

# The evolution of intelligent document processing

An acceleration in computing and automation capabilities throughout the past several years has led to a flurry of overhauls in business processes. As general comfortability with AI and robotic process automation (RPA) software has spread, more and more companies have leveraged these innovative tools to make their work operations smarter, leaner, and more efficient.

Chief among these innovations is intelligent document processing (IDP) and adjacent softwares. IDP is the automation of data extraction from complex documents, thereby taking raw information and converting it into structured usable data. Depending on the level and capability of the individual tool, this automation process can turn the time-consuming and rote burden of document data management into a well-oiled, information organizing machine.

As modern and revolutionary as it may seem, IDP has historically, in some form, been a facet of numerous brands for decades. [As far back as the 1980s](#), companies used computers for digital document management — a far more rudimentary process of RPA that linked document storage processes to individual computers. Collectively, it was a clunky, cumbersome, and deeply frustrating process by today's standards, but at the time it began to show forward-thinking and high-capacity businesses how repetitive tasks didn't have to hamstring their employees

Those forebearers of IDP evolved over the succeeding years, into the RPA solutions we leverage today. As we know it now, IDP is generally made up of three fundamental qualities that ensure a streamlined document organization process:

- 1 Classification**  
The process of identifying and organizing entered documents into distinct categories, often using technology like optical character recognition (OCR) to help assign decision makers to provide human-in-the-loop input or just better organize masses of information.
- 2 Extraction**  
The process of identifying specific information within a document, allowing the machine to correctly identify the use case, intent, or recipient of said document.
- 3 Human-in-the-loop interaction**  
Depending on the sophistication of the IDP system, the human element can be a helpful guiding force in approving decisions and actions (ideally) or the result of an unintelligent system that doesn't have the capacity to act on or derive the correct information (worst case).

Modern companies use some form of the above three features to operate their own RPA solutions, some with [greater degrees of success](#) and sophistication than others. At its core, a good IDP solution should not only use these qualities successfully but also build on these fundamental structures to drive business efficiency across your operations and help make your workplace smarter and faster as a whole.

Most importantly, the best and most helpful systems will not only leverage such features to delineate information, but also be designed to fundamentally understand the contents of a document in relation to a business. Through that more holistic understanding, the right IDP solution will surpass run-of-the-mill RPA by forgoing the need for unnecessary human input and additional metadata to provide end users with a system that escalates their capabilities and treats the information as a roadmap to better overall processes.

# IDP in action

Businesses of all shapes and sizes have found powerful and sometimes creative ways to deploy IDP in their workflows, almost universally to the benefit of those businesses. With the right [organizational preparation](#), companies of all sizes can get a leg up extracting complex information from their documents using IDP today. Here's just a few major industries that have particularly benefited from IDP and automation solutions.

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## Healthcare

Employees of the healthcare industry understand paperwork as a hurdle in the way of high-skilled employees who need to accomplish more important and patient-centric tasks. Healthcare networks, hospitals, and individual agencies are often sifting through mounds of information tied to documents that vary in format and even user input (i.e. digital vs. handwritten).

[IDP has been a rescuing technology](#) for a number of these companies, quickly identifying key patient data and leveraging it into actionable healthcare decision making that's saved lives and improved the overburdened infrastructure. From the success of these document-specific RPA forms, healthcare companies have found ways to save precious dollars and time for overburdened staff while ensuring patient care is never sacrificed.

## Legal

Amidst a sea of contracts, emails, and other loose or unstructured documents (more on those later), [automation and AI are essential partners](#) in wading through and deriving actionable truths from the information. In particular, with a field as error-avoidant as law, IDP can be a powerful shield protecting firms and departments from costly or reputation-harming manual errors, ensuring accurate litigation documents and the highest confidence in service to clients.

## Finance

From mortgages to banking and everything in between, financial firms leverage [end-to-end document processing](#) on a regular basis to maintain a timely and efficient flow of business that saves them time and money.

IDP can easily process loan and mortgage applications, helping large institutions better respond to customer needs by rapidly and accurately identifying the key financial information, necessary supporting documentation, and customer history to deliver

a superior product and customer service. With this approach, financial needs can be more accurately addressed, protecting both the institution and customer from error or malfeasance. In support of that, modern API-based platforms run on systems that are more easily governed than older RPA solutions, providing financial security teams with better transparency and peace of mind in protecting the integrity of their data.

