Transforming Lending with Open Banking: A Case Study in Building a Cash Flow Underwriting System

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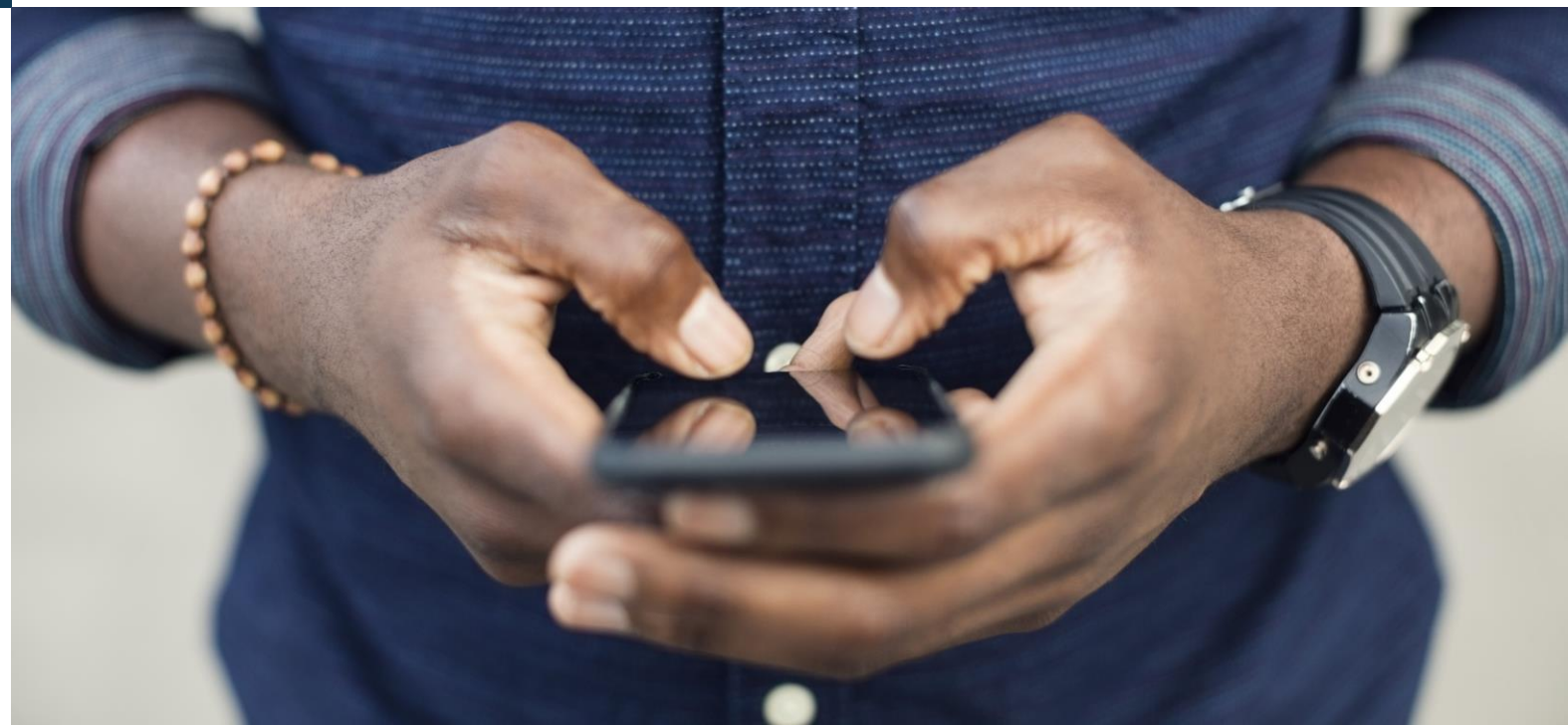
iCreditWorks



Agenda

What is cash flow underwriting?

