NEW
RESOURCES
CONSULTING

USE CASE

AI-Driven Loan Origination Processing for a National Finance Organization

Challenge

A national finance company was facing mounting operational pressure in its loan origination process. Analysts responsible for preparing loan documentation spent a significant portion of their time reviewing provider documentation and extracting key details needed to prepare accurate loan origination documents.

The process relied heavily on manual review and repetitive copy-and-paste work across multiple documents and spreadsheets. Analysts had to navigate extensive documentation from various lending partners, identify the correct parameters for each loan product, and match those parameters to the needs of individual customers.

The challenges that developed due to this approach were myriad:

- The process was highly time-consuming, slowing down loan origination turnaround times.
- Manual document handling increased the risk of human error.
- Analysts spent more time searching for information than performing higher-value analysis.
- Competitive pressure in the lending market required the organization to move quickly while maintaining accuracy and quality.

While speed and quality were central to the organization's competitive advantage, leadership recognized that without a more efficient approach, they risked losing ground to faster, more technologically advanced competitors.

The organization set a clear goal: reduce the time spent processing loan originations by approximately 75% while maintaining the same level of accuracy and quality by leveraging artificial intelligence.

Approach

New Resources Consulting (NRC) partnered with the client's technology leadership team to explore how artificial intelligence could modernize and streamline the loan origination preparation process. Rather than simply introducing a new tool, NRC worked alongside the client to design a practical AI strategy aligned with their existing systems and operational needs. The engagement focused on both the technical design and the operational integration required to bring AI into production.

NRC's work included:

- Collaborating with the client's technology leadership to define a scalable AI architecture
- Designing and implementing the AI solution
- Integrating the AI system with the organization's existing platforms and workflows
- Establishing testing and validation frameworks to measure system accuracy and performance and ensure regulatory compliance

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- Developing a working prototype to demonstrate value before production deployment
- Supporting the transition from prototype to a fully production-ready system

One of the most complex aspects of the project was integrating AI capabilities into the client's existing technology architecture without disrupting critical workflows. NRC's prior experience solving similar challenges in regulated industries allowed the team to rapidly design a practical solution and implement it seamlessly and efficiently while maintaining the security and compliance standards required in financial services.

Solution

The resulting system transformed how analysts interact with loan documentation. Previously, analysts had to manually search through provider documents to identify loan parameters, compare those parameters to customer needs, and manually assemble loan origination documentation. The new system shifts this process dramatically.

Using an AI-powered architecture built with Python, Microsoft Agent Framework, Azure Functions, and Azure AI Foundry, the system now analyzes provider documentation automatically and extracts the relevant loan parameters. Instead of spending time digging through documents, analysts can now rely on the AI system to locate and spotlight the appropriate information. Their role, therefore, shifts from manual data gathering to verification and validation, allowing them to confirm accuracy rather than perform the entire process manually. This human-in-the-loop approach ensures quality control while dramatically reducing processing time.

The system also includes an extensive validation framework designed to ensure high levels of accuracy and provide measurable performance insights for the organization.

Results

As the solution enters production deployment, early projections based on pilot testing and client estimates indicate substantial operational improvements. Based on early client estimates, the AI-enabled workflow is expected to deliver:

- Up to 75% reduction in analyst time spent preparing each loan origination package.
- Approximately 2× increase in document processing capacity per analyst, enabling more originations with the same team size.
- Up to 90% faster end-to-end turnaround time for loan origination document preparation from initial request to completion.

These improvements allow the organization's lending team to move significantly faster while maintaining the quality standards required in the finance industry.

Beyond operational efficiency, the solution helps the organization maintain its competitive edge in a fast-moving market. By accelerating internal workflows and reducing manual overhead, the company can respond to client requests more quickly and compete more effectively with technology-driven lenders and emerging fintech startups.

The project also demonstrates the inherent value of practical AI implementation. Rather than experimenting with isolated prototypes, the engagement delivered a production-ready system designed to create and deliver measurable business value. NRC's AI Solutions Group continues to support the client as they scale the system and explore additional automation opportunities across their lending operations.