

The COO's Pocket Guide to Enterprisewide Intelligent Automation



“In just three years, the nature of machine work will change. The percentage of tasks overall—administrative, departmental, and cross-enterprise and expert—will continue to grow substantially, *with the largest percentage increase in cross-enterprise and expert work.*”¹

Why this guide

This guide is for COOs and business operations leaders looking to enable their enterprises to be always-on—to create an uninterrupted value stream to their customers—no matter what happens. To do this, and do it well, leaders will expand from automating repetitive and administrative tasks to automating more cross-enterprise and expert work.

“Seventy-nine percent of executives whose organizations are scaling intelligent automation expect their organization to outperform the competition in revenue growth within the next three years.”¹

Use this guide to get clear on the what, why and how of using enterprisewide intelligent automation to make your business operations a source of competitive advantage that can’t be easily replicated.

What’s inside

Enterprisewide intelligent automation:

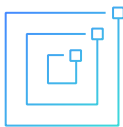
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The what and why of enterprisewide intelligent automation



What is enterprisewide intelligent automation?

Enterprisewide intelligent automation is the evolution of automation from foundational through intelligent automation.



Foundational automation. This is your basic task automation that eliminates the need to manually perform repetitive work involving structured data. Basic workflow and robotic process automation (RPA) software are often used here to eliminate errors and speed transactional work.



Advanced automation. Advanced automation takes foundational automation up a few levels by bringing humans and machines together to support end-to-end processes. Advanced automation can handle unstructured data and uses automation capabilities such as natural language processing and analysis to support work requiring more expertise than routine task work.



Intelligent automation. Intelligent automation is where AI capabilities take center stage—in addition to other advanced automation technologies—to perform actions that require little human intervention. It features reasoning and learning capabilities that can analyze a lot of operational information, recognize patterns and execute independently.



Enterprisewide intelligent automation is the use of intelligent automation across the enterprise. However, instead of focusing on individual technologies, enterprisewide intelligent automation focuses on the application of technologies and the extent to which their combination can transform the way work gets done. Some call this hyperautomation or extreme automation. Whatever you call it, it’s the act of bringing intelligent automation to every relevant corner of your business—to every individual—to drive the right outcomes across the spectrum of work, from repetitive to cross-enterprise.

The spectrum of work and enterprisewide intelligent automation

You can apply automation to virtually all types of work across the enterprise. However, when it comes to the application of enterprisewide intelligent automation, the biggest operational impact could come from its application to cross-enterprise and expert work.

What do we mean by cross-enterprise and expert work?



Cross-enterprise work
This is work that involves multiple departments in order to start and finish it, for example, approving loans.



Expert work
This is work that requires human judgment, for example, personalized consultation.



Why enterprisewide intelligent automation?

The value of enterprisewide intelligent automation can be summed up in two words: **adaptability and scale**. Intelligent automation deployed across an enterprise can allow a business to rapidly scale up or down and adopt new operating models.

Although automating each type of work delivers value as shown to the right, applying intelligent automation to expert and cross-enterprise work enables transformation at a new level. AI and automation come together in expert and cross-enterprise to change the way humans and machines interact to analyze data, make decisions and perform tasks within a workflow or system.

| Work type | | | | |
|--|--|---|--|--|
| Repetitive Requires no human judgment and consists of routine, low-skill, repeatable tasks. These can create human issues such as high error rate and low morale. Examples: <ul style="list-style-type: none">– Clerical work– Copy and paste input– Manual data entry | Administrative Supports other work in core business operations. This work is high stakes but usually moderate skill. Examples: <ul style="list-style-type: none">– Compliance– Documentation for various regulatory systems | Departmental Keeps the department running but usually doesn't touch the core business product. Example: <ul style="list-style-type: none">– Expense tracking and approval | Expert Requires human judgment. Automation can remove the routine aspects of work and make experts more effective by keeping track of important details and putting necessary data at their fingertips. Example: <ul style="list-style-type: none">– Personalized consultation | Cross-enterprise Multiple departments are involved in run-the-business work. Examples: <ul style="list-style-type: none">– Processing insurance claims– Approving loans |
| The impact of automation | | | | |
| Improves the accuracy and speed of routine work by supplementing people with bots | Reduces the burden of paperwork and regulatory compliance by digitizing and managing various types of documentation | Reduces departmental work with low-code apps that handle processes that otherwise would involve hard-to-manage documents and spreadsheets sent over email | Increases the productivity of experts by assisting them with deeper insights and recommendations for action | Delivers start-to-finish customer experiences with straight-through processing and enables integration of individual business operations across the enterprise into one customized, simplified process |

Just ask the automation achievers.