## Insurance

Insurance companies deal with mountains of document-bound data on a daily basis, both from internal communications but even more so from [inbound customer claims](#) and requests. IDP is helpful in this area by identifying the claim types and the necessary human-in-the-loop interaction that needs to be triggered in order to review, approve, or react to the information in question. This frees up insurance companies and their compliance officers to more accurately tackle requests, helping to cut down on process costs and empower customers with attentive service.

These are just a few industry examples that see major regular benefits from intelligent document processing.

Another way of understanding how IDP directly impacts success and efficiency is by examining the types of documents companies receive, and how the new generation of IDP solutions can unlock the complex data in these documents and put it to work for your business.



### Structured documents

This is the term for “fixed forms,” or more specifically forms that show fixed information in specified locations. Structured documents include centralized tax and government documents, like I-9s and W-4s. From an IDP standpoint, this level of universality makes classification easy, while using OCR to identify particular handwritten versions of forms is essential.



### Semi-structured documents

These forms lie somewhere in the middle. Though not fixed on all fronts like tax forms, semi-structured documents have fixed information but the particular placement will vary case-to-case. Invoices are semi-structured documents with similar structures and intents but unique properties per company, making extraction trickier for lesser IDP solutions that are not properly programmed.



### Unstructured documents

Unstructured documents: The last document category is essentially the rest of the document world outside of the bounds mentioned above — with both information and placement being unfixed. These can range from straightforward but individualized documents, like legal contracts, to far more “wild west” variations that include anything from blog posts to emails and social media.

# Current RPA solutions to IDP

Since the humble beginnings of document management and processing, AI and robotics have transformed these once-basic functions into organizational superpowers for the companies that use them. Today, the IDP landscape consists of two pillars — legacy RPA solutions and more modern, AI-driven IDP solutions. Both have upsides and shortcomings based on the use cases in which they're deployed.

## Legacy RPA solutions

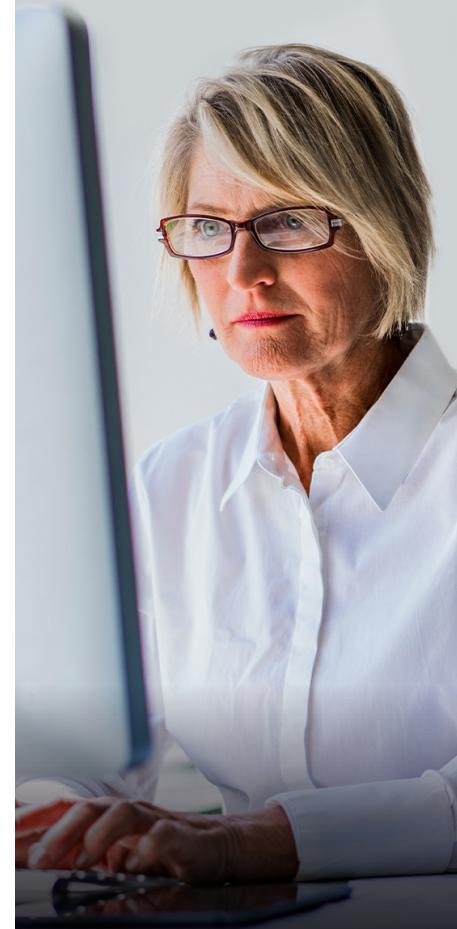
Like many automation solutions, IDP grew to solve the shortcomings of existing RPA technologies. [At one point in time](#), companies that used early business intelligence (BI) tools would leverage them to help document and inform processes relevant to their departments of business, such as inventory management. Often, these manifested as data warehouses, or centralized points of data storage from which analytics and reporting were conducted. Other teams would eventually recognize the informational value these systems afforded and try to force them into sales and marketing contexts with lower degrees of success.

These BI tools were predecessors to current legacy RPA — not just in function but also in a trend toward the misuse of automation tools to provide incomplete analysis or output. From these early machinations, RPA evolved to accomplish more complex individual tasks, but the majority of them were designed for just that — the individual.

Today, when brands use legacy RPA solutions built to replicate the IDP experience, what they're getting is a house-of-cards structure wherein RPA operations are built on top of each other — creating a precarious and rigid situation that can't operate if even one element is not built to serve the larger function.

