



White paper

Power to the people: 6 ways intelligent document processing empowers your staff



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Summary

Recent headlines have some people worried that artificial intelligence (AI) will soon eliminate their jobs. But the truth is that today's advanced AI systems are actually more likely to open up new opportunities for organizations and the workers they employ.

Intelligent document processing (IDP) solutions provide a good example of this principle. They harness the power of computer vision, natural language processing, and machine learning to help individual employees become more productive and efficient. They enable your team members to engage in creative, innovative work rather than wasting time on tedious tasks. And that, in turn, allows you to reduce the time, effort, cost, and errors involved in document processing, while empowering your people.

The collaborative capacity of AI

If you believe the headlines, artificial intelligence is about to take all our jobs.

- “AI could replace equivalent of 300 million jobs.” – [BBC](#)
- “Which jobs will AI replace? These 4 Industries will be heavily impacted.” – [Forbes](#)
- “Artificial intelligence could replace up to 80% of human jobs, expert says.” – [FOX Business](#)
- “AI is quietly eating up the world’s workforce with job automation.” – [VentureBeat](#)
- “The robots have finally come for my job.” – [The Wall Street Journal](#)

But if you dig a little deeper into the reports that inspire the headlines, the story is much more nuanced. For example, the 2023 [Goldman Sachs report](#) that inspired the BBC headline above also says, “Although the impact of AI on the labor market is likely to be significant, most jobs and industries are only partially exposed to automation, and are thus more likely to be complemented rather than substituted by AI.”

Similarly, the [World Economic Forum](#) says that intelligent systems are likely to create more jobs than they eliminate. It concludes, “We estimate that by 2025, 85 million jobs may be displaced by a shift in the division of labor between humans and machines, while 97 million new roles may emerge that are more adapted to the new division of labor between humans, machines and algorithms.”

In reality, recent advances in AI are opening up a host of new opportunities for companies and the workers they employ.

Many of today’s workers aren’t all that happy with their jobs.

A recent [Gallup poll](#) found that only 21% of employees say they feel engaged at work, an indicator of the phenomenon known as “quiet quitting.” In addition, stress is at an all-time high with 44% of workers saying they experience significant daily stress.

Offloading some of their more tedious and repetitive tasks to intelligent systems can give these workers the ability to focus on the more fulfilling aspects of their work. It allows them to become more productive and efficient, while also opening up the opportunity for them to learn new skills.

One of the AI-based technologies that holds the most potential for empowering workers in this way is intelligent document processing (IDP).

Intelligent document processing (IDP)

Organizations have been using automated document processing to improve efficiency for many years. Using optical character recognition (OCR), systems can extract data from highly structured forms and integrate it into databases and applications.

Intelligent document processing takes this kind of automation to a whole new level. It harnesses the latest advances in computer vision, natural language processing, machine learning, and other branches of AI to streamline workflows, and speed the process of transforming data into insights.

Industry analysts [define IDP](#) this way: “Intelligent document processing (IDP) solutions extract data to support automation of high-volume, repetitive document processing tasks and for analysis and insight. IDP uses natural language technologies and computer vision to extract data from structured and unstructured content, especially from documents, to support automation and augmentation.”



Typically, IDP solutions move documents through a series of steps:

- **Ingestion** – The solution digitizes paper documents and imports documents from a variety of different formats to make them available for processing. This stage also provides an opportunity to improve the quality of the documents through computer vision algorithms that can reduce noise and improve the accuracy of AI-aided OCR tools.
- **Classification** – Natural language tools pre-process documents to determine what language(s) they are written in, as well as what kinds of data they contain. It can also separate multi-page documents and identify relevant pages.
- **Data extraction** – The intelligent system transforms captured documents into computer-readable forms. It pulls out the key pieces of information contained in the document (dates, names, addresses, monetary values, etc.) using trained models, and then it stores that data in a database or other format.
- **Data enrichment** – Natural language processing, sentiment analysis, and other tools augment the data with metadata that will improve search and analytics. This process enables real-language search.
- **Validation** – The IDP solution checks the data against internal and external data sets, involving humans as necessary to find and fix errors. Machine learning technology allows the system to improve as a result of these interactions, which can reduce the amount of human intervention necessary over time.
- **Insights** – At the end of the process, the data integrates into other software and business process workflows. It becomes available to analytics and other solutions to help the business make better decisions.

And unlike manual processes, intelligent document processing can scale easily to handle billions of documents. It helps organizations reduce the time, effort, cost, and errors involved in processing documents.

How IDP empowers your staff

Today's IDP solutions have several characteristics that set them apart from legacy document automation solutions that relied solely on OCR and rules engines rather than AI. These characteristics allow your team to become more productive and efficient, improving your operations and, ultimately, your bottom line.

1. Rapid insights

The pace of business just keeps getting faster.

As the world has become more connected, expectations have shifted. Consumers are used to ordering something online and having it delivered within a day or two. And online chat means you can connect to a customer support agent day or night. That changes everyone's assumptions about how soon companies should respond to requests.

The smartphones in our pockets mean that we've grown accustomed to being able to answer any question as soon as we think of it. Your business leaders expect that the information they are using is similarly up to date.

