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Is automated straight-through document processing achievable?

Complexity, Context and Cognition: Converging the three key differentiators of Intelligent Document Processing

By Sudhir Sen, Vice President, Products

Analyst firm IDC says the volume of data generated around us each moment will grow to 175 ZettaBytes by 2025. Extracting this data from its various sources, including several types of documents, is imperative for all businesses in today's data-driven economy.

While manual data extraction from documents is a tedious, error-prone and expensive process, solutions powered by Optical Character Recognition (OCR) technology have several limitations. Inconsistent format and structure of the extracted data necessitate employees to constantly monitor and validate. Intelligent Document Processing (IDP) solutions powered by Artificial Intelligence (AI), Machine Learning (ML) and OCR can help enterprises overcome these shortfalls, and achieve 'touchless' data extraction from highly complex documents at scale.

If you are looking for the smartest document processing solution, this guide will help you discover the power of IDP, which enables straight-through processing and touchless data extraction.

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Did you know that the world's data is set to grow to 175 ZettaBytes (ZB) by 2025? That's a lot of new data!

If you were able to store 175ZB onto Blu-ray discs, you'd have a stack of discs that can get you to the moon — 23 times — says IDC.

Most of this information is locked in emails, PDFs, scanned images of documents, and even handwritten notes. They could be business-critical documents like purchase orders, invoices, resumes, mortgage applications, ACORD filings, identity cards, licenses, and much more.

The IDC survey established that only 32% of the data available to enterprises was leveraged. This implies that business owners are not able to realize the TRUE value of all their data currently.

What do enterprises need to put their data to work?

They need to truly digitize their data, and derive the right insights from it. Relevant insights will help businesses run better and grow more efficiently.

However, the key challenge for enterprises in achieving true digital transformation is the inability to ingest and interpret huge volumes of documents faster and extract data accurately from them.

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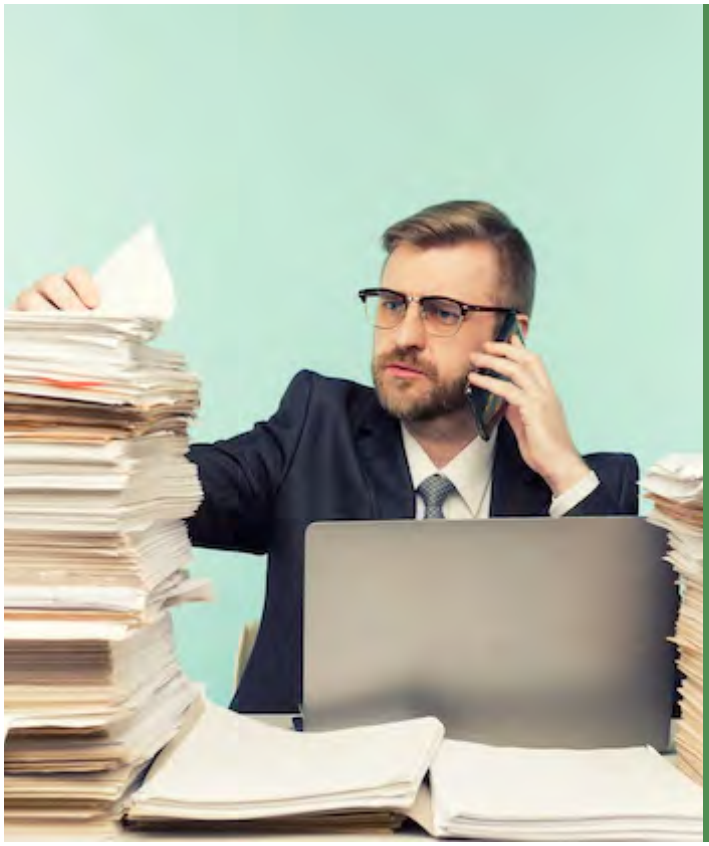
Manual document processing is a speed breaker

Efficiency is the keyword here. Many organizations use valuable human effort to collect, review and input data from purchase orders, quotes, invoices, remittances and other documents – every day, year after year.

According to Accenture, one of the top efficiency challenges for most CFOs is manual processes.

Manual tasks such as 'copy-pasting' data between internal and external systems, enterprise applications, and desktop applications like Excel are repetitive and time-consuming.

They impact productivity, performance, employee satisfaction, compliance, and customer satisfaction. And of course, they lower staff efficiency and lead to unwanted errors and costs. By automating these routine tasks, businesses can accelerate workflow efficiencies, free up time for higher value work, and increase revenue.



