

Intelligent Automation for Invoice Processing

Overview

A finance team of a leading professional services company were facing challenges due to the long turnaround times for processing invoices manually. Different automation solutions were explored but with limited success due to different formats of invoices which further required manual intervention for maintenance and updates of the templates. Both approaches were time consuming and error-prone.

RPA tool- with its cognitive capabilities, was able to resolve the complex processing with its ability to automatically capture the details from any invoice format with a high degree of accuracy, improving the speed and accuracy of operations.

Challenges

Manually processing a huge number of invoices was a time consuming, error-prone and required intensive effort. To resolve this, automation (rule-based) was approached. However, that RPA solution did not produce the expected results, as it required frequent updates of the invoice templates in the system. With rule-based automation, only a fraction of invoice formats were covered – which were from the top suppliers. The invoice template had to be updated each time a new vendor was added to the system – or if an invoice with a new format had to be processed. Also, existing invoice templates needed updating if an invoice delivered was in another format or an existing supplier became a top supplier for the company. This meant that the invoice template would have to go through extensive modification. This made the process more continuous and a nightmare to maintain.

Solution

After studying the processes and historical data that was available with the client, the automation framework was defined. The team studied the invoice formats of the top suppliers, as they contributed the largest volumes of invoices that were processed. This provided an understanding of the variations and complexity of the process. With RPA tool, a combination of rule-based automation along with Intelligent Document Processing was implemented.

- 1. Creation of training data:** The team analyzed all the PDF templates available, so that they can understand the possible patterns to define the dynamic template models and keyword dictionary
- 2. Processing the PDFs using Intelligent Document Processing** on RPA tool, all the issues observed during testing were incorporated to be addressed with the automation framework created
- 3. Validations, errors and exceptions:** Once the data was validated, invoices were processed very quickly. In case the bot identified any mistake or exception, it would flag the data for manual intervention later. Here, nearly 15 exceptions were managed, accounting for 90% of exception coverage. It also self-learned how a manual operator would deal with such errors and exceptions, in the next occurrence, the bot could decide by itself on how to proceed, and process it all on its own

Implementation and Challenges

The implementation was completed in 3 weeks.

Designed the basic model and keyword dictionary based on the available data. During UAT and dry runs, more invoices were added and the model & keywords were updated to include all types of invoice templates. Designed Tool's UI portal for users to view/approve the details captured by RPA tool's intelligent PDF reader

The challenges faced during the implementations are:

1. Customer normally archives their data after reconciliation. So customer was not able to share the required set of PDFs which would have increased the scope of automation.
2. Close to 50% of the PDF templates were not available during initial phases – this resulted in multiple iterations to incorporate new templates

Outcome after deployment

The first objective was to remove manual dependency. After the first week of implementation, only 65% of invoices were processed successfully without any error. After the new templates were incorporated into the model and dictionary, 80% success rate was achieved after 4 weeks of continuous processing.

The second objective was to reduce the processing time of invoices and error rate which was achieved by eliminating manual effort. Invoices were processed within 5 seconds, which took more than 3 minutes before RPA tool.

Lessons Learnt

Non-availability of Supplier invoice templates

The success rate could have been improved to a very good percentage in the initial weeks of implementation itself, if all possible templates were studied and incorporated in the initial study phase. Since most of the details were not available till UAT, lot of rework and fine tuning has been done as part of UAT and dry runs.

OCR Issues

Due to the scan quality of the invoices, during the Abbyy OCR process, the confidence level of the fields were very low and it resulted in a lot of failures. A new feature was implemented to introduce the confidence level at field level and to populate the confidence level in the JDI screen and set those PDFs for manual intervention. Thereby, the user was able to correct the incorrect fields and process the files without issues

Results

The client benefited from the reduced dependency on manual interventions required due to the RPA tool's self-learning capabilities.

Business benefited from cost savings due to highly improved turnaround times and accuracy. More than 80 % of the invoices were automated, which increased the operational ceiling of the finance team without having to scale up on the team size, or burdening the existing staff. The team was able to achieve RoI with automation within 6 months, instead of 12 which was defined at the start of the project.

With RPA Tool's, employees were able to improve their work life balance as they were no longer required to put in extra shifts and stay late at work to complete the quantum of work.