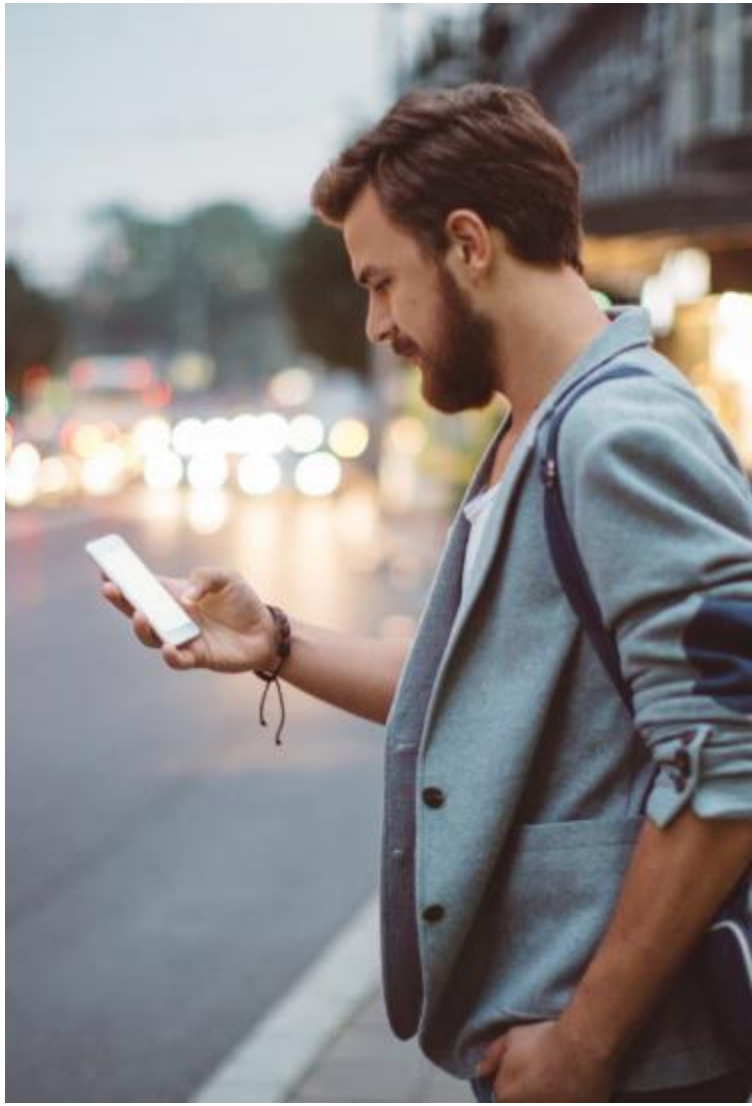
Open Banking

Methodology
- Open Banking Integration
- ML Models
- Custom Underwriting Rules

Demo

Design and Implementation
- Consumer application (Mobile)
- Underwriting Platform
- Aggregator Platform
- Processing and Modelling Platform

Challenges and Limitations



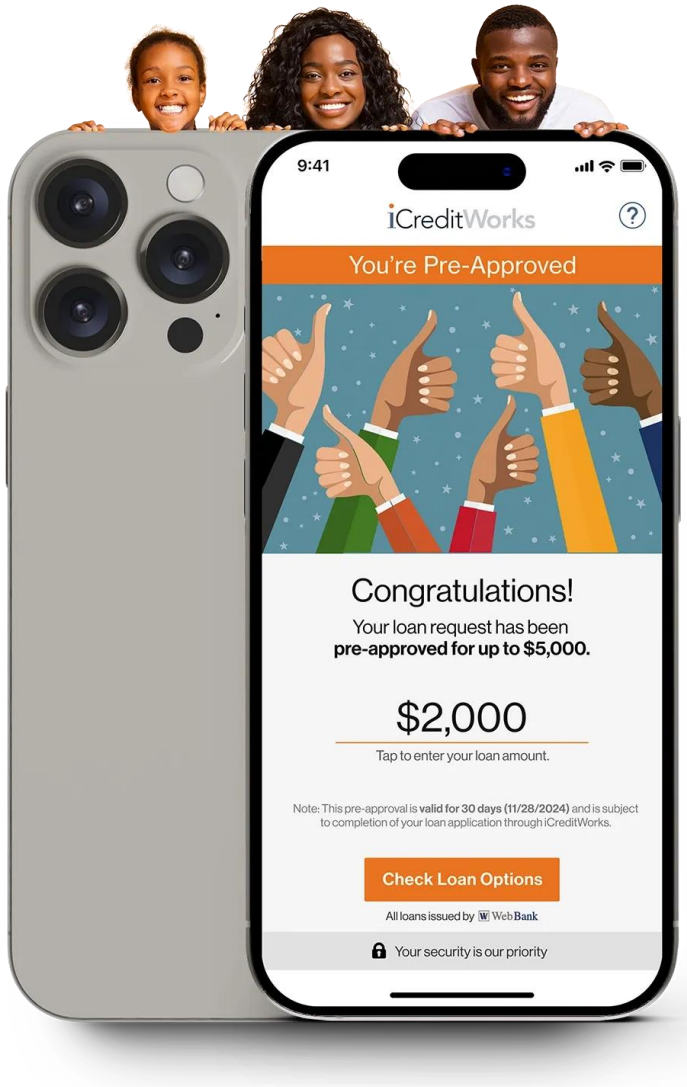
About iCreditWorks

iCreditWorks is a fintech company that drives B2B2C financing at the point of sale (POS).

iCreditWorks provides credit decisions in seconds and offers a range of loan products catering to different asset classes, from Prime Plus to Sub-Prime, thin / No FICO, and the unbanked.

