



Customer
EY

Products and Services

Azure
Azure Applied AI Services
Azure Blob Storage
Azure Cognitive Services (AI)
Azure Form Recognizer
Azure Machine Learning
Azure SQL Database
Computer Vision (AI)

Industry

Professional Services

Organization Size

Corporate (10,000+ employees)

Country

United States

EY teams help clients extract data from contracts and invoices using Azure Form Recognizer

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EY organization exists to build a better working world, helping to create long-term value for clients, people, and society and build trust in the capital markets. Enabled by data and technology, diverse EY teams in over 150 countries provide trust through assurance and help clients grow, transform, and operate. Working across assurance, consulting, law, strategy, tax, and transactions, EY teams ask better questions to find new answers for the complex issues facing our world today.

Trust plays a huge role for the EY organization while serving its clients, and emerging technologies play a crucial role in this. One important initiative at EY organization is to improve the accuracy of the extracted data from important business documents such as contracts or invoices. The EY Technology team collaborated with Microsoft to build a platform that hastens invoice extraction and contract comparison processes. Using Azure Form Recognizer (Form Recognizer) and the Azure Custom Vision API (Vision), EY teams have been able to automate and improve the Optical Character Recognition (OCR) and document handling processes for its consulting, tax, audit, and transactions services clients.

Following the money

EY teams wanted to streamline the payment tracking process for its clients. In this process, multiple vendors send various documents such as automatic payment orders (APOs), invoices, and purchase orders. Manually auditing and reconciling amounts billed with amounts received is an arduous and time-consuming process, especially when you're processing hundreds, or maybe thousands, of invoices. When there is missing money on the line, the imperative for reconciliation can become urgent and time sensitive.

Finding the right clause

EY teams also wanted to help clients in automating the search and extraction of specific control criteria from complex contractual documents. Such documents are often lengthy and follow strict regulatory compliance. These contracts must be reviewed, compared, and verified. It becomes quite a costly and daunting endeavor to manually go through these documents, so EY teams decided to develop a solution that can carry out rule-based, intelligent search to identify trends, patterns, and anomalies in real time and/or from historical data.

Help Accelerating invoice reconciliation

To tackle these pain points, the intelligent automation OCR team at EY Technology organization developed an AI-enhanced OCR solution built on Microsoft Azure. The main text-processing components are Form Recognizer and Vision, both features of Azure Cognitive Services. The platform also includes Azure Blob Storage, a SQL database, Azure features for Python, Azure Machine Learning, and the Azure web app.

“We went on an early adopter model so that we could provide the latest technology in the market to the clients and to get an early feedback from them, that helps us in providing better customer experience.”

—Ratheesh Parassery: Product Manager, EY Platform Engineering
EY Technology

Simplifying complex contract audits

To help clients in auditing and financial crime investigation meet their needs, The EY document intelligence team designed rule-based extractions for complex contracts using Custom Vision. Vision is an image recognition service, available as SDKs, that uses a machine learning algorithm to detect and classify parts of an image or document.

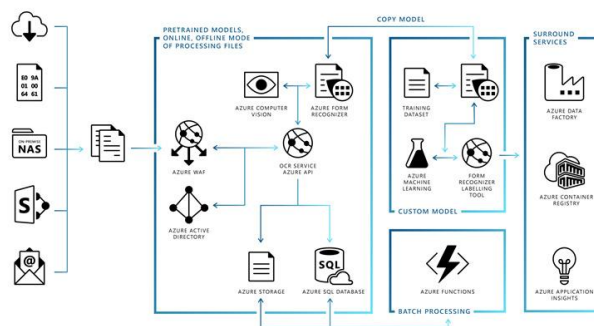
“There are two important parts for rule-based extraction,” Parassery explains. “One is the structure of the document, and the second part is relating the original document to the extracted document.”

A developer can train, or retrain, the algorithm by giving it images that both include and exclude the features that the clients want detected. Vision can apply one or more labels to an image and provide the coordinates to where the labels can be found within the

image. Once it's trained, Vision can be added to an image recognition app.

When EY clients run a contractual document through the OCR engine, Vision uses the rules-based extractions to compare it to the original contract and apply bounding boxes (labels) to the relevant clauses and sections, along with the coordinates of those clauses and sections.

Another benefit, Parassery says, is that, "Vision also works with very low DPI documents—like 50 to 100 DPI—compared to some other OCRs that have a minimum requirement of 300 DPI."



Parassery says, "If each contract takes an average of three minutes to analyze, this has the potential of saving 1.5 million minutes, or 250,000 hours, of manual work."

Expanding document intelligence

Parassery has a long list of Azure features to work into EY organization's document processing platform and looks forward to a continued collaboration with Microsoft. Parassery says, "We definitely felt supported by the product teams in helping with the early adoption, answering our questions, and providing us with necessary materials."

One of EY organization's most immediate desires is to include Vision's voice-to-text conversion and Language Understanding (LUIS) to the contract extraction pipeline. Other features they hope to explore are Azure API Management, Azure Data Factory, Azure App Insights, and Azure Monitor. By adding these capabilities, EY teams can serve even more clients use cases and continue to enhance the integrity and trustworthiness of the world's capital markets.

" The ease of using the labeling tool, that was a win here."

—Ratheesh Parassery: Product Manager, Platform Engineering
EY Technology

" The value addition from Vision are the bounding boxes, coordinates, and extracted text—which is a very large volume of data—at a cheaper, very efficient rate and speed of processing."

—Ratheesh Parassery: Product Manager, Platform Engineering
EY Technology

" Microsoft Form recognizer and vision provides an edge to us while serving our clients through digitization use cases across service lines and domains."

—Said Nagarajan Haridas: Product portfolio lead, Intelligent Automation
EY Technology