

# Achieving Broader Automation in Finance & Accounting (F&A) through Intelligent Document Processing (IDP)

Leveraging IDP along with Robotic Process  
Automation (RPA)

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# Executive summary

Automation in business processes has been accelerating over the last several years, with enterprises leveraging Robotic Process Automation (RPA) to automate repetitive, transactional activities performed by employees. The Finance and Accounting (F&A) function is no exception.

However, F&A processes involve substantial manual effort to extract meaningful data from large volumes of semi-structured and unstructured documents. This data extraction and validation cannot be successfully automated through RPA alone, due to its limitations in handling semi-structured and unstructured documents.

With the advent of Intelligent Document Processing (IDP), however, enterprises can now leverage Artificial Intelligence (AI) to classify documents and extract data with reasonable levels of accuracy. IDP solutions can significantly reduce human effort in data extraction and limit it to performing corrections and validations on the extracted data (in case of exceptions). The use of such IDP solutions has increased within F&A in recent years to automate the extraction of data from documents such as invoices, orders, and expense receipts. IDP solutions, together with RPA, can provide more comprehensive automation outcomes to enterprises, improving operational efficiencies and allowing employees to focus on more productive activities.

## **In this paper we examine:**

- The intelligent automation ecosystem
- IDP solutions and their capabilities
- Adoption of automation within the F&A function
- Scope for expanding automation outcomes within F&A using IDP
- Key challenges for IDP adoption
- Outlook for IDP

## **The paper is intended for:**

- Executives responsible for business process optimization
- Chief Financial Officers and others in charge of corporate efficiency
- Chief Operating Officers and other heads charged with improving operations

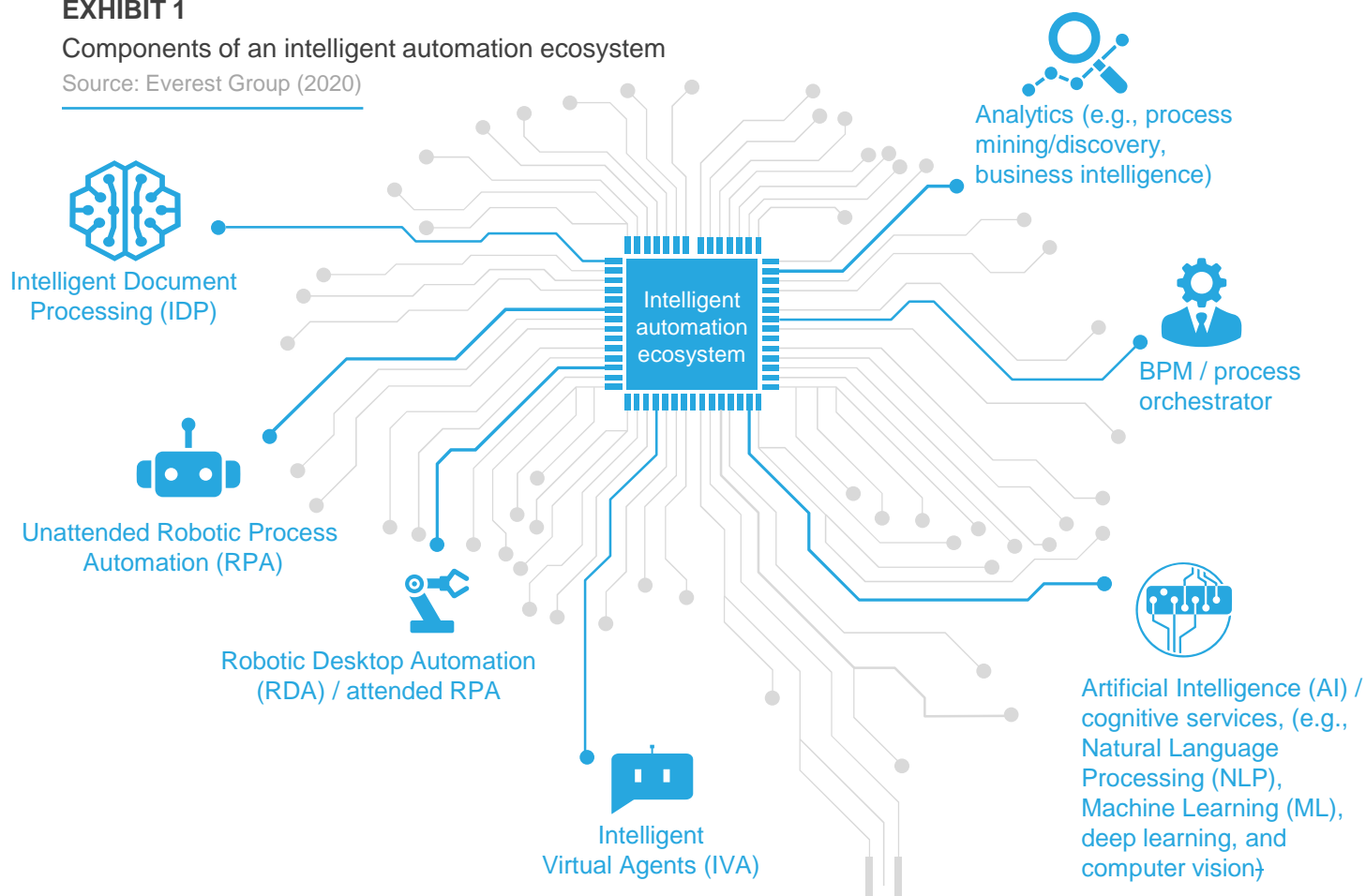
## Introduction to intelligent automation