And innovation just keeps getting faster. Not too long ago, generative AI like ChatGPT seemed like the stuff of science fiction. Now it's changing daily life, and the companies that don't innovate will be left behind.

The biggest benefit of IDP is its ability to help businesses adapt to this fast pace. Leveraging AI, it can dramatically increase the speed of document processing while improving accuracy. [PWC reports](#), "Even the most rudimentary AI-based extraction techniques can save businesses 30-40%." That can be the difference between taking a week to respond to taking just days.

Consider the example of a mortgage company competing to service a new home loan. The prospective home buyer fills out pre-approval applications with several different companies. Then they wait.

Of course, the mortgage rate is important, but speed also plays a role. If the home buyer gets responses from several of your competitors 40% faster than they receive your response, they will likely choose from among those early responders. Your company won't even have a chance to get the business.

You might be in a very different industry, but you probably have similar time pressures. Insurance, transportation, healthcare, manufacturing, retail, pharma, telecoms, even education and government all rely on timely processing of documents. IDP can speed up processes dramatically, allowing your human staff to spend less time while handling more documents. It also gives them more time to think about strategy and critical business decisions, helping them become more effective and engaged in their roles.

2. Human-in-the-loop exception processing

There are some tasks that computers do far better than humans. And there are some that humans do far better than machines.

The best IDP solutions bring together the best of both worlds with human-in-the-loop (HITL).

HITL is a popular technique for improving machine learning models. In general, humans process exceptions that can be used to help refine models. For example, if you were building a machine learning model that allowed autonomous vehicles to identify stop signs, you might start with humans labelling a bunch of images of stop signs. The machine learning model would look for images similar to those that were labelled by humans and attempt to determine whether other images did or did not include a stop sign. Then humans would evaluate the computer-generated output, offering feedback on when the autonomous vehicle system got it right and when it got it wrong. That would help the system get better over time.

When it comes to IDP, human-in-the-loop is similar. Because many organizations have already trained a lot of document processing models, your team might not have to go through the early steps of labeling each document.

However, every IDP solution, no matter how sophisticated, is going to run into documents that are difficult to parse. Maybe they are handwritten documents with particularly messy handwriting. Maybe someone spilled coffee on a form before scanning it. Maybe they used an older version of a digital form that is different than the documents the system usually processes.

In these situations – and others like them – humans can perform the necessary task of validating uncertain information. In essence, humans become the process for exception handling.

HITL empowers staff by allowing them to concentrate on the edge cases that the AI can't handle on its own. Rather than wasting time on tedious data entry tasks, workers are engaged in complex decision-making tasks that require their unique experience. Some solution providers also offer HITL as a managed service, further reducing the burden on your staff.

3. Low code

Today's IT teams are universally over-worked and under-staffed. When your data analysts are developing or refining their IDP models, they don't have time to wait for the developers in IT to get around to writing the code they need. They need tools that allow them to accomplish those tasks on their own.

A report titled [Emerging Technologies: The Future of Low Code](#) notes, "Digital business transformation is radically outpacing the capabilities and staffing of many traditional 'pro code' strategy's capabilities to change. Both IT organizations and external service providers struggle to keep up with the agility and diversity that digital solutions demand. Low code has emerged in the last five years as one potential tool in both enabling business transformation and scaling these initiatives cost-effectively over time."

Low-code tools rely on user-friendly interfaces to enable data scientists, analysts, and others to set up IDP models and workflows. According to one analyst firm, 41% of the employees in any organization can be considered "business technologists." These are the tech-savvy folks that peers turn to for advice when they have questions or problems with the software and hardware they use every day.

While these super-users may not have formal computer science or programming training, they have more than enough expertise to set up and improve the IDP models. In fact, in many cases, these people are much more familiar with the workflows involved, which can enable them to do a better job refining the models than professional developers. Low-code tools speed innovation and also help "citizen developers" learn new skills that can help them advance their careers.

Analysts predict, “By 2024, developers outside of formal IT departments will account for at least 80% of the user base for [low-code] technology/tools, up from 60% in 2021.”

Not all IDP solutions have low-code capabilities built in, but many of the best ones have these capabilities. Low-code allows organizations to use their IDP solutions for more use cases and tailor their workflows more specifically for their needs.

7 must-haves in an IDP solution

- > **Platform capabilities.** Rather than a solution that serves only a specific use case, look for an IDP platform with the flexibility to handle many different workflows and adapt as your needs change.
- > **Support for many types of documents.** Some solutions can handle only highly structured documents while others are more full-featured. Make sure you choose a solution that can handle the kinds of documents you will need to process today and in the future.
- > **Ease of use, including low-code development.** If the solution is too unwieldy and requires engineering support to refine models, it may not result in the productivity gains you hope to achieve.
- > **Support for human-in-the-loop workflows.** While HITL may not be necessary for every application, your platform should make it easy to integrate humans for data verification and model refinement when it is helpful.
- > **Model evaluation.** The best IDP solutions make it easy to see how well different models are performing and tweak them as desired.
- > **Advanced security.** Many IDP workflows deal with sensitive data. Make sure your vendor has the security expertise necessary to protect your valuable data.