Industry Verticals

- Dental Financing
- Equipment Financing
- PaaS – Platform as a Service



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What is cash flow underwriting and how is it different from traditional credit-based underwriting

Traditional Underwriting

- Credit attributes based – Fico, Vantage, Debt to Income Ratio, Income, traditional scoring model
- Issues – Thin file, minimal credit history, fluctuating incomes

Cash flow Underwriting

- Analyze bank transactions through open banking connections.
- Generate a cash flow score
- Underwriting rules based on cash flow score and identified income.

Open Banking

- Securely sharing financial data via APIs with user consent.
- <u>Key Role in Cash Flow Underwriting:</u> Provides access to real-time banking transaction data, which is critical for evaluating an applicant's financial health beyond traditional credit scoring.
- Data Privacy and Security:
  - Use of secure authentication mechanisms (OAuth, multi-factor authentication).
  - Compliance with regulations.
  - Ensures transparency and consent from users for data sharing.
- User Experience: Same as Financial Institute’s application.

Methodology

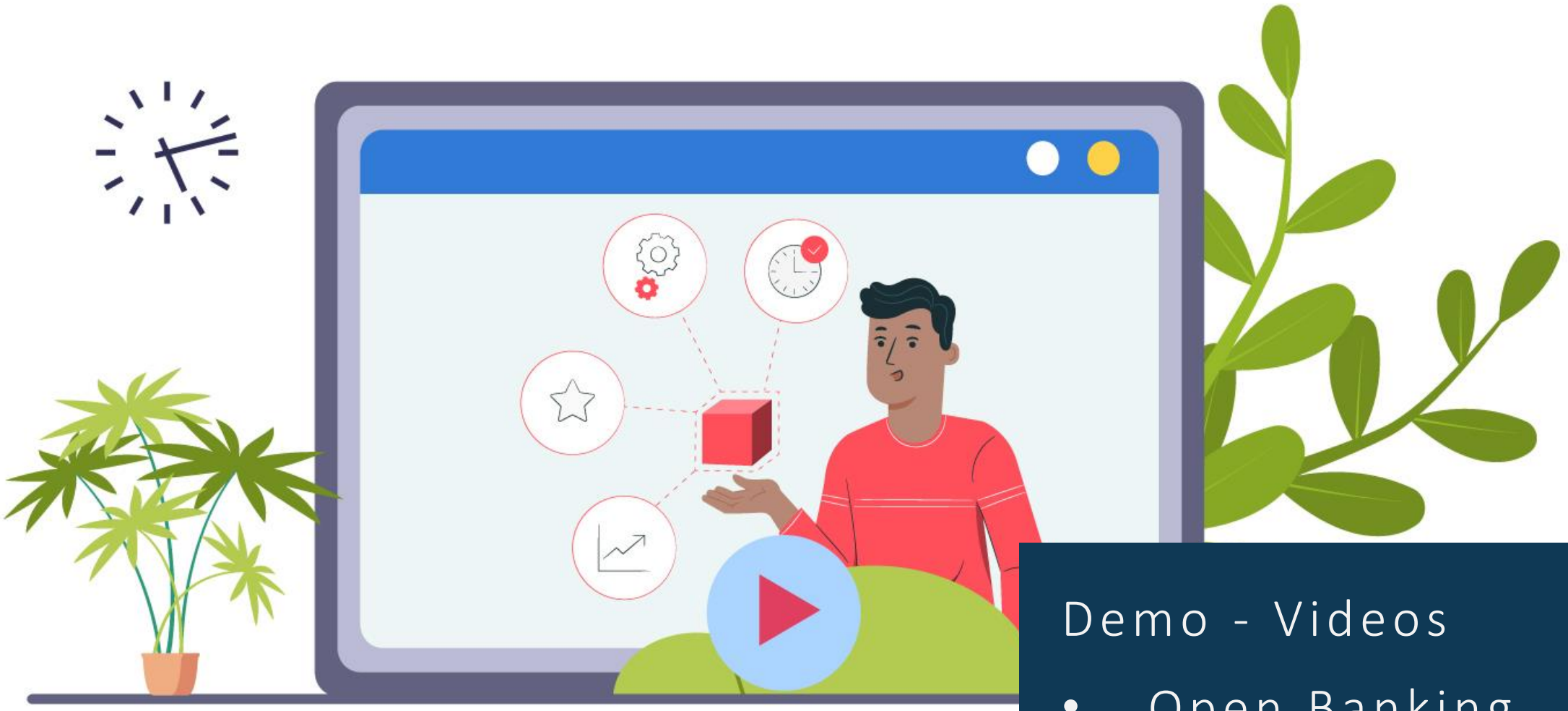
The cash flow underwriting system leverages real-time financial transaction data obtained via open banking APIs. That data is then run against a machine learning model to get a cash flow score and income. Based on the cash flow score and income, underwriting rules are utilized to identify the subject's approval amount.