Meanwhile, a legacy RPA solution might be able to individually target certain keywords, or extract precise bits of information from documents, but it would be doing so by brute force. Each function has to be programmed to repeat the activity to effect, and therefore a larger, more needlessly involved infrastructure becomes the norm, while making complex data analysis nearly impossible.

Compounding these shortcomings, [legacy RPA is more vulnerable to cyberattacks](#) and other security issues for these aforementioned reasons. As more industries employ automation across their businesses, in manufacturing and beyond, it behooves these



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companies to leverage more singularly controlled and operated systems that don't put valuable data and resources at risk to external actors.

## AI-driven IDP solutions

Businesses have grown to use more complex software and absorb large amounts of data at once — and similarly, IDP solutions have evolved to match this demand. Newer, AI-driven IDP solutions are much more capable of (and inherently designed for) document processing for enterprise applications.

As companies explore new IDP solutions, they'll see a lot of buzzwords about automation, and how specific software or tools are better designed for the current moment than others. Solving "unstructured data," leveraging "hyperautomation," or other near-science-fiction terminology is largely marketing. Choosing the right solution boils down to selecting a software that offers ease of use and flexibility.

Though the large majority of the up-to-date IDP market is well-intentioned and feature-heavy, there's still a gap in approach and delivery. A lot of solutions tackle the entirety of the IDP functionality discussed earlier, providing top-tier OCR with cutting-edge automative technology in classification and extraction. They are, by and large, the best versions of these tools on paper.

However, what's missing is an eye for what customers are demanding and depending on in the business space. These solutions are built through complex systems that often have to be programmed per use case, creating a burdensome development backlog. Compared to a more modular system with an integrated approach, most current solutions can't get these automation use cases out fast enough to provide a timely and positive impact to business. On top of that, these tools don't operate as an end-to-end automation solution, nor are they designed to communicate outside of their purview or help businesses learn and build on processes.



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# Automation Hero has revolutionized IDP

Automation Hero stands out as a truly modular, end-to-end, and future-proof IDP solution that recognizes the evolution of the technology and the limitations of current attempts. Through this effective approach, companies have reformed their utilization of automation, opening whole new use cases for these multifaceted tools where automation was once thought impossible.

To understand what makes the Automation Hero solution stand out, take a closer look at these three fundamental pillars.

## Modular

Automation Hero has focused on democratizing AI, giving users the ability to build tailored solutions to individual document understanding problems. In the IDP field, this approach is no different, prioritizing business rather than technology. This informs modularity that can fit the specific needs of each business, and not the other way around.

## End-to-end

With Automation Hero's IDP solution, the program classifies and extracts information from documents, and then uses it to build workflows and actions, interact with humans at precise moments, and inform future IDP use cases.

The proprietary Automation Hero flow system makes this high-end human-in-the-loop application of information possible. These processes are capable of expressing complex and dynamic business logic and connecting directly with external system APIs to transform the information extracted from your documents directly into action. The flow system provides a visual representation of each data movement, IDP information extractions, and other processing steps so that the whole workflow can be managed without code.

Collectively, this system provides superior applications that enable improved performance, document accuracy, and overall data security compared to the black box isolated approach used by the competition with less powerful integration.

## Future-proof

Perhaps the most important Automation Hero advantage is its unparalleled longevity. The software's modular and end-to-end nature allows the tool to be inherently future-proof, a factor that legacy RPA fails to account for and other competitors can only pretend to have reached.

The Automation Hero API integrates directly with external software systems, allowing the new range of IDP use cases to be seamlessly added to your existing data and communication ecosystem. On top of that, the intelligent automation design pioneered by Automation Hero meets individual needs and tasks in order to handle any change in documents or the use cases for said documents.

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Automation Hero isn't just a Band-Aid solution to RPA and IDP — it's a future-proof, multifaceted solution to a long-standing process.

Fundamentally, IDP from Automation Hero can be customized to extract information from complex documents across industries and use findings to improve business practices and accelerate the growth of companies.

Automation Hero isn't just a Band-Aid solution to RPA and IDP — it's a future-proof, multifaceted solution to a long-standing process. For companies needing to streamline the integration of data trapped in complex documents, or build more efficient workflows based on processes centered around these documents, Automation Hero is the ultimate solution that can take these businesses to the next level.

**To learn more, schedule a call  
to speak with one of our experts.**

[Schedule a call](#)