How do other executives feel about the value of intelligent automation?
What are they seeing and doing?

In 2020, the IBM Institute for Business Value reported on a [comprehensive survey](#) of 1,500 executives from around the world to find out more about the value of intelligent automation initiatives today and in the near future. Conducted in collaboration with Oxford Economics, the study highlights a subset of organizations that **plan to allow intelligent machines to perform cross-enterprise or expert work in the next three years.**

“Not only are automation achievers leading the way in automation programs, they are also successful in the wider business arena. They rate themselves higher in responsiveness and productivity, and they outperform peers in profitability, revenue growth, and efficiency. They expect continued success in the next three years, predicting improvements that only widen the gaps.”¹

Automation achievers outshine peers in profitability and revenue growth



78% of automation achievers say they'll allow intelligent machines to make complex and mission-critical decisions within three years.

Before and after:
enterprisewide
intelligent
automation
in action

The following three organizations are using intelligent automation technologies to improve cross-enterprise and expert work with notable results.



Financial services

TD Ameritrade sets out to improve the entire customer experience while reducing long-term technical debt and maintenance costs

“When COVID hit, we saw huge amounts of market volatility and trading. The margin and option requests went through the roof.... Had we not already automated the process, we would have been in a huge bind.”

—**Michael McGraw**
Director of Enterprise Process Design,
TD Ameritrade



Before the automation

TD Ameritrade had different and disparate workflow systems across the organization and a lot of manual work going on, inhibiting its ability to compete without increasing resources.

To achieve business objectives, the company launched an enterprise workflow automation (EWA) project aimed at making the entire customer experience as engaging as possible. It started with key processes: institutional money movement and new account opening—expanding to account maintenance, cash management and account transfers.

After the automation

Process-specific performance highlights include:

- **Opening new accounts:** Decreased new account processing time by 30% for its retail business and more than 50% for its institutional division
- **Opening new margin and option trading accounts:** 97% of new margin and option requests go through immediately, and errors were virtually eliminated. New and existing customers can open accounts quickly.
- **Institutional money movement:** Eliminated errors from multiple handoffs by delivering system-generated, rules-based decisioning along with automatic field validation. Director of Enterprise Process Design Michael McGraw said: “We got roughly a 40% reduction in processing time, which is a major lift for a large, resource-consuming process. It was a win that allowed us to say, ‘Hey, if we use this new tool as it’s intended, we could see huge productivity gains.’”

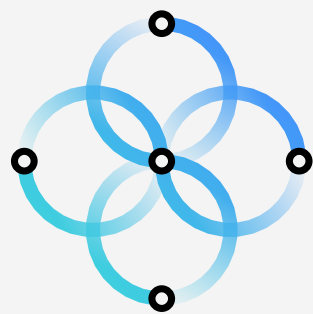
[Read the full case study](#) to learn more about the automation value, implementation and technology.

Green energy

ENN Group improves efficiency, satisfaction and productivity with AI assistants spanning employee and customer self-service functions

“Our AI automation platform provides employees with personalized AI skills, helps employees perform daily tasks, frees them from repetitive daily tasks and unleashes their creativity and imagination.”

—Li Qiang
IT Platforms Executive,
ENN Group Co. Ltd.



Before the automation

As a complex company committed to solving the energy challenges of tomorrow, ENN faced climbing operating costs, growing customer expectations for quality products and services, changing business requirements, and an ongoing need to keep employees satisfied.

To address these challenges, ENN deployed intelligent virtual assistants—spanning employee and customer self-service functions—to improve efficiency along with customer and employee satisfaction.

After the automation

- **IT desktop services AI assistant** was launched at the beginning of the pandemic. Within half a day, the virtual assistant helped enable thousands of employees with the technology they needed to work remotely. Previously, it would’ve taken days—perhaps even weeks.
- **“Little ENN Assistant” virtual employee** was introduced a year earlier into the company’s financial sharing center to perform basic back-office tasks such as monthly ledger booking. Overall, it completed 2,000–3,000 tasks per day, implementing over 70 business scenarios and resulting in millions of dollars of value and a 60% reduction in processing time.