Bank Integration

- Open Banking
- Non-Open Banking Supported Financial Institutes(Credit Unions)
- Fintech Banks

Machine Learning Custom Models

Underwriting rules

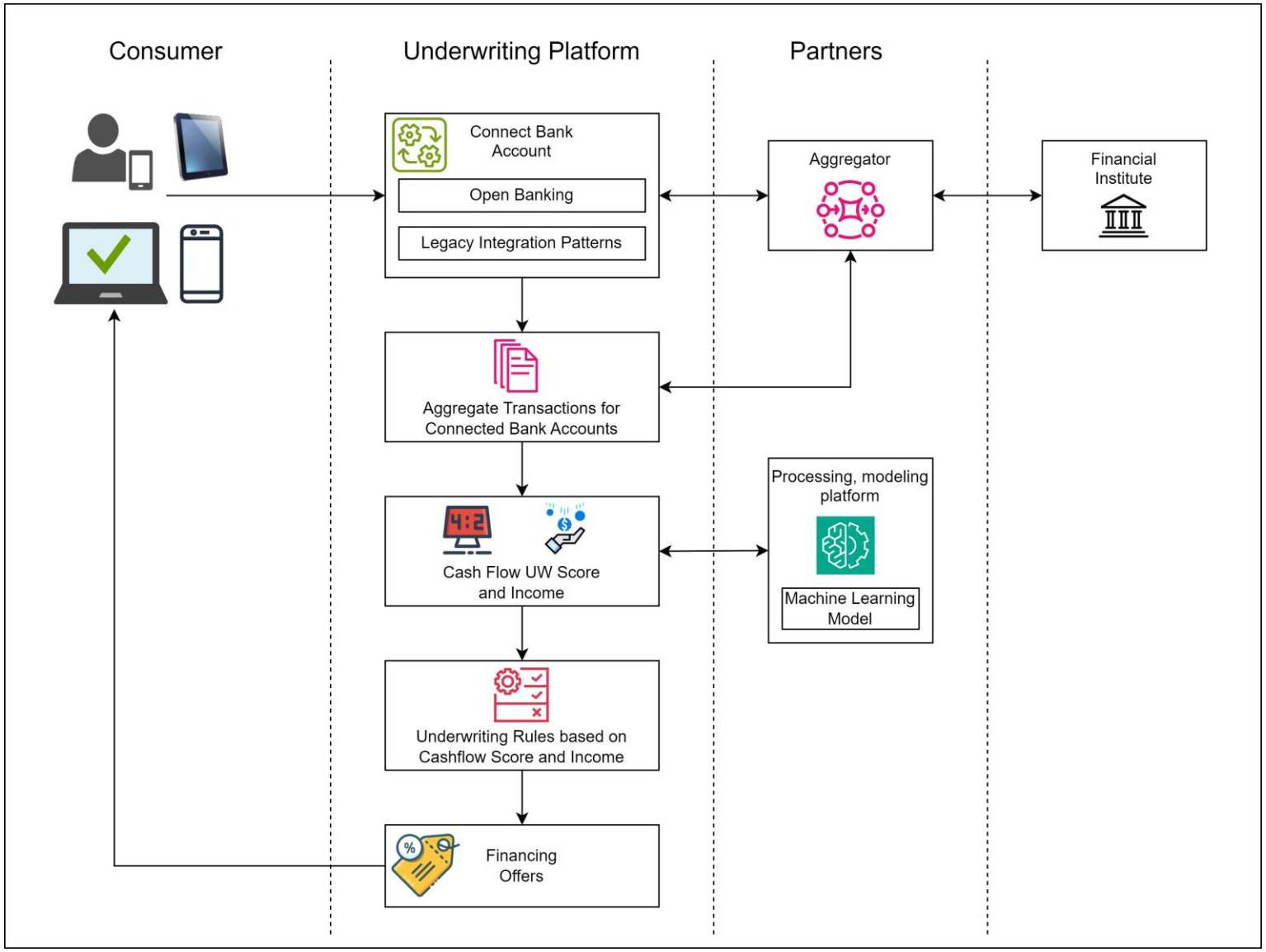


Demo - Videos