The introduction of next-generation automation technologies ushered in a wave of changes in the way processes are managed within an organization. Simple rule-based and repetitive processes were automated using technologies such as Robotic Process Automation (RPA). RPA robots are guided by a set of pre-defined rules to automate repetitive tasks. They reduce human involvement and thereby speed up processing, reduce errors, improve productivity, and lower the cost of operations. Though RPA adoption is already yielding several benefits, a lot more can be achieved by leveraging several other aspects of intelligent automation, which are depicted in Exhibit 1.

### EXHIBIT 1

#### Components of an intelligent automation ecosystem

Source: Everest Group (2020)



Many enterprises that have embraced RPA are now incorporating solutions that leverage Artificial Intelligence (AI) to acquire human-like decision-making capabilities. These intelligent automation solutions leverage capabilities such as computer vision, Machine Learning (ML), Natural Language Processing (NLP), and advanced analytics. The automation ecosystem is evolving from basic automation for transactional tasks to intelligent automation, which assists in judgment-intensive processes.

Intelligent Document Processing (IDP) is a key component of this intelligent automation ecosystem. IDP solutions help automate the extraction of meaningful data from semi-structured and unstructured documents, leveraging AI, ML, and NLP capabilities. Let's take a closer look at IDP.

## Intelligent Document Processing (IDP)

IDP software solutions combine the power of AI technologies to efficiently classify and extract data from different types of documents and feed the output into downstream applications. IDP allows the processing of semi-structured and unstructured documents such as invoices, purchase orders, contracts, emails, and images.

An enterprise-grade IDP solution can perform the following tasks:

- **Pre-extraction:** Performs image pre-processing to improve the quality of the scanned document, captures data, and indexes and classifies documents into categories
- **Extraction:** Extracts relevant data by leveraging NLP and machine/deep learning capabilities for further processing
- **Post extraction:** Validates the extracted data with the help of pre-defined taxonomies, data dictionary, and business validation rules

To achieve an acceptable level of data processing accuracy, IDP solutions need to be trained with a statistically significant document set. A robust training ensures a reliable processing output, but IDP still requires a human-in-the-loop, to review and correct the extracted information in cases of low extraction confidence. The corrections performed by manual operators can also help improve IDP's processing capability over time, and make the system flexible enough to handle new document variations in production. In situations where the use case is not too complex, reasonable levels of Straight Through Processing (STP) can be expected with robust training.

### Key benefits of IDP software solutions

IDP solutions offer several benefits to enterprises over traditional document processing. They:

- Reduce the manual effort required in document processing
- Ensure faster turn-around times
- Improve employee experience and productivity
- Reduce the overall cost of processing high data volumes
- Lower the risk of human error due to machine processing coupled with a review by a human-in-the-loop
- Streamline document tracking and improve compliance

### Interplay between RPA and IDP

RPA and IDP can work in tandem to enable greater automation in various process flows. These solutions can be configured to interact with each other with reduced human intervention in the process. RPA can be employed both before and after IDP's document processing operation and automate other steps in the process flow, as described below:

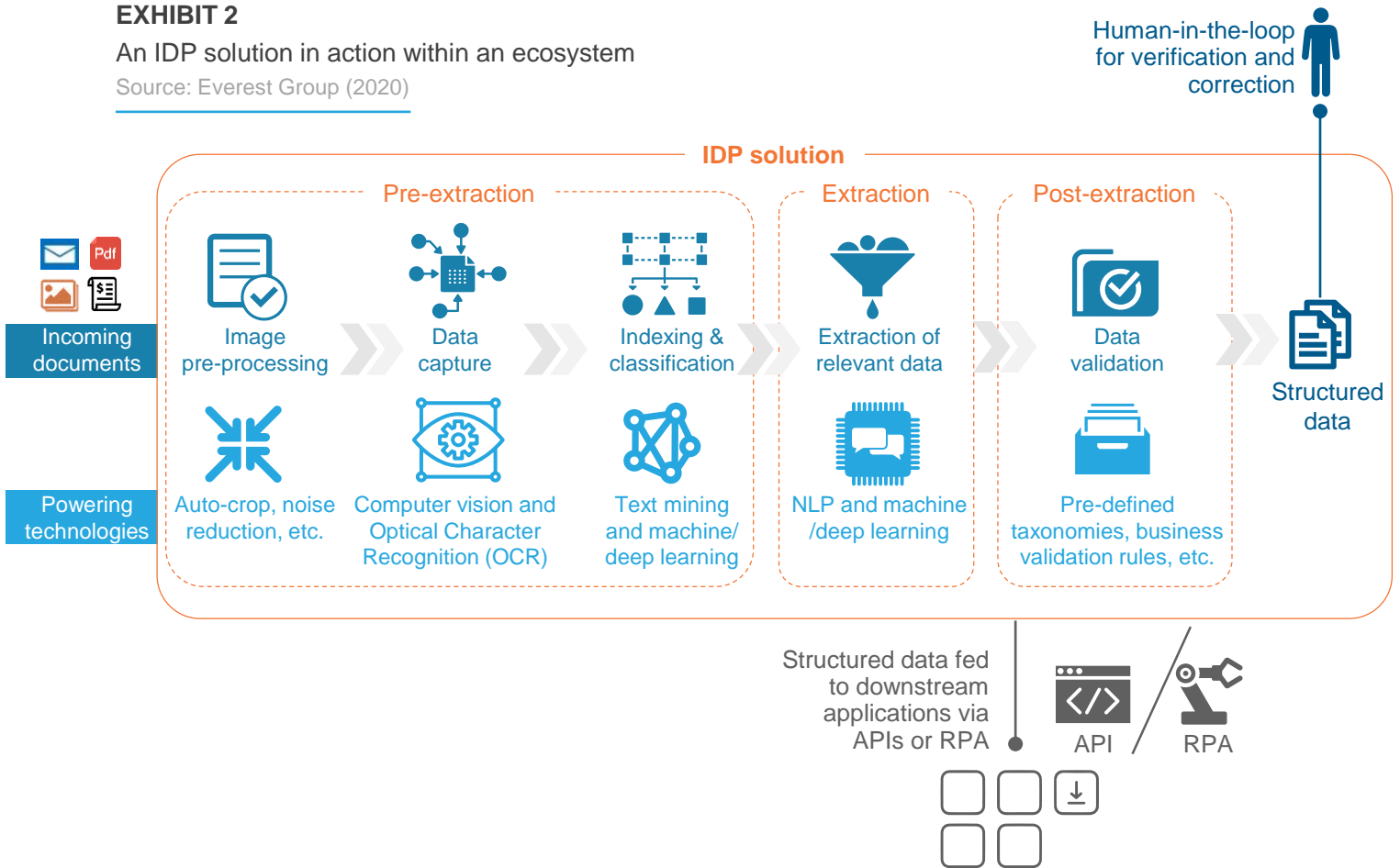
- **RPA as source:** An RPA robot can collect documents from a specific source, such as a designated mailbox, and feed them to IDP for processing
- **RPA as destination:** After IDP processes a document and prepares structured data as output, the data can be sent to an RPA robot for additional operations such as:
  - Data entry into and consumption by multiple downstream applications
  - Application of business validation and evaluation of eligibility based on pre-defined rules

Exhibit 2 showcases an IDP solution in action within a technology ecosystem.

**EXHIBIT 2**

An IDP solution in action within an ecosystem

Source: Everest Group (2020)



The Finance & Accounting (F&A) function, in particular, could take advantage from several automation benefits that IDP can offer in addition to RPA.

## Automation in F&A

The F&A function – characterized by repetitive and predictable processes, and high transaction volumes involving significant manual effort – has experienced strong adoption of automation solutions over recent years. RPA solutions are widely leveraged to deal with the high volume and error-prone nature of these processes. In fact, F&A is the single largest process area for the RPA software market, accounting for more than 20% of the RPA market revenue.

However, the F&A function continues to have many processes that still require manual effort to process large volumes of documents, especially semi-structured and unstructured documents. RPA and traditional capture solutions are inefficient in extracting data from such documents. To address this need, organizations are increasingly adopting IDP solutions in processes such as invoice processing, travel and expense claims processing, order management, and billing, which has delivered significant