And that was just the beginning. ENN built on its existing RPA foundation to include more intelligent automation capabilities. The single platform provides a foundation for future solutions along with the ability to consolidate, operationalize and govern data from across its operations, reducing costs while eliminating data silos.

ENN’s updated virtual AI assistants—now spanning employee and customer self-service functions—can query users on intent and then pass that information to RPA to perform appropriate actions. The time to get new virtual assistants up and running is two days versus multiple weeks.

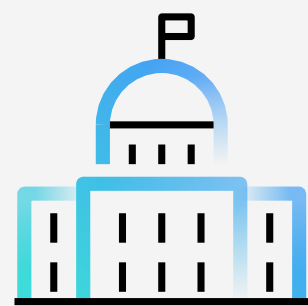
[Read the full case study](#) to learn more about the automation value, implementation and technology.

Government

**Administrative Office of the Courts
uses automation to support landmark
US Supreme Court ruling**

*“We’ve streamlined so much of the process....
The system isn’t just single-threaded. It’s
automated to the point that if anything sits
at any point out of the process in a queue, it’ll
automatically kick over to number two, number
three in order to keep the process going.”*

—Matt Garst
Head of North America Sales,
IBM Business Partner Prolifics



Before the automation

The Gideon v. Wainwright ruling of 1963 ensures the right of US criminal defendants to receive free public defense. It takes a lot for US courts to make good on that promise. An Administrative Office of the Courts (AOC) in the southeastern US set out to transform overburdened administrative processes to ensure the right to fair representation.

With 135,000 claims per year—and counting—processes and staff were struggling to keep up. More than 70,000 claims were on hold due mostly to simple errors that couldn’t be resolved until administrative staff manually notified the submitters.

After the automation

The team built a single integrated framework that automates the entire indigent defense claims process, from initial submission, workflow and reporting to approval by the chief justice, and payment.

“All the way through, the entire process is completely transparent,” says Matt Garst, Head of North America Sales at Prolifics. “Every step of the process, you can see who has it and where there are bottlenecks.... Before, when the AOC director would meet with the chief justice, she and her staff would spend countless hours in the individual systems pulling the necessary data for a full view of what was going on with the claims. Now, all she has to do is open up her iPad and show them.”

The automation accelerated claims processing by at least 77%, from 45 or more days per claim to 10 days or fewer—less than the time allotted by law. The solution also facilitated the first pay raise for the state’s public defenders in a decade. Most important, the automation is helping uphold the right to fair representation.

[Read the full case study](#) to learn more about the automation value, implementation and technology.

Technology basics (or how to choose the right tools from so many choices)



What tools or solutions do you need to achieve enterprisewide intelligent automation?

Let’s start by broadly looking at your automation solution options. You basically have the following four options, which many companies mix and match:



A note on automation platform solutions:

They’re typically suitable if you’re experiencing the following:

- You need some amount of customization but don’t want to have to write code from scratch for everything.
- You’ve tried packaged apps, but they’re not doing what you need them to do.
- You need to go to market fast and make changes quickly.
- You want your capabilities to be integrated rather than disparate products from different vendors.

Take the [fitness test](#) if you’re considering a platform solution.

1

You can write all code from scratch.

Pros

You own and control everything.

Cons

It becomes a black box, where the business side doesn’t have any visibility or understanding of the code. This option requires a lot of IT expertise and time to understand what the code does and to make any changes.

2

You can buy a collection of point applications.

Pros

You can select from a wide variety of vendors.

Cons

You act as the integrator as you buy different automation applications from different companies. The products don’t always work well with each other, and there’s no underlying foundation for things such as analytics.

3

You can buy packaged apps.

Pros

This option is ready made, and some niche apps fill specific needs, such as billing or digital marketing.

Cons

If your business doesn’t fit the mold of the packaged app, it’s not going to do all the things you want it to do. Packaged apps don’t have a lot of flexibility, so you have to work within their limits.

4

You can adopt an automation platform.

Pros

This option is an integrated set of foundational applications with which you can build any automation solution.

