IBM Digital Business Automation

Field Guide

IBM

Download the current version of the IBM
Digital Business Automation Field Guide $\downarrow$

http://ibm.biz/Ibm-digital-business-automation-field-guide

Build resiliency & adaptability with automation & AI

You have heard about powerful approaches like Business Process Management (BPM), Business Rules Management (BRM), Enterprise Content Management (ECM), and Robotic Process Automation (RPA). IBM offers a way to improve, reinvent, and transform your business operations with Digital Business Automation (DBA), which combines these capabilities into a single platform.

DBA: DIGITIZE AND AUTOMATE BUSINESS OPERATIONS

Digital. Find opportunities to digitize. Examine the interaction between process participants (workflows), manual operations (tasks), paper trails (capture), how documents are managed (content), how decisions are made (decisions) and workforce performance visibility (operational intelligence).

Business. Target business processes. In DBA initiatives, this includes the work your employees do to serve your clients or their colleagues.

Automation. Automate human tasks with digital workers. Free up time for your employees to focus on more important customer-centric and added-value activities.

What's inside?

This field guide provides a high-level overview of IBM's Digital Business Automation (DBA) approach and platform.

LEARN IT
A summary of the concepts.

GET STARTED
Tips to start the journey to digitize and automate your business processes.

Realize the benefit of Digital Business Automation (DBA)

Every enterprise has defined business processes that range from simple and repetitive to complex and unique. Business automation remixes work by blending automated and manual human processes to fuel growth, reduce cost, and ensure compliance. A good first step in digital business automation is to identify manual processes as candidates for automation.

SAVE TIME AND $$ WITH AUTOMATION

Improve your customer's experience and drive growth. Better serve your customers by automating difficult and time-consuming processes. You can scale and offer more services and increase satisfaction through personalization.

Reduce cost and errors, and improve consistency. Be more resilient as you automate expensive, error-prone tasks that a computer can easily figure out.
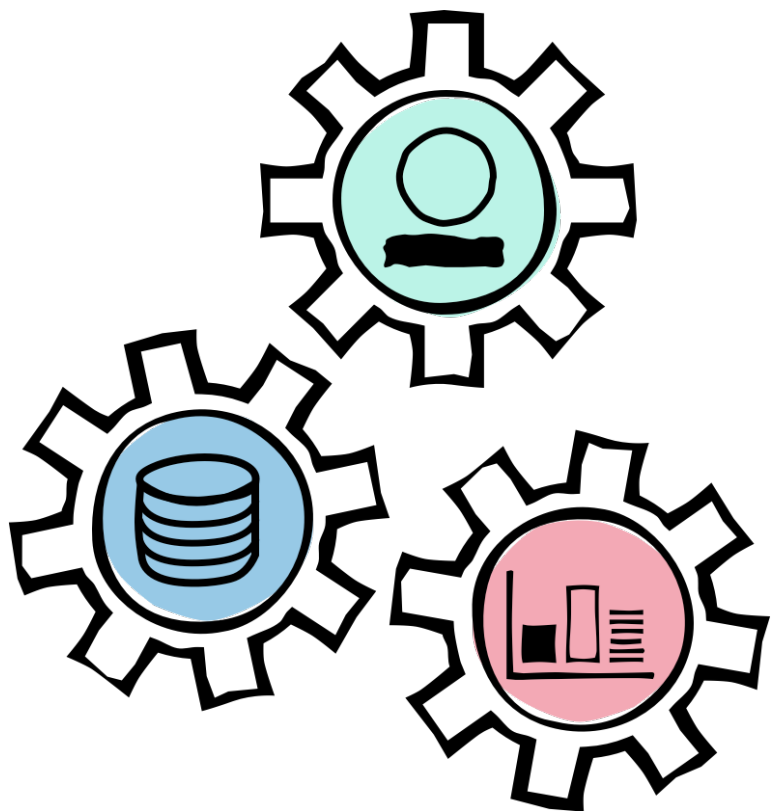
Govern your business processes. Adapt to the rapid pace of business policy change, organizational change, and product and partner changes while ensuring the traceability required to comply with regulations.