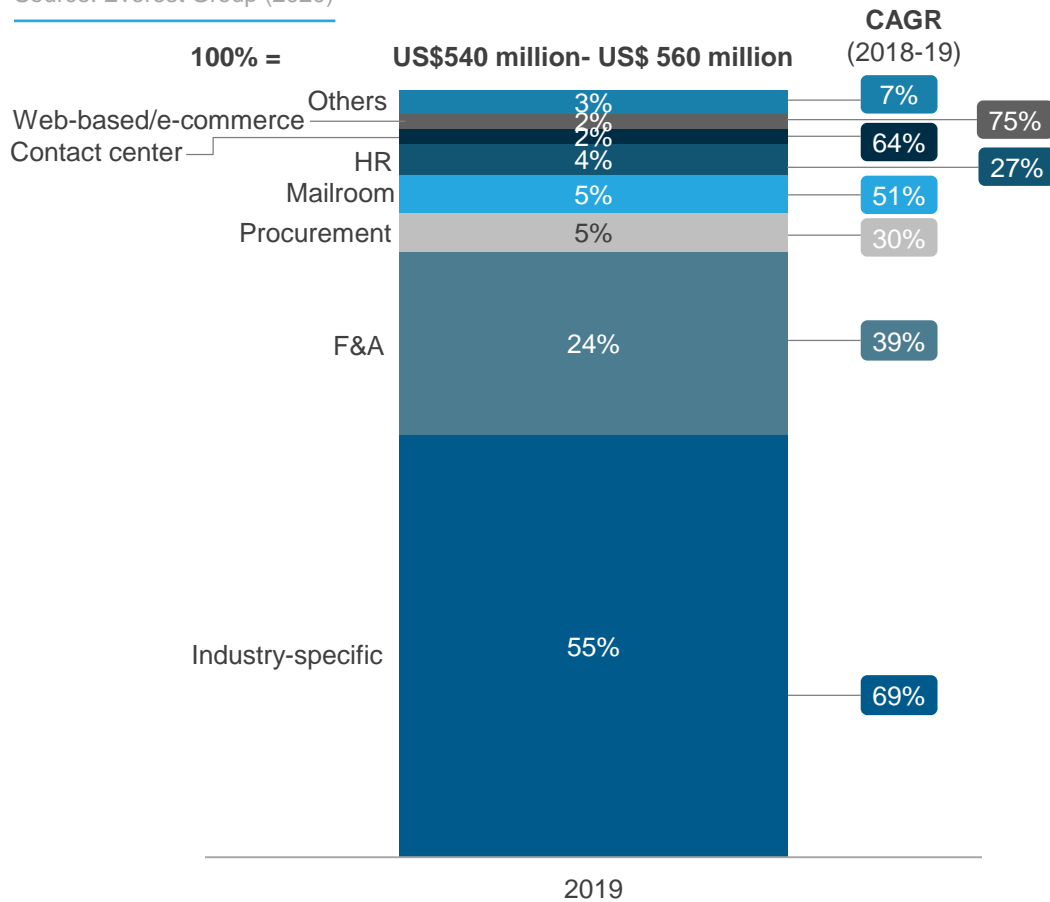
results within F&A. The combination of IDP and RPA helps automate a majority of transactional processes, improving operational efficiencies and allowing employees to focus on more productive activities.

IDP has also seen adoption in other process areas such as banking, insurance, healthcare, procurement, and HR processes. Exhibit 3 illustrates the IDP software market size across different process areas, with F&A being a prominent area of adoption.

**EXHIBIT 3**

IDP software market size by business process/function

Source: Everest Group (2020)



Let us now examine how IDP, in addition to RPA, improves automation outcomes in specific processes within F&A.

**Invoice processing**

Invoice processing is a crucial process within the F&A function, as organizations need to efficiently process large volumes of invoices from different suppliers, while also maintaining compliance to business rules. Invoice processing involves effort-intensive tasks, such as reviewing and validating invoices from different suppliers, manually entering data into the accounting system, and performing a three-way match between the invoice and its corresponding purchase order and order receipt data. This is a time-

consuming exercise that limits the overall process efficiency, has a significant cost impact, and affects payment commitments to suppliers in certain situations.

RPA can help enterprises automate the process flow partially, particularly, the retrieval of the purchase order and order receipt, and the subsequent three-way match. RPA can also automate invoice approval partially for invoices corresponding to certain business rules. Once the invoice is approved, RPA can automate the payment acknowledgement to the supplier. However, by itself, RPA is unable to efficiently extract data from invoices due to wide variations in document formats and quality. This means that significant manual effort is still required for this activity even after RPA adoption.