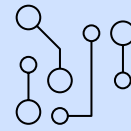
Cons

You don’t get to choose a different vendor for every application. With this option, you’re dependent on a single vendor for support across the platform.

What specific technology capabilities does enterprisewide intelligent automation require?

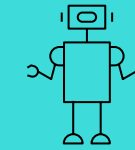
If you want to achieve enterprisewide intelligent automation, you're going to need some combination of the following four capability areas:

- **Process mining and modeling** to discover and analyze your processes
- **RPA and digital labor** to augment your workforce
- **AI and operational intelligence** to apply machine learning to your automation
- **Core automation** to digitize and automate your operations



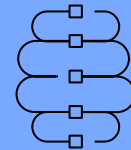
Process mining and modeling

- Understand existing process and task flows
- Generate process models
- Analyze impact on KPIs
- Simulate future processes using what-if analysis



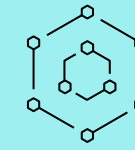
RPA and digital labor

- Perform repetitive tasks
- Act on data extracted from unstructured documents
- Automate systems that do not have APIs



AI and operational intelligence

- Classify and understand content
- Prioritize tasks
- Make predictive decisions
- Build intelligent chatbots
- Apply AI to operational data



Core automation

- Capture and process documents
- Manage work
- Automate decisions
- Digitize content

Let's dive deeper into some of these capabilities.

1

Process mining and modeling refers to the analysis and optimization of business processes based on event log data. Data mining algorithms are applied to identify trends, patterns and details.

Process mining and modeling enables you to:

- Understand existing processes and task flows so you can identify areas for improvement
- Analyze and simulate future processes using what-if analysis to help you start new automations with greater confidence
- Analyze impact on key performance indicators (KPIs)

2

RPA refers to the use of bots to automate repetitive activities. RPA bots mimic the actions of humans interacting with software applications.

RPA allows you to:

- Automate repetitive tasks to free up employees to focus on higher-value work, speed simple transactions and eliminate data-entry errors
- Combine it with intelligent capture to ingest unstructured documents and act on the data
- Make automation even more accessible with targeted, purpose-built chatbots that directly connect to the automation

3

AI and machine learning refers to the ability to use data to allow systems to learn, predict and recommend.

AI and machine learning allows you to:

- Understand unstructured documents without needing to know the format of the documents in advance
- Prioritize the tasks that workers perform, using machine learning to match the right people with the tasks they're best at
- Automate predictive decisions by combining business rules with predictive analytics
- Use intelligent chatbots to put a conversational interface in front of your automation
- Use the data generated by all these capabilities to gain unique insights into how to make your automation more effective

4

Core automation refers to traditional automation capabilities that are essential for digitizing and automating your operations—content services, capture (document processing), workflow and decision management.

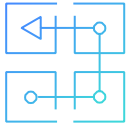
See the next page for a deeper explanation of core automation capabilities.

Core automation capabilities



Capture (document processing)
Import unstructured paper or electronic documents and extract data through recognition, classification and AI.

- Benefits:**
- Speed extraction of data
 - Reduce data entry errors
 - Gain insights from unstructured documents



Workflow
Design and manage how work gets done by humans and systems, start to finish.

- Benefits:**
- Choreograph human and automated activities
 - Improve consistency across business operations
 - Increase straight-through processing



Decision management
Gather, manage, execute and monitor decisions—those repeatable rules and policies—that are part of daily business operations.

- Benefits:**
- Rapidly adapt to business change
 - Increase consistency and auditability of decisions
 - Integrate with predictive analytics



Content services
Securely manage the full lifecycle of content—share, manage and collaborate on unstructured or semi-structured information including documents, text, images, audio and video.

- Benefits:**
- Gain instant access to content
 - Connect content to digital business applications
 - Manage governance and compliance

Where do you start?

1

Ask the right questions. In a large business, you might have dozens of potential automation projects, which means that choosing where to start can be paralyzing.

The following six questions aren’t exhaustive, but they can help you and your team focus on an effective starting point:

- How quickly do you respond to customer requests?
- How does your customer experience compare to other leaders in the industry, including your born-digital competitors?
- Do your employees spend a significant portion of time doing manual work that could be automated?
- Do your competitors offer more products and services targeted at specific niches in the market than you do?
- Can you rapidly modify your front-end and back-end software applications as customer expectations and government regulations change?
- What percentage of customer transactions result in exceptions that must be manually processed?

