

Report On
***“Design and Proposal of a Centralized End-to-End Application for Limit (AFL) Platform for
Eastern Bank PLC”***

By
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An internship report submitted to the BRAC Business School (BBS)
in partial fulfillment of the requirements for the degree of
Bachelor of Business Administration (BBA)

BRAC Business School (BBS)
Brac University
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Declaration

I hereby declare that,

1. The report submitted is my original work while completing a degree at BRAC University.
2. This report has never been, and never will be, reproduced for any other BBA course or any other purpose.
3. This report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate reference.
4. I have acknowledged all the main sources of help.

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Letter of Transmittal

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Subject: Submission of internship report on “Design and Proposal of a Centralized End-to-End Application for Limit (AFL) Platform for Eastern Bank PLC”.

Dear Sir/Madam,

As a requirement for the completion of an internship at Eastern Bank PLC under BRAC Business School, I would like to submit my internship report titled “Design and Proposal of a Centralized End-to-End Application for Limit (AFL) Platform for Eastern Bank PLC”. I have completed my internship period in the Corporate Division of Eastern Bank, starting on October 13th, 2025.

I sincerely hope that this report fulfills the objectives and requirements of my internship and that it finds your acceptance. I have attempted my best to finish the report with the essential data and recommended proposition in as significant a compact and comprehensive manner as possible. I am grateful to you for your guidance and kind cooperation at every step of my endeavor on this report.

Sincerely yours,

Sadman Shakib Dipto

22104085

BRAC Business School

BRAC University

Date: 11th January, 2026

Acknowledgements

The BUS490 course in the BRAC Business School undergraduate program provided me with a great opportunity to gain hands-on experience in a real professional setting. I'd like to thank my faculty supervisor, Senior Lecturer, Ms. Noushin Laila Ansari for her excellent guidance. Her encouragement and insightful feedback during the course of my internship really helped me to complete this report.

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I can never thank my family enough for their unconditional love and undying support over this journey. They've always stayed my motivation to keep on pushing forward and were my rock. Finally, I really appreciated the positive and collaborative work culture within the bank. All the colleagues openly shared ideas and helped each other in any case of need. This is the environment that made my internship productive and memorable.

Executive Summary

This internship report, done in Eastern Bank Plc, is an in-depth assessment and proposal of a centralized and end-to-end automated platform dedicated to the generation of Application for Limit (AFL) memos within the Corporate Division. The current manual process requires the collation of data from different sources like Finacle, CIB reports, Financial Reports and Bank Registers, thus taking three to four days for a single memo and is prone to errors and delays in procedure. Moreover, the entire process of AFL creation up to final approval takes several months due to the complexity of the memo.

The proposed solution envisions a fully integrated, centralized digital portal that has the capabilities to automate the entire AFL lifecycle. Core functionalities include data extraction from pre-existing banking systems, generation of memos through standardized one click templates, real time status update of the AFL throughout the approval hierarchy, and automation in terms of notification. Anticipated benefits include; reduced number of times required for the preparation, shortening of the credit approval cycle, reduction of human error to a minimum and facilitating predictive analytics for the future credit risk.

The project included process mapping in its entirety, precise data collection from Relationship Managers (RMs), Assistant Relationship Managers (ARMS) and head of MIS, data field analytical review, and feasibility analysis. Additionally, recommendations for phased implementation of the workflow were articulated, using programming tools like Python and Application Program Interfaces (APIs). By adopting this initiative, the bank stands to significantly improve relationship managers' productivity and efficiency in their area of operation related to high value corporate lending.

Keywords: Application for Limit; AFL automation; Corporate banking; memo generation; end-to-end process automation; Centralized banking system.

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Introduction

The gap between academic teaching and the realities of the world of work is a major barrier for those young people entering the labor market fresh from university. University curricula often focus on theoretical ideas and concepts, while recruiters often want candidates who have practical skills, hands-on experience and the ability to solve real business problems. This incongruity makes it difficult for the fresh graduate to deliver immediate value and is proving to be difficult for organizations to identify personnel who can contribute effectively.

Internships play an important role in reducing this gap. They provide students with real overview of the profession, allowing students to put the theory into practice. It also develops the vital competencies required for the workplace, such as communication, collaboration, and analytical reasoning, and build confidence in solving complex tasks. At the same time, companies receive novel insights, the chance for enthusiastic support, and a chance to test prospective future employees.

This internship report outlines my three-month involvement in the Corporate Division and the Client Management Team at Eastern Bank PLC. Throughout this employment, I had observed and taken part in the extremely manual and labor heavy process of producing Application for Limit (AFL) memos for corporate clients. In response to inefficiencies caused by data distributed across multiple systems, as well as volumes of data manually aggregated by manual labor, my project focused on architecting a centralized, end-to-end, digital platform to stay informed and to automate and make the AFL lifecycle more intuitive.

The proposed solution puts disparate banking systems into one repository and consequently enables the generation of memos and real-time progress tracking all the way. Crucially, it opens up the need for sophisticated analytics and data-driven credit decisioning. This project demonstrates the influence of internship work experience in fostering substantial, technology-supported improvements affecting operational efficiency and support of strategic goals in corporate banking.

Chapter 1: Overview of Internship

1.1 Student Information:

Name: Sadman Shakib Dipto

ID: 22104085

Program: BBA (Bachelor's in Business Administration)

Major/Specialization: CIM (Computer and Information Management)

1.2 Internship Information:

Period: 3 months (12 weeks)

Company Name: Eastern Bank PLC.

Department/Division: Corporate Division

Address: 100 Gulshan Ave, Dhaka 1212

1.2.2 Internship Company Supervisor's Information

Name: Munirul Mansur

Position: Unit Head, Client Management, BPM & MIS

Head Office: Eastern Bank PLC.

100 Gulshan Avenue, Dhaka-1212, Bangladesh

1.3 My Contribution to the Company

During my internship in the Corporate Division (Client Management Team) of Eastern Bank PLC Head Office, Gulshan, Dhaka, I assisted Client Management Team and Relationship Managers dealing with the large corporate clients. I organized and digitized client files, which ensured that critical files were easily accessible. In addition, I used to facilitate effective communication between the Client Management Team and branch office. I was also responsible for the development of a database, which held the information of products and services provided by Eastern Bank PLC. Finally, I assisted preparation of Application for Limit (AFL) submissions by collating data collected from systems like UBS, CIB reports and client documentation. I checked the accuracy of data and made calculations of limits and ratios. On seeing the considerable amount of time spent on manual procedures I proposed the use of a centrally automated process that would be able to take data and accelerate the preparation of AFL in a manner that may reduce the processing time by 50-70%.

1.4 Benefits that I Gained

My internship at the head office of the Eastern Bank PLC under the Corporate Division (Client Management Team) was very much beneficial to my personal and professional development. It gave me real-life experience in a real corporate banking environment, where I was in the same room as

Relationship Managers dealing with important clients and managing high net worth deals. Working closely with the team allowed me to understand the banking operations, document management, inter-department coordination and the criticality of precision in the credit processes. I increased my skill of managing large amounts of data, communicating in different departments and implementation of banking systems like UBS. The internship also taught me to look for inefficiencies and use critical thinking to come up with solutions. In general, it gave me working knowledge of corporate banking, helped build my confidence in taking on responsibilities and rekindled my passion for digital transformation in the banking space.

1.5 Problems/Difficulties (faced during the internship period)

One of the biggest challenges faced was the acquisition of clean and reliable data for analytical purposes. In practice, the information captured from heterogeneous sources was often fragmented, inconsistent and incomplete. For example, UBS export files had sometimes not included key fields or had anomalies in the formatting, and CIB reports supplied by the Bangladesh Bank required there to be manual downloading and cross-checking procedures. In addition, client-provided financial statements and PDFs came in random forms and formats with hand-written notes or scanned pictures. As a result, a large amount of time was spent in manual data cleaning and reconciliation, which was both time intensive as well as prone to human error.

Another impediment had to do with the coordination needed between multiple departments. Obtaining timely responses from Credit Administration, Treasury and Trade Operations were sometimes delayed because of their overwhelming task loads and therefore creating bottlenecks in the processing of AFL. Additionally, the manual and repetitive nature of AFL preparation made it difficult to focus on higher-value tasks, and the lack of a centralized system increased the risk of errors.

My initial plan was to just build an automated AFL generator but after deep analysis I understood that the data was too complex and most of it was completely scattered. So, this is why I started working on a central end to end AFL system where data from all the necessary sources will be stored in a central database and this data can be used to generate AFL and further data analysis can be done on this valuable data.

1.6 Recommendations (to the company on future internships)

In order to improve the effectiveness of upcoming internship programs in the Corporate Division within the Eastern Bank PLC, the institution should create a simplified digital training curriculum that includes easy-to-browse video tutorials that emphasize on sophisticated systems such as Finacle and CRM platforms. Such an approach would allow newly recruited interns to quickly acclimatize, therefore redressing initial difficulties with tasks including organizing documents and keeping clients up to date.

The introduction of simple automation software that could scan and extract information from financial statements and Know Your Customer (KYC) forms would further be responsible for reducing the amount of transcription errors and increase the efficiency of report preparation.

Moreover, the development of explicit inter-departmental communication protocols will reduce delays related to protracted feedback loops among Credit Administration, Treasury, Compliance and branch entities.

Chapter 2: Organization Part

2.1 Introduction

EasternBank PLC (EBL) is a leading authority in the area of private commercial banking of Bangladesh, being formally formed in 1992. In the face of the difficult socio-political and macroeconomic context that prevailed for the last few years, including weakening foreign exchange reserves and high inflationary pressures, EBL has shown significant resilience. The bank's 32-year journey has been marked by sustainable expansion with strong governance frameworks, ethical conduct and perpetual innovation. EBL's institutional culture focuses on a reflective assessment of key competencies and strategic negotiation of uncertainties; hence, it is aligned with the overall spirit of resilience of Bangladesh. Through a sustained level of attention to its performance measures, regulatory compliance, and societal impact, EBL has continued to make significant contributions to the economic growth of the country, while maintaining a sufficient degree of buffers of liquidity and solvency.

2.2 History and Milestones

EBL was incorporated on 8 August 1992 and went into operation on 16 August 1992. It got listed on the Dhaka Stock Exchange in March 1993 and on Chittagong Stock Exchange in September 2004. Significant milestones include the launch of online banking in 2003, the introduction of offshore banking services in 2004, acquisition of subsidiaries such as EBL Investments Ltd in 2009, EBL Securities in 2011 and EBL Finance in 2011. The bank created EBL Asset Management in 2015 and got the Moody's Ba3 credit rating in 2016. Some recent achievements include the opening of a permanent headquarters in 2018, receiving Employer Brand Award in 2019, receiving an IFC Best Partner recognition in 2021, and receiving a FinTech Award in 2021.

In 2024, EBL carried out various initiatives: introduction of Islamic banking products; memorandum of understanding with National Pension Authority and Bangladesh Importing Agents; such as organizing conferences on anti-money laundering/counter-terrorism financing; collaborated with JP Morgan in remittance services; carried out a comprehensive overhaul of Skybanking application; and received ICMAB Award.

Mission, and Core Values

EBL's vision is to become the most valuable brand in the financial services industry of Bangladesh, and thereby to create lasting value for the stakeholders and the society at large. The mission integrates service excellence performance to customers; maximization of shareholder's value; and creation of a cohesive team culture through systematic challenge of current existing processes. It highlights the importance of instituting team-based ethos, achieving customer satisfaction through innovative solutions, caring for employees, sharing knowledge, empowering personnel, being transparent in integrity, respectful of relationships, avoiding abuse of power, openness through communication, and being a responsible corporate citizen such as tax compliance, environment, and adherence to laws and ethical codes.

Core values include service excellence, trust, integrity, openness, commitment and responsible citizenship. The Code of Conduct clearly includes provisions such as prohibited money laundering, bribery, conflict of interest, external borrowing, outside employment, stock speculation, and political activity.

2.4 Strategic Priorities

EBL's strategic priorities include fortification of capital to increase resilience, integrating climate risks into decision-making processes, increasing the green finance portfolio, using technology to optimize processes and customer experience, retaining talent through incentive systems and work-life balance programs, and using brand strength to drive growth.

Key areas of focus include digital transformation, as evidenced by the Skybanking application, various ISO certifications, artificial intelligence applications, and cybersecurity measures, cost efficiency, evidenced by people empowerment initiatives, such as the "People First" philosophy and salary increments and the Critical Illness Fund. Sustainability initiatives such as emissions disclosure, green finance initiatives, solar-powered branches and ESG (environmental, social, and governance) criteria alignment also included. Additional priorities include strong risk management, sectoral import substitution strategies, cross-selling strategies, women and small enterprise empowerment and promotion of export and import growth through hedging and digitalization.

2.5 Organizational Structure and Management

EBL's organizational structure is designed to support efficient operation and comprises of Board of Directors that is responsible for governance oversight, Shariah Supervisory Committee to oversee Islamic banking operation, management committees, MANCOM, ALCO, ERM and the Risk Management Committee. This brings compliance, risk avoidance, and strategic implementation. Key leadership roles include the roles of the Chairman, Managing Director, Chief Financial Officer and Chief Risk Officer who have profiles focusing on financial, governmental, and sustainability expertise.

2.6 Products and Services

EBL offers a diverse portfolio across multiple sectors such as, retail, SME, corporate, treasury, Islamic, and offshore banking.

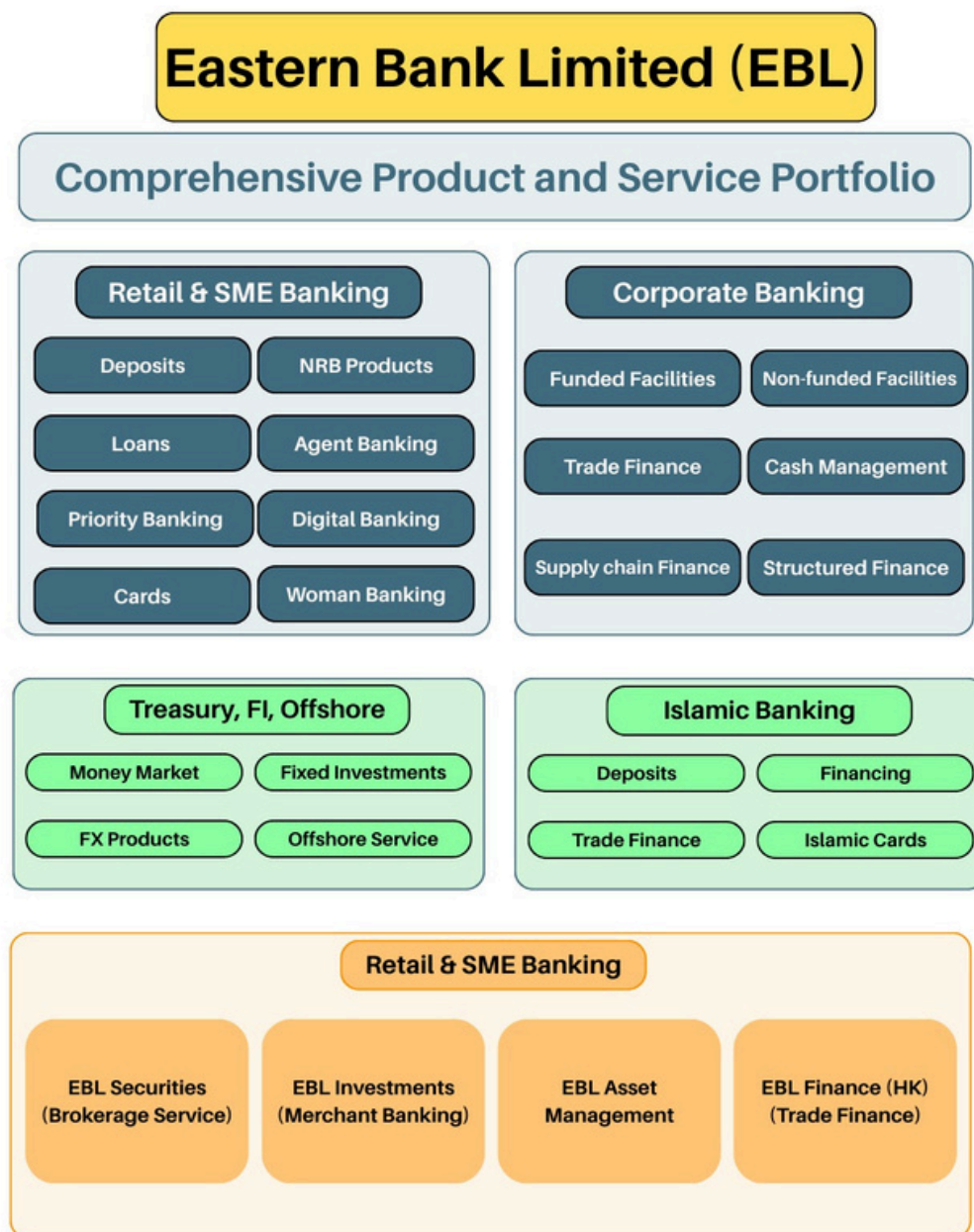


Figure 1: EBL Product and Service Portfolio

- **Retail & SME Banking:** Deposits (Savings, Current, DPS, Fixed); Loans (Personal, Home, Auto, Education, SME like Business Wonder); NRB Products (Global accounts, Remittances); Agent Banking (Deposits/Withdrawals, Transfers); Priority Banking (Power, Infinity); Cards (Visa/Mastercard Credit/Debit/ Prepaid); Digital (Skybanking App with 150+ features, 328849 users); Women centric (Ovilashi, Mukti Loan, Shohoz SME)
- **Corporate Banking:** This includes Funded/ non funded facilities (loans, LC's, guarantee); Trade finance; Cash management (EBL Connect); Supply chain Finance; Structured advisory Makes up 75% of loan portfolio.

- **Treasury, FIs & Offshore:** This constitutes of Money market, fixed investments (government securities) FX products (spot, forwards, IRS) Offshore deposits/loans
- **Islamic Banking:** This includes Mudarabah deposits; finance (MPO, DMF, Murabahah); trade; cards. EBL asset under management: at 31 December 2015 amounted to EUR 5.8 billion, of which EUR 4.5 billion related to the EBL asset management business.

2.7 Financial Performance

EBL achieved strong results in 2024 despite challenges. It showed strong financial performance in almost every metric. A snapshot of the financial performance of EBL is given below:

Key Metrics	2024 (BDT million)	2023 (BDT million)	% Change
Total Assets	616,050	506,271	21.68%
Deposits	457,692	366,153	25.00%
Loans & Advances	410,718	353,465	16.20%
Operating Income	26,626	20,527	29.71%
Profit After Tax	7,504	6,107	22.88%
EPS	5.53	4.5	22.89%
ROA	1.34%	1.27%	5.51%
ROE	18.63%	16.85%	10.56%
NPL Ratio	3.34%	3.10%	7.74%
CRAR	15.11%	15.07%	0.27%
Cost-to-Income	40.14%	44.22%	-9.23%

Table 1: Financial Performance Table

Business Review:

Business Segment	Key Metrics (2024)
Corporate Banking	Loans: 75% of total portfolio Assets: BDT 323,475M NPL: 2.71%
Retail & SME Banking	Deposits: BDT 312,323M (+25%) Loans: BDT 30,628M NPL: 1.59% Cards growth: +32% Growth in digital transactions Inclusive products for women/SMEs
Treasury, FIIs & Offshore	Investments in govt. securities: BDT 123,156M FX income: +50% Remittances: BDT 83,959M (+47%)
Islamic Banking	Launched: 2024 Deposits: >BDT 5,000M (in 4 months) Assets: BDT 5,245M Initial loss: BDT 43M (startup phase)
Subsidiaries	EBL Securities: Income BDT 98M Net loss BDT 818M (market downturn) EBL Investments: Income BDT 78M Net loss BDT 25M

Table 2: Business Review Table

2.8 Sustainability and Corporate Social Responsibility

EBL's sustainability framework is in line with IFRS S1/S2, focusing on governance, strategy, risk management, and metrics. Key achievements include 35.24% green financing (BDT28522million Outstanding Financing) and 89.48% financing of sustainable proportions (BDT174098million Financing). The institution provided BDT 216,495 m of sustainable initiatives, renewable energy (BDT 348 m), and energy efficiency (BDT 9,889 m) including Moreover, EBL was a pioneer when it came to disclosing financed emissions; through implementation of solar-powered branches, plastic-free offices and reaching 30% reduction of emissions attributable to DHL services. EBL has received several awards for sustainability such as the Top Sustainable Bank (BB 2023) and Best Climate Focus Bank (2024).