- Open Banking
- Non-Open banking

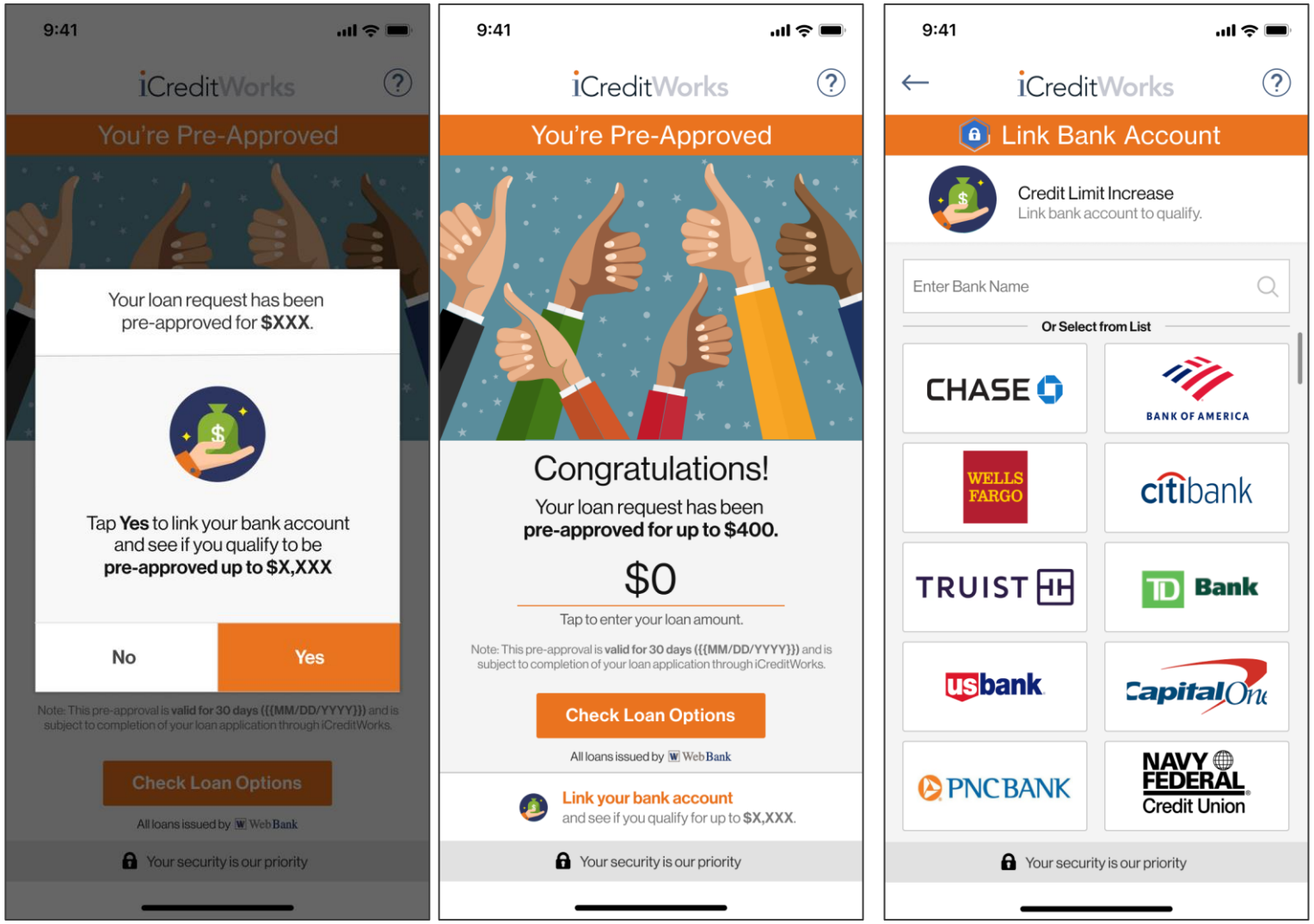
Design and Implementation

- Consumer application (Mobile)
- Underwriting Platform
- Aggregator Platform
- Processing and Modelling Platform