4. Customized workflows

No two organizations process documents in exactly the same way. An advanced IDP solution will allow you to use low-code tools to easily customize your models and your workflows. That makes it easy to not only set up the initial workflow, but also to refine it over time.

This capability empowers your staff to find new ways to improve your existing processes. Because your staff can make changes without having to wait for engineering to write code and update the system, you can easily test whether small changes to the model, or the workflow, brings greater efficiency. And if not, they can quickly roll those changes back.

This level of flexibility and agility empowers your team to think more creatively and find innovative ways to improve your operations. Rather than wasting time on tedious, rote tasks, your team will be actively finding ways to complete tasks faster and with fewer errors. That leads to improvements in your bottom line over time, while also keeping your human workers highly engaged in valuable work.

5. Industry standards

The best IDP solutions are more than just software – they also include valuable services from data processing experts. And when the vendor has worked with a lot of different organizations in a lot of different industries, they bring an understanding of industry standards with them, allowing you to leverage their expertise.

For example, Iron Mountain has worked with a number of government agencies to help them process documents like immigration papers and birth, death, and marriage certificates. While each country has different regulations that necessitate some customization, this experience has helped Iron Mountain acquire a deep understanding of the best practices for governance, security, and retention for government documents. That allows them to help other organizations in the public sector get up and running with an IDP deployment very quickly.

Instead of needing to learn all this information about industry standards on their own, your staff is able to tap into the knowledge of experts. This helps them develop their own skills faster while enabling them to create models and workflows that rival those created by people with far more experience.

6. Ability to iterate and scale

When you process documents manually, your speed is limited by the number of staff members you have working on the task. And scaling up causes your costs to increase at the same rate.

Old-school document automation solves some of these problems. It allows fewer workers to process more documents and helps organizations save money through some economies of scale. But these systems generally don't get better over time. The processing capabilities you initially purchase are the same capabilities you will have until you replace the system.

IDP not only scales very easily, it also harnesses the power of machine learning to improve over time. The more you use the solution, the faster and more accurate it will become. And these improvements don't cost additional money.

Deploying an IDP solution will empower your workers today. And it will empower them more and more over time as they work with the technology to help your organization achieve its goals.

Next steps

If your organization is ready to investigate how IDP might help you improve productivity, here's how to get started:

1. Identify your stakeholders. Consider who in your organization is involved in document processing. The list might include operations, customer service, sales, data management, accounting, logistics, purchasing, or other teams. You also need to include IT, as well as security and compliance.
2. Determine what you need – now and in the future. Many organizations start by automating a single process, but if you focus on a single workflow, you may miss out on opportunities for greater productivity improvements. Even if you start with a relatively small deployment, think about how you might scale to other areas of the business and write your requirements with the big picture in mind. Analysts recommend that teams start by “articulating current requirements and also by considering future technological development and organizational growth.”

3. Don't forget about security and compliance. Make sure that any IDP solution complies with any applicable regulations, such as GDPR. This can be especially important if the solution is cloud-based and data might be transferred from one geographic region to another for storage or processing. Analysts advise that you “check if the solution stores data for processing and what security controls are offered beyond data anonymization and encryption.”
4. Consider how your IDP will integrate with your larger data strategy. Your IDP solution will not operate in a silo. It will need to deliver data to your other systems for storage, analysis, and/or additional processing. Make sure you understand what kinds of integrations will be necessary so you can add those to your requirements.
5. Make a short list of vendors. Once you have all your requirements nailed down, you'll need to determine which vendors and products can meet your needs. Dozens of different vendors offer IDP solutions, so you might find it helpful to use a scoring matrix to identify the options that will best meet your needs.
6. Conduct proof of concepts (POCs). After you've narrowed the possibilities to a manageable number, work with your vendors to set up some POCs to see how the solution will work in the real world. Giving the solution a try is really the only way to see how it's going to work for you.
7. Evaluate the POCs. One industry analyst suggests that organizations score the POCs based on “accuracy, efficiency, ease of use, security and overall cost.” Your organization may also have other specific criteria that are important to you.

For more information about intelligent document processing, or about how to get started evaluating solutions, visit <https://www.ironmountain.com/insight>.

Iron Mountain InSight Intelligent Document Processing

For organizational leaders interested in saving time with AI-enabled intelligent document processing (IDP), Iron Mountain InSight IDP can reduce document processing time with accuracy, while scaling to billions of documents.

You can deploy InSight IDP as a managed service, and/or with a low-code development environment with all the tools and libraries your team needs to create and customize their own document processing.

Iron Mountain has leveraged extensive experience from custom engagements with some of the world's largest organizations to build and refine document processing workflows for government, e-healthcare, mortgage and banking, human resources and contracts. An amazing team of AI experts are available to help build both standard and customized solutions.

Organizations across the globe trust us to store and protect information and assets. From critical business information to geological samples, works of fine art to original recordings of treasured artists, our customers can rely on us to protect what they value and help unlock its potential.

For more information, visit
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