⊕ **Learn more**

Discover the power of the IBM automation software platform.
https://www.ibm.com/automation/software

A digital strategy is essential to streamlining processes
and automating your business.

What work is best suited for automation?

Apply automation to the many types of work in your organization. Automation is especially effective in handling tasks that do not require human judgment.

NOT ALL WORK IS EQUAL

Repetitive work. Automate routine, repeatable tasks that don't require human judgment to help improve the accuracy and speed of routine work. Supplement people with bots and digital workers.

Administrative work. Digitize and automate the management of core business operations to reduce the burden of paperwork and regulatory compliance.
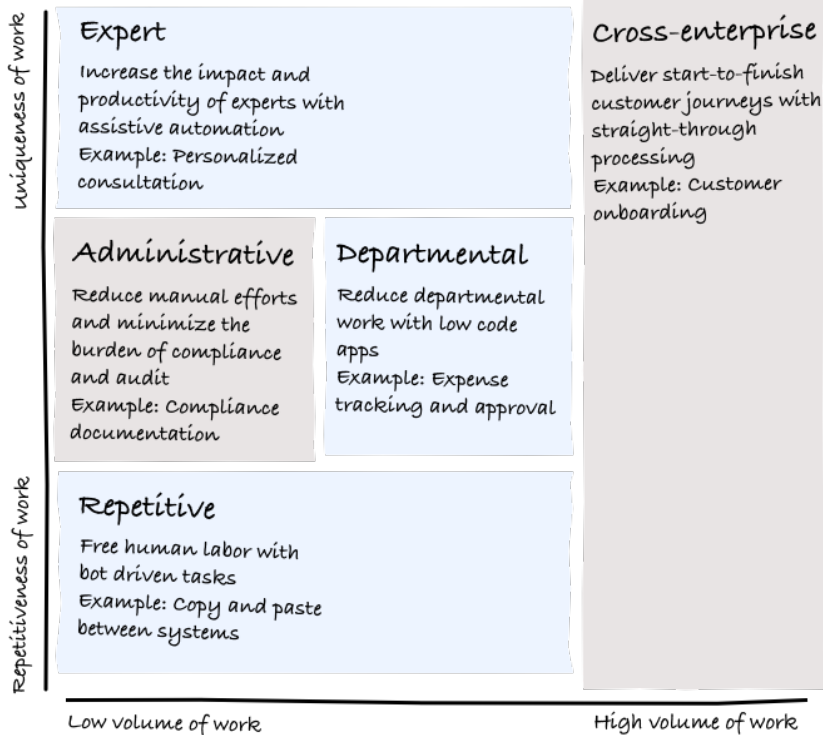
Departmental work. Run your departments with low-code apps that handle processes that otherwise would involve hard-to-manage documents and spreadsheets sent via email.

Expert work. Make data available to expert workers to help them formulate deeper insights and expert recommendations.

Cross-enterprise work. Deliver start-to-finish customer experiences with automated straight-through processing that shields customers from departmental boundaries.

⊕ **Learn more**

See Chapter 2 in The quick and practical guide to digital business automation.
https://www.ibm.com/downloads/cas/QXKAEKWR

Uniqueness of work

Expert

Increase the impact and productivity of experts with assistive automation
Example: Personalized consultation

Cross-enterprise

Deliver start-to-finish customer journeys with straight-through processing
Example: Customer onboarding

Administrative

Reduce manual efforts and minimize the burden of compliance and audit
Example: Compliance documentation

Departmental

Reduce departmental work with low code apps
Example: Expense tracking and approval

Repetitive

Free human labor with bot driven tasks
Example: Copy and paste between systems

Repetitiveness of work

Low volume of work   High volume of work

Different types of work and automation areas across your organization.