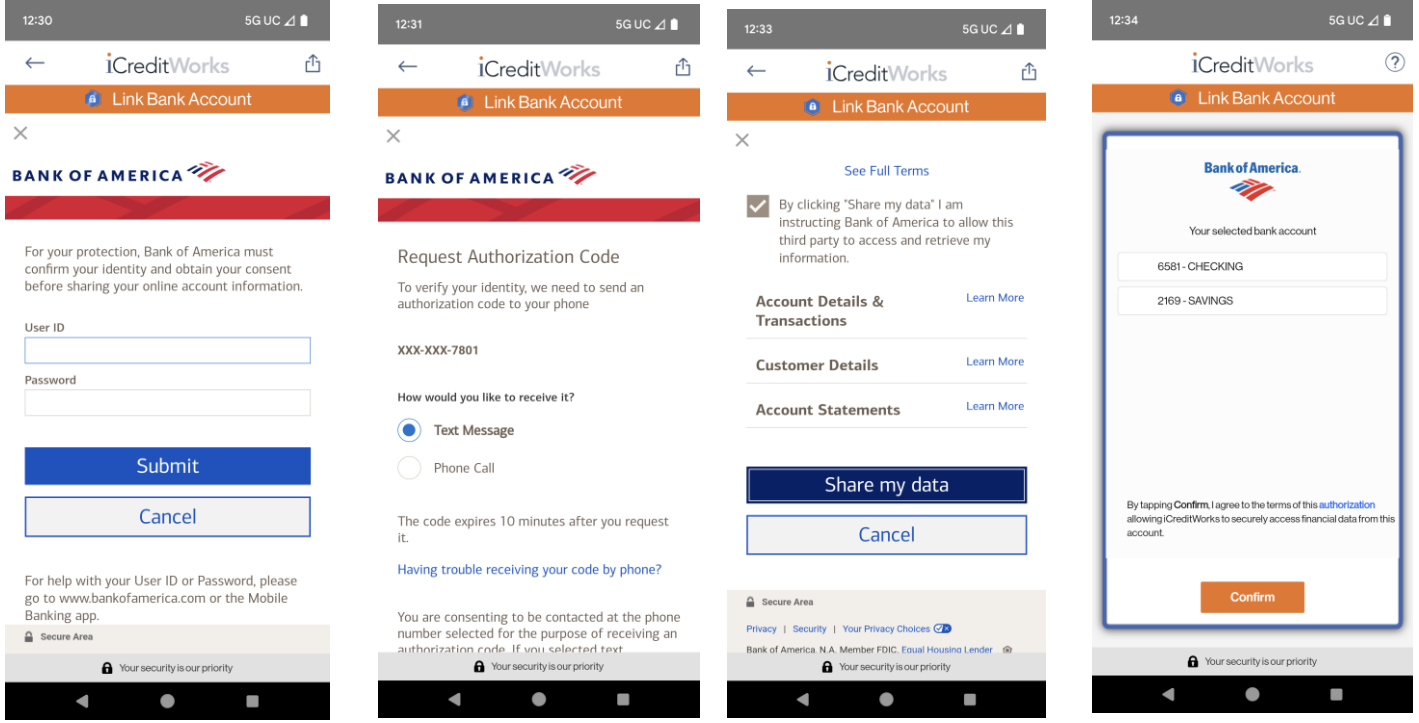
Implementation

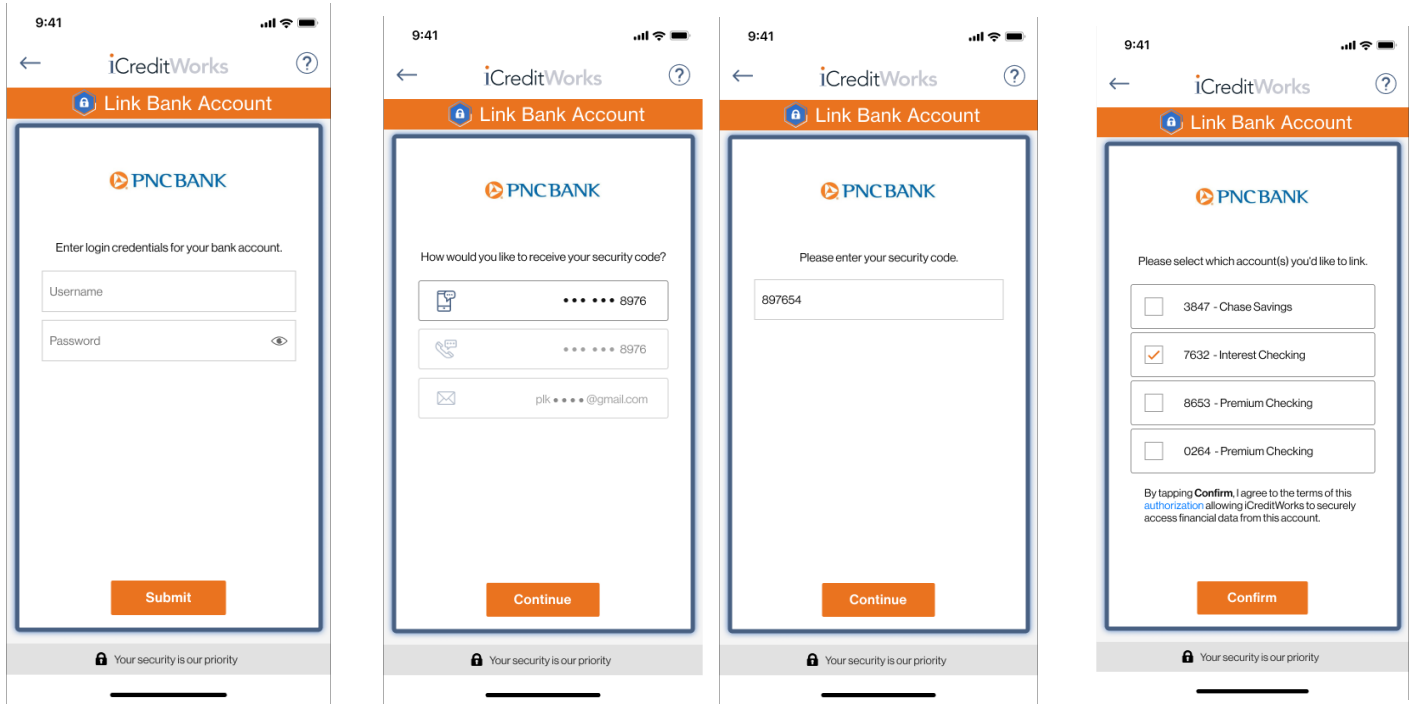
- Consumer Mobile application
  - Platforms – iOS, Android
  - Explicit Consent - Ensuring transparency and adherence to data privacy standards.