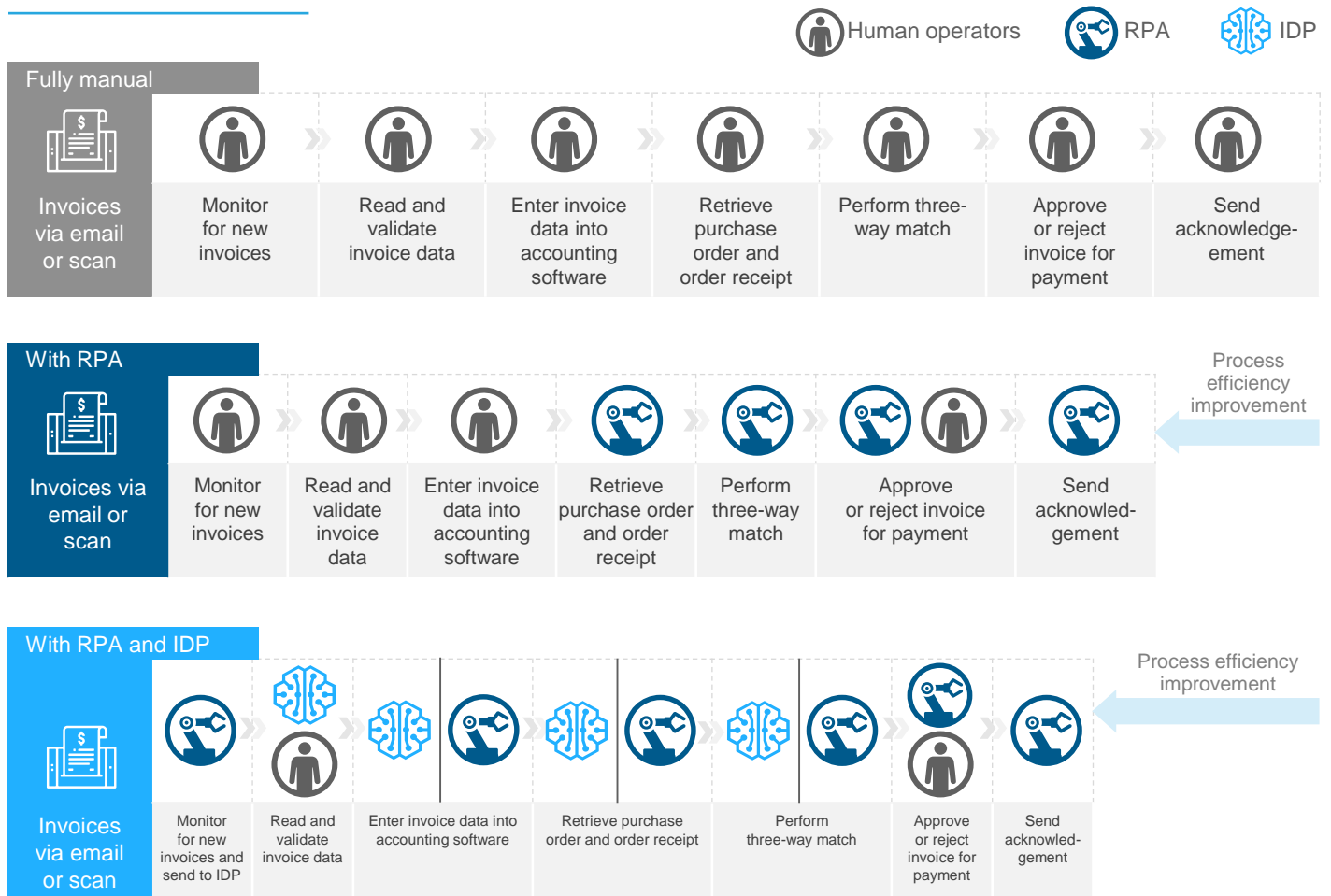
IDP is well suited to address this challenge. The IDP system can classify invoices by type, extract relevant fields from the document, and apply validation rules to the extracted data. Through the use of APIs, IDP solutions can also handle some of the process' subsequent steps, such as entering the information into the accounting software or performing the three-way match. Overall, the use of IDP along with RPA leads to a substantial improvement in process efficiency.

Exhibit 4 showcases the process efficiency improvements that can be achieved simply with RPA and with a combination of RPA and IDP.

**EXHIBIT 4**

Process flow for invoice processing in a fully manual process versus those that include RPA and those that combine IDP and RPA

Source: Everest Group (2020)





## Order management and billing

Order management and billing is a lengthy process in F&A, that requires manual review of several types of documents, such as order requests and transport documents, and confirmation of receipt documents, at different process stages. Leveraging IDP along with RPA ensures a more streamlined process, with a significantly lower manual effort.