CSR expenditure:

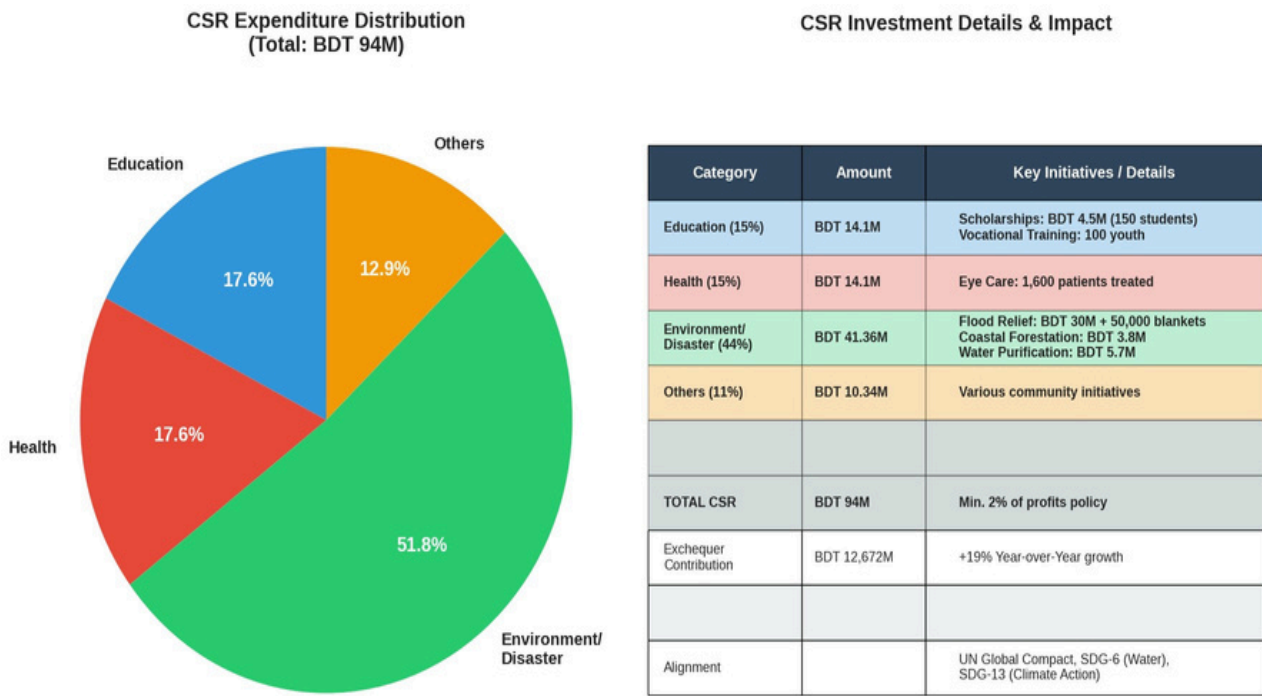


Figure 2: CSR Expenditure

2.9 Conclusion

Eastern Bank PLC (EBL) has shown great strength and forward-thinking leadership in the midst of a particularly difficult time in the economy and society of Bangladesh.

Since its beginning in 1992, EBL has grown into one of the most trusted and innovative financial institutions in the nation. Underwired by a clear vision of becoming the most-valued financial services brand in Bangladesh, and a mission which is spearheaded by the principles of service, ethical practices and responsible citizenship, the bank has always focused on the sustainability of the long term as opposed to short-term gains.

EBL's diversified portfolio reflects its commitment to serving all of its customer segments. Digital innovations, the enhanced Sky Banking application the best example of which enables to be more accessible and convenient banking. At the same time, sound governance, risk management and a "People First" culture have built trust and operational excellence.

Sustainability and corporate social responsibility are a part of EBL's identity. The bank continues to lead in the area of green financing and climate related initiatives and the bank's CSR program also make significant contribution to the social areas of education, healthcare, environmental protection, and community welfare.

Chapter 3: Design and Proposal of a Centralized End-to-End Application for Limit (AFL) Platform for Eastern Bank PLC

3.1 Introduction

Bangladesh's banking sector is fast moving forward with the digital transformation initiatives that intends to improve the operational efficiency and regulatory compliance. Nevertheless, basic processes such as corporate credit approvals, through Application for Limit (AFL) specifically, are still dependent on the majority of manual procedures.

This report is used to propose the implementation of a centralized, end-to-end platform of AFL at Eastern Bank PLC (EBL) to consolidate disparate data repositories into one common platform. The main focus through streamlining AFL memo generation is on utilizing the rich but largely unused data encapsulated in AFLs for transformative analytical use. Such an approach makes it easier to benchmark clients with their industry peers, supports predictive risk modelling and provides data-driven insights that are conducive to the formulation of proactive lending strategies.

Drawing upon direct observations gained during my internship in EBL's Corporate Division, the project combines principles of Computer and Information Management to facilitate the transition from theory to practice within the real business industry. The initiative is in line with the innovation priorities of EBL and a step towards resilient growth by making operational data a strategic asset that can be a foundation for an advanced analytics and AI light decision making.

3.2 Background and Significance/Problem Statement

In the corporate banking ecosystem of Bangladesh, AFL memo is an important element for the approval, renewal and enhancement of credit limit, which usually enclose 40-60 pages of detailed client and risk assessment information. At EBL, Relationship Managers are required to manually collate information from over ten separate sources, such as Finacle/UBS for transactional records, CIB Portal for regulatory reporting, statements provided by the client, CAD registers for documentation of the issue of liabilities, and archival memos. This fragmentation causes inefficiencies in operations such as a reconciliation and calculation period of three to four days per memorandum, increased risk of error due to data inconsistencies, and approval cycles that stretch over several months. Moreover, the dominant issue is the inability of data utilization opportunities. AFL documents contain hundreds of valuable data fields but, with no centralized repository, EBL is not able to run holistic analytics. For example, benchmarking client metrics against sectoral peers, predicting loan defaults using predictive modeling or extracting insights for portfolio optimization are still not achievable.

Consolidation of this information would result in 50-70% reduction in processing times, lower incidence of mistakes and the power to use predictive analytics to minimize NPL (Non-Performing loans) risks. It would empower the Relationship Managers to focus strategically on clients and improve their risk management based on data. It will also make EBL a pioneering institution in the exploitation of

corporate lending data to enable sustainable positions for insightful growth in a volatile market like Bangladesh.

3.3 Objectives

- Create a unified central system to eliminate data silos, ensure real-time access, and serve as a repository for ongoing analytics.
 - Facilitate automated memo generation, calculations, and workflows as an enabler, while prioritizing data quality for broader applications.
 - Integrate machine learning capabilities for predictive credit risk modeling, trend forecasting, and future AI extensions.
 - Align with Bangladesh Bank's digital and regulatory standards, ensuring scalability, security, and contribution to resilient corporate lending operations.
-
- Making sure to utilize the AFL data for industry benchmarking by comparing client data with the industry peers.

3.4 Findings and Analysis

Based upon the three-month internship with the Corporate Division of the Eastern Bank PLC, detailed analysis on the Application for Limit (AFL) workflow process and conducting interview sessions with Relationship Managers (RMs), Assistant Relationship Managers (ARMs) and the head of MIS, the following key findings have surfaced along with the implications.

1. Absence of Centralized System

The AFL preparation process does not have a unified digital platform. Relationship Managers manually write memos with Microsoft Word Templates. There is no scope of automation or data integration with the current infrastructure. This phenomenon is the reflection of antiquated system constraints where the core banking platforms (UBS/Finacle) were implemented primarily for transactions processing rather than analytical integration and hence did not have the capability of APIs or data warehousing.

2. Severe Data Fragmentation

Critical AFL data is spread across over 10 different and independent systems: UBS/Finacle (transactional data), the CIB Portal (regulatory reports), CAD registers (liabilities), client-submitted documents (financial statements), valuation reports, insurance records, and previous memo archives. Each source requires individually manual inspection, separate access, manual extraction, and reconciliation. As a result, operation inefficiency is greatly increased.

3. Excessive Time Consumption

Manual AFL preparation takes three to four days per memo for data collection, verification and calculations and complete approval cycles take several months. Interviews revealed that RMs spend 60 - 70% of their effort in the AFL doing administrative data compilation instead of strategic analysis, client advisory, and business development. When hundreds of AFLs are processed a year, this translates into thousands of wasted hours.

4. High Error Susceptibility

Manual data entry and calculations for ratios, exposures and limits across more than 10 disconnected systems creates multiple failure points. Corporate facilities commonly involve BDT 50-500 crore loan disbursement. Even small percentage errors in them can constitute massive financial risk. Inconsistent data formats (PDFs, scanned documents, variable Excel structures) and the resulting additional inaccuracies can cause a huge waste of time and money.

5. Lost Analytical Opportunities

This is the most important strategic finding. AFL memos contain more than 400 valuable data fields in 18 modules on borrower profiles, financial performance, risk indicators, industry and collateral details. In the absence of centralization, this rich dataset is limited to static documents with no potential analytical insights.

6. Inter-Departmental Coordination Delays

Proper coordination is needed by Credit Administration, Treasury, Trade Operations, Compliance, and branch offices to compile an AFL. Communication gaps and lagged responses create bottlenecks that result from manual handoffs, which may be eliminated in a centralized digital workflow.

7. Data Quality Issues

Client provided financial statements come in non-standardized formats such as, handwritten notes, poor scan quality, inconsistency in terminology etc. CIB reports need to be parsed manually and UBS exports sometimes contain missing fields or errors in the formatting. These inconsistencies require a lot of data cleaning and represent the absence of standardized validation protocols, which could be imposed by automated Extract, Transform and Load (ETL) data pipelines.

8. Limited Real-Time Visibility

Stakeholders do not have real-time AFL status tracking throughout the approval structure. Managers cannot track pending actions, identify bottlenecks, or predict workload, which stands in the way of allocating resources and implementing data-driven process optimization.

9. Compliance and Regulatory Vulnerability

Manual processes create problems in auditing the trail and in complying with regulations. The focus of the Bangladesh Bank on digital transformation and data governance is making the manual approach riskier than ever. The inability to aggregate portfolio exposures quickly or answer regulatory queries puts the institution at risk of regulatory compliance issues. Forthcoming requirements for stress testing or reporting sector concentration or Environmental, Social and Governance (ESG) risk will be challenging to meet without a centralized infrastructure

3.5 Literature Review

Automation has played a substantial role in changing the nature of manual procedures internal to banking, especially when it comes to applications for a credit limit, as it reduces repetitive work. In the bank's domain, the automation of data extraction from disparate sources such as an institution's financial statement and its credit report serves to reduce both errors and process delays and thereby allows relationship managers to focus on strategic activities (Dibouliya and Jotwani, 2023). However, lack of in-depth training and systematic change management can result in an increased level of stress for

employees in adapting themselves with organic systems (Frey & Osborne, 2017, as cited in Singh & Gupta, 2025).

ETL procedures are an integral part of the centralization of data for business intelligence in financial institutions using real-time integration from sources ranging from transaction systems to regulatory reports to support credit assessments (Vanam, 2025). Contemporary ETL frameworks that embrace utilities, for example, Apache Airflow and Kafka, address any legacy bottlenecks by boosting the reliability of pipelines and decreasing their latency, which contributes to the streamlining of approval workflows in high-volume settings (Davenport & Ronanki, 2018, as cited in Vanam, 2025). These processes allow for the scalable handling of data and help to build powerful systems.

Data warehousing works to complement the task of automation by providing a central repository for analysis processes, which is useful to offer predictive risk modeling and decision making related to credit protocol in a faster way (Dibouliya & Jotwani, 2023). Empirical studies highlight that more the data warehouse is combined with artificial intelligence capabilities, lesser is the processing duration as well as the inaccuracy of the corporate lending scenarios (Al-Okaily et al., 2022, as cited in Dibouliya & Jotwani, 2023). Robust strategies such as specific training initiatives can help to dull the impact of occupational stress and increase the impact of job satisfaction and thereby achieve a well-rounded transition toward automated platforms (Smith & Thompson, 2020, as cited in Singh & Gupta, 2025).

3.6 Research Questions

What are the current inefficiencies in EBL's manual AFL preparation process, and what are their operational impacts?

Which data sources and fields are essential for AFL memo generation, and how can they be integrated into a unified database?

How can ETL processes automate data extraction, transformation, and loading from disparate banking systems?

What automated workflows and features would reduce AFL processing time and errors?

Which machine learning models are suitable for transforming centralized AFL data into predictive credit risk insights?

What are the technical, organizational, and financial requirements for implementing the proposed platform?

How can the platform enable industry benchmarking and portfolio analytics using consolidated AFL data?

What security, compliance, and ethical considerations must be addressed for sensitive banking data?

3.7 Research Methodology

The research adopts a mixed-methods approach, combining qualitative insights from stakeholder interviews with technical design and feasibility assessments to propose a centralized AFL platform for Eastern Bank PLC.

3.7.1 Data Collection Methods

The inquiry process began with the identification of the basic issue, which was the division of data within the systems of EBL that resulted in the fact that the processing of AFLs takes 3-4 days per memo, which slows down the analytical process. Such observation happened after three months of the internship under the Corporate Division in the Client Management Team. Firsthand experience with the preparation of AFLs highlighted some of the most important areas of pain, including the inconsistency of data formats and the presence of inter-department bottlenecks.

Sample Justification and Selection:

Respondents: Two Relationship Managers, 5 Assistant Relationship Managers, and Head of MIS of EBL.

Selection Criteria: Purposive sampling was used and the following selection criteria were used to select the interviewees:

1. Direct engagement in AFL preparation.
2. Representation of a variety of corporate client portfolio.
3. Availability during the period of 3 months internship.

Interview Protocol Format: The interviews were done in semi structured style with every individual taking 30 to 45 minutes.

Documentation: Handwritten notes were made in details during the interviews because audio recording was refused due to institutional confidentiality.

Data Collection Process: Interviews were carried out at the workstations of the participants to be able to observe AFL prevailing workflows directly.

Concentration Areas: Every interview was based on up-to-date information sources in AFL preparation. The resultant product was a mapping of more than four hundred of the data fields spread over eighteen AFL modules.

Module A PROPOSED TRANSACTION/ PURPOSE OF THE REQUEST					
Field / Information Required	Current Source	System / Report Name	Format	Mandatory?	Automation Feasibility
Proposed Transaction/Purpose (Narrative)	Manual Input by RM	Manual	Text	Yes	Easy
Module B : FACILITY SUMMARY [Amount in BDT crore]					
Field / Information Required	Current Source	System / Report Name	Format	Mandatory?	Automation Feasibility
Facility Type	Manual Input by RM	Manual	Text	Yes	Hard
Class	Credit Policy Manual/Credit Instruction Manual/Previous Memo	Manual	Text	Yes	Hard
Existing Limit	Core Banking System/Last approval	UBS	Number	Yes	Easy
Present O/S	Core Banking System	UBS	Number	Yes	Easy
Existing Pricing	Core Banking System/Last approval	UBS	Number	Yes	Easy
Proposed Limit	Manual Input by RM	UBS	Number	Yes	Easy
Proposed Pricing	Core Banking System/Last approval	UBS	Number	Yes	Easy
ONE-TIME LIMIT-II:	Core Banking System	UBS	Number	Yes	Easy
REGULAR LIMIT-I:	Core Banking System	UBS	Number	Yes	Easy
Sub-Total - I	Calculated	Manual Calculation	Text	Yes	Easy
Sub-Total - II	Calculated	Manual Calculation	Text	Yes	Easy
Total Funded:	Calculated	Manual Calculation	Text	Yes	Easy
Total Non-Funded:	Calculated	Manual Calculation	Yes/No	Yes	Easy
Total [I+II]	Calculated	Manual Calculation	Text	Yes	Easy
Module C: GROUP EXPOSURE WITH EBL [Amount in BDT crore]					
Field / Information Required	Current Source	System / Report Name	Format	Mandatory?	Automation Feasibility
Existing Limit	Core Banking System	UBS	Number	Yes	Easy
Outstanding	Core Banking System	UBS	Number	Yes	Easy
Proposed Limit	Manual Input by RM	UBS	Number	Yes	Easy
Funded	Module B	Manual	Text	Yes	Hard
NF	Module B	Manual	Text	Yes	Hard
Total	Module B	Manual Calculation	Text	Yes	Easy
% of EBL Capital:	Calculated	Manual Calculation	Percentage	Yes	Easy
Notes:	Manual Input by RM	Manual	Yes/No	Yes	Hard

Figure 3: AFL Data Mapping

2) Document Analysis: To analyze and define data flows and redundancies, an examination of existing AFL memo, EBL's 2024 Annual Report and system export files was conducted.

3) Secondary Data: Secondary data from various academic sources related to banking ETL processes and risk analytics were used in designing the research.

3.8 Project Management & Financing

The AFL platform implementation is organized into five major phases with specific deliverables spanning a 12-month timeline.

3.8.1 Phases of the Project

Phase 1: Foundation & Planning

The first part will be to build the foundation for the entire project. This phase will start with the validation of requirements and alignment of stakeholders to ensure that all parties involved in the project understand the project scope and objectives. Simultaneously, the team will work out the content of the database schema and establish the MS SQL environment which will be used as a central repository. Security framework design will be started during this step and that will include role-based access control (RBAC) and encryption protocols to safeguard against sensitive data on the banking site. The phase will end in the selection of pilot clients, in which 10-15 accounts with high volume will be selected that will be used for initial testing and validation.

Phase 2: Data Integration & ETL Development

This phase will be focused on developing data pipeline infrastructure. The team will set up API connections to essential systems such as UBS, Finacle and CAD for the automated data extraction. Python-based ETL pipelines will be created in order to manage the automated extraction, transformation, and loading of the data from these disparate sources. OCR implementation will be configured to work on unstructured documents like client's financial statement, CIB reports etc. A data staging area will be created with rigorous data validation rules to ensure data quality and initial data loading will begin with rigorous quality data testing to assure accuracy and completeness.

Phase 3: Core Platform Development

The third phase will make the user-facing components a reality. The AFL Memo generation module will be built with seamless integration of templates to automate the generation of standard memos. A modern dashboard UI will be developed using React.JS for easy access of data and analytics. The workflow engine for approval routing will be implemented to digitize the whole approval hierarchy and notification system that will ensure timely alertness to the concerned stakeholders. User authentication will be integrated through Azure Active Directory - to allow secure, role-based access to the platform.

Phase 4: Analytics & ML Integration

This phase will include adding advanced analytical capabilities to build upon to transform the platform from a data repository to a strategic decision support tool. XGBoost models will be trained and implemented for credit risk evaluation that will give predictive information about default probabilities. LSTM forecasting modules will be created to analyze financial trends and forecast future performance. K-means clustering algorithms will be able to allow benchmarking by industry grouping similar clients for comparative analysis. An analytics dashboard with rich visualization tools will display these insights in an accessible format and comprehensive model validation and testing for accuracy will ensure reliability before it gets deployed.

Phase 5: Testing, Training & Deployment

Finally, this phase will ensure for the smooth adoption and operational readiness. User acceptance testing will also be made with pilot relationship managers to gather their feedback to identify any issues in terms of usability. Comprehensive staff training programs will be delivered to support detailed documentation to achieve user competency. The platform will be deployed in phases throughout the entire Corporate Division to minimize disruption and enabling iterative improvements. Performance monitoring tools will measure the efficiency of the system and adoption rates by users, while through optimization efforts any bottlenecks that are identified will be addressed. Finally, the system will be transferred to the IT operations team for maintenance and support.