Implementation

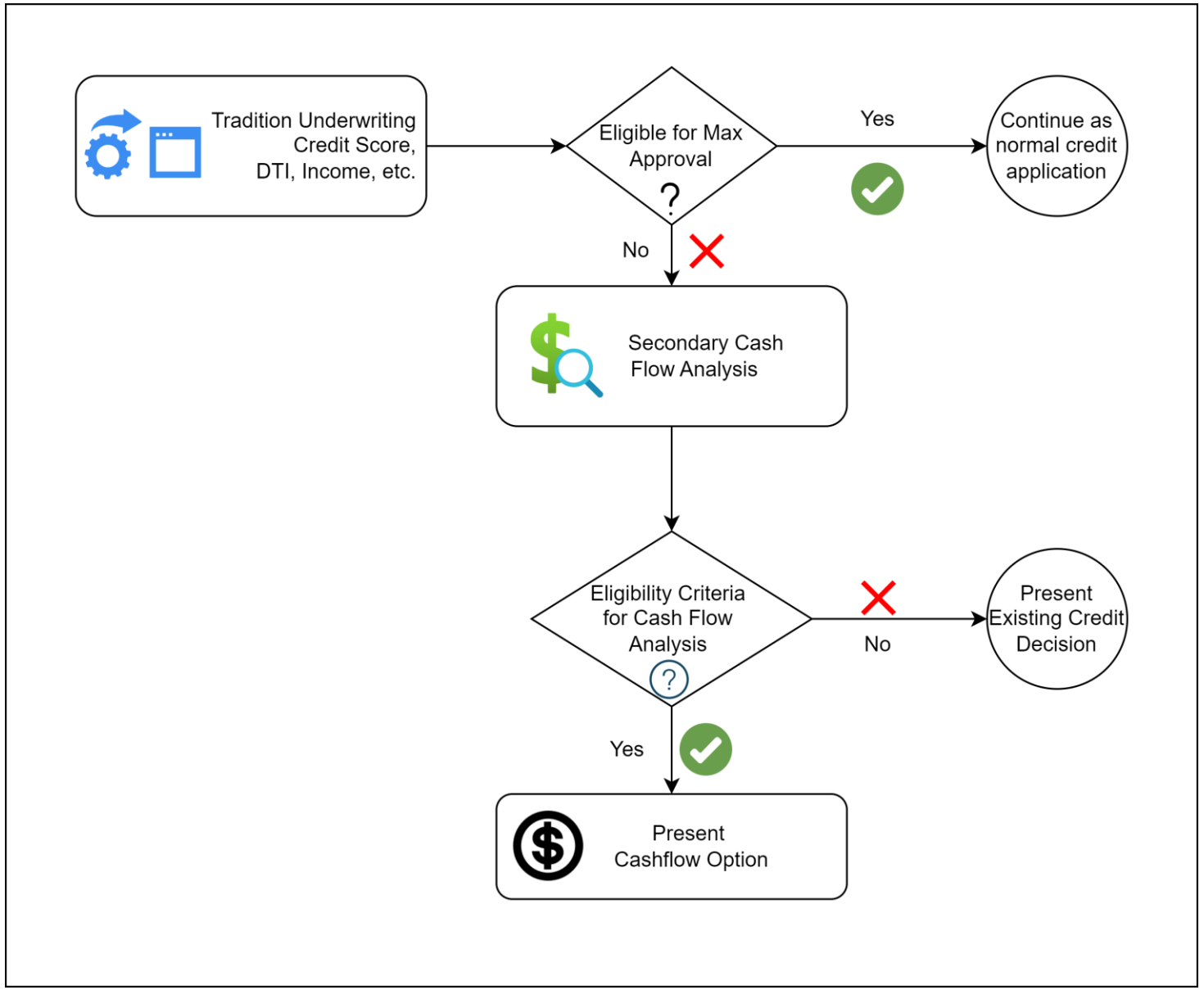
- Consumer Mobile application
  - Bank linking within the context of the mobile app (No external Pop-Up browser windows)
  - Native Bank UI experience for open banking-supported financial institutes
  - Non-supported open banking financial institutes (Credit Unions, Smaller Banks)