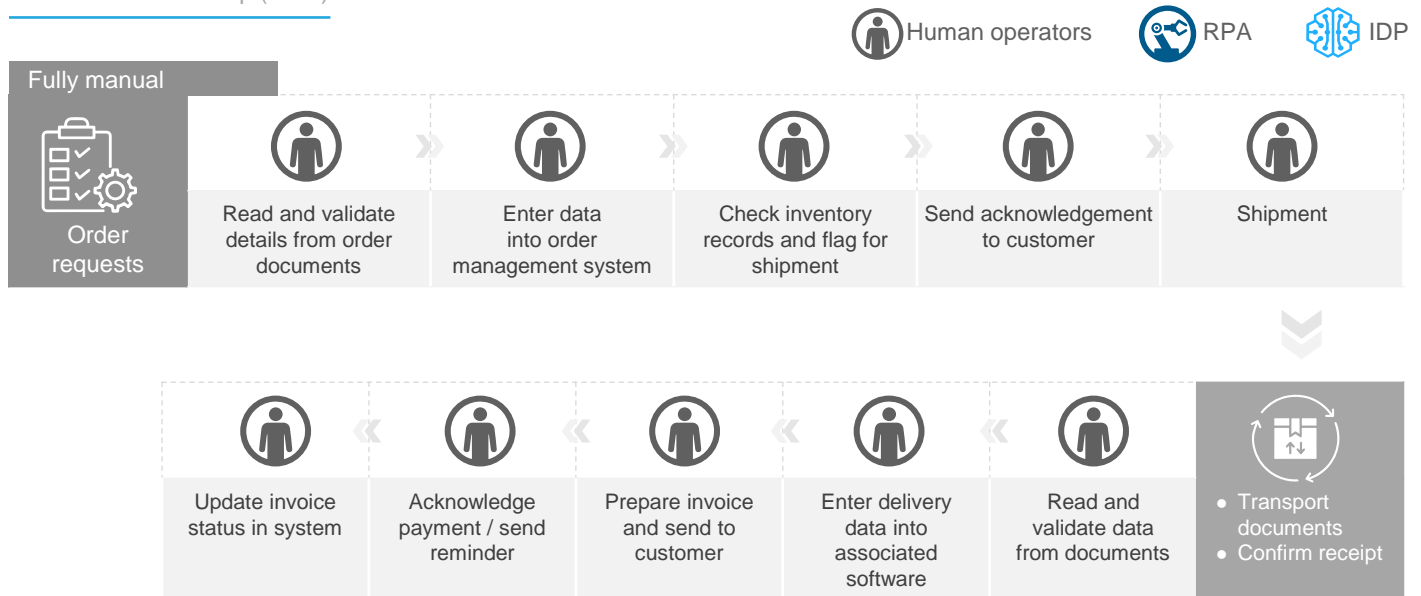
Order requests from customers differ in format and structure. RPA can be used to monitor incoming order requests and feed the new documents to IDP for extraction. IDP can extract relevant data from the order request and feed it into the order management system, either via APIs or through the use of RPA. RPA can automate several subsequent activities in the process, such as checking the inventory records, flagging an ordered item for shipment, and updating the records.

Once the item has been shipped, an enterprise needs to capture the relevant transport documents in the system. These documents can vary widely in structure and layout based on the transport mode used. The enterprise also needs to capture the confirmation of receipt of the item from the customer. IDP solutions can be used to classify and extract data from these transport documents and confirmation of receipts. Once these documents are captured in the system, RPA can automate invoice creation and communication to the customer, and follow up for the payment. As Exhibit 5 illustrates, using IDP along with RPA makes for a considerably more efficient process, requiring lesser manual effort and resulting in faster turnaround.

### EXHIBIT 5

Process flow for order management and billing in a fully manual process versus a process that combines IDP and RPA

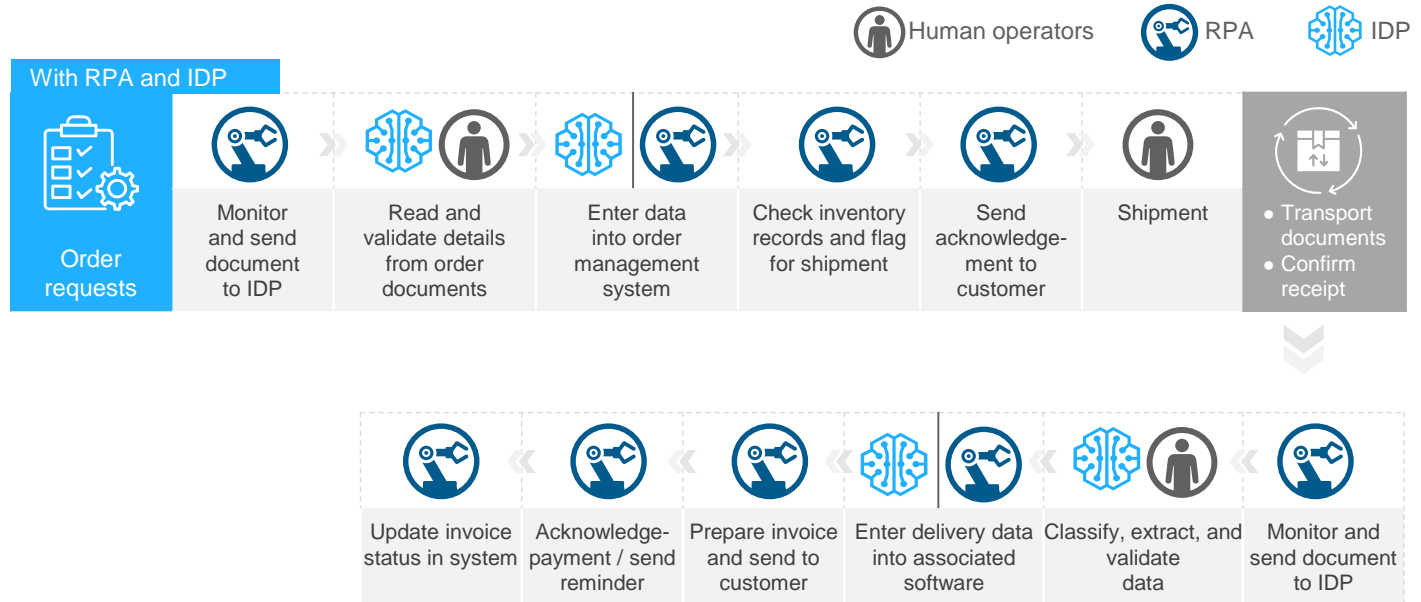
Source: Everest Group (2020)