3.8.2 Process/Activity-wise Time Distribution

<i>Phase</i>	<i>Duration</i>	<i>%of Total</i>	<i>Key Milestones</i>
<i>Foundation & Planning</i>	2 months	17%	Database ready, pilot clients identified
<i>Data Integration & ETL</i>	3 months	25%	All 10 data sources connected, ETL automated
<i>Core Platform Development</i>	3 months	25%	Memo generation functional, workflow active
<i>Analytics & ML Integration</i>	2 months	17%	All 4 ML models deployed and tested
<i>Testing, Training & Deployment</i>	2 months	17%	Full system being live, staff trained
<i>Total Project Duration</i>	12 months	100%	Platform operational across Corporate Division

Table3:Activity wise TimeTable

Gantt Chart:

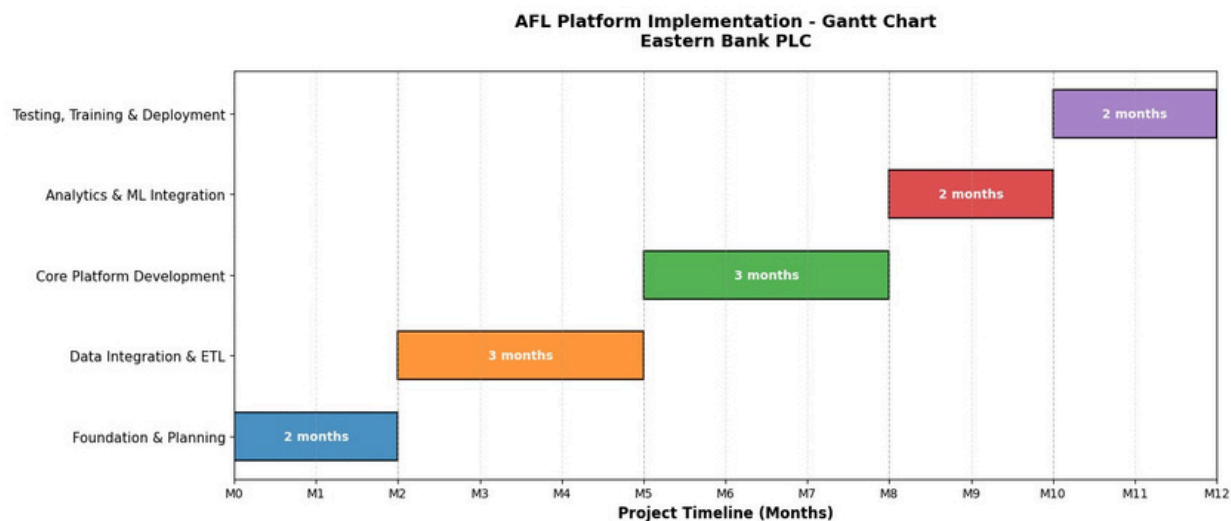


Figure 4: Gantt Chart

Critical Path Activities:

- Database design and schema approval (cannot proceed without this foundation)
- UBS/Finacle API integration (blocks ETL development)
- ETL pipeline completion (prerequisite for memo automation)
- User acceptance testing (ensures final deployment)

Parallel Activities:

- Security framework development can run alongside database setup
- ML model development can begin using historical data while ETL is being built
- Training material preparation can occur during testing phase

3.8.3 Process/Activity-wise Resource Allocation

1) Technical Resources:

Database Administrator: 2 database administrators needed for Schema design, MS SQL optimization, backup procedures.

Backend Developers: 3 backend developers needed for maintenance of Python ETL pipelines, API integrations, and business logic.

Frontend Developer: 2 front end developers needed for constructing the React.js dashboard, UI/UX design.

Data Scientist: 3 Data Scientist required for ML model training, validation, and deployment.

DevOps Engineer: 2 DevOps Engineer required for Azure infrastructure, Docker deployment, monitoring.

2) Business Resources:

Project Manager: 1 Project manager needed for timeline tracking, stakeholder coordination, risk management.

Business Analyst: 2 Business analysts for requirements gathering, process mapping, UAT coordination

Credit Risk Expert: Risk model validation, regulatory compliance review

3) User Resources (EBL Staff):

Pilot RMs: 4-5 RMs and ARMs required for testing, feedback, training validation

IT Support Staff: 2 IT support staffs required for system administration, user support and post-deployment maintenance.

3.8.4 Estimated Costing Structure

The specific amounts cannot be disclosed as it is highly confidential. But the cost structure mainly includes the following components:

1) Infrastructure Costs:

Cloud hosting cost: MS SQL database, application servers, storage for 12+ months of historical AFL data; scaled to handle concurrent RM access and nightly ETL jobs.

Software licenses: MS SQL Enterprise (required for advanced security features), Python libraries (mostly open-source), Apache Airflow (open-source orchestration)

Security tools: Azure AD Premium and encryption key management services

2) Development Costs:

Internal staff time: Development of database/backend, frontend, and ML integration

Contractor support: Specialized skilled people required for API integration with legacy UBS system, advanced OCR implementation for non-standardized documents.

Training program: Development of user manuals, video tutorials, and also regular workshop costs.

3) Operational Costs:

Testing environment: Separate staging server for UAT to avoid disrupting production

Data migration: One-time ETL of historical AFL data (3-5 years) for ML model training

Change management: Communication campaigns, feedback collection tools, post-deployment support

4) Contingency Reserve:

15-20% buffer for unforeseen challenges such as extended API integration timelines (legacy system documentation gaps), additional security requirements from Bangladesh Bank audits, or scope adjustments based on pilot feedback

5) Cost-Benefit Justification:

Current manual process: RMs spend 3-4 days per AFL $\times$ 200+ AFLs annually = 600-800 person-days lost

Platform enables 50-70% time reduction, freeing 300-560 person-days for strategic client work

Error reduction minimizes costly rework and potential NPL risks from incorrect calculations

Predictive analytics capability supports proactive risk management, reducing future losses

Estimated ROI breakeven at 12-18 months through productivity gains and risk mitigation (according to head of MIS).

6) Funding Sources:

Internal IT budget allocation for digital transformation initiatives (aligns with EBL's 2024 strategic priorities)

Corporate Division operational budget (direct beneficiary of efficiency gains)

Potential cost-sharing with other divisions if platform is extended to retail/SME lending in future phases

Chapter 4: Proposed System Architecture Design

The platform will follow the idea of the multi-layer architecture that is based on the modern banking architecture and includes presentation, application, data, and integration layers. The use of this layered design will provide separation of potentials concerns, scalability, and security of the credit risk platform as recommended. Its architecture will be a cloud-hybrid and is going to use microservices that will offer modularity and allow making independent updates (i.e., adding new machine-learning models without interfering with AFL workflows).

4.1 High-Level Architecture Components:

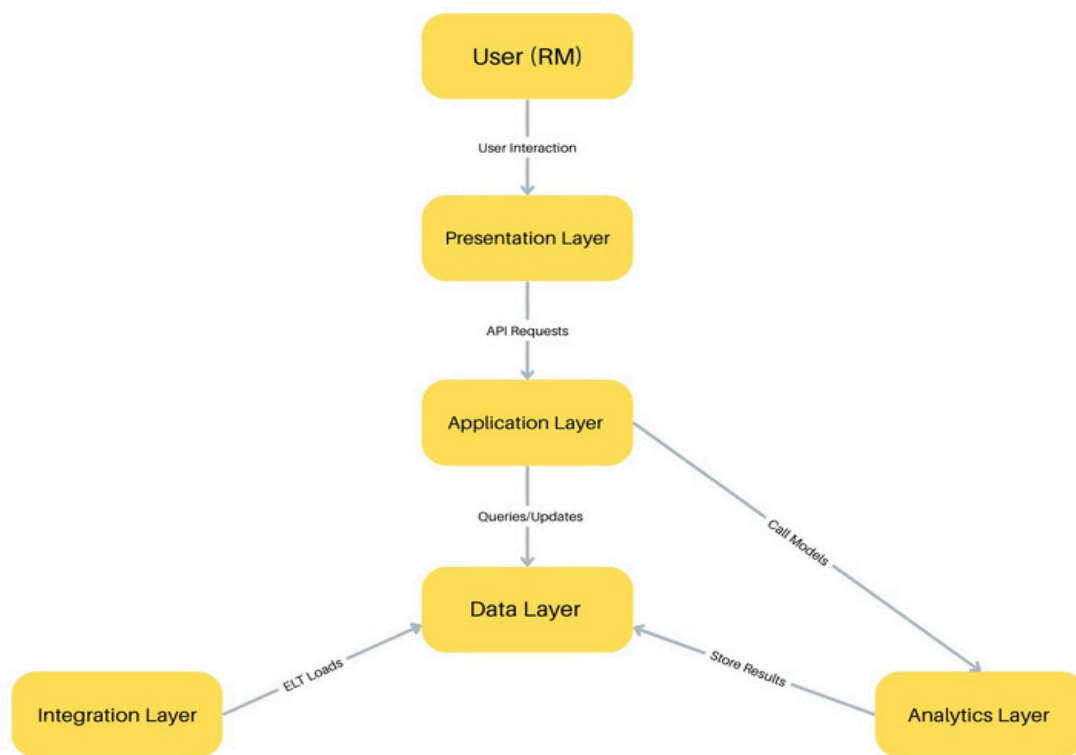


Figure 5: System Architecture Components

Presentation Layer (User Interface): This is a web-based dashboard built with React.js and can afford Relationship Managers (RMs) the opportunity to visually access the data. It has features such as query interfaces, pre-built AFL templates, and visualization (e.g. generated financial trend charts built with Chart.js).

Application Layer (Business Logic): Backend services (created by either Node.js or Python (Flask/Django)) which support provisions through RESTful APIs. It is a layer that organizes workflows, makes computations (e.g. financial ratios) and incorporates machine-learned models.

Data Layer (Central Database): Microsoft SQL Server will be the heart of the storage which is normalized based on the requirements of operational efficiency of the system.

Integration Layer (ETL): Python ETL pipelines using libraries including Pandas, and Apache airflow to schedule the tasks. Data is gathered through APIs (e.g., Finacle), cleansed and normalized and loaded in small batches so as not to cause downtime.

Analytics Layer: A specialized layer that will implement machine-learning libraries such as scikit-learn, TensorFlow or PyTorch. The execution of models is done as scheduled jobs or on demand and the results are stored in the database to be later query able.

4.2 Workflow Modeling – How the System will Work

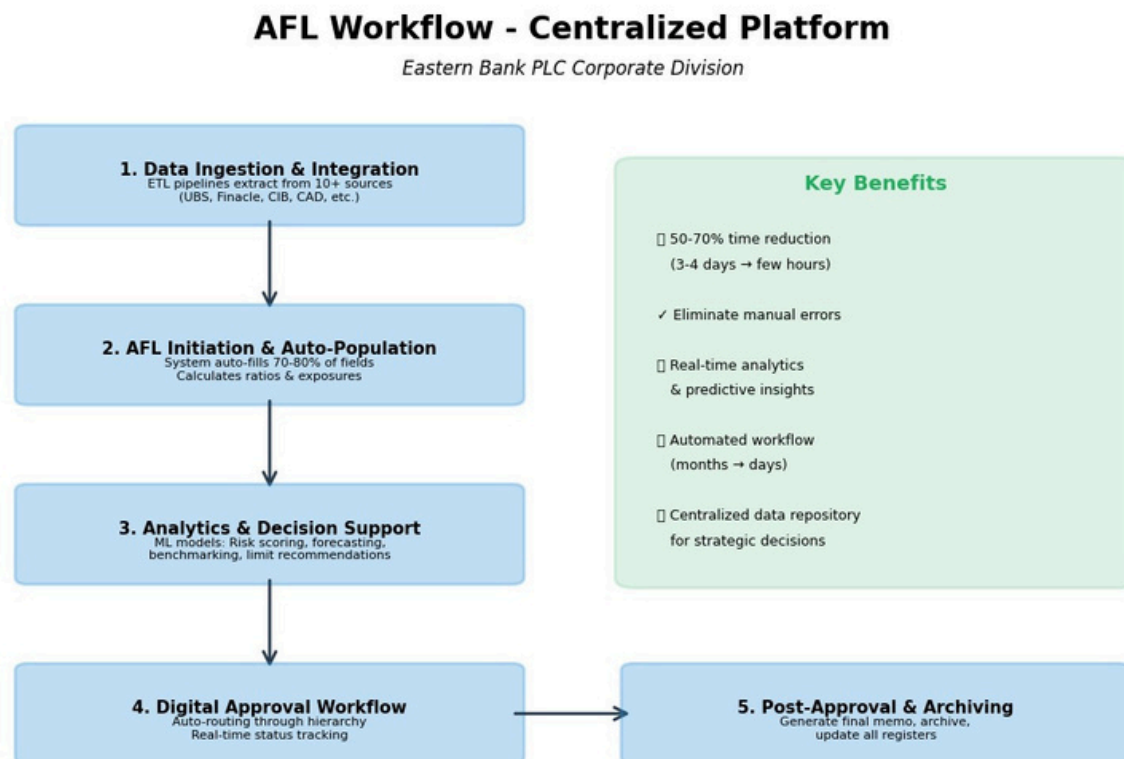


Figure 6: AFL Workflow

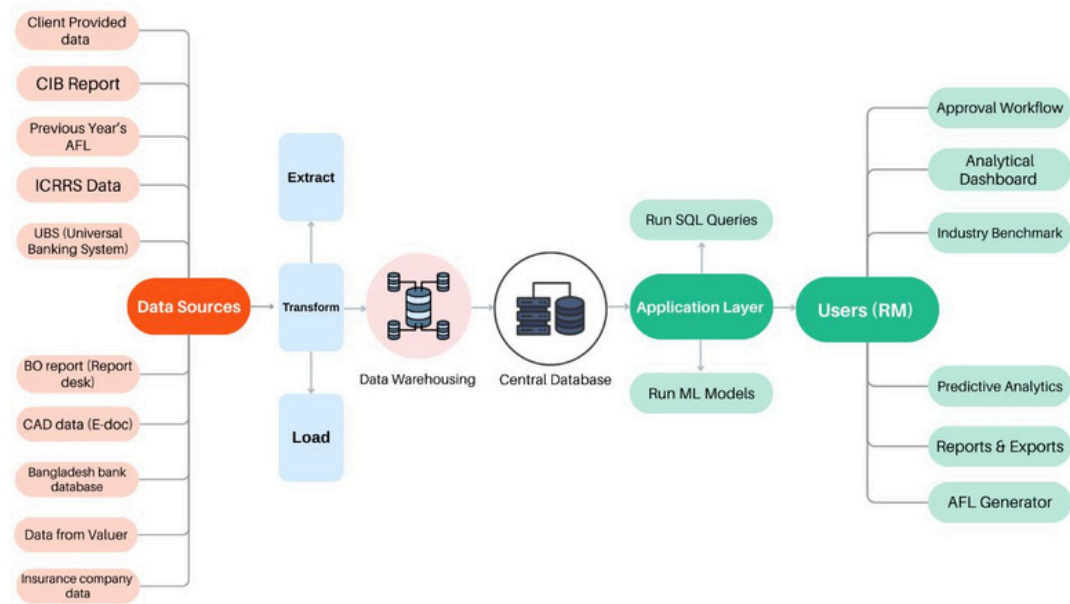


Figure 7: Data Flow of AFL System

The unified platform AFL, will follow a very simple and automated workflow converting the present scattered manual system to a system of integrated digital workflow. The process of work consists of five main steps:

1) Data Ingestion and Integration

ETL pipelines will be automated to run on a regular basis (nightly using Apache Airflow) in order to obtain data about the identified sources. Real-time API connections will fetch transactional data on UBS/Finacle and facility data on CAD registers. Credit reports will be downloaded on the CIB Portal on a daily basis, whereas unstructured documents, including financial statements and valuation reports provided by clients will be processed with the help of the OCR technology. All the data obtained will be subjected to verification checks prior to their loading in the staging area hence, taking care of the data quality early. This computerized extraction will do away with the existing manual process, where RMs waste hours that are used to collect information through various systems.

2) AFL Initiation and Auto-Population

Upon a Relationship Manager launching a new AFL request via the web-based dashboard, the system will make queries on the central MS SQL database to automatically fill the necessary fields in the 18 AFL modules by around 70-80 percent. Ready-made database views and stored procedures will be used to access the relevant client information such as the profile of the borrower, financial statements, current facilities, securities, group exposures and past performance. Of the critical ratios to be computed automatically by the system, these are the Debt Service Coverage Ratio (DSCR), leverage ratios, and exposure totals. RMs will merely be required to record a narrative portion, grounds and any other client-specific information unavailable in the data base, thus saving time spent in carrying out the preparation of memos to a few hours.

3) Analytics and Decision Support

Before the completion of the AFL memo, RMs can have the choice of using integrated ML models to generate additional insight. XGBoost will result in credit-risk ratings and default probability rates, which

will be determined using financial indicators and previous data on the client. The LSTM prediction model will be used to forecast the financial trend within the nearest future and help to estimate the future ability of the client to repay the loan. The K-means clustering will be used to place the client in the position of peers in the industry giving it some context on the limits proposed. The optimal credit limits will be suggested by the use of the Random Forest models based on historical credit approval trend and risk to-return analysis. The outputs of these analyses will be displayed in easy-to-understand visualization on the dashboard and can be directly added to the AFL memo to justify credit recommendations. **4) Digital Approval Workflow** After the RM completes his/her tasks and submits the AFL memo, the system will automatically direct them through the approval hierarchy based on pre-defined business rules. It will go progressively through the Unit Head, Client Relationship Management Head, Head of Corporate Division and finally to the Managing Director or the Board based on the limit amount. Each of the levels of approval will be notified by emails and SMS with direct links to the memo after which the officers are supposed to review it. The dashboard will show the real-time of statuses, such as which stage of approvals the AFL is at this moment and which timelines it will be completed. Approvers can make comments, demand corrections or decline the application which will be reflected in the audit trail. It is a computerized workflow that will eradicate physical file transfer and delays in coordination that make it take several months to get approval. **5) Post-Approval Processing and Archiving** Once it is approved, the system will automatically issue the completed AFL memo in standardized word format with the digital signatures of all the approvers. Once the approved memo along with all its supporting documents are submitted, a copy of them will automatically be stored in the document management system with the necessary metadata tags to facilitate easy retrieval. All the approved AFL data points will be organized in the central repository and then provide the rich historical data to use them in future analytics and model training. The system will change the modules needed such as facility registers, exposure summaries, and client profiles. Automated messages will be sent to the Credit Administration Department and other branches to continue with documentation and disbursement processes of the facility. This end-to-end workflow will reduce AFL process from a disconnected, paper-based, operational process that now takes months to accomplish to a digital operational process that can be done in a few days, as well as establishing a strategic data repository to be used in advanced analytics and risk management.

4.2.1 ETL Processes:

Extraction Processes for AFL Data Sources

The extraction step would enable the automated process of retrieving raw information from over ten sources which not only would be precise in time but would be data intact and also maintain continuous flow of operations. The phase will use a hybrid architecture implemented with API integrations to capture the structured data, propose batch routines to download the reports, and automate events to upload the documents. Each data that has been accessed is then directed into a staging repository; audit

trails would be kept.

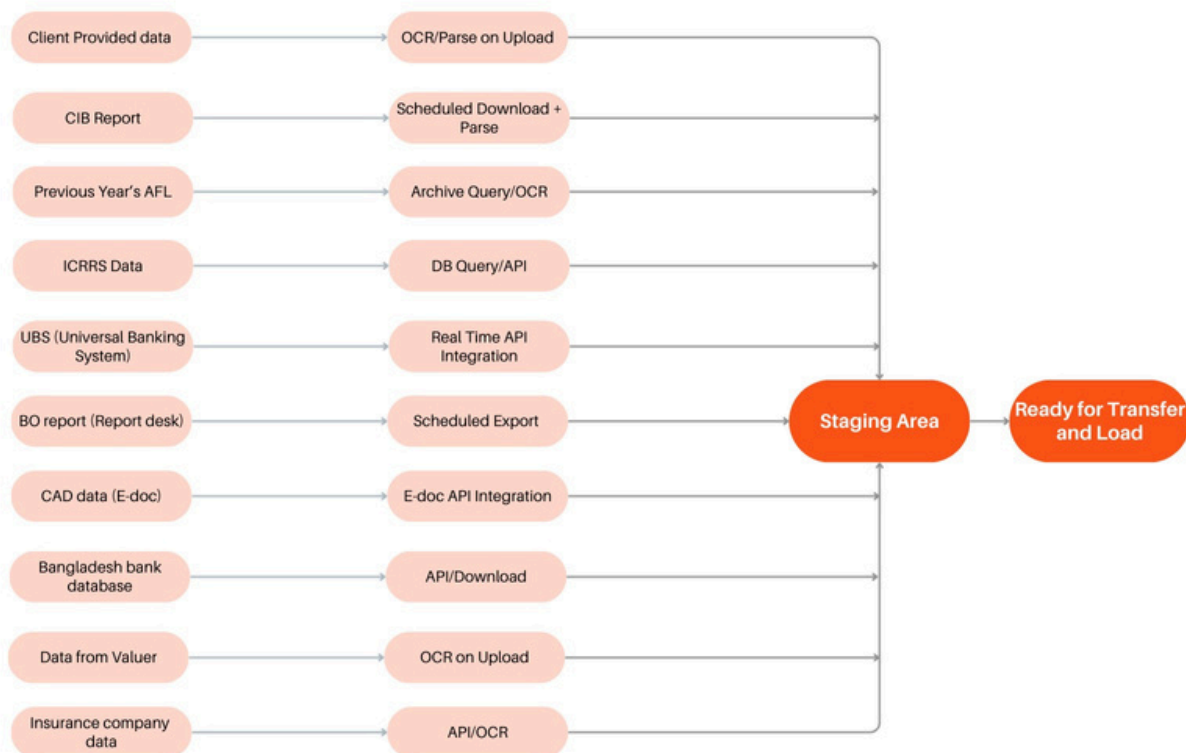


Figure 8:Extraction Phase of ETL

Description of data sources and extraction process:

1. **UBS (Universal Banking System)** The Transactions and Facility data of the institution are achieved in the Universal Banking System which is the core banking platform of this institution. The retrieval is performed corresponding to real time API call to secure endpoints, which would be on demand when an AFL request is made by a Relationship Manager. The given mechanism provides the immediate access to the important fields like outstanding balances, facility details, security information, and syndication details.
2. **ICRRS Data (Internal Credit Risk Rating System)** The Internal Credit Risk Rating System gives proprietary risk scores and ratings per the regulations of Bangladesh Bank. It is extracted through on-demand database looks or API pulls of the ICRRS module which are normally synchronized on a daily basis to reflect changes in the risk types and probability-of- default measures.
3. **BO Report (Report Desk)** Business Operations (BO) report contain the trade accounts, settlements and dues information. The extraction is performed on a daily basis, which would consist of automated download of CSV or Excel files over the Report Desk portal, and then a preliminary parsing step is followed where the trade volumes and settlement details are isolated.
4. **CAD Data (E-doc)** Some of the electronic records found in Credit Administration Department (CAD) include liability and approval. The retrieval may be done in real-time or on a required

basis, via API calls to retrieve the most recent document versions, and hence, up-to-date data in long-term liabilities, approval status and collateral details.

