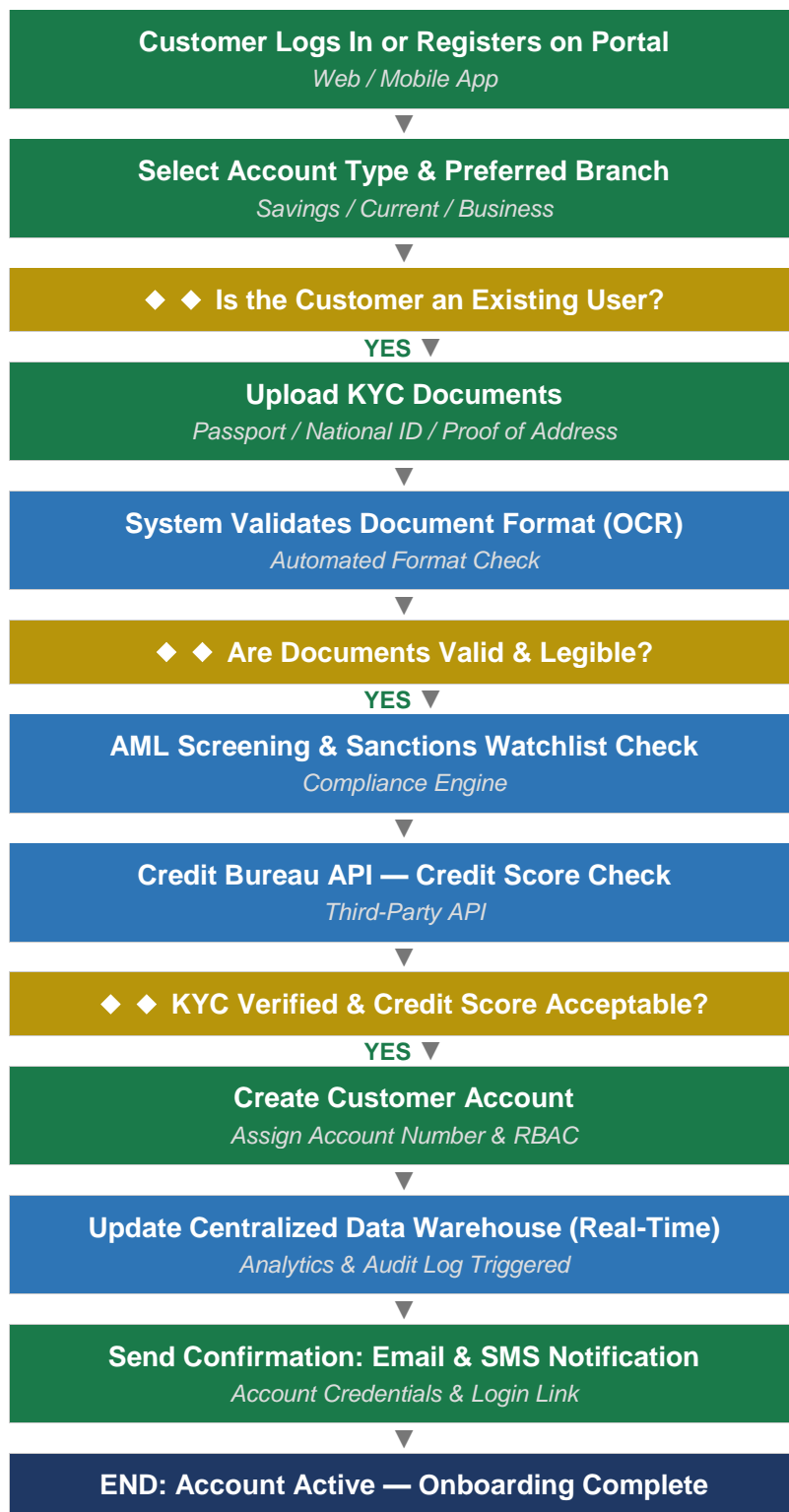| Stage	Description
Request Account	The customer logs in or registers on the online banking portal and selects the preferred account type and branch. This is the entry point to the onboarding journey.
Submit KYC Documents	The customer uploads mandatory identity verification documents (passport, national ID, proof of address). The system performs OCR extraction and validates document format.
KYC Verification	The system cross-references submitted documents with government databases and AML/sanctions watchlists. This is a critical compliance checkpoint — failure routes the customer to a manual review queue.
Credit Score Check	The Credit Bureau API is invoked to assess the applicant's credit history and risk profile. The outcome determines account eligibility and any applicable credit limits.
Create Account	On successful verification, the system auto-generates an account number, configures role-based access controls (RBAC), and sets up online banking credentials.
Real-Time Data Update	Customer data and account details are written to the centralized data warehouse in real time, triggering downstream analytics dashboards and compliance audit logs.
Notify Customer	Automated email and SMS notifications are dispatched with account credentials, a secure login link, and onboarding guidance — completing the end-to-end journey.