2

Pick a significant but not mission-critical project. Find an example that will be worth the effort and demonstrate value when completed. Don’t pick a project that can break everything.

3

Begin with an end in mind. Ensure the first project is a front-office or back-office operation that is important to the business and in which you’ve mapped out the desired state or experience.

4

Choose a technology solution that allows you to start anywhere, integrate effectively and scale. Choose a flexible solution that comes with a full set of capabilities to enable cross-enterprise and expert work but allows you to use only what you need when you need it.



Tip: Look at the leaders in your industry—especially those that are growing fast—to see what’s possible. Keep in mind you’re looking at all of their work, which may include dozens of individual automation projects that add up to a transformative approach. Pick one or two projects as a starting point. Make each project individually valuable, knowing that as they build and interconnect, the benefit can be exponential.

Nine practices of highly successful programs



What should you do to ensure success?

In this section, we share five strategic dos based on lessons learned from hundreds of enterprisewide deployments of intelligent automation.



1

Do clearly identify where you're having the most pain or opportunity to increase business value.

For example:

- Too much repetitive manual work
- Content is difficult to find and use
- Limited visibility across operations
- Difficult to manage regulatory compliance
- Time consuming or labor intensive to extract data from documents
- Inability to provide customer self-service
- Difficult to understand and improve business operations
- Too much dependence on IT—can't keep up with demand for new software applications

2

Do assign clear owners. Ensure that technology stakeholders and business owners are on the same page or that there's a strategic leader who can make sure all components work together, not in siloes.

3

Do aim for what you can do in the next 3–6 months. Start small. Go for a quick win (or fail). Having said that, take the time to deliver value. A project that takes longer than 90 days is not a failure.

4

Do take a programmatic approach.

Here's a 4-step example:

- **Step 1. Discover:** First, understand how your processes are really running. Apply process mapping, modeling and mining to your core business processes to pinpoint operational inefficiencies and opportunities.
- **Step 2. Decide:** Identify what to automate based on insights from multiple relevant data sources. Find your operational sweet spot if you haven't already: this is where you have the most authority and advantage over your competition if you achieve operational excellence.
- **Step 3. Act:** Apply the right technologies to automate the right tasks and processes.
- **Step 4. Optimize:** Continuously improve workflows and reallocate digital resources to reduce process and workflow blockers.

5

Do promote your early wins. "Show off" new processes to gain traction for your initiative. This is good change management.

What shouldn't you do to ensure success?

In this section, we share four strategic don'ts based on lessons learned from hundreds of enterprisewide deployments of intelligent automation.



6

Don't try to solve everything at once. Avoid a “one and done” approach. Enterprisewide automation is an ongoing cycle. With a cyclical approach, your automated solution should be producing good data that can provide more insight on how to optimize more, going forward.

7

Don't forget about digitizing and automating decision-making in your process. Processes and projects get stalled when this is neglected. It's not enough to just digitize documents. You need to digitize the logic and decisions in workflows, too. If you want to improve efficiency or avoid stalled processes due to manual intervention, you need digitized feedback loops to constantly keep decision rules in sync with the current process and not a point in time in the past.

8

Don't forget about streamlining the employee experience when trying to improve the customer experience through automation. Strategically automate the employee experience for back-office efficiency and frontline effectiveness.

9

Don't allow free technology to dominate your strategy. This can lead to shadow IT in multiple departments, compliance issues and a lack of enterprise strategy.