5. **Bangladesh Bank Database** Regulatory data beyond CIB, such as macroeconomic indicators and compliance flags, is sourced here. Extraction uses scheduled API calls or secure portal downloads, typically daily or weekly, to align with regulatory update cycles.
6. **Data from Valuer** External valuation reports for assets and collaterals are processed upon upload. Event-driven extraction applies Optical Character Recognition (OCR) to PDFs, enhanced by image preprocessing, to capture property values, net worth assessments, and valuation dates.
7. **Previous Year's AFL** Historical memos support projections and comparisons. On-demand extraction queries the internal archive database or file system, retrieving past limits, projections, and approvals in digital format where available.
8. **CIB Report** Bangladesh Bank reports on credit information bureau is a critical source of data as an external source. Reporting using the CIB Portal is scheduled to be done by an automatic downloader on a daily basis, and then the reports are processed and rated, group exposures, and default histories are retrieved.
9. **Client Provided Data** Upon upload an unstructured submission is processed, such as financial statements and KYC documents. Extraction reads Excel file directly or opts to use OCR on the PDF files to give out revenue, net income, and ownership data.
10. **Insurance Company Data** Partner insurers provide coverage information about collaterals. When dealing with structured data API integrations are being used more often than not; otherwise, extracted supports OCR used on uploaded PDFs or CSVs to capture policy amounts, coverage type, and expiry dates on receipt.

Transformation Phase in the ETL Pipeline

Immediately after extraction in the ETL pipe, transformation will be done to ensure that the raw data, which may be non-standardized and disparate data in the staging stage, is converted into clean standardized and enriched data that may be loaded into the central MS SQL database. This step reduces the inconsistencies of the AFL data sources, hence, making sure that the data is of good quality to be used to generate memos and analytics effectively. Currently, Relationship Managers reconcile these matters manually, leading to calculation errors and delays. The transformation is supported using Python scripts with the APIs like Pandas to process the data, NumPy to perform the numerical operations, and Scikit-learn to perform advanced processing. Driven by Apache Airflow, it includes validation rules in order to maintain the data integrity and logging to ensure traceability. This is a modular process whereby fields can be run simultaneously under the eighteen AFL modules (such as borrower profiles and

financial analysis).

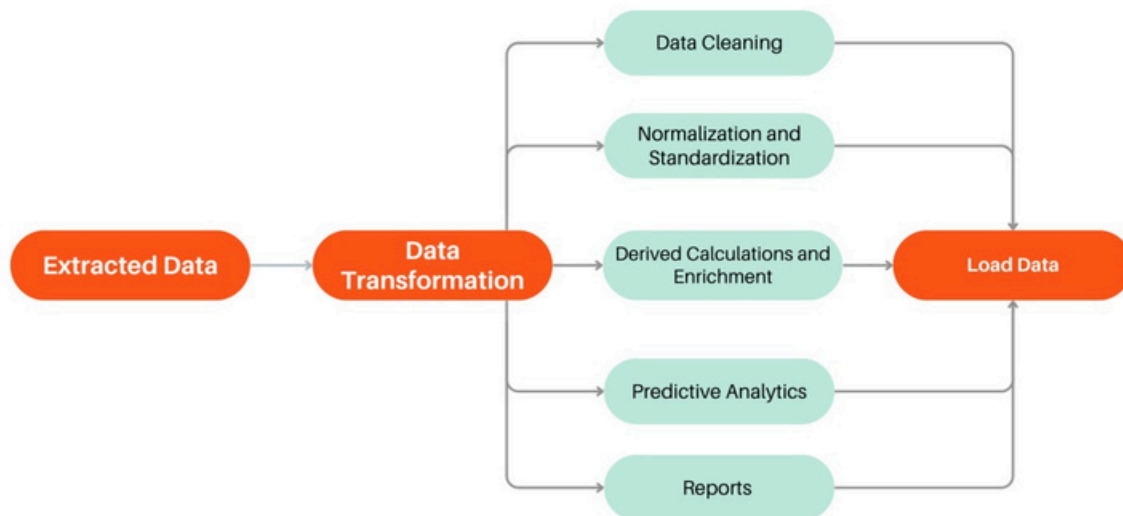


Figure 9: Transformation Phase of ETL

Loading Phase in the ETL Pipeline:

The **loading phase** is the final step in the ETL (Extract, Transform, Load) pipeline, responsible for transferring the cleaned, standardized, and enriched data from the transformation stage into the central MS SQL database. This phase ensures that the unified repository remains accurate, consistent, and performant. By automating loading, the platform will eliminate manual data entry errors, supports incremental updates for efficiency, and maintains data integrity across the ~440 fields in the 18 AFL modules.

Loading will be implemented using robust tools such as SQL Server Integration Services (SSIS) for visual orchestration or Python libraries like SQL Alchemy and Pandas for programmatic control. Processes are designed to be incremental, minimizing resource usage and downtime while supporting high-volume banking data. Error handling, transaction management, and post-load validations are integral to ensure reliability and compliance with Bangladesh Bank guidelines.



Figure 10: Loading Phase of ETL

4.2.2 ML Integration for Analytics

To consolidate data into action insights applicable in credit decision-making, centralized AFL will be developed to run four machine learning models. Using these models will leverage the integrated database containing more than 440 fields spread across 18 functional modules in providing predictive models, risk analysis, and strategic guidance that is impractical with disjointed sources of data.

Model Architecture and Implementation

The implementation of all machine-learning models will be on python and will use the libraries of scikit-learn, Tensorflow and also XGBoost. Model execution will be done at a regular time (daily or weekly by Apache Airflow) or whenever required with a dashboard interface. Data on training will include historical AFL data of three to five years and the retraining of the models will be done quarterly to ensure the models remain accurate as new data is gathered. Output variables will be placed in the result table of analytics to be easily accessible and they would be incorporated directly into the memo of AFL and dashboard visualizations

4.2.2.1 Four Core ML Models

1. XGBoost for Credit Risk Assessment

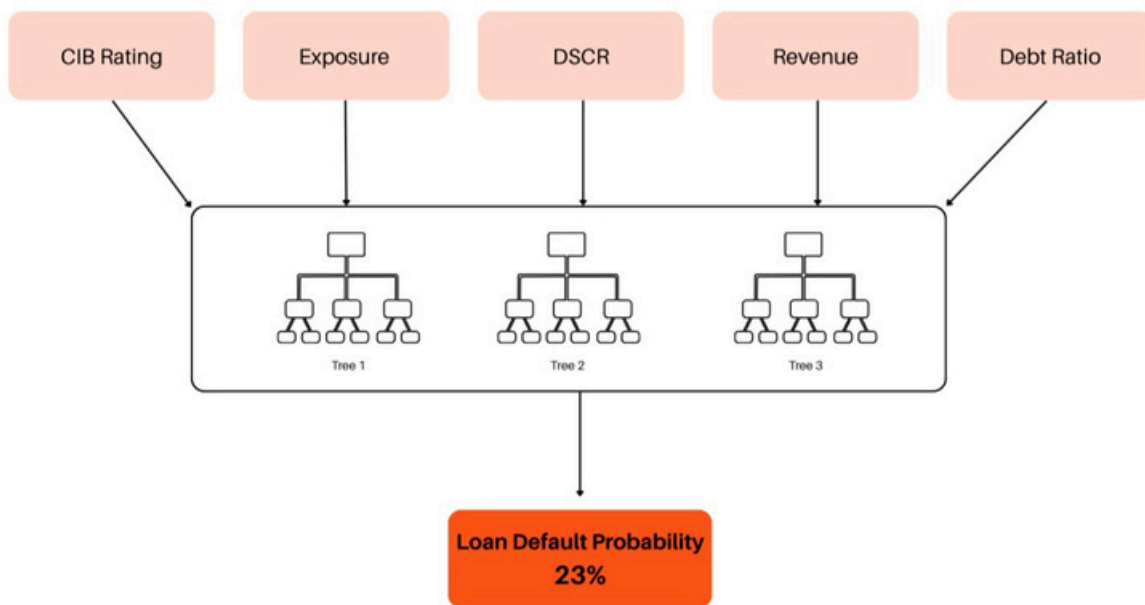


Figure 11: XGBoost Workflow

The loan default probability of any individual client is going to be estimated using a gradient-boosting model and its factors will include financial ratios (DSCR, leverage, current ratio), exposure factors (total facilities, utilization rates), payment history, CIB ratings and external credit scores and industry risks. The model will deliver a risk rate between 0 and 100 and feature-importance ranking, which will point out the most significant predictors and, therefore, deduce the high-risk accounts before a default event happens.

2. LSTM for Financial Trend Forecasting

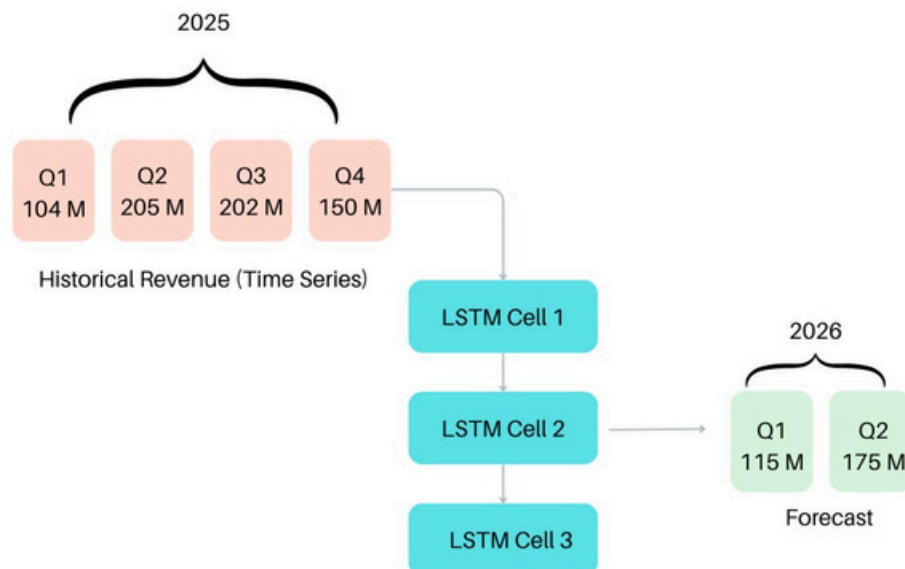


Figure 12: LSTM Workflow

The multi-year financial statements will be analyzed using Long Short-Term Memory networks which will predict certain key performance indicators in the next twelve to twenty-four months such as revenue growth trends, profitability trends (net income, EBITDA), predicted debt-service coverage ratios (DSCR), and working-capital requirements. These predictions will help the relationship managers to judge the capability of the clients to maintain recommended credit limits and in recognition of early signs of financial decline.

3. *K-Means for Industry Benchmarking*

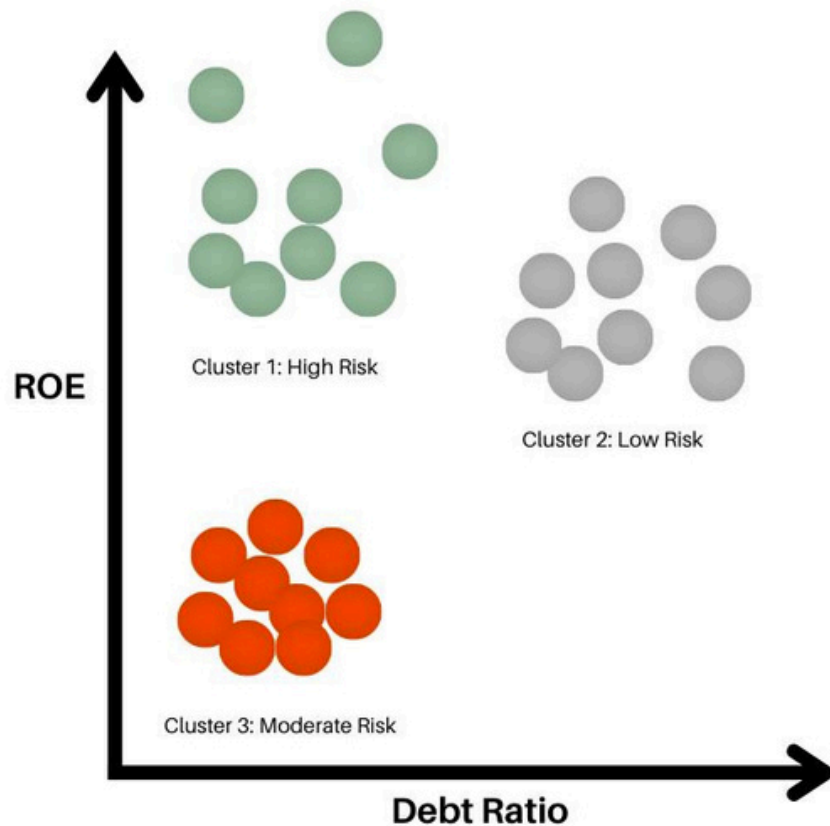


Figure 13: K-Means Workflow

Clustering algorithms will divide the clients based on the industry, and performance indices like sales volume, profitability ratios (ROE, ROA), leverage and growth rates. This grouping will lead to comparative analysis that will show the performance of each client compared to other clients in the industry.

4. *Random Forest for Limit Recommendations*

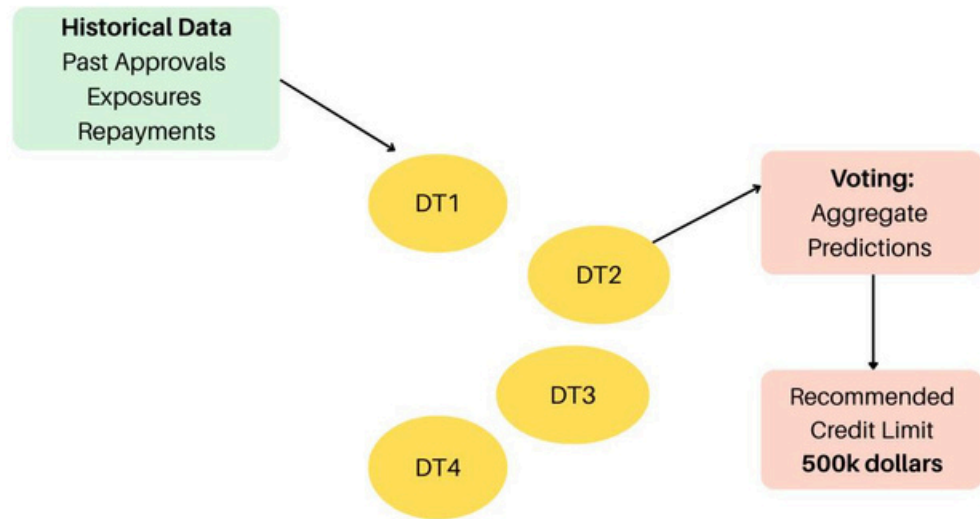


Figure 14: Random Forest Workflow

This ensemble model will analyze historical approval patterns combined with client financial health, current exposure levels, collateral coverage ratios, and risk ratings to suggest optimal credit limits. The model will learn from past decisions where specific client profiles received certain limit amounts, helping standardize recommendations while highlighting cases that deviate from historical norms for further review.

4.2.2.2 Implementation Workflow

There will be systematic procedure of model deployment. First, Pandas will be used to extract the features in model-ready formats by creating automated data-preparation queries that will extract the relevant features of the central database.

Second, predictive scripts will be used periodically, meaning running models on the scheduled time, and storing the results in the database with the time-stamps and confidence ratings.

Third, the react.js dashboard will be used to display the outputs as intuitive visualizations, in the form of risk gauge charts, trend-line graphs, table of peer comparison, and suggested limit ranges.

Fourth, these insights are going to be available with a single click to relationship managers during AFL preparation, and model outputs can be introduced as memo narratives.

Lastly, model performance will be accessed every month through accuracy measures and automatic notifications will be issued in the case of a poor quality of prediction below an acceptable standard.

4.2.2.3 Data Requirements and Training

The performance of the model will require the historical data to be clean, i.e. three to five years of verified AFLs with underwritten results (performing vs. defaulted), quarterly financial statements with active customers, detailed CIB report histories, and facility usage and repayment records. The ETL pipeline will ensure that such data is well formatted and verified before the model is trained. Preliminary training will be done with 80 percent of the historical data used to build the model and 20 percent used to test the model.

4.2.2.4 Expected Analytical Capabilities

The ML will have a number of strategic capabilities that would not have been possible under the existing manual structure once it becomes activated. The platform will result in early-warning detection that flags in advance clients whose financials are practiced the wrong way. It will optimize a portfolio based upon the identification of concentration of risks and underperforming segments, set limits in a more data-driven fashion on the basis of quantitative risk-return analysis, and be predictive regarding loan defaults. These functions will enable the Eastern Bank PLC to carry out the transition of current reactive to active credit-risk management paradigm and, thus, mitigate non-performing loans and improve the quality of portfolios.

4.3 Database Design Considerations

The database structure that supports the centralized AFL platform presents its own issues, which are mainly because of the spread across the extant data space. AFL data comes in a variety of different sources each of which was not designed to be interoperated, each with its own formats and structures.

The main architecture idea of the proposed database will be based on Microsoft SQL Server, using a normalized relational schema; however, there will be some cases in which the database is denormalized in order to meet the performance needs. The first challenge is not in the technology itself but in harmonizing information that is in essentially heterogeneous forms in over ten source systems. Financial statements come in form of PDFs, CIB reports and have unevenly distributed field names, and UBS exports inconsistently contain the field names that is really difficult to clean and organize.

It is worth mentioning that a comprehensive database schema or an ERD diagram has been left out of this report. The intricacy of the project as well as the time limitations by the internship duration and the confidentiality in the sensitive information of the Eastern Bank regarding its internal data structures makes it unfeasible to create a full schema at this stage. For this reason, a basic database workflow structure is visualized in this report.

