Climate Risk Assessment Solution

Initiative that embeds climate risk into the credit system

About the client

The client is a multinational banking and financial services company with branches in over 60 countries. It offers a variety of banking services to individuals, business entities and large institutions.

Overview

The client oversees an extensive portfolio of 2.5 billion sustainable finance assets, with approximately 90% of these assets located in developing countries. Recognizing the importance of sustainability, the client aimed for a comprehensive sustainable finance framework. This framework was intended to help them effectively manage investments in green buildings and social lending (SME lending, microfinance), ensuring support for transition. To achieve the objective, the organization committed to a partnership for Carbon Accounting Financials (PCAF) framework for green asset disclosure. Key aspects to consider:

Multiple initiatives are being pursued under the ESG umbrella, such as sustainable finance and various assessments related to transactions as well as sustainability risk	One of the stepping stones in the ESG technology initiatives is the creation of the Climate Risk Assessment (CRA) platform in the corporate lending assessment process	CRA application automates the risk assessment process by leveraging BlackRock's Baringa Climate Change Scenario model

Climate risk assessment challenges

- Management of data is manual, labor-intensive and prone to error (e.g., data gets out-of-date quickly and tracing the impact of data change is difficult)

- Data accessibility and data quality vary by client (e.g., by region and industry)

- Generation of climate risk assessments is manual and time-consuming. In addition, the data pre-population in application is subjective with potential client inconsistency

- Managing data from clients is difficult due to versioning issues and lack of impact tracing for climate risk scoring

Solution delivered

The bank is developing ESG navigator for addressing ESG related regulatory requirements. ESG navigator is an overall umbrella project under which multiple applications, like climate risk, sustainable finance and various assessments related to transactions as well as sustainability risk are built. HCLTech has partnered with bank to build the CRA application to embed climate risk into its current credit system for corporate lending.

CRA initiative aims to transform the existing manual process into a workflow-based automated process. The application is built using a workflow management system, where the case flows through different personas Maker, Checker, Relationship Manager (RM) and Climate Risk Approver for final scoring.
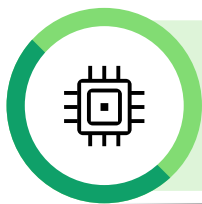
Application functionality

Key aspects include:

CRA application fetches client number, sector, group, address details from client information system	CRA uses a set of questionnaires to determine or assess the client's exposure to climate risk

Questions are classified across three major categories:

Governance and disclosure
Covers aspects like reporting standard, rating, strategy, policy and management intervention

Gross physical risk and physical risk adoption
Coverage to capture acute risk and chronic risk

Gross transition risk and transition risk mitigation
Coverage to assess policy and legal risk, technology risk, market risk and reputational risk

Scoring matrix
A score is assigned for each answer option and a weightage matrix for a set of questions. Based on this scoring matrix, the section score, the overall score and BRAG (Black, Red, Amber and Green) status are calculated automatically by CRA.

Workflow
The application permits the maker (the person who inputs the data) to capture/update all the questions' responses across five sections. With calculated scoring, the case gets sent for verification to checker. On checker's approval, case gets transferred to the RM. If the BRAG status is Green or Amber, the RM (Relationship Manager) has the option to either reject the case and refer back to the maker or approve it. If BRAG status is Red or Black, the case can only be recommended to the climate risk approver. The climate risk approver can override/approve/reject/refer back cases irrespective of the status. Additional workflow for advisors is in the development process for future release.

Key features of solution components

Data is pre-populated from publicly available sources for transition/physical risk and S&P (Standard and Poor's)

Risk assessors can leverage group-level data sets for entity assessment

Climate-related events are periodically scanned for their potential impact on the client's climate risk scoring

Program benefits

Assessment of climate risk exposure for corporate lending

Engagement with clients on ESG business needs and transition

Incorporate climate risk into the client process, beginning with credit system

Receive ESG insights to steer business strategies

Application developed has helped to address some of the challenges of 'Management of Data' and 'Generation of Climate Risk Assessments'
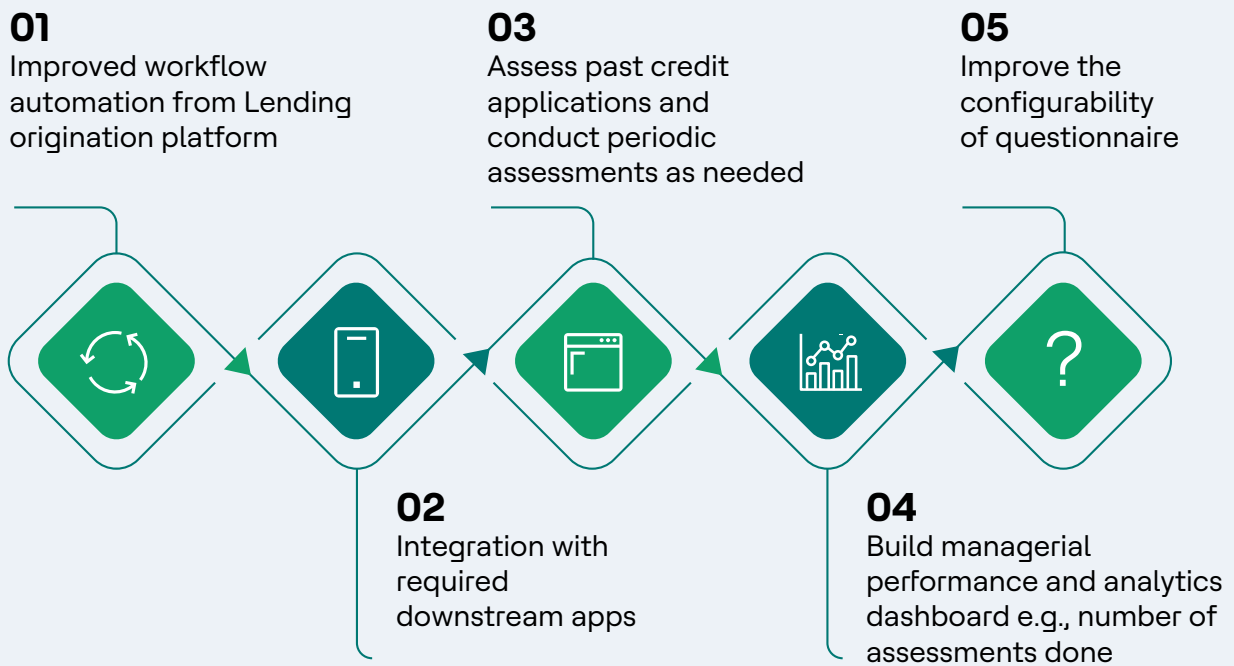
Straight Through Processing has been enabled and hence the data is picked up from core banking systems and other system as applicable

Technology stack

Key components of technology used to build application

React JS	Post Gre SQL DB	Camunda	Java Spring Boot	Maven

The road ahead

01
Improved workflow automation from Lending origination platform

03
Assess past credit applications and conduct periodic assessments as needed

05
Improve the configurability of questionnaire

02
Integration with required downstream apps

04
Build managerial performance and analytics dashboard e.g., number of assessments done

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