



PROCESSING CHEQUES WITH KEEN-EYED AI

Abstract

Squiggly handwriting can cause great problems in processing mortgage cheques. That's why a hassled Alessandra Nastassja, Chief Administrative Officer at a large mortgage servicer in the United States, brought in Infosys BPM to design an AI solution for more accurate processing of customers' handwritten cheques. This case details how the new solution cut Alessandra's team's earlier manual efforts by 60%, improved posting accuracy, and thereby reduced customer complaints and dissatisfaction.



Stymied by poor handwriting

Alessandra Nastassja is the Chief Administrative Officer at a large and highly rated mortgage servicer in the United States that manages a portfolio exceeding USD 100 billion. She oversees end-to-end cheque processing and quality control (QC) operations. Her responsibilities include mitigating operational risks, maintaining compliance standards, and minimizing customer complaints arising from payment-posting errors.

For years, Alessandra's team depended on largely manual processes to extract data from scans of cheques and coupons sent by customers. However, because these documents were handwritten, they varied significantly in layout, style, and

orientation. The quality of the scans was often further affected by faded ink and overlapping stamp marks. These variations made it difficult to use deterministic rules or traditional OCR approaches for consistently accurate data extraction, forcing Alessandra's processing agents to read each scan to extract cheque details.

This increased not only processing times but also errors. As the company's business grew, the volume of incoming cheques grew with it, and Alessandra found her team struggling to maintain accuracy and turnaround times. Since the company's quality control and verification checks were also manual, the extremely high volumes of incoming cheques magnified

operational inefficiencies. Delays became frequent, leading to inconsistent QC and, in turn, incorrect payment allocations. This not only caused customer dissatisfaction but also burdened the company's call centres with increasing volumes of calls from customers requesting corrections.

Alessandra eventually realized the need for a scalable, intelligent automation solution that could improve both efficiency and customer experience. Looking for a suitable provider, she brought in a transformation team from Infosys BPM led by Niloufer Afzal after a global RFP process and subsequent evaluation of respondents.

AI-balling the problem

Niloufer Afzal and her team of four AI specialists began by studying the challenge. They found that whatever solution they designed would need to reconcile unstructured image data, semi-structured

remittance content, and highly structured loan records originating from multiple systems, each with differing data models and timing requirements. They also realized

that ensuring consistency across these varied inputs, system fallouts, and reference data would be a significant integration challenge.

Approach Summary



Eventually, Niloufer decided that the best approach would be to build a customized solution using an open-source generative AI model. While implementing an off-the-shelf product might have been easier, it would have entailed expensive and recurring licensing costs for the mortgage provider.

The solution would also use a vision-language model (VLM), combining computer vision and natural language processing. Extending the capabilities of traditional large language models (LLMs), the VLM would process scanned cheques using both visual cues and contextual understanding, enabling it to handle variations in handwriting, layouts, and degraded image quality more effectively.

After Niloufer and her team completed the solution design, they submitted it to Alessandra for an enterprise architecture

review. After ensuring that it aligned with the organization's IT capabilities and adequately accounted for dependencies and risks, Alessandra's IT department signed off on the plan and greenlit it for development.

Moving into the build phase, Niloufer and her team customized the AI model, implemented post-processing and validation logic, and integrated the solution with the organization's document systems through streamlined application programming interfaces (APIs).

Next, they focused on system integration testing (SIT) and user acceptance testing (UAT). After successfully completing all testing phases, the solution was ready for deployment.

Niloufer and her team deployed it in a secure cloud environment aligned with the

organization's security standards, complete with audit trails, reporting capabilities, and automated quality checks. For monitoring and governance, they implemented logging, exception queues, and human-in-the-loop reviews through a UI-based administration and monitoring platform.

The deployment was not without challenges. For instance, the organization's database was locked during nightly batch processes that overlapped with automation runs, causing partial failures. Resolving these constraints required close coordination with upstream and downstream system administrators rather than purely technical fixes. However, with Alessandra's support, Niloufer successfully overcame these issues by reviewing batch execution windows and realigning them to eliminate database lock conflicts.