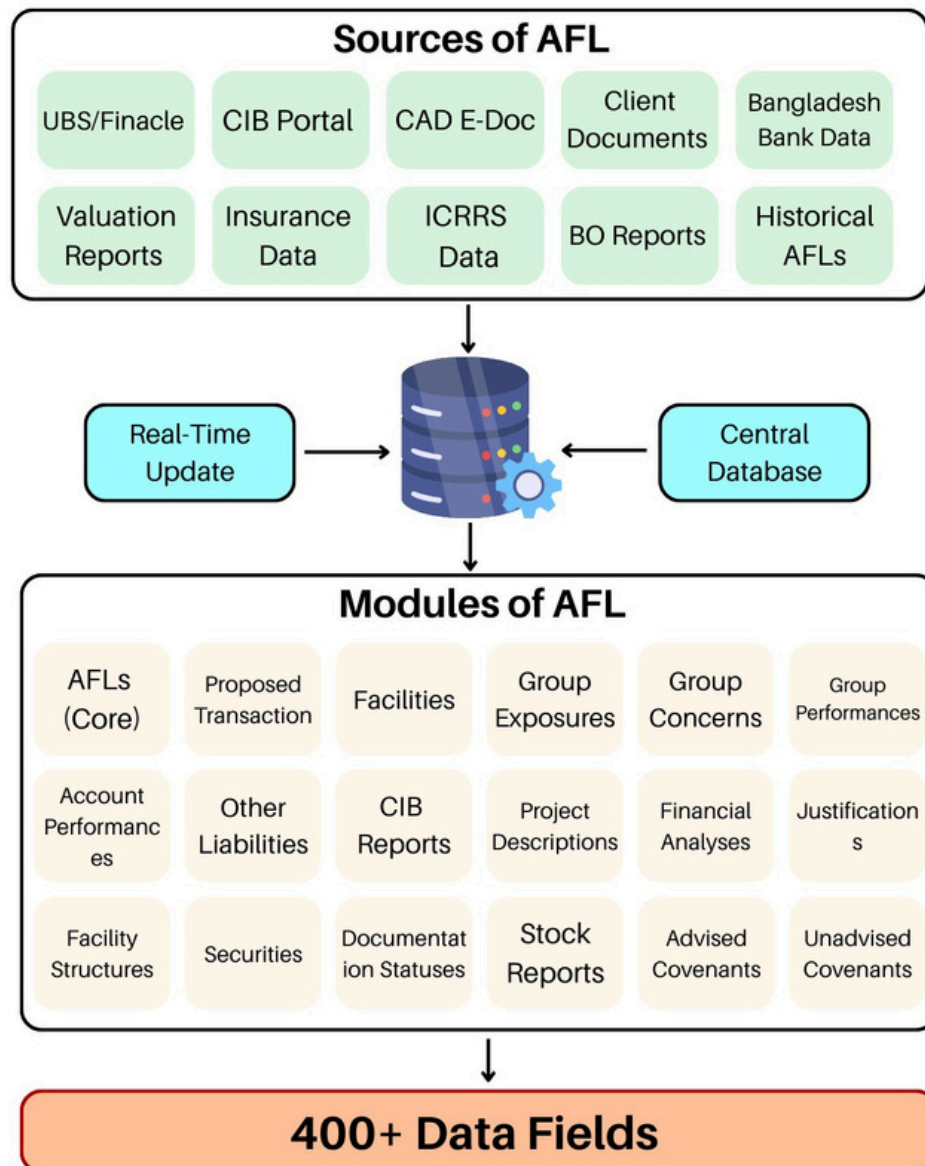


Figure 15: AFL Database Workflow Structure

4.3 Ethical Considerations

The project is keen on data privacy based on the Digital Security Act in Bangladesh. Raw data on the interviews were anonymized and the informed consent was taken on all the participants. Role-based access controls (e.g., only RM users are allowed to access sensitive fields with a view-only privilege), data encryption over the network and on the server and intensive audit logging are deployed within the system architecture to exclude security violations. No other human subjects other than the study participants during the interview stage were involved, thus, eliminating the need to have Institutional review board assessment. The fact that the machine-learning models will be affected by potential biases based on the past will be mitigated by introducing systematic tests of fairness and using diversified

training sets. Automation is transparent, with an option of the human decision-making process to override it in order to strengthen the accountability.

4.4 Anticipated Problems/Limitations

Data integration: Finacle and other legacy systems can be unwelcoming to API integration, which could cause delays in implementation; one way of mitigating the issue is to install strong ETL solutions.

Scope: The paper is limited to the AFL operations in corporations and not retail banking, which assumes internal access without the real time developmental needs.

Technical: The project will be accompanied with high amounts of initial capital costs and skill gaps; these points will be addressed with the help of planned training programs and a gradual implementation strategy.

Adoption: The resistance to change by the relationship managers (RMs) is another threat; which will be addressed through building a user-friendly interface and pilot implementations.

External Factors: The envisaged changes in regulations after 2025 require the introduction of quarterly update round it allows keeping track of compliance.

Chapter 5: Proposed System Features

The suggested centralized AFL platform will include a set of key features that will fix the targeted inefficiencies and provide access to strategic analytical opportunities.

1. Centralized Data Repository

A single MS-SQL database is used to store the entire data about AFL in a single normalized schema, which contains all the AFL related data retrieved in different systems. It has more than 400 fields in 18 modules, which include (without limiting to) data about the borrowers, financial reports, facilities, securities, CIB reports, group exposures, and previous data. Such consolidation removes the data silos and creates a platform on which later automation and analytics can be developed.

2. One-Click AFL Memo Generation

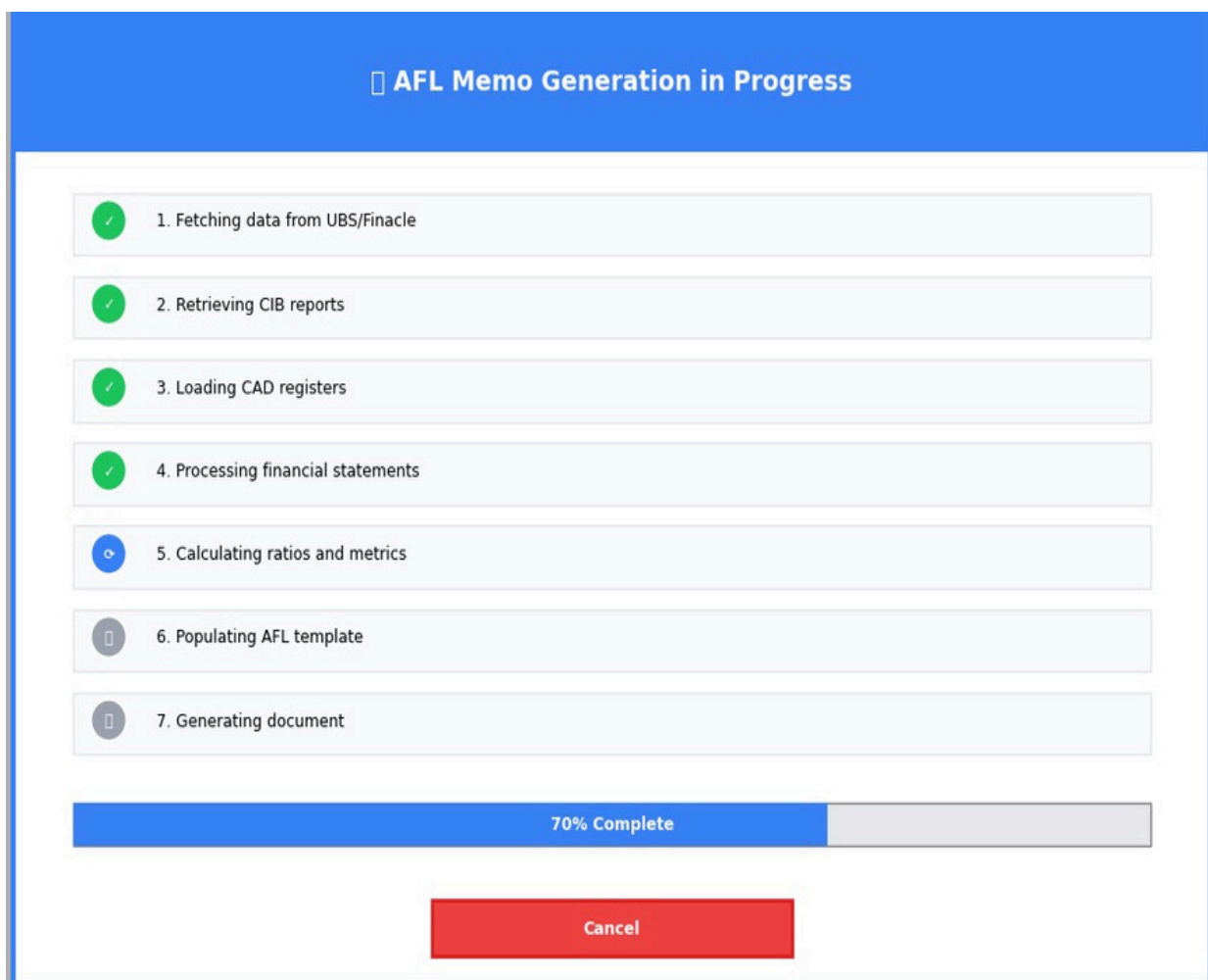


Figure 16: AFL Generation Interphase

Automated memo creation will leverage centralized data and standardized templates to pre-populate 70-80% of memo fields by sending query to the unified database. The system will do automatic calculation of its exposures, limits, ratios, and totals through stored procedures and allows the use of templates in Word and Excel with permission to edit each section. The override mechanism will enable the

Relationship Managers to update the narratives and justifications, whereas version control will capture such changes and maintain an audit trail. This feature can save 50-70 percent of preparation time as well as alleviate mistakes in transcription.

3. Real-Time Workflow Management

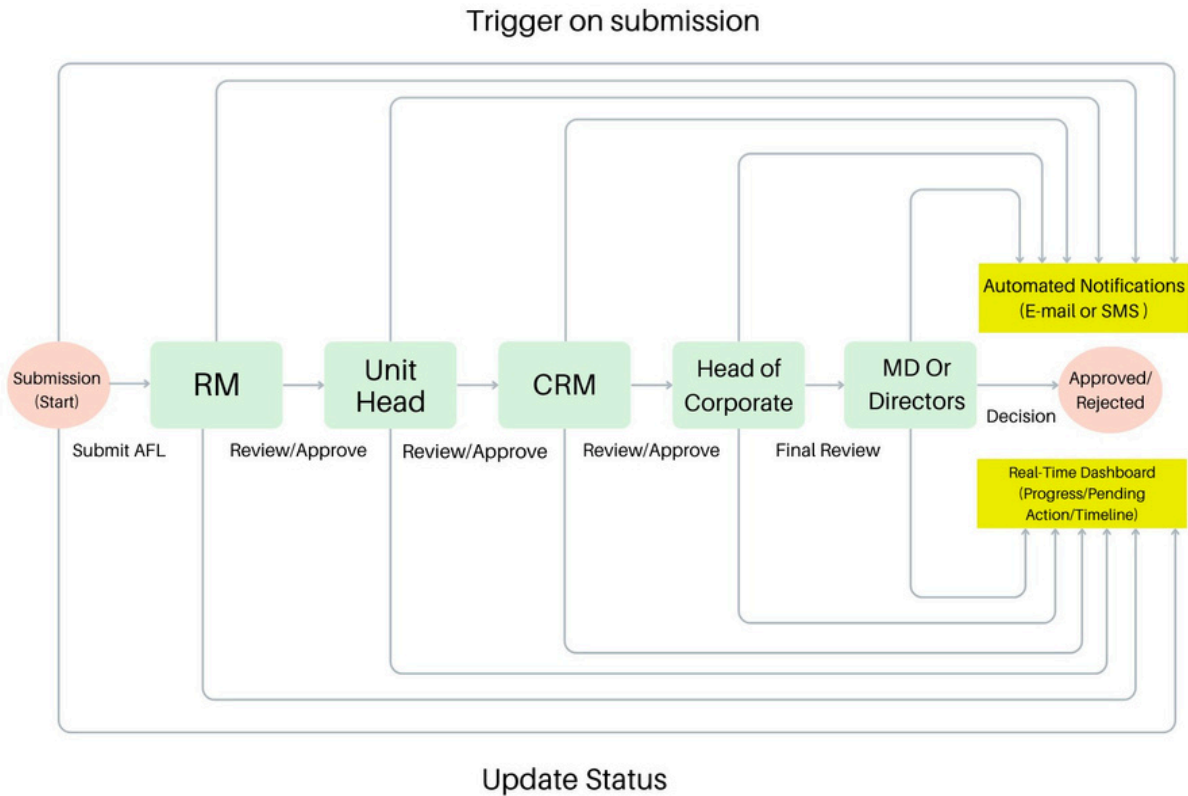


Figure 17: Real-Time Workflow Management

Digital approval routing cuts across the organizational structure, status tracking automates the assignment of the workflow based on the type of facility and monetary thresholds. A live dashboard shows the AFL status (Draft, Pending Review, Under Approval, Approved, Rejected) and uses role-based queue management of the different approval levels (RM- Unit head- CRM- Head of Corporate- CRO/MD/Board). The system detects the bottlenecks by raising the flag of delayed approvals and providing the estimated completion time schedule based on historical patterns of processing.

4. Automated Notifications and Alerts

The screenshot shows the EBL AFL Platform interface. The top navigation bar includes 'EBL AFL Platform', 'Dashboard', 'AFL Queue', 'Notifications' (highlighted with a red badge showing 7), 'Analytics', and a user profile 'Welcome, Munirul Mansur (Unit Head) | Logout'. On the left, a 'Filter Notifications' sidebar lists categories: All Notifications (7), Action Required (3), Pending Approvals (2), Documentation Issues (1), SLA Warnings (1), and Status Updates (0). Below this is a 'Notification Settings' section with toggles for Email Alerts, SMS Alerts, Desktop Push, and Sound. The main 'Notification Center' area displays a list of notifications with color-coded headers: 'Action Required' (3), 'Pending Today' (2), and 'This Week' (2). The notifications include: 'SLA Deadline Approaching' (AFL for Square Pharmaceuticals requires approval within 2 hours), 'Documentation Deficiency Detected' (Beximco Textiles AFL missing updated CIB report), 'Pending Approval Required' (Akij Group AFL awaiting your review and approval), 'Escalation Alert' (Bashundhara Paper AFL overdue by 24 hours - escalated to Head of Corporate), 'Status Update' (Apex Foods AFL approved by CRM - moved to Head of Corporate), and 'Document Upload Notification' (New financial statements uploaded for Prime Bank client). Each notification has a corresponding action button like 'Review Now', 'View Details', 'Approve/Reject', 'View Status', 'Track Progress', or 'Review'.

Figure 18: Notification Dashboard

The screenshot shows an email notification from 'afl-alerts@easternbank.com' to 'munirul.mansur@easternbank.com' with the subject 'URGENT: AFL Approval Required'. The email header includes the date 'Jan 08, 2026 10:30 AM'. The body of the email features the EBL logo and a greeting 'Dear Munirul Mansur (Unit Head, Corporate Division),'. A prominent red box contains the text 'SLA DEADLINE ALERT' and 'An AFL requires your immediate attention' with 'Time Remaining: 2 hours 15 minutes'. Below this, the 'AFL Details' section lists: Client: Auxbeam Bangladesh, AFL type: Limit Renewal, Current stage: Pending Unit head approval, and Priority: High. At the bottom, a footer note states: 'This is an automated notification from EBL AFL Platform. To update notification preferences, visit: Settings > Notifications'.

Figure 19: Automated E-mail Notification

A smart notification system will make the coordination time shorter, with the use of email and SMS notifications to stakeholders in case of need to do anything. It sends reminders over pending approvals on approaches to SLA, documentation deficiency or absence of data, status-update messages to relevant individuals at the completion of particular approval stages, and requirement alerts about work.

5. Interactive Analytics Dashboard

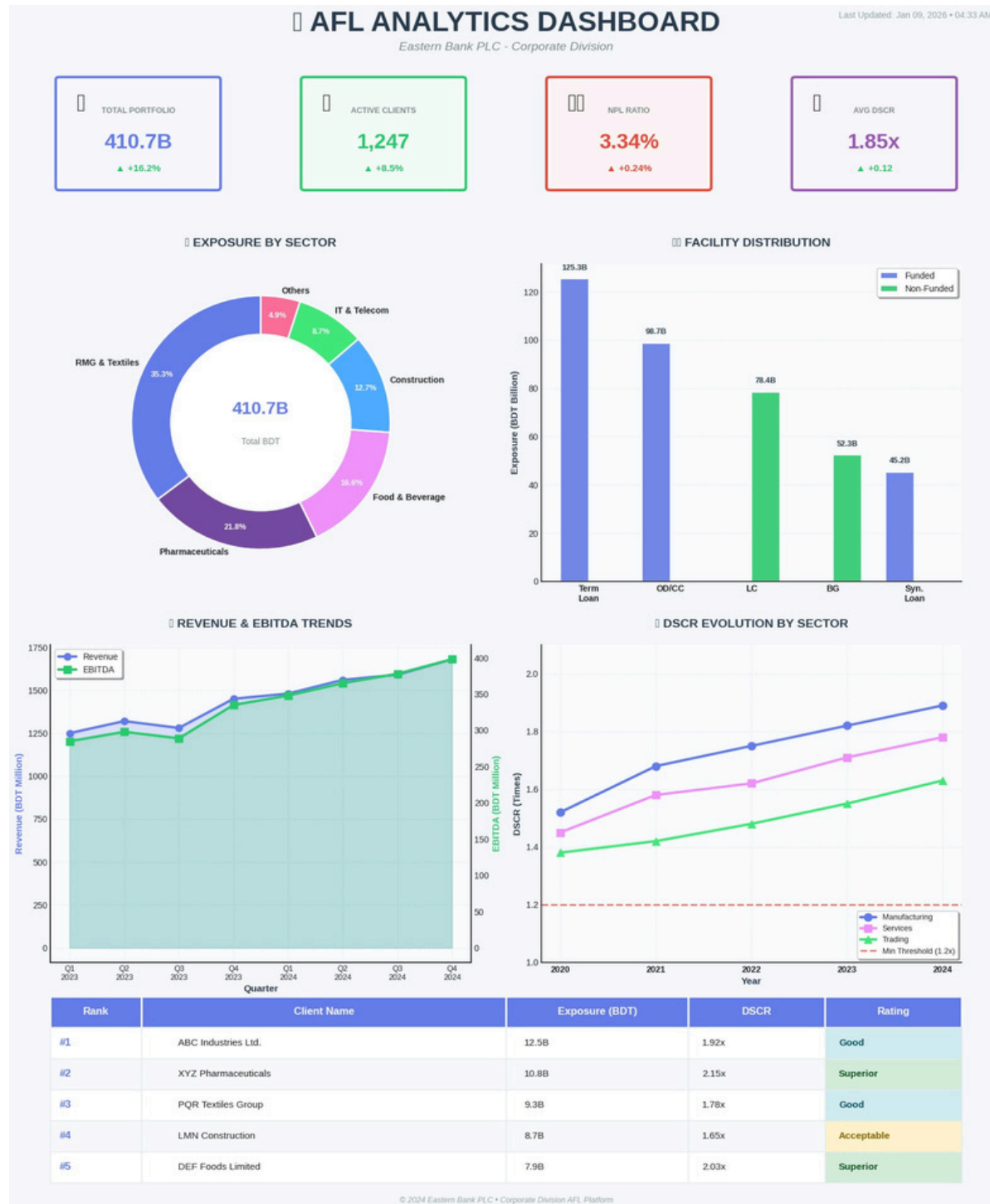


Figure 20: Interactive Analytics Dashboard

The web-based interface provides detailed visualization and analysis, such as client profile summaries and essential financial values and trends, exposure analysis showing the concentration by sector, group, and facility type, and historical performance charts showing the sale of revenue, profitability and DSCR changes. The dashboard provides an overview of a portfolio and allows customisation of reports as well as data export and real-time update of the central repository.