Typical application areas

All industries can benefit from some digital business automation. Either for vertical processes specific to an industry (supply chain management in manufacturing and retail, loan origination in banking, power grid management for utilities, ...) or generic processes (client or employee onboarding, eligibility, claim processing, loyalty programs, pricing, rating, fraud detection, intelligent extraction, ...) that apply across industries.

START FROM WHERE YOU ARE

Improve workflow. Examples of workflows that can be improved using automation include claims handling, end-to-end loan origination, grant approval, customer service or call center, engineering change management.

Straight-through processing (STP). Use automation to improve the processing of eligibility determinations, pricing, promotional offers, claims assessment and benefits determination.

Compliance and decision support. Regulatory requirements, business policies, fraud assessment, self-service and problem resolution all benefit from automation.

⊕ **Learn more**

Check out IBM DBA client stories.
https://www.ibm.com/automation/software

Banking

John Doe

1234 5678 9012 3456
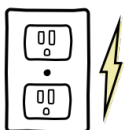
Insurance

Healthcare

Government

Energy & Utilities

Travel & Transportation

Telcom

Retail

Automation benefits all industries.

Help your employees

The best way to find opportunities for DBA is to observe people. Look at what they do and how they spend their time: do they retype data from one application or system to another, decipher documents to extract information, set reminders, consult policies to make decisions, or any other task that might be automated.

LOOK AROUND. OPPORTUNITIES ARE EVERYWHERE.

Hands. Observe the amount of time and frequency that your employees interact with a computer.

Eyes. Find out what documents your employees need to look at to accomplish their job.

Brain. Determine if decisions that progress a business process are prescriptive or intuitive.

Memory. Figure out how to organize the information required throughout a business process, both for the short and long term.

Central nervous system. Identify the actions required to coordinate the steps of a business process, to pass or delegate tasks from one stakeholder to another, and to turn from one system to another.

⊕ **Learn more**

Learn about IBM's DBA Reference Architecture.
https://www.ibm.com/cloud/architecture/architectures/dba-architecture/overview

Right Brain
Cognition
(Operational intelligence
& Machine learning)

Left Brain
Business policy & business rules
(Operational intelligence &
Decision automation)

Memory
Share and govern
unstructured
information
(Content)

Eyes
Extract from unstructured
documents (Capture)

Get insights from monitoring
dashboards (Operational
Intelligence)

**Central
nervous system**
Orchestration of work
(Workflow)

Hands
Manipulation (Tasks)

Spot automation opportunities by examining
how people work.

DBA platform capabilities

There is a very natural and pragmatic mapping of these physiological elements or traits to the competencies offered by digital business automation as a platform and set of software capabilities.

POWER TO THE PEOPLE!

Tasks. Enable employees to focus on higher level activities by automating individual manual, mechanical, and repetitive tasks.

Capture. Automatically extract pertinent data from documents.

Decisions. Automate decisions based on policies and business rules.

Workflow. Orchestrate participants in your business processes, from humans to systems.

Content. Organize documents and information content and make it accessible at scale.

Operational intelligence. Make business operations transparent and visible through dashboards and derive insights with machine learning.

⊕ **Learn more**

Learn about IBM's DBA Architecture.
https://www.ibm.com/cloud/architecture/architectures/dba-architecture/overview

Tasks

Hands 🔴
Manipulation (Tasks) and
smart work automation
(Digital workers)

Workflow

**Central
nervous system** ⚫
Orchestration of work
(Workflow)

Content

Memory 🟡
Share and govern
unstructured information
(Content)

Capture

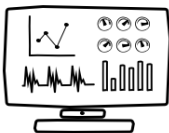**Eyes** 🟢
Extract from
unstructured
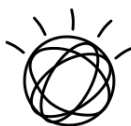documents (Capture)

Decisions

Left Brain 🔴
Business policy &
business rules
(Operational intelligence
& Decision automation)

Operational Intelligence

Eyes 🟢
Get insights from
monitoring dashboards
(Operational Intelligence)

Right Brain 🟠
Cognition
(Operational intelligence
& Machine learning)

Platform capabilities to digitize and automate your business.