**EXHIBIT 5** (continued)

Process flow for order management and billing in a fully manual process versus a process that combines IDP and RPA

Source: Everest Group (2020)



## Expense claims processing

This process flow requires time and effort from both the employee filing the expense report and the F&A team, which reviews and validates the expenses. In a manual process, an employee reviews expense receipts and enters the expense data in the form of an expense report. The F&A team reviews these expense receipts and validates them against the expense report provided. Policy rules related to handling business expenses need to be applied to ensure claim validity. The claim is then considered for approval or rejection, based on a set of business rules. Once approved, the expense is entered into the accounting system for payment, and a confirmation is sent out to the employee. RPA can automate a few tasks in the process, such as business validation of the claim against the policy and automated claim approval or rejection in certain scenarios. However, due to wide variations in the type of receipt documents and the fields that need to be processed, the process still requires data extraction and validation of the receipt documents.

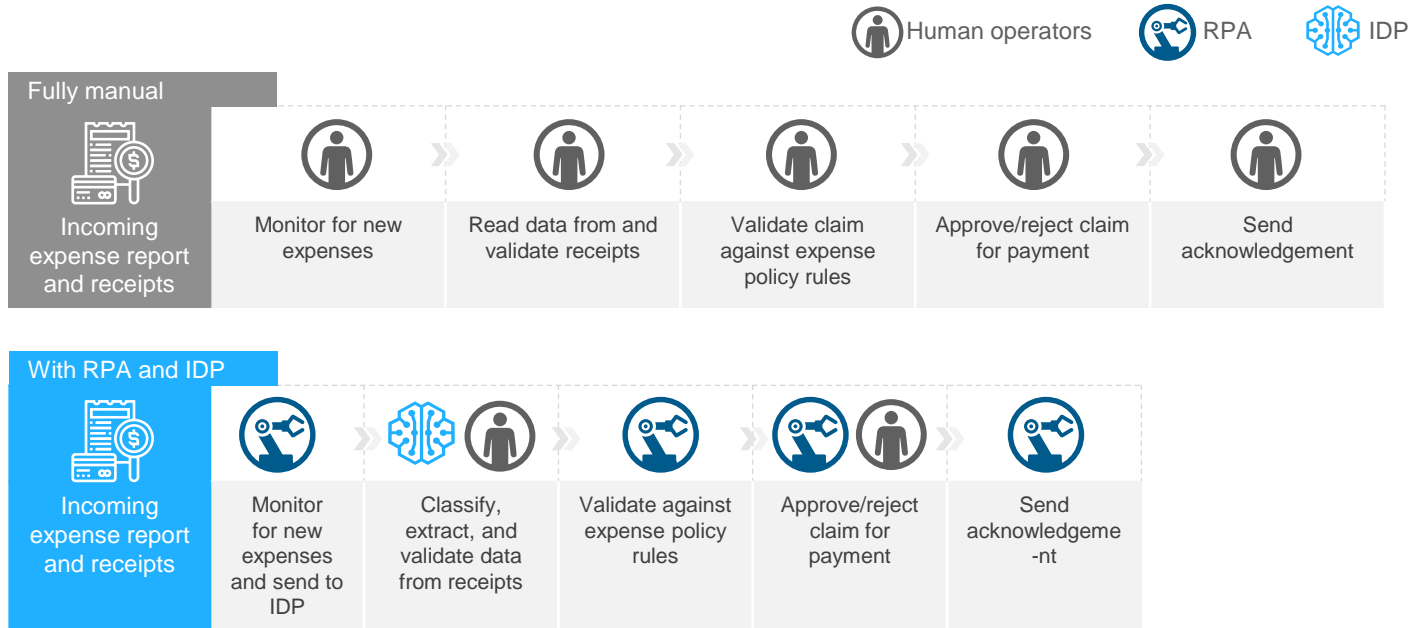
IDP can understand and classify different types of receipt documents, such as restaurant bills, cab receipts, and hotel bills. An IDP solution can extract relevant data fields based on the type of receipt document and apply data validation rules on the extracted information. By introducing IDP into the process, employees can directly share the relevant expense receipts for the claim, reducing the manual effort for both the employees and the F&A team.

In Exhibit 6, we showcase the process efficiency improvement that can be achieved with a combination of RPA and IDP in expense claims processing.

**EXHIBIT 6**

Process flow for expense claims processing in a fully manual process versus a process that combines IDP and RPA

Source: Everest Group (2020)





## IDP in other process areas

Many other process areas apart from F&A – where IDP has experienced the highest adoption – are also employing IDP and reaping its benefits. The following exhibit lists these process areas, along with representative use cases.