6. Integrated Machine Learning Models

Four models are proposed, each tailored to key AFL analytics:

i) XGBoost for Credit Risk Assessment:

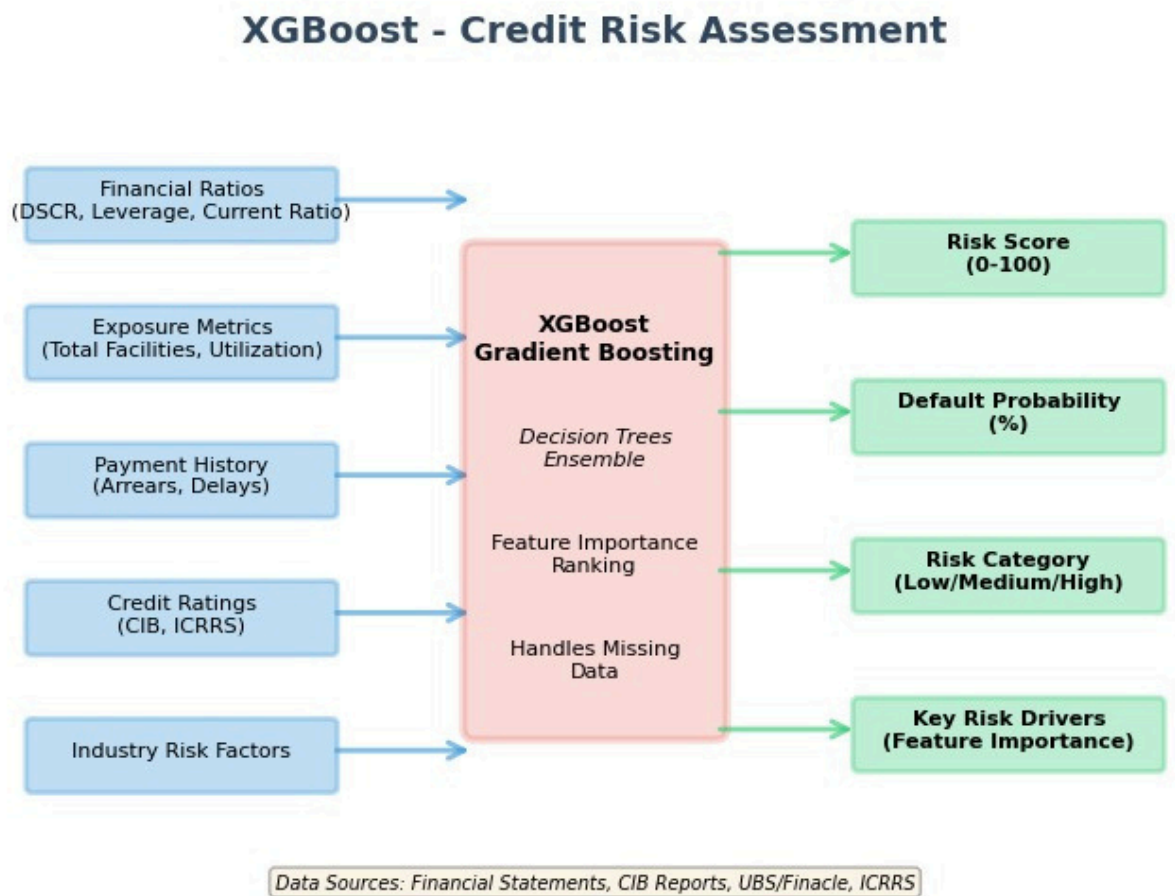


Figure 21: Credit Risk Assessment with XGBoost

XGBoost uses structured features from multiple AFL data sources, derived from client-provided financial statements and Financial Analyses module, exposure and liability data from UBS/Finacle and CAD registers, internal/external ratings from ICRRS and CIB reports, and historical performance from Account Performances and Group Exposures.

ii) LSTM for Financial Trend Forecasting:

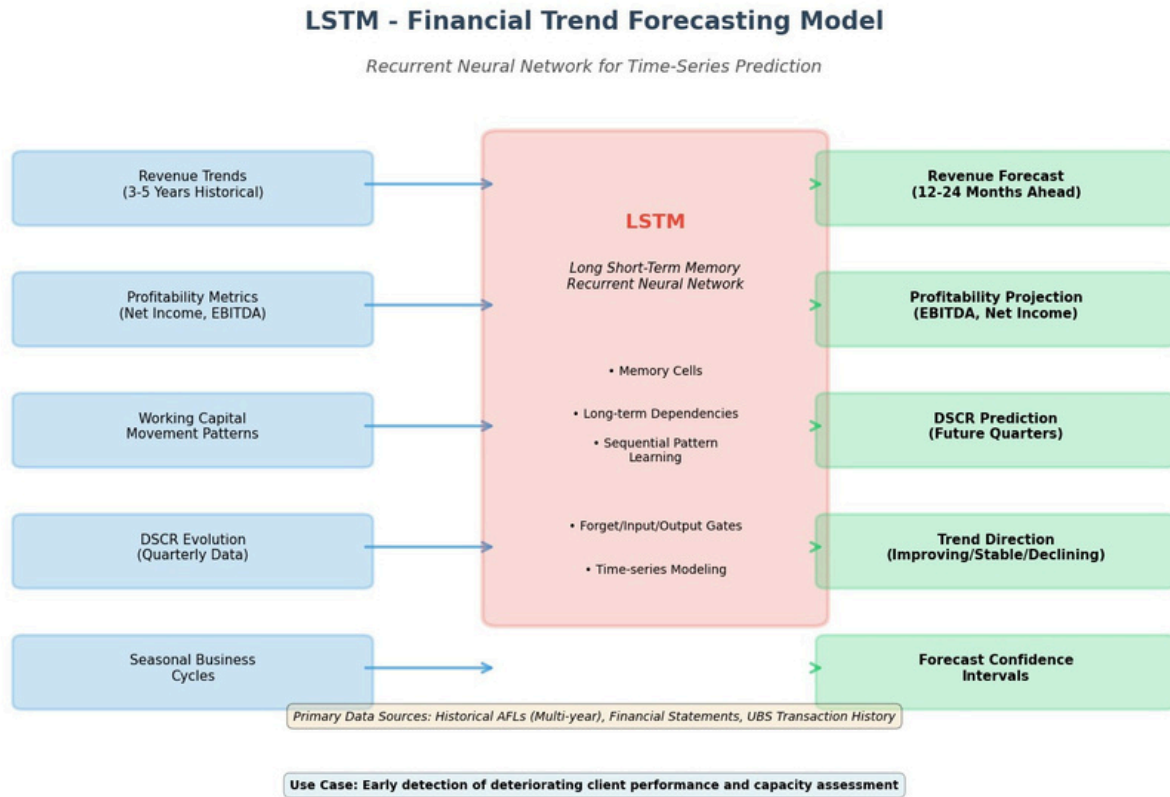


Figure 22: Financial Trend Forecasting with LSTM

LSTM analyzes time-series data extracted from historical AFLs (Previous Year's AFL), multi-year financial statements (Financial Analyses module), and periodic updates from UBS/Finacle and CIB reports to forecast trends in key metrics such as revenue, net profit, DSCR, and exposures, enabling early detection of deteriorating client performance.

iii) *K-means for Industry Benchmarking:*

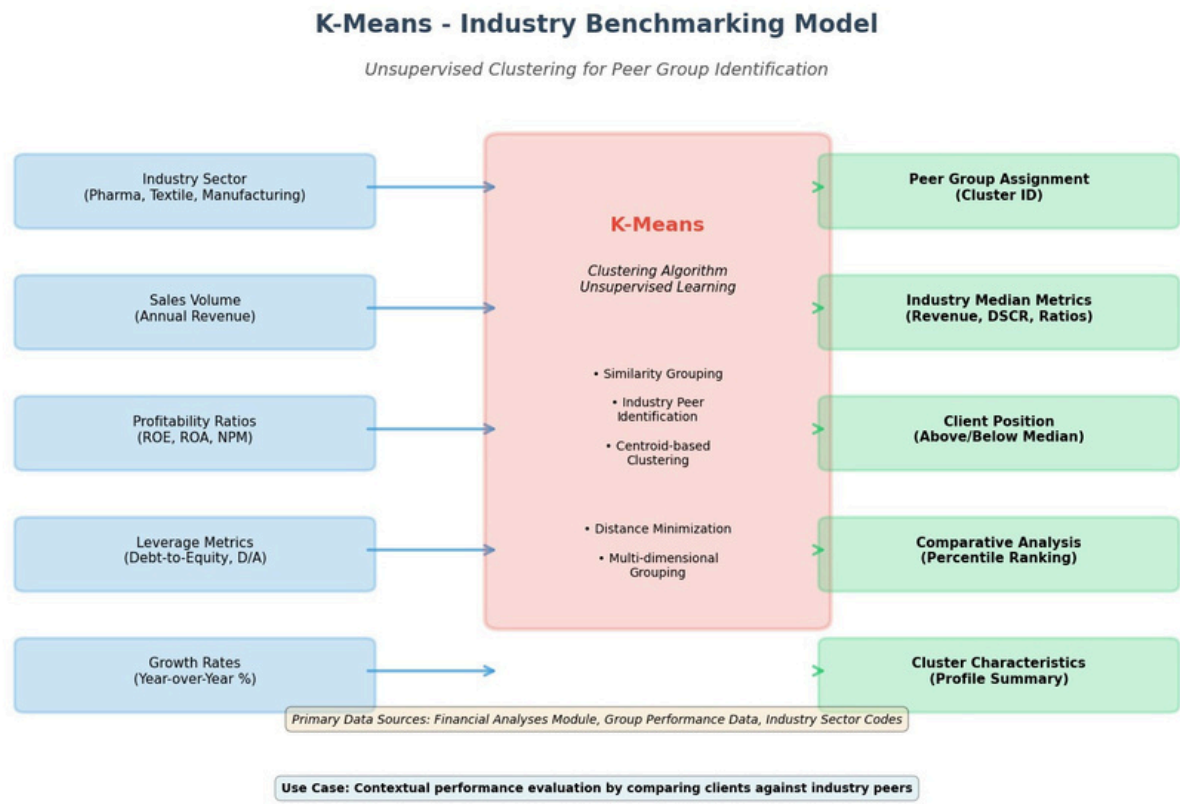


Figure 23: Industry Benchmarking with K-Means

K-means clusters clients based on aggregated metrics(e.g., sales, net worth, ROE, leverage) pulled from Financial Analyses, Group Performances, and CIB reports, enriched with industry codes, allowing comparison of a client’s performance against sector peers stored in the centralized database.

iv) Random Forest for Limit Recommendations:

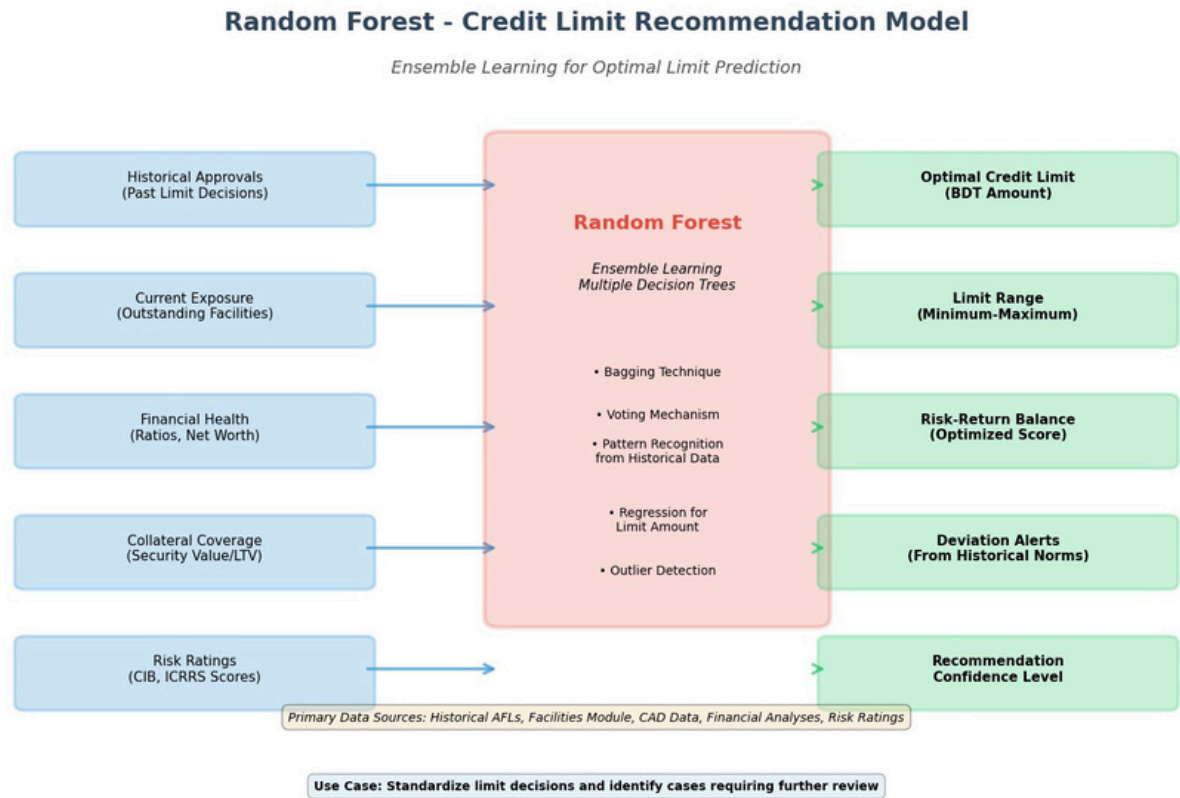


Figure 24: Credit Limit Recommendation with Random Forest

Random Forest leverages historical approval data from past AFLs (Facilities, Proposed Transactions, Recommendations modules), combined with current exposures (UBS/CAD), financial health indicators (Financial Analyses), and risk ratings (CIB/ICRRS) to suggest optimal credit limits that balance risk and business opportunity.

7. Role-Based Access Control (RBAC)

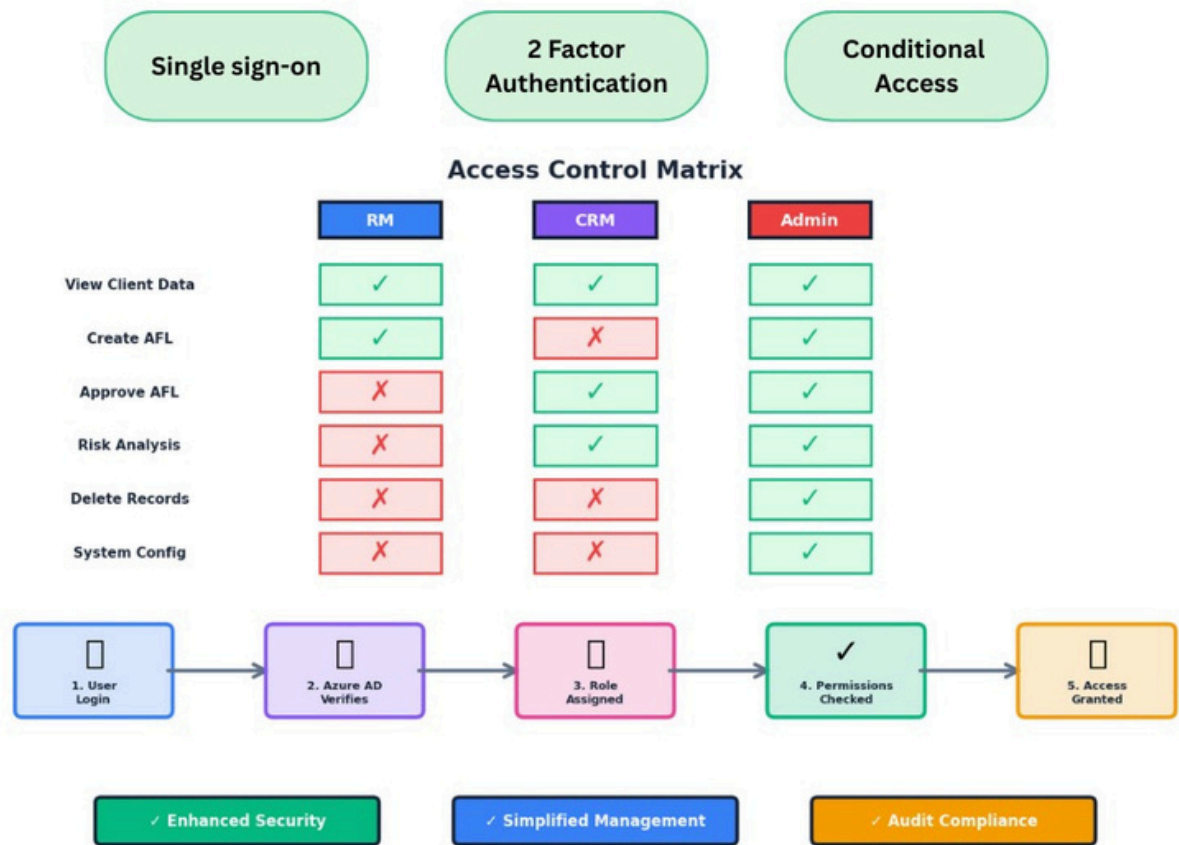


Figure 25: Role-Based Access Control (RBAC)

The users will be able to authenticate through the Single Sign-On and Multi-Factor authentication with Azure Active Directory, which makes the process secure. After the authentication, every user is assigned a certain role according to the job function. Every user has pre-determined roles with certain dictated allowable actions. Accordingly, an example of AFLs mandatory attributes that can be created by the Relationship Manager and amended by the Credit Risk Manager, which the Administrator can approve and analyze risks, as well as manage users may be found complete access to the system. The system checks role permissions automatically each time a user takes an action and the user is allowed entry or his or her access is denied to unauthorized activities.

8. Comprehensive Audit Trails

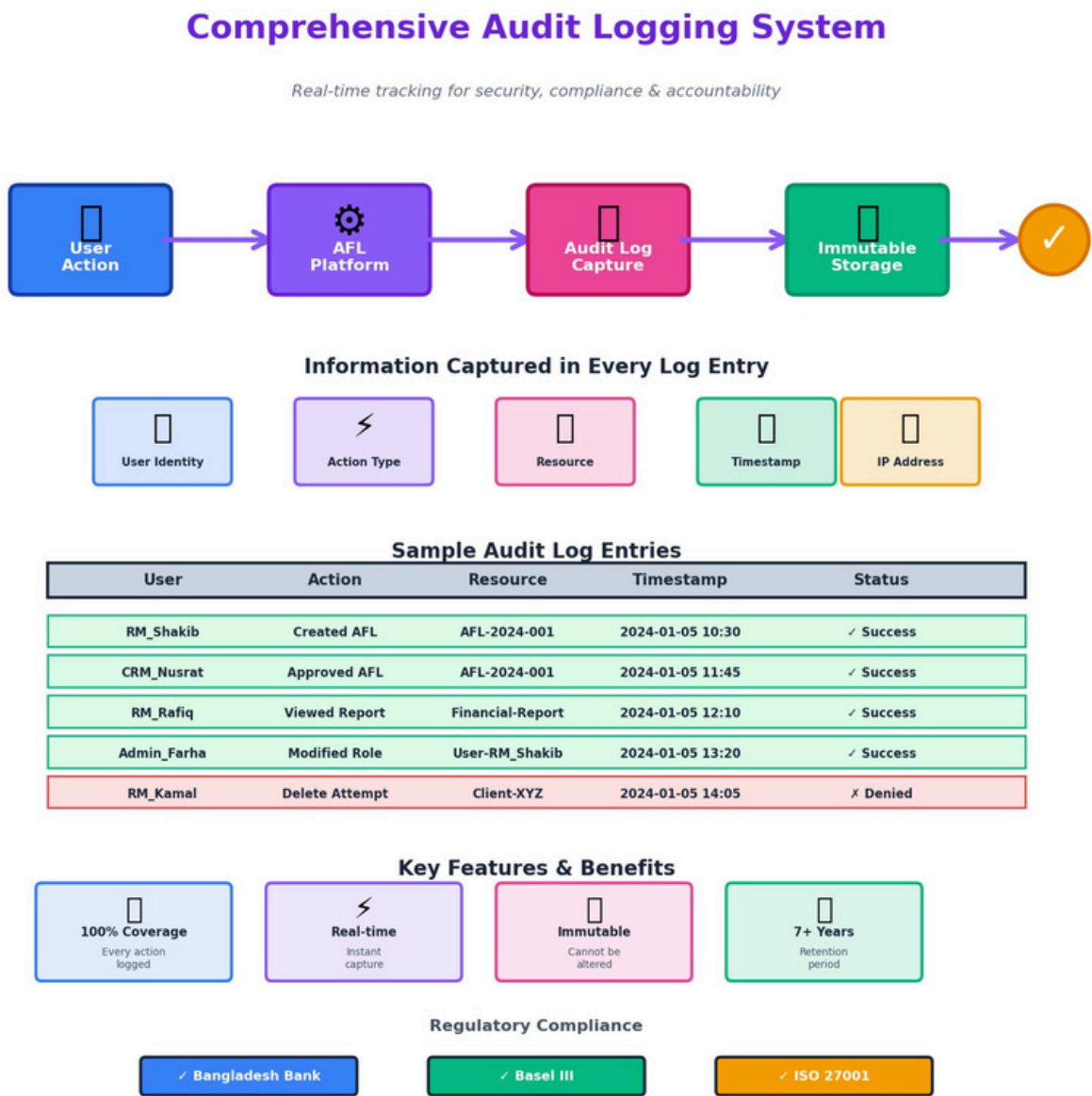


Figure 26: Comprehensive Audit Trails

All the activities that are carried out in the AFL platform are automatically tracked and entered in real time. Audit logs contain the name of the person who did the activity, the activity, the resource that the individual accessed, the exact time, the agent IP address, and the result (success or failure). These records are placed in storage that cannot be changed nor removed by any actors and hence cannot be tampered with. The logs are also preserved at least seven years to meet the regulations of the Bangladesh Bank to ensure the creation of a whole-accountability trail that promotes compliance reporting, security monitoring, and forensic investigations.

9. Enhanced Security of the system:

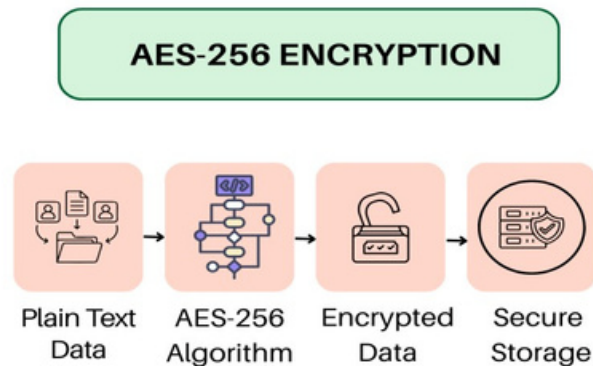


Figure 27: AES-256 Encryption

Any sensitive AFL information, such as financial statements, client information, and CIB reports, is protected through AES -256 encryption. Upon storage or transmission of data, the system uses 256-bit encryption key, which encrypts readable data, to form impossible to decode ciphertext. Encryption is applied to data in rest stored in the MS SQL database and to data on transit on the networks with TLS1.3. Encryption keys are stored safely in Azure Key Vault and they are regularly rotated to maintain top level of security.