Plan and execute your automation effort

Your business operations work often involves interaction between people and IT systems or applications. Architect solutions that automate decision making by using workflow tools, business decision processing engines, and a content management solution.

THINK BIG, START SMALL, SCALE FAST

Build an automation roadmap. Focus on the work you do on a regular basis that noticeably improves your customer or employee experience as candidates for automation.

Start the journey. Pick a significant, but not mission-critical automation project. Be sure it is worth the effort and demonstrates value.

Apply AI. Build AI into your automation to improve the quality of decision making, perform intelligent data capture, and detect and act upon hidden patterns in data collected by operational systems.

Realize the benefit. Ensure each project serves your overall automation goal with a resulting benefit and value that is exponential.

⊕🔍 **Learn more**

See Chapter 4 in The quick and practical guide to digital business automation.
https://www.ibm.com/downloads/cas/QXKAEKWR

Discover new patterns

Improved satisfaction

Secure

Increasing value

AI

Content management

Eliminate Repetitive tasks

Start

Human workflows

An incremental path to automation.

Design your automation solution

Achieving hyperautomation is no small feat. It requires a disciplined incremental approach focused on continuously building deliverables valuable to business users.

BALANCE COST AND VALUE

Determine how much is enough. Don't apply technology or software capabilities to solve every DBA opportunity. Iterate. Think through your business functions and capabilities to determine how much of each is worth including in an iteration.

Follow the good enough principle. Estimate how much modeling, simulation, process orchestration, decision support, or task automation will bring immediate benefit to your employees or users and improve their work and performance.

Collaborate with others. Conduct a collaborative solutioning scoping exercise that involves all functions, from business representatives to implementers and designers. Follow a well-structured approach, such as IBM's Enterprise Design Thinking.

⊕ **Learn more**

Learn about IBM's DBA Reference Architecture.
https://www.ibm.com/cloud/architecture/architectures/dba-architecture

Determine how far to go with each capability based on your business problems and priorities

Capability	Basic, essential	Innovative, intelligent	Breakthrough, transformational

- Straight-through processing
- Case management
- Content management
- Service choreography
- Decision automation
- Decision support (e.g., cognition)
- Service integration
- Automated UI entry (RPA)
- Guided UI
- Monitoring & Analytics
- Orchestration
- Simulation
- Process re-engineering
- Modeling

Choose the right combination to build your solution.

Innovative & smarter claim management with DBA

Here is a practical illustration of DBA in the context of auto claim processing: digital workers free humans from mundane and repetitive tasks while keeping case and content management up to date for traceability and auditability purposes.

SIMPLIFY AND ENHANCE THE CUSTOMER EXPERIENCE

This scenario uses the capability of workflow management, rule-based decision making to assign roles and select best offer, task automation with digital workers, content management to organize the collected documents, operational intelligence to give claim managers real-time insights on their business, and intelligent capture at the point of the accident.

⊕🔍 **Learn more**

Check out the Autombile insurance claim processing architecture.
https://www.ibm.com/cloud/architecture/architectures/dba-auto-insurance-claim-processing

Nathalie's automated insurance app walks her through the claim process ...

A Digital worker examines the claim details and works with stakeholders and the platform to ...

Initial review

Finds Body shops

Gathers data

Collects repair quotes

Assigns Adjuster

DBA

Selects best offer

Agent

Adjuster

Claims managers compare claim statistics to improve service ...