The clear benefits of unclouded vision

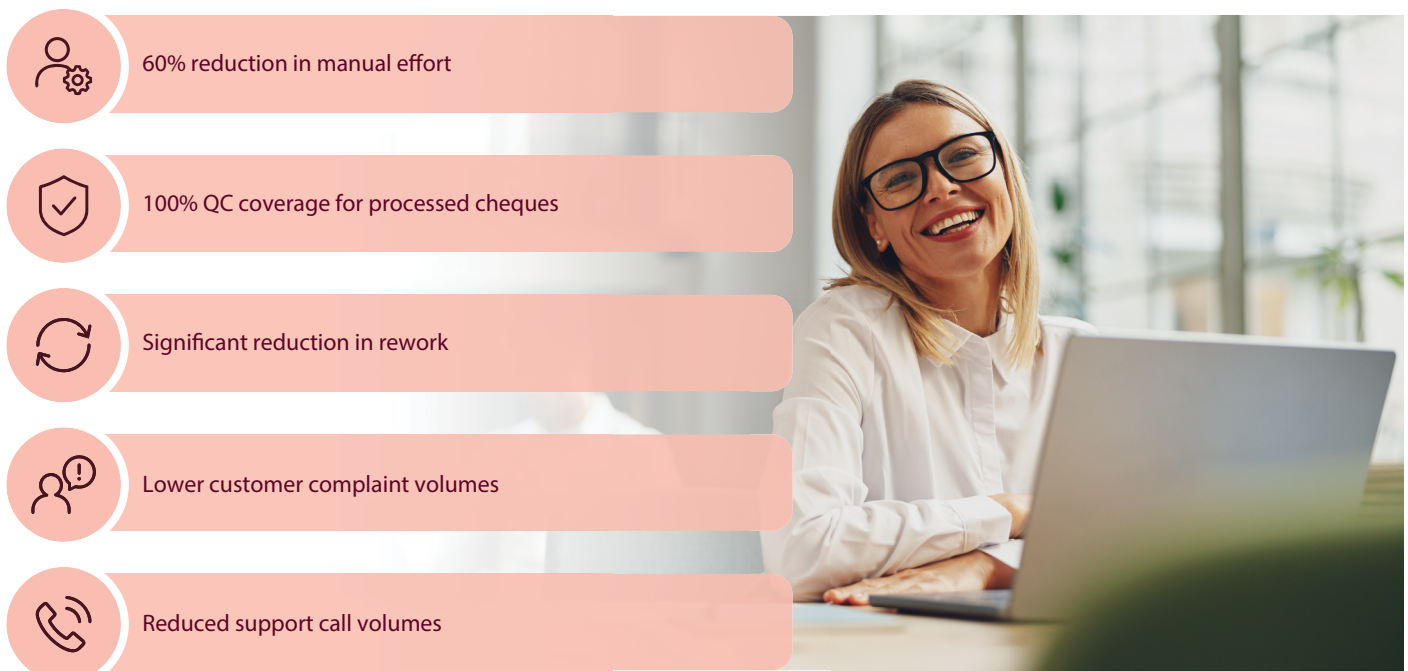
During the early months after deployment, some stakeholders continued to express concerns. They worried about the AI model's ability to accurately read poorly handwritten cheques and the potential impact of automation errors on financial and regulatory compliance. Alessandra's teams, accustomed to their earlier manual processes, were also initially resistant to adapting to the change.

To address these concerns, Niloufer conducted multiple information sessions for stakeholders and processing teams. She explained how the new solution prioritized controlled accuracy over aggressive straight-through processing. She also clarified that the AI model's outputs were not treated as final in isolation but were validated against data from other enterprise and ERP systems before posting. This

automated reconciliation layer had already significantly reduced downstream errors and escalations.

To build confidence further, Niloufer deployed the solution incrementally and provided hypercare support throughout the transition.

Key benefits



Once the initial change-management hurdles were overcome and adoption became widespread, the solution quickly demonstrated its value.

Its AI model automatically and accurately extracted loan numbers, borrower details, and amounts from scanned images of handwritten cheques. Automated processes then validated this information against data from other enterprise and ERP systems before posting the corresponding loan numbers and payment amounts into core platforms.

Alessandra and other stakeholders were particularly impressed by the automated completion capability, which enabled end-to-end keying and quality checks without manual intervention.

Soon, with intelligent automation reducing more than 60% of her team's earlier manual effort. Furthermore, with the system delivering 100% QC coverage for processed cheques, stakeholders gained confidence in the significantly improved accuracy, compliance, and reduction in payment misallocations.

Overall, the solution now performs quality checks on cheques worth approximately USD 400 million. The organization has experienced a significant reduction in rework, customer complaints, and support call volumes.

It is no wonder that Alessandra's success with the AI initiative soon earned widespread internal recognition. Today, the measurable FTE savings and newly achieved operational excellence in cheque processing have reinforced confidence in AI-driven solutions across the organization.

**Names have been altered to preserve the identities of the people involved.*

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