The hidden costs of manual document processing

- 1/3rd of an employee's year is spent on repetitive data entry tasks
- 49% of invoices are received manually across firms; this correlates with the time and cost involved in processing them
- Paper-based customer / employee onboarding processes cost up to 20X more than computer-assisted document processing

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Tackling complexity: OCR solutions can only get you so far

So, the next question is, what is the best automated document processing solution?

Several businesses depend on solutions built on OCR technology. As a traditional tool that converts the data on a printed document or an image into a digitized format, OCR is a better alternative to manual processes. It works well on extracting text from documents like paper files, passports, invoices, business cards, printouts, letters, and images.

But it has limitations. OCR transcribes documents and provides text representations, but not the appropriate content and its context for downstream processes. Even with the best-quality scanners, OCR-based data extraction solutions deliver a maximum accuracy of 60%, which falls short of high-value enterprise expectations. Often, business users tend to put in more time in making manual corrections in the extracted data than the time OCR saved in extracting it from the documents.

Moreover, OCR-based solutions cannot deliver straight-through processing (STP) with accuracy. They work based on templates — the documents to be processed must be in specific formats; otherwise, OCR cannot extract data from them. However, this is far from the reality as every organization works with a large volume and variety of documents every day.

> **OCR-based document processing solutions cannot extract any context from the content**

While processing semi-structured, unstructured, and handwritten documents, OCR-based solutions fail often. Creating and maintaining templates for all evolving document formats is a tedious and human effort intensive task, which makes OCR-based solutions unsuitable for enterprise-grade rapid scaling. Most importantly, OCR-based solutions cannot extract any context from the content. For example, if a number extracted from a table does not contain a quantifying unit (such as currency), it fails to convey value. Business users might have to step in and spend time looking for the missing pieces of information to add value to the extracted data.

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Not all automation solutions are built alike

Typical pain points of enterprises using pure Machine Learning (ML) model-based automation for document processing:

- **Poor touchless rate** - “Our model predicts 18 out of the 20 fields in a document correctly, but we have to manually input the remaining two fields always.”
- **Model updates trigger a complete retest** - “Every time a new model is generated, the earlier formats are affected. The new model stops reading data that worked earlier.”
- **Longer time to unlearn and re-learn** - “If a vendor changes a document format, the ML model takes time to understand and learn. Data scientists have to retrain the model.”
- **Low OCR accuracy** - “Our attention-based deep learning OCR does not achieve accuracy on numbers and dates. It works on domain-specific labels but falters on dynamic values.”
- **Heavy tech investment** - “We need to maintain a data science team to continuously improve the model as new formats/vendors are added.”

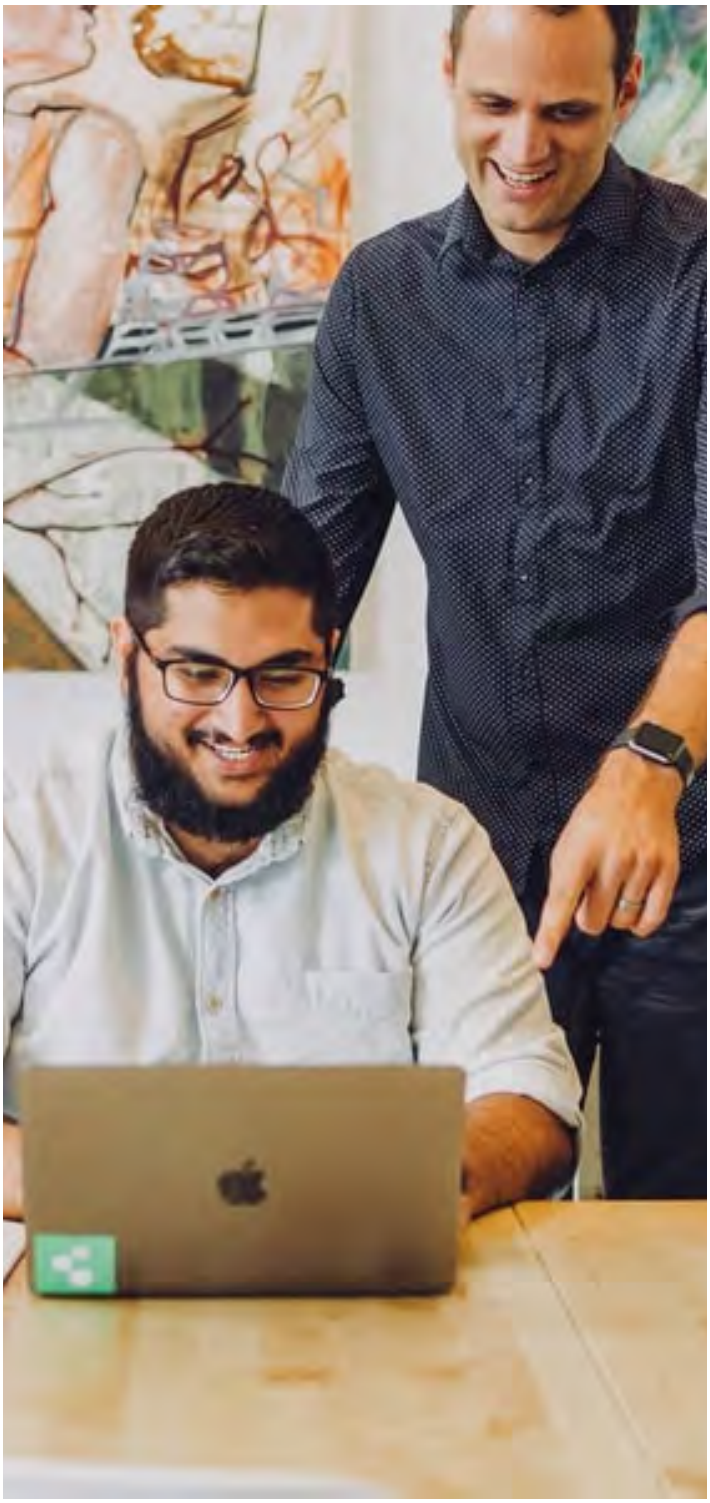
Context is king: Intelligent Document Processing adds valuable context to extracted content