Time to process

Alerts

Customer satisfaction

Claims manager

Meanwhile, Nathalie accepts the proposed settlement and gets her car repaired quickly ... ♡

$$
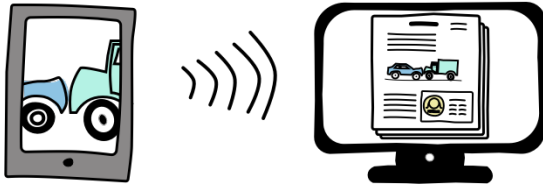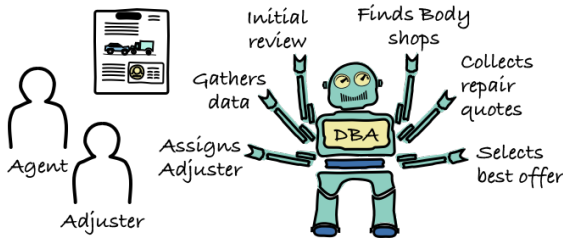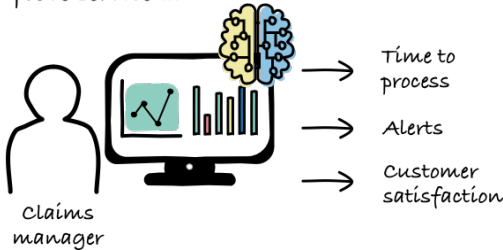
Workflow management

Workflows bring together the tasks and content used to complete business processes that have the potential for automation. Workflows orchestrate tasks between humans and systems, keep track of what is being processed, provide visibility to team workloads and workflow status and progress, and log execution data used to derive business improvement insights and for auditability.

BUILD A WORKFLOW TO AUTOMATE YOUR PROCESSES

Create consistent customer experiences. Provide a consistent and transparent user experience with reusable, standardized workflows that can be used across your enterprise. Seamlessly blend structured and unstructured processes into a smooth, repeatable workflow.

Automate your end-to-end workflow. Manual workflows can easily disrupt or slow operations. Automate as many of your business workflows as possible to increase agility, visibility, and consistency across your processes.

Build business automation services to digitize and scale work. By increasing automation and reducing manual work, you increase your capacity to scale up the volume of transactions that you can run through the automated processes.

⊕ **Learn more**
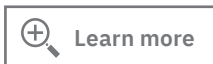
Use IBM's Reference Architecture for Workflow Management.
https://www.ibm.com/cloud/architecture/architectures/workflowDomain
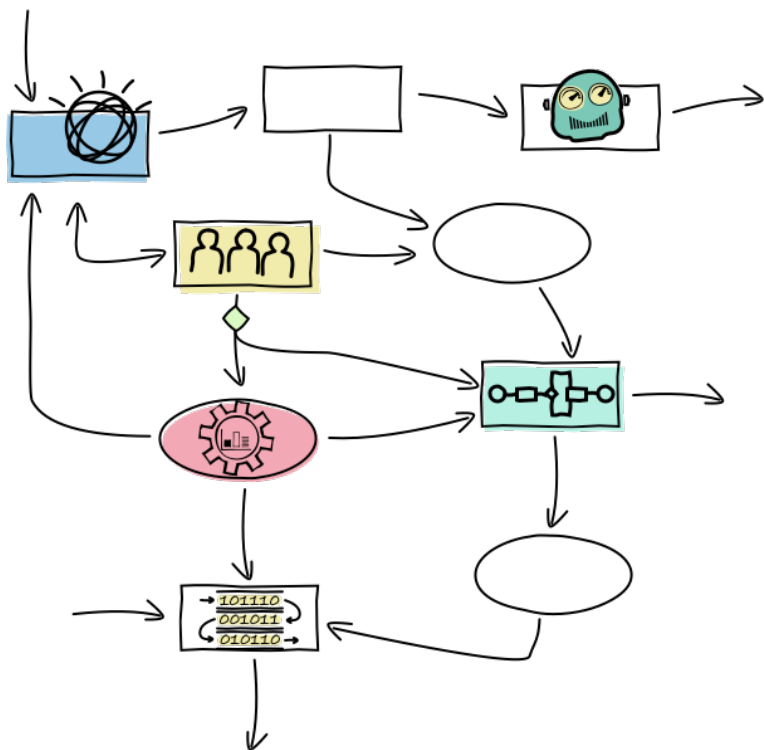
Automate your business processes.