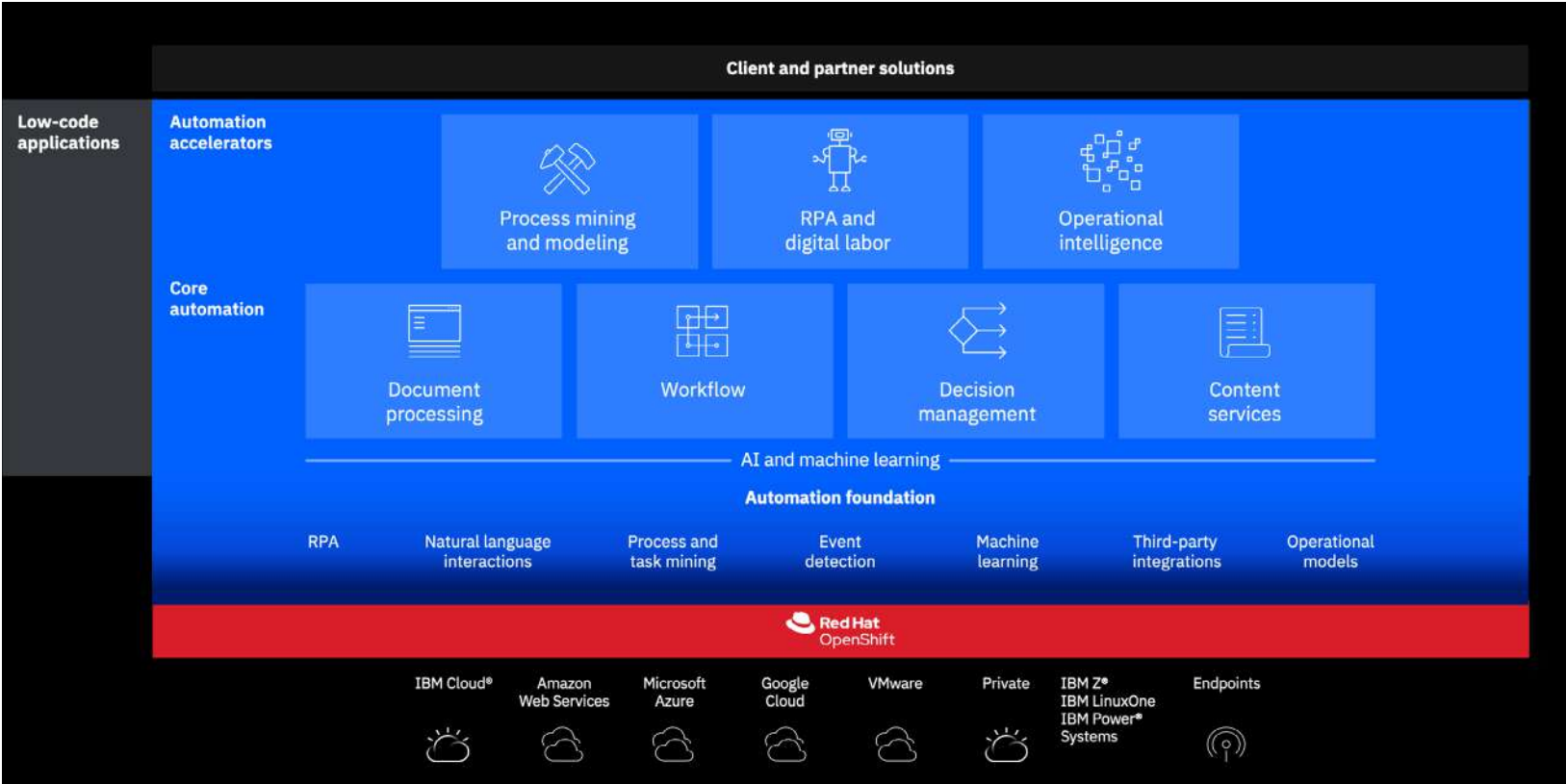
What IBM offers



IBM offers a modular set of integrated AI-powered automation software, built for any cloud. With one of the most complete sets of automation capabilities—RPA, capture, content, decision management, process modeling, process mining and workflow—it includes the essentials to help drive business transformation across your enterprise and solve some of the toughest operational challenges.

With [IBM Cloud Pak® for Business Automation](#), you can create agile business applications, apply actionable insights using shared data and make continuous improvements.

IBM Cloud Pak for Business Automation



How it works

At the center of IBM Cloud Pak for Business Automation are core automation capabilities that allow you to digitize and automate your business operations:

- **Document processing:** Extract data from unstructured paper or electronic documents.
- **Workflow:** Get work done through a sequence of steps performed by humans and systems.
- **Decision management:** Use rules and policies to automate repeatable decisions that would otherwise have to be made manually.
- **Content services:** Manage unstructured or semi-structured documents, text, images, audio or video.