10. Document Management System

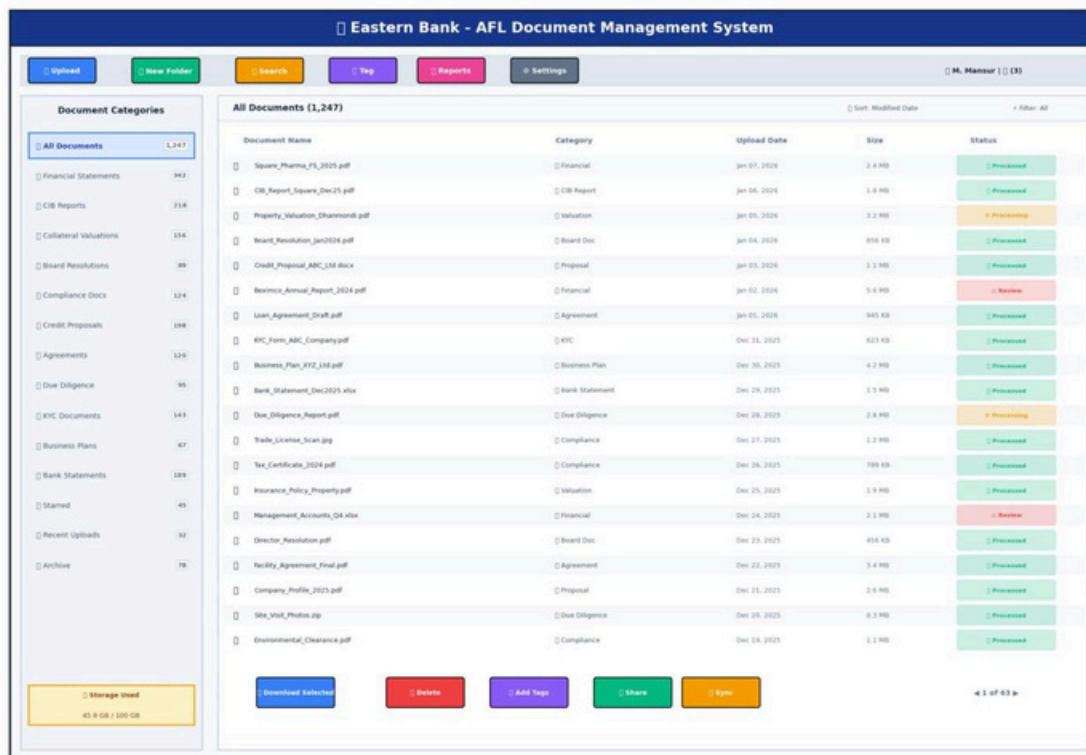


Figure 28: Document Management Interface

The document repository has a central place where the files of PDF and images as well as Excel files are uploaded along with the OCR. The system does automatic categorization/tagging (e.g., financial statements, CIB reports, valuations) and version control of update of documents. The association of documents with database records is made by integration with extracted data, whereas the secure storing is accompanied with access controls that can be used to retrieve documents effectively.

11. Reporting and Export Features

Flexible reporting tools serve diverse stakeholder needs through pre-built report templates (portfolio summaries, exposure reports, risk dashboards) and a custom report builder with drag-and-drop fields. The system supports scheduled report generation and email distribution, multiple export formats (Excel, PDF, CSV) for downstream analysis, and regulatory report templates aligned with Bangladesh Bank requirements.

12. Integration APIs

RESTful APIs enable connectivity with other bank systems through bidirectional data exchange with UBS/Finacle for real-time updates, integration with CRM systems for client relationship data, connection to Treasury systems for FX rates and pricing, links to Compliance systems for sanction screening results, and webhook support for event-driven integrations.

13. Performance Monitoring and Analytics (Dummy data used to visualize)

1) **Credit Risk Analysis:** Portfolio can be optimized by identifying high-risk clients.

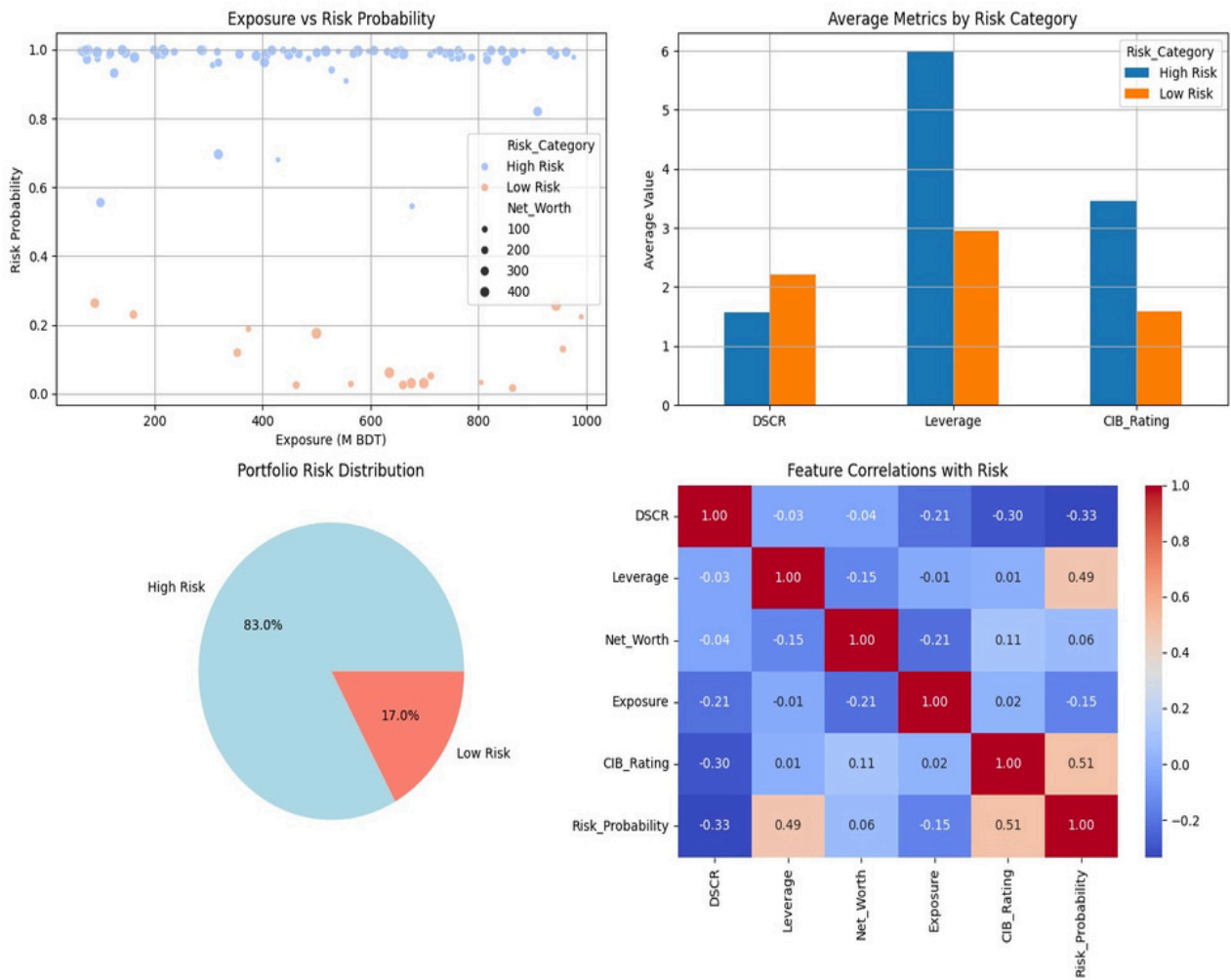


Figure 29: Demo Credit Risk Analysis

2) **Financial Analysis:** Trend charts which will show year-over-year ratios.

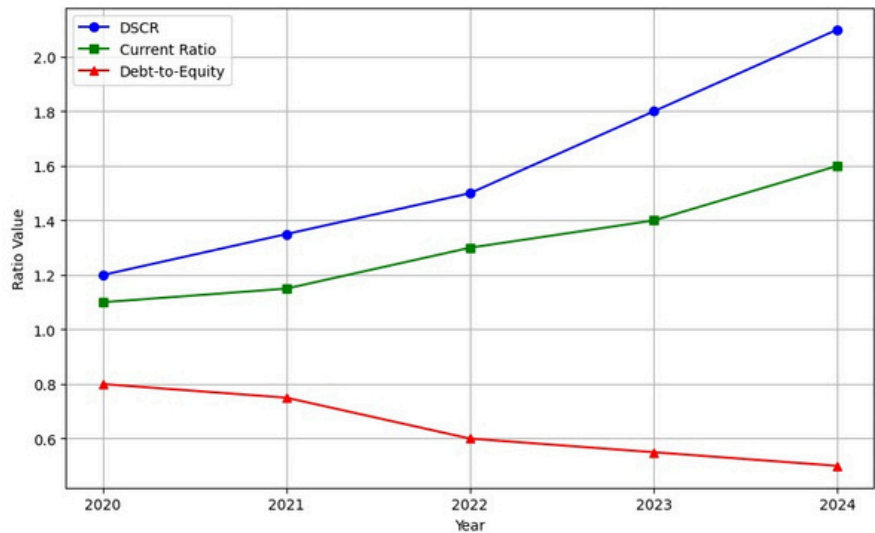


Figure 30: Demo Financial Analysis

3) **Benchmarking:** Will compare company performance against peers in the same sector.

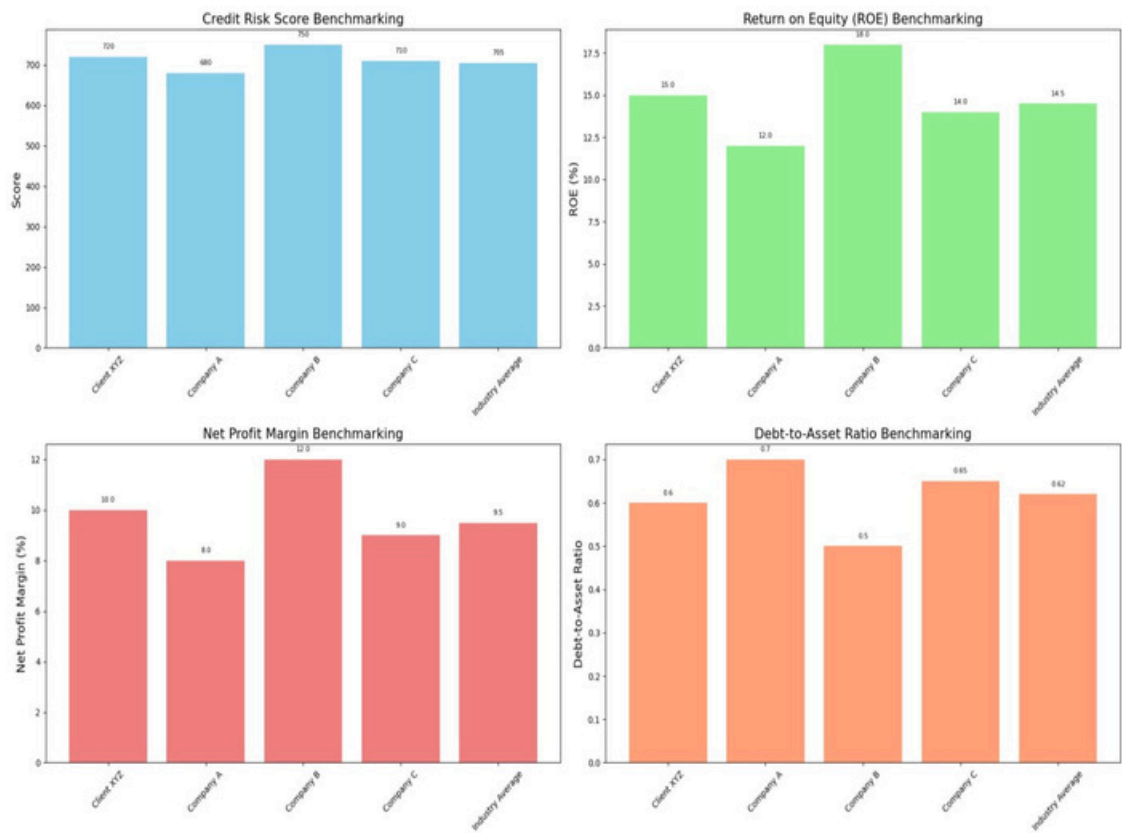


Figure 31: Demo Industry Benchmarking

4) **Predictive:** NPLs will be forecasted using time-series data.

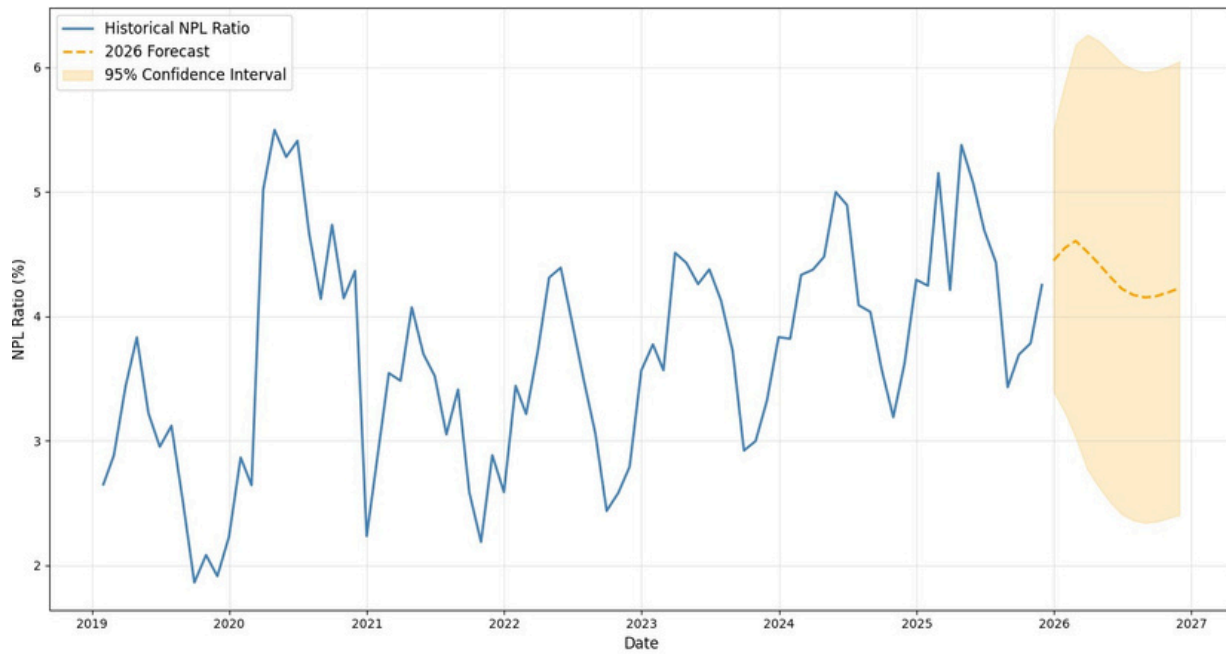


Figure 32: Demo Predictive Analysis

Chapter 6: Summary and Conclusion

The problem that persists in Eastern Bank PLC Corporate Division is the data fragmentation in the corporate credit approval processes, and this internship project proposes to realign this problem by introducing a centralized end-to-end Application for Limit (AFL) platform. The study shows that the current manual AFL workflow takes 3–4 days to compile and it takes several months to complete the approval cycle. Through direct observation, semi-structured interviews with Relationship Manager and Assistant Relationship Manager and head of MIS, process mapping, and a data field analysis of the entire dataset were done. More importantly, it exposed a huge warehouse of valuable data untouched and scattered in various systems.

The platform that is proposed re-arranges the paradigm of isolated preparation of memos to strategic centralization of information. The solution facilitates the smooth flow of data through the integration of disparate sources such as UBS, Finacle, CAD registers, client financial statements, and historical memo, into a single system through high-quality Python-based ETL pipelines. The automated memo generation, calculations, and workflow tracking would be an immediate operational advantage, expected to save 50–70% of the time spent on preparation of the memo and ensure a reduction of the number of human errors. However, the key transformational influence is contained in the conversion of such consolidated information into an asset, strategic to Eastern Bank PLC.

The bank provides a platform of advanced analytics with a clean and centralized repository with hundreds of fields to store borrower profiles, financial performance, exposures, risks, and securities. The ability to deliver integrated machine-learning services, including XGBoost to credit risk score, LSTM to predict financial trends, K-means to cluster industry data and Random Forest to offer limit recommendations, is an opening door to predictive opportunities, loan default identification, portfolio optimization, and client benchmarking against industry peers. Therefore, EBL will be able to transform the reactive lending model to the data-driven and forward-looking risk image which results in reduced non-performing loans and increased profitability in it.

Overall, this platform of centralized AFL is much more than the automation of processes; it is a digital transformation enabler in the corporate banking sphere. Enabling Relationship Managers to act through the unlocking of the analytical capabilities of data that would have otherwise been scattered, the solution can uphold credit decision-making, and make Eastern Bank PLC a progressive leader in the changing banking environment of Bangladesh. The project highlights why centralization of data is crucial in transforming the operational needs into competitive ones and preconditions future innovations facilitated by AI.

6.1 Recommendations

Gradual Implementation: Starting with a pilot phase would make it focus on high-volume customers or functioning within an individual relationship-management business unit.

Change Management and Training: EBL should establish extensive training initiative on Relationship Manager and credit teams on the use of the new platform not only through the technical usage but by also interpreting the results of the analysis to drive adoption and reduce change resistance. Multiple training sessions can be arranged for the employees to get used to the platform.

Infrastructure and Partnerships: Eastern Bank must invest in hybrid cloud infrastructure, such as Azure or AWS alongside storage of sensitive data and partner with fintech providers to acquire superior optical character recognition, application programming interface integration, and machine learning. They should also make sure that there is specific IT support to maintain ETL continuity and retraining models.

Governance and Continuous Improvement: EBL should introduce a cross-functional oversight committee that has Corporate, IT, Risk, and Compliance members in it to oversee data quality, Accuracy in models and compliance with regulatory requirements. The committee will review to add new data sources and developing needs of analysis every three months.

6.2 Implications

Operational Implications: Saving of time by a significant amount would allow the Relationship Managers to focus their energies on client relationships and business development, as opposed to data reconciliation, which would increase productivity and job satisfaction.

Strategic Implications: Availability of centralized and high-quality data should enhance proactive risk management, make more informed limit decisions, and create evidence-based strategies that yield non-performing loan growth.

Competitive Implication: The widespread use of data-driven practices can present the Eastern Bank PLC as a unique and knowledge-driven institution, which will appeal to advanced corporate clients requiring a full range of consultations and fast approvals.

Industry-Wide Implications: The effective implementation can act as an example to other Bangladeshi banks to go through with the shift toward analytics-based lending and national goals of digital financial inclusion and resilience.

Academic and Professional Implications: The project reinforces the importance of internships in transforming the information-management concepts into practice, and is a demonstration of how centralized data architectures may refute the gap between operational effectiveness and strategic intelligence in new markets. This centralized analytical framework can see Eastern Bank PLC achieve sustainable growth and lead the credit banking sector because it transforms data into a core asset instead of a byproduct of the credit processes.

6.3 Lessons Learned

This internship has shown that there are serious shortcomings between theoretical IT solutions and banking realities. Textbook ETL operations work with clean and structured data. But the reality is completely different. For instance, financial statements are received in the form of handwritten PDF, CIB reports do not always follow the same format, and UBS exports lack certain fields that will have to be cleaned by manual effort.

Academic courses are focused on the contemporary APIs and cloud integration. But the reality is that systems like Finacle banking systems, that are 30 years old are not documented with an API and creative work arounds. As a result, long integration periods are needed.

Theory portrays that automation enhances efficiency. But the reality is that relationship managers are afraid of being displaced on the job and of embracing new systems and that change management is more important than technical excellence.

The issue of compliance is seldom discussed in University projects. But the process of approval by Bangladesh Banks, requirement of audit trail, and regulations of data privacy are of great constraint to design decisions and increase implementation cycles.

Academic solutions do not always take budget constraints into account. The reality is that cost- benefit analysis, ROI analysis, and incremental execution are required to ensure management buy-in to IT investments.

Theory teaches us that ML models are offering to give automated credit decisions. But the fact is that the banking relations, the trust in the client, and the judgment cannot be replaced by the automation.