Task 3: Create the Flowchart

The flowchart below illustrates the customer onboarding and KYC verification process for the Core Digital Banking Platform. It uses UML-compliant shapes and colour coding to distinguish start/end points, actions, and decision gateways.

◯ Start / End	▢ Action Step	◆ Decision Point	▢ Sub-process / System

START: Customer Initiates Account Request

▼

Customer Logs In or Registers on Portal
Web / Mobile App

▼

Select Account Type & Preferred Branch
Savings / Current / Business

▼

◆ ◆ **Is the Customer an Existing User?**

YES ▼

Upload KYC Documents
Passport / National ID / Proof of Address

▼

System Validates Document Format (OCR)
Automated Format Check

▼

◆ ◆ **Are Documents Valid & Legible?**

YES ▼

AML Screening & Sanctions Watchlist Check
Compliance Engine

▼

Credit Bureau API — Credit Score Check
Third-Party API

▼

◆ ◆ **KYC Verified & Credit Score Acceptable?**

YES ▼

Create Customer Account
Assign Account Number & RBAC

▼

Update Centralized Data Warehouse (Real-Time)
Analytics & Audit Log Triggered

▼

Send Confirmation: Email & SMS Notification
Account Credentials & Login Link

▼

END: Account Active — Onboarding Complete

Alternative / Exception Flows

- New User (NO path): Customer is directed to full registration form before proceeding to KYC document upload.
- Invalid Documents (NO path): Customer is prompted to re-upload documents or contact support. Maximum 3 retry attempts before case is escalated to manual review.

- KYC/Credit Fail (NO path): Application is routed to the compliance review queue. Customer receives notification with required actions and estimated timeline.

Flowchart Validation Checklist

Validation Item	Status	Notes
Flowchart adheres to UML standards with clear representation	Yes	Ovals = Start/End, Rectangles = Actions, Diamonds = Decisions
All decision points have valid Yes / No paths	Yes	Three decision gateways: Existing User, Document Validity, KYC/Credit
Accurately reflects customer data trends (e.g., KYC verification rates)	Yes	KYC and AML screening modelled as discrete steps with failure paths
Redundant or repetitive actions combined wherever possible	Yes	AML + sanctions check combined into single compliance engine step
Each step reviewed for completeness (authentication, KYC status updates)	Yes	Login, OCR validation, credit check, RBAC creation all included
Flowchart exported / saved as Flowchart.png	Yes	Use Lucidchart / Visio / Draw.io to render and export
Start and End nodes are clearly identified	Yes	Dark blue oval nodes at top and bottom of flow
Compliance requirements (KYC, AML, GDPR) are represented	Yes	AML screening and sanctions check included as subprocess nodes

Reflection Questions

1. What challenges did you face when identifying actors and use cases?

Challenge	Description
Granularity Balance	Deciding whether to model high-level business processes or break them into atomic steps was the main challenge. For example, 'Submit KYC Documents' encompasses OCR extraction, format validation, and document storage — each could be a separate node. We opted for a business-oriented grouping that remains accessible to non-technical stakeholders.
Compliance Complexity	Mapping multiple simultaneous regulatory requirements (KYC, AML, PCI-DSS, GDPR) into a linear flowchart required careful sequencing to avoid misrepresenting overlapping compliance controls as purely sequential steps.

Exception Handling	Modelling exception paths (e.g., document re-upload, manual escalation) without cluttering the main flow required a deliberate decision to separate these into an 'Alternative Flows' section rather than embed every edge case inline.

2. How does your diagram facilitate understanding of the program's functionality?

Benefit	Description
System Boundary Clarity	The flowchart makes it immediately visible which steps are internal (core banking platform) and which involve external systems (Credit Bureau API, government watchlists), reducing ambiguity for developers and compliance reviewers.
Decision Transparency	Explicit Yes/No decision diamonds ensure all stakeholders understand exactly where the process branches, making it easier to identify risk points and design appropriate controls for each branch.
Stakeholder Communication	Color-coded nodes (blue = start/end, green = actions, amber = decisions) allow non-technical stakeholders such as compliance officers and executives to quickly navigate the diagram without requiring deep technical knowledge.

3. What are your suggestions for improving customer experience?

Strategy	Description
Real-Time Progress Tracker	Display a live onboarding progress bar to customers so they can see exactly which stage their application is at (e.g., 'Documents Received → KYC in Progress → Account Being Created'). This reduces anxiety and customer support calls.
Intelligent Document Upload	Implement AI-assisted document scanning that pre-validates image quality before submission, providing instant feedback if a document is blurry, expired, or incorrect — eliminating the retry loop and reducing processing delays.
Onboarding Completion Target < 5 Minutes	Combine swimlane diagrams and process simulation to identify bottlenecks in the KYC flow. Automate the credit bureau API call in parallel with AML screening rather than sequentially, targeting end-to-end completion under 5 minutes as per the project SLA.