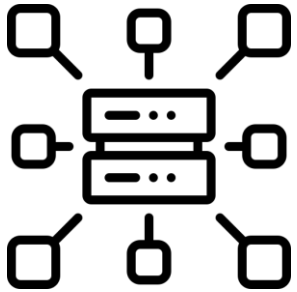
Implementation

- Underwriting Platform



Implementation

- Aggregator



- Facilitating the secure connection to bank accounts.
- It bridges the gap between the underwriting platform and the financial institutions, offering two primary integration methods:
  - Open banking
  - Traditional integration.

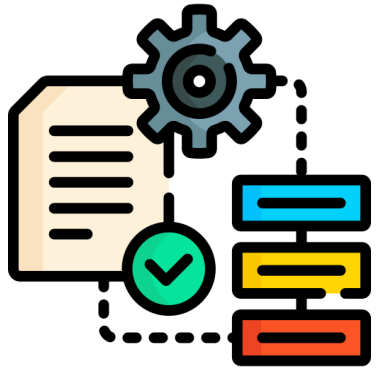
- Open Banking Integration
  - Widget
    - Direct and secure connection to users' bank accounts.
    - It enables users to log in via a familiar interface, mirroring the look and feel of their financial institution's web application, thereby maintaining a consistent user experience.
  - Consent - Explicit consumer consent is obtained, with clear notifications that financial data is being shared with the aggregator.
  - The integration adheres to Open Banking standards, prioritizing secure data sharing and user authentication

- Traditional Integration
  - FIs not participating in Open Banking
  - System interaction through the aggregator's APIs.
    - Aggregator's APIs secure login.
    - Two-factor authentication
    - Post login, users can select bank accounts to link.
  - Native UI of consumer application.
  - UI dynamically adapts based on the API responses from the aggregator.

- Key Aggregators
  - A variety of aggregators, with Plaid, Ninth-Wave, Yodlee, and FinCity emerging as some of the most prominent ones

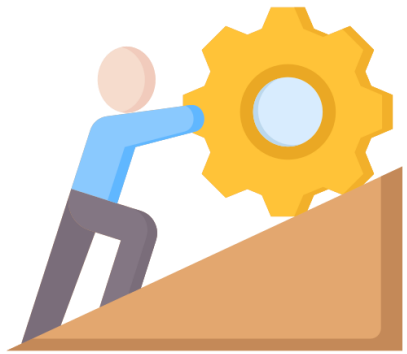
Implementation

- Processing and Modelling Platform



- Evaluate an applicant's financial health.
- Analyze cash flow transactions and generate two key metrics:
  - Cash flow score
  - Cash flow income.
- External partner with a machine learning model designed explicitly for financial analysis.
- The model is adept at processing transactional data to assess cash flow patterns.
- It calculates a cash flow score that reflects the applicant's financial stability and liquidity by analyzing deposits, withdrawals, and other transaction types.
- The model employs algorithms to identify and quantify the applicant's cash flow income.
- Underwriting Rules based on the output generated by Model

Challenges and Limitations



- Inconsistency in the amount of transaction data provided by various financial institutions
- Inconsistencies within the transaction data, notably missing attributes such as transaction dates and posted dates.
- System integration across the full spectrum of banking institutions
- Immediate availability of transaction data post-bank account linkage.
- Integrating open banking interface within the context of the native mobile application.
- Failures and Fallbacks
- Mobile App Integration – Widget and Native

Technical Forums

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