Chapter 7: Limitations of the Report

A number of limitations to the scope and level of analysis are identified in this report:

Short Internship time: There was insufficient time to test the entire system and develop a prototype because the internship was only 3 months. More time spent on engagement would have enabled the actual implementation of pilot features and testing of the technical assumptions.

Sample Size Limitations: The interviews were conducted with 8 participants (2 RMs, 5 ARMs, 1 MIS head) to be able to have insights of that participation, but it might fail to address the perspectives of all the users of EBL throughout this Corporate Division. The proposal would be enhanced with the help of additional input of the Credit Administration, Risk Management and IT departments.

Confidentiality Constraint: The report does not include budget figures and full database schema due to confidentiality of Eastern Bank.

Lack of Technical Prototype: The proposed solution lacks a working prototype or proof-of-concept. Real implementation and integration problems as well as user experience are untestable hypotheses or assumptions that need to be confirmed with the actual system implementation.

Lack of Access to Historical Data: Full historical AFL records of 3-5 years were not available to be used to actually train and validate ML models. The projected model performances are made on theoretical assumptions.

Regulatory Assumptions: The suggestion presupposes the stability of the regulatory situation although it is in compliance with existing Bangladesh Bank procedures. Design modifications may be required due to changes in compliance requirements, policies of data governance or requirements of cybersecurity.

External Dependency Risks: Existence of assumptions regarding availability of third-party API, quality of vendor support, and compatibility of technology is assumed on the prevailing circumstances and might evolve throughout implementation.

Limitations on Cost-Benefit Analysis: ROI computation is based on time savings and productivity improvements are estimated and without counter performance levels. Depending on quality of implementation and number of users, actual benefits can be different.

Limitations in Literature Review Scope: The literature review is mostly generalized to banking automation and the ETL process. As AFL automation is completely a new concept, relevant research article was really hard to find.

Reference:

Doshi, K. (2025). Automation in banking: Simplifying operations and enhancing customer experience. *International Journal of Scientific Research in Engineering and Trends*, 11(1), 966-973.

Gabriel, S. (2025). Next-generation financial services: AI-powered cloud automation for secure digital banking environments. Retrieved from https://www.researchgate.net/publication/397427991_Next-Generation_Financial_Services_AI-Powered_Cloud_Automation_for_Secure_Digital_Banking_Environments

Liao, C. (2025). AI-driven credit risk assessment: Transforming lending decisions in global financial markets. *International Journal of Finance and Economics*.

Singh, S., & Gupta, L. B. (2023). Analyzing how automation impacts stress and job satisfaction in banking jobs. *International Research Journal on Advanced Engineering and Management*, 3(3), 406-409.

Appendix

AFL data mapping:

[illegible]

184	Notes	Manual Input by RM	Manual	Yes/No	Yes	Hard	Void Date Due	BO Report	Report Desk	Number	Yes	Hard	
185	Overall Observation	Manual Input by RM	Manual	Text	Yes	Hard	Investment Liability	BO Report	Report Desk	Number	Yes	Hard	
186	Outstanding	Core Banking System	UBS	Number	Yes	Easy	Letter Int. Size	BO Report	Report Desk	Number	Yes	Hard	
187	Position of	BO Report	Bangladesh Bank CB	Text	Yes	Hard	Max. Balance	BO Report	Report Desk	Number	Yes	Hard	
188	Reason for significant increase, if any	BO Report	Bangladesh Bank CB	Text	No	Hard	Order Type E/C/Cork/Cork to be replaced by L/C	BO Report	Report Desk	Text	Yes	Hard	
189	Term Loan	BO Report	Bangladesh Bank CB	Text	Yes	Hard	Order Value \$/EGD/US\$	BO Report	Report Desk	Number	Yes	Hard	
190	Funded VC	BO Report	Bangladesh Bank CB	Text	Yes	Hard	Overdue receivable	BO Report	Report Desk	Number	Yes	Hard	
191	Total Funded	Calculated	Manual Calculation	Text	Yes	Easy	Part Due Amount	BO Report	Report Desk	Number	Yes	Hard	
192	Non-Funded	Calculated	Manual Calculation	Yes/No	Yes	Easy	Part Due Due/BN/Overdue	BO Report	Report Desk	Number	Yes	Hard	
193	Total CB Liability	BO Report	Bangladesh Bank CB	Text	Yes	Easy	Present DPS	BO Report	Report Desk	Text	Yes	Hard	
194	Total Liability	CAD Region	CAD Email	Text	Yes	Easy	Shipment Date	BO Report	Report Desk	Date	Yes	Hard	
195	% EBL V Exposure	EBL, Letter of Credit Total Liability	Manual Calculation	Percentage	Yes	Easy	Term Date	BO Report	Report Desk	Number	Yes	Hard	
196	Details of Term Loans	BO Report	Bangladesh Bank CB	Text	Yes	Hard	Termination Date	BO Report	Report Desk	Date	Yes	Hard	
197	Concom Name	BO Report	Bangladesh Bank CB	Text	Yes	Hard	Report Date	BO Report	Report Desk	Date	Yes	Hard	
MODULE - G: LIABILITY POSITION OF THE CUSTOMER WITH OTHER BANK'S (Amount in BDT crore)													
198	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	
199	Cardinal/Non-cardinal/both	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Grand Total	Calculated	Manual Calculation	Text	Yes	Easy	
200	Report/Response Report	Client Provided	Client POP/Manual entry	Date	Yes	Hard	Total	Calculated	Manual Calculation	Text	Yes	Easy	
201	Commercial/Operational	Client Provided	Client POP/Manual entry	Date	Yes	Hard	Name of FI	Core Banking System	UBS	Text	Yes	Hard	
202	Compliance Status	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Type of Facility	Core Banking System	UBS	Text	Yes	Hard	
203	ETRM/IFU (if applicable)	Client Provided	Client POP/Manual entry	Text	No	Hard	Line	Core Banking System	UBS	Text	Yes	Hard	
204	Encumbrance / Mortgage Status	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Outstanding as of 31.12.22	Core Banking System	UBS	Text	Yes	Hard	
205	Factory Map/over	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Security	Core Banking System	UBS	Text	Yes	Hard	
206	Factory buildings	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Long Term Liability Position of the Customer with Other Bank's	CAD Region	CAD Email	Text	Yes	Easy	
207	Location	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Syndication	Core Banking System	UBS	Text	Yes	Hard	
208	Machinery	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Syndication - VC	Core Banking System	UBS	Text	Yes	Hard	
209	Major activities / production process	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	
210	Ownership of property/land	Client Provided	Client POP/Manual entry	Text	Yes	Hard	CAD Liability	CAD Region	CAD Email	Text	Yes	Easy	
211	Products & Production capacity	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Buyer Sales Vs Buyer	Client Financial statements	KRIS/UBS	Number	Yes	Easy	
212	Project type	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Buyer Sales	Client Financial statements	KRIS/UBS	Number	Yes	Easy	
213	Total Land Area	Client Provided	Client POP/Manual entry	Text	Yes	Hard	CB Report Date	BO Report	Bangladesh Bank CB	Text	Yes	Easy	
214	Utility arrangements	Client Provided	Client POP/Manual entry	Text	Yes	Hard	Comments	Manual Input by RM	Manual	Text	Yes	Easy	
183	Draw & Country	BO Report	Report Desk	Text	Yes	Hard	Group Sales List of 30.06.2022	Client Financial statements	KRIS/UBS	Number	Yes	Easy	
182	Commercial/industrial	Manual Input by RM	Manual	Text	Yes	Easy	Group Sales Vs Group Liability	Client Financial statements	KRIS/UBS	Number	Yes	Easy	
181	Credit Sum. (4)	BO Report	Report Desk	Text	Yes	Hard	Group Sales List of 30.06.2022	Client Financial statements	KRIS/UBS	Number	Yes	Easy	
180	GBL Rating	BO Report	Report Desk	Text	Yes	Hard	Report	Manual Input by RM	Manual	Text	Yes	Easy	
179	FY 2020-21	BO Report	Report Desk	Text	Yes	Hard	Overall Observation	Manual Input by RM	Manual	Text	Yes	Hard	
178	FY 2020-22	BO Report	Report Desk	Text	Yes	Hard	Outstanding	UBS	Number	Yes	Hard		
177	FY 2020-23	BO Report	Report Desk	Text	Yes	Hard	Position of	BO Report	Bangladesh Bank CB	Text	Yes	Hard	
176	FY 2020-24 (Projected)	Client Provided	Client Documents	Text	Yes	Easy	Reason for significant increase, if any	BO Report	Report Desk	Text	No	Hard	
175	Facility	Core Banking System	UBS	Number	Yes	Easy	Term Loan	BO Report	Report Desk	Text	Yes	Hard	
174	Line	Core Banking System	UBS	Number	Yes	Easy	Funded VC	BO Report	Report Desk	Text	Yes	Hard	
173	OS as of 30.06.23	BO Report	Report Desk	Text	Yes	Hard	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	
172	OTHER STATUS POSITION	BO Report	Report Desk	Text	Yes	Hard	Grouping Limit	Core Banking System	UBS	Number	Yes	Easy	
171	Facilities	BO Report	Report Desk	Text	Yes	Hard	Outstanding	Core Banking System	UBS	Number	Yes	Easy	
170	Reason for past due & adjustment plan	BO Report	Report Desk	Text	Yes	Hard	Proposed Limit	Manual Input by RM	Manual	Text	Yes	Hard	
169	Reason for past due & adjustment plan	BO Report	Report Desk	Text	Yes	Hard	Facility	Manual	Text	Yes	Hard		
168	Take of the company during the period FY 2022-22	Client Provided	Client Documents	Number	Yes	Easy	MF	Manual	Text	Yes	Hard		
167	Total	Calculated	Manual Calculation	Text	Yes	Easy	Total	Manual Calculation	Percentage	Yes	Easy		
166	Total Export through all banks	Calculated	Manual Calculation	Text	Yes	Easy	% of EBL Capital	Calculated	Manual Calculation	Percentage	Yes	Easy	
165	Total Import through all banks	Calculated	Manual Calculation	Text	Yes	Easy	Report	Manual Input by RM	Manual	Text	Yes	Hard	
164	Total	Calculated	Manual Calculation	Text	Yes	Easy	Total Capital of the Bank	Manual Input by RM	Manual	Text	Yes	Hard	
163	EBL	BO Report	Report Desk	Text	Yes	Hard	Group Sales under Large Loan/Fin	Manual Calculation	Yes/No	Yes	Hard		
162	EBL	BO Report	Report Desk	Text	Yes	Hard	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	
161	EBL	BO Report	Report Desk	Text	Yes	Hard	Previous APL	APL	Text	Yes	Hard		
160	EBL	BO Report	Report Desk	Text	Yes	Hard	Yes EBL	APL	Date	Yes	Hard		
159	EBL	BO Report	Report Desk	Text	Yes	Hard	Presence of Business	APL	Text	Yes	Easy		
158	EBL	BO Report	Report Desk	Text	Yes	Hard	Sales	Client Documents	Number	Yes	Easy		
157	EBL	BO Report	Report Desk	Text	Yes	Hard	New Month	Client Documents	Number	Yes	Easy		
156	EBL	BO Report	Report Desk	Text	Yes	Hard	Facility	Client Documents	Number	Yes	Easy		
155	EBL	BO Report	Report Desk	Text	Yes	Hard	Liability	Client Documents	Number	Yes	Easy		
154	EBL	BO Report	Report Desk	Text	Yes	Hard	London Banks (NBFIs)	Client Documents	Text	Yes	Hard		
153	EBL	BO Report	Report Desk	Text	Yes	Hard	TOPL	Calculated	Manual Calculation	Text	Yes	Easy	
152	EBL	BO Report	Report Desk	Text	Yes	Hard	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	
151	EBL	BO Report	Report Desk	Text	Yes	Hard	10 Concom	Module C	APL	Text	Yes	Hard	
150	EBL	BO Report	Report Desk	Text	Yes	Hard	11 FY 2022-23 (in % of APL)	Previous APL	APL	Text	Yes	Hard	
149	EBL	BO Report	Report Desk	Text	Yes	Hard	12 FY 2022-23 (Projected)	Previous APL	APL	Text	Yes	Easy	
148	EBL	BO Report	Report Desk	Text	Yes	Hard	13 Assets	Common Provided	APL	Text	Yes	Hard	
147	EBL	BO Report	Report Desk	Text	Yes	Hard	14 EBL	Report Desk	Text	Yes	Hard		
146	EBL	BO Report	Report Desk	Text	Yes	Hard	15 Total	Calculated	Manual Calculation	Text	Yes	Easy	
145	EBL	BO Report	Report Desk	Text	Yes	Hard	16 Trade Income	Trade Income	Report Desk	Number	Yes	Easy	
144	EBL	BO Report	Report Desk	Text	Yes	Hard	17 Interest Income	Trade Income	Report Desk	Number	Yes	Easy	
143	EBL	BO Report	Report Desk	Text	Yes	Hard	18 Profit	BO Report	Report Desk	Text	Yes	Hard	
142	EBL	BO Report	Report Desk	Text	Yes	Hard	19 Asset Due	BO Report	Report Desk	Number	Yes	Hard	
141	EBL	BO Report	Report Desk	Text	Yes	Hard	20 External Credit Rating	Common Provided	Client Documents	Text	Yes	Hard	
140	EBL	BO Report	Report Desk	Text	Yes	Hard	21 CRRS	Common Provided	Client Documents	Text	Yes	Hard	
139	EBL	BO Report	Report Desk	Text	Yes	Hard	22	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility
138	EBL	BO Report	Report Desk	Text	Yes	Hard	23 Account Name	BO Report	Report Desk	Text	Yes	Easy	
MODULE - H: ACCOUNT PERFORMANCE WITH EBL													
137	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	138	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility
136	Account Strategy	Client Provided	Operations Database	Text	Yes	Easy	139	Account Name	BO Report	Report Desk	Text	Yes	Easy
135	Borrower Liability (CB)	Client Provided	Bangladesh Bank CB	Text	Yes	Easy	140	Account Name	BO Report	Report Desk	Text	Yes	Easy
134	Borrower Name	Client Provided	Client Documents	Text	Yes	Hard	141	Account Name	BO Report	Report Desk	Text	Yes	Easy
133	Borrower Risk Grading	Client Provided	Client Documents	Text	Yes	Hard	142	Account Name	BO Report	Report Desk	Text	Yes	Easy
132	CHNs	Client Provided	Client Documents	Text	Yes	Hard	143	Account Name	BO Report	Report Desk	Text	Yes	Easy
131	Compliance Status	Client Provided	Client Documents	Text	Yes	Hard	144	Account Name	BO Report	Report Desk	Text	Yes	Easy
130	Date	Client Provided	Client Documents	Date	Yes	Hard	145	Account Name	BO Report	Report Desk	Text	Yes	Easy
129	EA Related	Client Provided	Client Documents	Text	Yes	Hard	146	Account Name	BO Report	Report Desk	Text	Yes	Easy
128	EA RELATED AS/EA RELATED	Client Provided	Client Documents	Text	Yes	Hard	147	Account Name	BO Report	Report Desk	Text	Yes	Easy
127	EASTERN BANK PLC	Client Provided	Client Documents	Text	Yes	Hard	148	Account Name	BO Report	Report Desk	Text	Yes	Easy
126	Early Alert Category	Client Provided	Client Documents	Text	Yes	Hard	149	Account Name	BO Report	Report Desk	Text	Yes	Easy
125	Environment Risk	Client Provided	Client Documents	Text	Yes	Hard	150	Account Name	BO Report	Report Desk	Text	Yes	Easy
124	External Credit Rating	Client Provided	Client Documents	Text	Yes	Hard	151	Account Name	BO Report	Report Desk	Text	Yes	Easy
123	Factory/Project Address	Client Provided	Client Documents	Text	Yes	Easy	152	Account Name	BO Report	Report Desk	Text	Yes	Easy
122	Group Business (Major)	Client Provided	Client Documents	Text	Yes	Easy	153	Account Name	BO Report	Report Desk	Text	Yes	Easy
121	Group Liability (CB) Min: CB	Client Provided	Bangladesh Bank CB	Text	Yes	Easy	154	Account Name	BO Report	Report Desk	Text	Yes	Easy
120	Group Name	Client Provided	Client Documents	Text	Yes	Hard	155	Account Name	BO Report	Report Desk	Text	Yes	Easy
119	Group Net Worth	Client Provided	Client Documents	Text	Yes	Hard	156	Account Name	BO Report	Report Desk	Text	Yes	Easy
118	Group Sales	Client Provided	Client Documents	Text	Yes	Hard	157	Account Name	BO Report	Report Desk	Text	Yes	Easy
117	Line Type	Client Provided	Client Documents	Text	Yes	Easy	158	Account Name	BO Report	Report Desk	Text	Yes	Easy
116	Nature of Business	Client Provided	Client Documents	Text	Yes	Easy	159	Account Name	BO Report	Report Desk	Text	Yes	Easy
115	Office Address	Client Provided	Client Documents	Text	Yes	Hard	160	Account Name	BO Report	Report Desk	Text	Yes	Easy
114	Originaling Unit	Client Provided	Client Documents	Text	Yes	Hard	161	Account Name	BO Report	Report Desk	Text	Yes	Easy
113	Ownership / Shareholding	Client Provided	Client Documents	Text	Yes	Hard	162	Account Name	BO Report	Report Desk	Text	Yes	Easy
112	Policy Branch code	Client Provided	Client Documents	Text	Yes	Hard	163	Account Name	BO Report	Report Desk	Text	Yes	Easy
111	Rating Agency	Client Provided	Client Documents	Text	Yes	Hard	164	Account Name	BO Report	Report Desk	Text	Yes	Easy
110	Rating Validity	Client Provided	Client Documents	Date	Yes	Hard	165	Account Name	BO Report	Report Desk	Text	Yes	Easy
109	Relationship with Borrower	Client Provided	Client Documents	Text	Yes	Hard	166	Account Name	BO Report	Report Desk	Text	Yes	Easy
108	Relationship with Group	Client Provided	Client Documents	Text	Yes	Hard	167	Account Name	BO Report	Report Desk	Text	Yes	Easy
107	Report/Exec Date	Client Provided	Client Documents	Date	Yes	Hard	168	Account Name	BO Report	Report Desk	Text	Yes	Easy
106	Risk Weightage	Client Provided	Client Documents	Text	Yes	Hard	169	Account Name	BO Report	Report Desk	Text	Yes	Easy
105	ST Rating	Client Provided	Client Documents	Text	Yes	Hard	170	Account Name	BO Report	Report Desk	Text	Yes	Easy
104	Share (%)	Calculated	Manual Calculation	Percentage	Yes	Easy	171	Account Name	BO Report	Report Desk	Text	Yes	Easy
103	Total	Calculated	Manual Calculation	Text	Yes	Easy	172	Account Name	BO Report	Report Desk	Text	Yes	Easy
102	(Relationship with Key Person(s))	Client Provided	Client Documents	Text	Yes	Hard	173	Account Name	BO Report	Report Desk	Text	Yes	Easy
MODULE A: PROPOSED TRANSACTION PURPOSE OF THE REQUEST													
101	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	101	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility
100	Proposed Transaction Purpose (Narrative)	Manual Input by RM	Manual	Text	Yes	Easy	100	Proposed Transaction Purpose (Narrative)	Manual Input by RM	Manual	Text	Yes	Easy
MODULE B: FACILITY SUMMARY (Amount in BDT crore)													
99	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility	99	Field / Information Required	Current Source	System / Report	Format	Mandatory?	Automation Feasibility
98	Facility Type	Manual Input by RM	Manual	Text	Yes	Hard	98	Facility Type	Manual Input by RM	Manual	Text	Yes	Hard
97	Class	Credit Policy Manual/Credit Instruction	Manual	Text	Yes	Hard	97	Class	Credit Policy Manual/Credit Instruction	Manual	Text	Yes	Hard
96	Existing Limit	Core Banking System/Last approval	UBS	Number	Yes	Easy	96	Existing Limit	Core Banking System/Last approval	UBS	Number	Yes	Easy
95	Present O/S	Core Banking System	UBS	Number	Yes	Easy	95	Present O/S	Core Banking System	UBS	Number	Yes	Easy
94	Existing Pricing	Core Banking System/Last approval	UBS	Number	Yes	Easy	94	Existing Pricing	Core Banking System/Last approval	UBS	Number	Yes	Easy
93	Proposed Limit	Manual Input by RM	UBS	Number	Yes	Easy	93	Proposed Limit	Manual Input by RM	UBS	Number	Yes	Easy
92	Proposed Pricing	Core Banking System/Last approval	UBS	Number	Yes	Easy	92	Proposed Pricing	Core Banking System/Last approval	UBS	Number	Yes	Easy