Above the core, we add automation accelerators that let you take advantage of emerging technologies that enhance core capabilities:

- **Process mining and modeling:** Automatically discover and graphically represent your company’s business automation to document, analyze and improve how the company operates.
- **RPA and digital labor:** Make information-centric jobs more productive by automating repetitive tasks with RPA bots and providing self-service automation for nontechnical professionals.
- **Operational intelligence:** Gain insight into your business operations by capturing events generated by operational systems. The data is presented in dashboards and made available to data scientists for analysis using AI and machine learning.

Our customers then use these intelligent automation capabilities to build low-code applications, no-code applications, and other client and partner solutions.

IBM Cloud Pak for Business Automation can be flexibly deployed on any cloud, on premises or in a hybrid cloud environment. It provides containerized software that’s Red Hat® OpenShift® certified and built on a common analytics layer that gives you insights into your operational insights and productivity. You can start with one capability and build from there.



Learn more about IBM Cloud Pak for Business Automation. Get the [Buyer’s Guide](#).

IBM Cloud Pak for Business Automation is part of the IBM Automation portfolio, built on a set of shared automation services that help you get insight into how your processes run, visualize hotspots and bottlenecks, and use financial impact information to prioritize which issues to address first. Learn more about [IBM Cloud Paks for Automation](#).

27 industry use cases for IBM Cloud Pak for Business Automation

This is just a small sample of how IBM Cloud Pak for Business Automation is helping clients improve business operations on behalf of customers, citizens and employees.

Cross-industry

Customer relationship management
Follow up the same day with customers based on CRM data, providing personalized and targeted messages.

Content sharing
Provide better customer service by offering external content share for financial transaction processing.

Seamless internal training
Reduce time, effort and cost by seamlessly sending and managing internal requests for training, devices and support.

Energy and utilities

Requests for utilities
Enable customers to submit documents through chatbots to request utilities.

Retail and distribution

Retail—customer returns
Improve customer experiences by handling spikes in customer returns with straight-through processing.

Vendor relationship management
Automatically respond to contract expiration and updates.

Inventory tracking
Capture product SKU info to formalize inputs to multiple systems.

Claims management
Route work items within necessary SLAs.

Billing and dispute management
Reduce human inefficiencies in low-dollar, high-volume uncategorized transactions.

Government

Federal purchase orders
Ingest purchase orders and pull off relevant item data to compare against the US General Services Administration (GSA) website.

Federal legal review
Quickly analyze unstructured information for relevancy and produce as evidence for a legal case.

SNAP benefit control
Modernize to get benefits in the hands of those needing them faster.

Unemployment claims control
Significantly reduce fraudulent unemployment claims by automating eligibility decisions.

Judicial and criminal proceedings
Eliminate paper processes and control the lifecycle of digital files.

Family care modernization
Modernize child and family care applications by centralizing business rules and adjusting them faster.

Workers’ compensation processing
Expedite the resolution of workers’ compensation claims with automated case management.

Public services—issues reporting
Residents submit issues and photos in minutes with an automated 311 reporting and response.

Professional licensing management
Automatically manage state-issued professional licensing.

Contractor offboarding
Automatically offboard contractors upon term completion, reducing human involvement.

Financial services

Customer insight
Retain and gain market share by unlocking customer data from challenging documents to create better customer profiles and better understand spending trends.

Bill payment
Offer an easy way for customers to pay their bills quicker.

Financial IT operations
Provide desktop support with attended bots.

Fraud investigation
Eliminate the need to manually create a “super sheet” for fraud investigators by automatically pulling and parsing relevant customer purchase history.

Self-service dispute
Enable customers to dispute transactions with a single click.

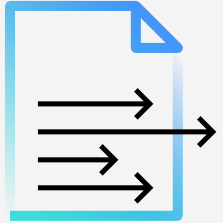
Lien expedition
Provide customers with an expedited lien release package.

Insurance claims
Enable customers to submit documents and claims with their mobile device, providing convenience and an improved user experience.

Personalized financing
Increase revenue by offering highly customized, real-time financing offers at the time of purchase.

Next steps

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New Orchard Road
Armonk, NY 10504

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1. Automation and the future of work, *IBM Institute for Business Value*, July 2020. ibm.com/downloads/cas/O17AWNv6