Let's examine how IDP solutions fill in these gaps.

IDP solutions combine the powers of advanced cognitive technologies including AI, OCR, ML and Deep Learning to process a wide variety of documents. IDP solutions not only recognize, learn, and capture the content, but also deliver valuable business context. They convert data to a structured form that can be easily processed by integrated downstream business systems.

They help to collect data in a systematic format suitable for analytics, and correlate insights from analysis to derive the 360-degree picture, thus eliminating manual effort in this entire process.

The pre-processing features of IDP solutions help to improve data clarity and reduce noise, and post-processing features help to auto-correct, auto-validate, and auto-format data. Together, these features improve the accuracy of the extracted data to such a high level that humans are needed in the loop only to validate and approve when exceptions arise.



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The cognitive edge: Achieving straight-through processing with JIFFY.ai's IDP Solution

JIFFY.ai's IDP solution runs on a hybrid processing engine with self-learning machine models. It can handle structured, semi-structured and unstructured documents without having to create models from scratch every time. It can process complex documents based on pure ML models, rule-based models, or a combination of both. It can be deployed faster in an enterprise automation landscape without ripping it apart. As it can be set up to leverage pre-trained AI/ML models, new document formats will be tagged as fresh categories. The system 'learns' them immediately, and evolves continuously.

So, how is it different from other IDP solutions?

Its ML component predicts a set of rules to be applied to extract data from documents rather than predicting values. So, even if the ML model changes, the processing state is maintained for all relevant documents. The system can handle dynamic and large volumes of documents, vendors and formats, and thereby the rapid business scaling needs of enterprises without hiccups. It extracts data accurately and quickly from multiple OCRs, fields and values, checkboxes and images, multiple documents with different formats, complex tables, handwritten text, address fields, camera images, various ID cards, driving licenses, receipts, and much more.

> **JIFFY.ai's IDP solution eliminates manual document processing in any workflow**

The AI component enables it to learn from human inputs while handling exceptions, thus giving the solution a sharp competitive edge. With the ability to extract text inside complex tables with 15-20% more accuracy compared to competitors' solutions, it brings users the benefits of better accuracy, scope, and user experience. The solution eliminates manual processing in any workflow, and enables end-to-end automated lifecycle management of documents from ingestion to extraction to posting to the destination applications. It ensures complete touchless processing even in scenarios where plain ML models fail to predict all the fields in a document. As cross-system validations and workflow approvals can be embedded in the system, faster and easier data validation becomes possible with minimal involvement from the IT team for customizations.