### EXHIBIT 7

#### IDP use cases in prominent process areas

Source: Everest Group (2020)

	<p><b>Public sector</b></p> <p>IDP solutions help eliminate manual processing of large volumes of physical documents, such as recruitment forms, RFP/RFQ forms, and purchase records.</p>
	<p><b>Human resources</b></p> <p>HR processes such as employee on-boarding, resume screening, applications processing, and benefits management have experienced increased adoption of IDP solutions.</p>
	<p><b>Procurement</b></p> <p>IDP solutions are used to process documents such as contracts, forms, procurement claims, bills of lading, and weight tickets.</p>
	<p><b>BFSI</b></p> <p>Use cases such as KYC documents, insurance claims, mortgage documents, bank statements, and checks processing have experienced strong IDP adoption.</p>
	<p><b>Healthcare</b></p> <p>IDP solutions are used in R&amp;D, patient onboarding, patient records, patient surveys, physician referrals, and to process claim-related documents.</p>
	<p><b>CPG &amp; retail</b></p> <p>The CPG &amp; retail industry uses IDP solutions to process documents such as proof of delivery, custom declarations, bills of lading, driver logs, and maintenance logs.</p>
	<p><b>Manufacturing</b></p> <p>Much of the paper-laden manual work in invoices, order forms, change requests, proposals, and quality assurance records is being automated through IDP.</p>

## Challenges with IDP adoption and how to navigate them

While IDP offers several benefits, it might not always be easy for enterprises to implement it; in fact, enterprises typically face several challenges when adopting IDP solutions. In Exhibit 8, we capture each of these issues and recommend ways to mitigate them to ensure smooth IDP implementation.

**EXHIBIT 8****Challenges to IDP adoption and how to address them**

Source: Everest Group (2020)

Challenge	Description	We recommend
<b>Lack of understanding of IDP solutions</b>	A big challenge that enterprises might face is a lack of understanding among stakeholders about IDP solutions' capabilities. Stakeholders could be ignorant about how IDP differs from traditional Optical Character Recognition (OCR) and template-based extraction solutions. There could also be confusion about the strengths and limitations of IDP's underlying AI capabilities.	<ul style="list-style-type: none"> <li>Plan activities to educate key stakeholders on the capabilities and limitations of IDP, and how they differ from traditional capturing solutions</li> <li>Leverage relevant webinars and thought leadership content in the space for the purpose</li> </ul>
<b>Expectation mismatch</b>	Enterprise stakeholders might have unrealistic expectations from IDP, even hoping that it would completely eliminate manual effort. There might also be impractical expectations about the time to realize the solution's full potential.	<ul style="list-style-type: none"> <li>Clearly explain the need for a human-in-the-loop for validations and corrections in IDP</li> <li>Set realistic expectations about the automation potential, achievable Straight Through Processing (STP) rates, and time-to-value early in the process</li> <li>Proactively involve key stakeholders in different stages of IDP implementation</li> </ul>
<b>Variability in training outcomes</b>	Outcomes in IDP implementation scenarios can vary depending on multiple factors, such as the complexity of the use case and the robustness of the training data. In particular, variations in the structure and quality of training documents, as well as the accuracy of the labelled training data set, will have an impact on outcomes.	<ul style="list-style-type: none"> <li>Keep the training data set as representative as possible, in terms of the structure and quality of documents to be encountered in production</li> <li>Validate the correctness of the data labels used to train the model</li> <li>Adopt pre-trained models offered by vendors that require lower training effort by the enterprise</li> </ul>
<b>Internal resistance</b>	Automation initiatives might face resistance from various teams within an organization. There could also be a general hesitation among employees about having to learn a new system and ways of working.	<ul style="list-style-type: none"> <li>Establish a strong communication and change management program backed by the executive management</li> <li>Plan reskilling/upskilling programs for resources impacted by IDP</li> <li>Leverage training and tools such as support forums and user guides to help users easily adopt the new system and ways of working</li> </ul>
<b>Difficulty in estimating benefits</b>	Estimating the benefits that can be realized from IDP can be a challenge due to the variability in final outcomes. Stakeholders might also focus on the wrong set of metrics for IDP implementation.	<ul style="list-style-type: none"> <li>Define the right set of metrics to estimate benefits; STP is an important metric to consider when estimating potential savings</li> <li>Understand that the time to full value may vary, depending on the complexity of the use case and training</li> <li>Continuously monitor and raise the bar to increase the ROI from IDP</li> </ul>

## Outlook

In combination with RPA, IDP is already delivering broader automation outcomes in F&A, increasing process efficiency and freeing up employees from time-consuming transactional work to engage in more productive activities. We expect this trend to accelerate in the coming years.

In fact, in the light of the COVID-19 pandemic, enterprises will need to increasingly turn their attention toward automation to reduce costs and improve operational efficiencies in order to survive. IDP solutions are well positioned to be a strong addition to the arsenal of automation tools that enterprises can leverage to achieve these objectives.



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