

Setting Up Data Pipelines for Regular Reporting and PAR Analysis

Client: A Pune-based NBFC

Problem Statement:

The Pune-based NBFC, which specializes in gold loans, faced challenges with timely and accurate reporting on their loan portfolio, especially in tracking and analyzing the Portfolio at Risk (PAR). The key issues included:

- **Lack of Real-time Reporting:** The NBFC struggled with delayed and fragmented reports, making it difficult to assess portfolio health on a real-time basis.
- **Inaccurate PAR Calculation:** Due to manual processes, PAR analysis was inconsistent, leading to potential risk exposure and inaccurate risk management.
- **Inefficient Data Handling:** Data was being manually extracted from various systems, resulting in time-consuming processes and data integrity issues.
- **Scalability Issues:** As the loan portfolio grew, the existing reporting system was unable to scale to meet the increasing data demands.

The NBFC engaged Technovative Consulting to design and implement a seamless data pipeline solution to automate regular reporting and PAR analysis for their gold loan portfolio.

Solutioning:

Technovative Consulting worked with the NBFC to develop an end-to-end data pipeline system to automate and streamline the reporting and PAR analysis process. The solution comprised the following key components:

Data Pipeline Design:

1. **Data Integration:** Technovative integrated data from various sources, including loan management systems, payment gateways, and customer databases. The data pipeline was designed to pull data from these multiple systems in real-time or on a scheduled basis.
2. **ETL (Extract, Transform, Load):** An automated ETL process was implemented to extract raw data, transform it into the required format, and load it into a centralized data warehouse for easy access and analysis.

PAR Calculation Automation:

1. **Automated PAR Metrics:** The PAR analysis, which includes the categorization of loans into buckets (e.g., 0-30 days, 31-60 days, and 61+ days overdue), was automated using predefined rules and KPIs. This reduced manual intervention and improved the accuracy of risk reporting.
2. **Dynamic Dashboards:** Technovative created customizable dashboards to track PAR, allowing stakeholders to view current risk levels and trends in real-time, based on the latest loan performance data.
3. **Real-time Alerts:** Alerts and notifications were set up to notify management when a loan crosses a threshold, such as a certain number of days overdue, so proactive actions could be taken.

Automated Reporting:

1. **Regular Loan Portfolio Reports:** Technovative designed an automated reporting system to generate daily, weekly, and monthly reports on the loan portfolio's performance, including key metrics such as loan disbursement, repayments, delinquencies, and PAR.
2. **Customizable Reports:** The reporting system allowed users to customize reports based on different loan categories, geographic regions, or customer segments to aid targeted decision-making.

Data Visualization:

1. **Power BI/ Tableau Integration:** Technovative integrated data visualization tools like Power BI or Tableau to present the data in a more accessible and insightful format. Interactive charts and graphs were built to visualize trends in loan disbursements, PAR levels, and repayment rates, improving decision-making capabilities for management.

Scalable Data Infrastructure:

1. **Cloud-based Data Warehouse:** A cloud-based data warehouse (e.g., AWS Redshift, Google BigQuery) was set up to handle large volumes of data. The infrastructure was designed to scale, ensuring that the NBFC could handle increased data as their loan portfolio expanded.
2. **Data Security & Compliance:** All data was encrypted and stored securely, ensuring compliance with data protection regulations, including those governing financial institutions.

Training & Knowledge Transfer:

1. **Team Training:** The NBFC's internal teams were trained on the new reporting system, ensuring they could use the dashboards, understand the PAR analysis, and generate reports as needed.
2. **Ongoing Support:** Technovative provided ongoing support to ensure the smooth operation of the data pipelines and troubleshoot any issues that arose post-implementation.

Impact:

- 1. Improved Accuracy in PAR Calculation:** Automated PAR analysis reduced errors associated with manual calculations, improving the accuracy of risk reporting. The NBFC was able to track overdue loans more precisely and categorize them into the correct PAR buckets.
- 2. Real-Time Reporting and Insights:** With automated data pipelines and real-time dashboards, the NBFC's management could now access up-to-date performance reports, enabling quicker decision-making and more proactive risk management. Daily and weekly reports ensured that the management stayed on top of loan portfolio performance, providing better visibility into any emerging risks.
- 3. Operational Efficiency:** By automating the data extraction, transformation, and reporting processes, the NBFC saved significant time and resources previously spent on manual report generation. The time spent on monthly and quarterly audits and reporting was reduced by 40%, allowing teams to focus more on strategic tasks and risk mitigation.
- 4. Scalability:** The scalable cloud-based infrastructure allowed the NBFC to seamlessly handle an increasing volume of loan data as they expanded their business. The system could easily accommodate growth without requiring a significant rework of the existing setup.
- 5. Improved Risk Management:** The automated PAR tracking allowed the NBFC to take timely action on high-risk loans, significantly improving the company's ability to manage its risk exposure. The management team could now proactively address high-risk loans, resulting in a 15% reduction in overdue loans and improved overall loan recovery.
- 6. Enhanced Decision-Making:** With access to detailed and customizable reports, the NBFC's management could make data-driven decisions for credit policies, loan collection strategies, and portfolio growth. Key stakeholders, including executives and branch managers, were empowered with insights that helped them align their goals with portfolio performance.

Conclusion:

Technovative Consulting successfully helped the Pune-based NBFC design and implement a comprehensive data pipeline solution for regular reporting and PAR analysis. By automating data workflows, introducing real-time tracking, and improving reporting accuracy, the NBFC was able to enhance its risk management, operational efficiency, and decision-making capabilities. The solution provided the company with a scalable, efficient infrastructure that not only improved the management of its gold loan portfolio but also positioned it for future growth as the business expanded.