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IDP AT WORK

Top 10 Industries Using IDP

1. Auditing
2. Automotive
3. Banking and Financial Services
4. Healthcare
5. Insurance
6. Legal
7. Logistics & Supply Chain
8. Manufacturing
9. Public Sector
10. Trade Financing

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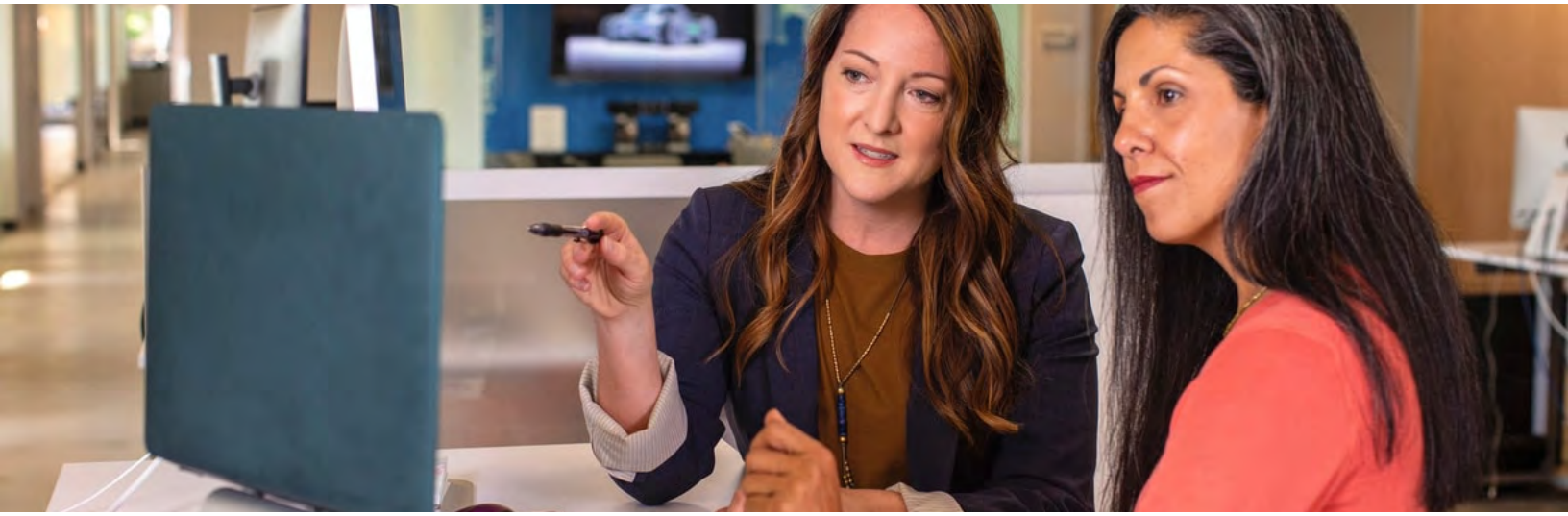
IDP AT WORK

Top 12 IDP Use Cases



Banking & Financial Services

- Mortgage document processing
- Know Your Customer / Customer onboarding

Supply Chain & Logistics

- Customs document management
- Bills of lading management

Manufacturing

- Invoice processing
- Export-Import process management

Human Resources

- Candidate application processing
- Employee data update

Legal

- Contract administration
- Case reviews

Media & Advertising

- Order line mapping
- Invoicing

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JIFFY.ai's IDP Success Story

Banking & Financial Services

We helped a global banking institution process over 200,000 Know Your Customer (KYC)/ Customer Identification Program (CIP) documents 90% faster and more efficiently. Our intelligent document processing solution automated 90% of their data-entry-based business processes. Learn more

With true touchless processing and usage-based SaaS pricing (you pay only for the volume of documents processed), JIFFY.ai's Intelligent Document Processing solution helps to accelerate data extraction from myriad complex documents spread across the enterprise, and save operational expenditure. It changes the paradigm of enterprise process automation end-to-end, liberates your teams from mundane data entry tasks, and empowers them to focus on what really matters — **innovation**.

Learn more about the IDP core that powers our Invoice Processing HyperApp.

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Founded with the mission to radically change how enterprises achieve autonomy by automating complex business processes, JIFFY.ai's intelligent automation platform empowers business users to adapt to change and innovate faster. The integrated platform employs the cognitive capabilities of no-code based software development, Intelligent Document Processing, Natural Language Processing, RPA, Machine Learning, and AI along with an overarching human-in-the-loop approach to power the next generation of enterprise applications. Built on this platform, JIFFY.ai's HyperApps (as-a-service) are pre-packaged automation applications that can be extended across the enterprise to accelerate end-to-end automation. Fortune Global 500 companies, Big4 consulting firms, and global leaders across various industries have been using JIFFY.ai's platform to achieve operational excellence, improve customer experience, and realize the true value of digital transformation. Explore further on www.jiffy.ai.

Unlock the true value of data from myriad documents and achieve complete enterprise digital transformation. Talk to one of our IDP experts today.

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