Task automation

Bots, digital workers, or digital assistants expand and leverage the value of an automation platform by completing recurring tasks fast and accurately, allowing your employees to focus on high-value work. A bot's role can be as mundane as retrieving data from one application and keying it into another (basic bot). A more valuable bot can add AI and cognitive capabilities to increase autonomy and interactivity (digital worker).

REPETITIVE TASKS ARE FOR BOTS, NOT PEOPLE

Accelerate time to value. Create, test, and deploy new automation schemes in hours, instead of days or months, by assembling predefined elementary skills such as sending an email, reading the content of a spreadsheet, or entering data in a web page form.

Improve accuracy and throughput. Eliminate data manipulation mistakes and complete automated tasks at a fast and predictable pace.

Create more powerful bots with DBA capabilities and AI. By allowing bots to use rule-based decisions to guide their actions, workflow to handle exception cases, or document capture to deal with unstructured data, you can have the bots and digital workers perform a wider array of tasks.

Expand your workforce with digital workers. By modeling job roles using predefined digital worker skills, you can automate repetitive and time-consuming sophisticated human tasks and activities to augment the productivity of your users with a digital workforce.

⊕ **Learn more**

Use IBM's Reference Architecture for Task Automation.
https://www.ibm.com/cloud/architecture/architectures/roboticProcessAutomationDomain
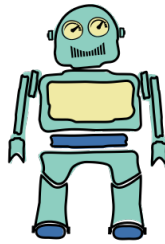
Bot
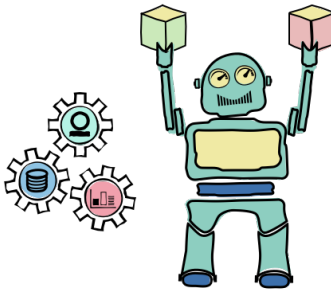
DBA-augmented Bot
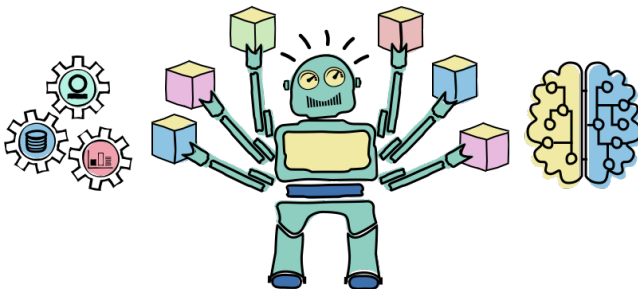
From simple automation bots to powerful digital workers.

Content management

Investing in digital transformation and reinventing under-performing, high-friction business processes requires applications to have access to and control over a wide range of content, including documents, images, and audio files. Content management services provide capabilities for collecting, governing, managing, and enriching enterprise content within any application.

MAKE THE RIGHT CONTENT AVAILABLE AT THE RIGHT TIME

Create innovative, data-driven applications. Save developer time and enhance business applications with integrated content services. Store, organize, and manage content so users can easily access and retrieve relevant content in a governed manner.

Extract content intelligence. Tap into your content to promote employee collaboration, enhance workflows, and apply AI to extract insights and optimize knowledge-worker productivity.

Securely access content anywhere. Enable secure, efficient, consistent, and accurate content collaboration and decision-making. Access content services on mobile devices, desktops, and as discrete capabilities embedded in workflows or applications**.**

Use a cloud-native architecture. Develop content applications faster on any cloud with a flexible container platform.

⊕🔍 **Learn more**

Use IBM's Reference Architecture for Content Management.
https://www.ibm.com/cloud/architecture/architectures/contentManagementdomain

22
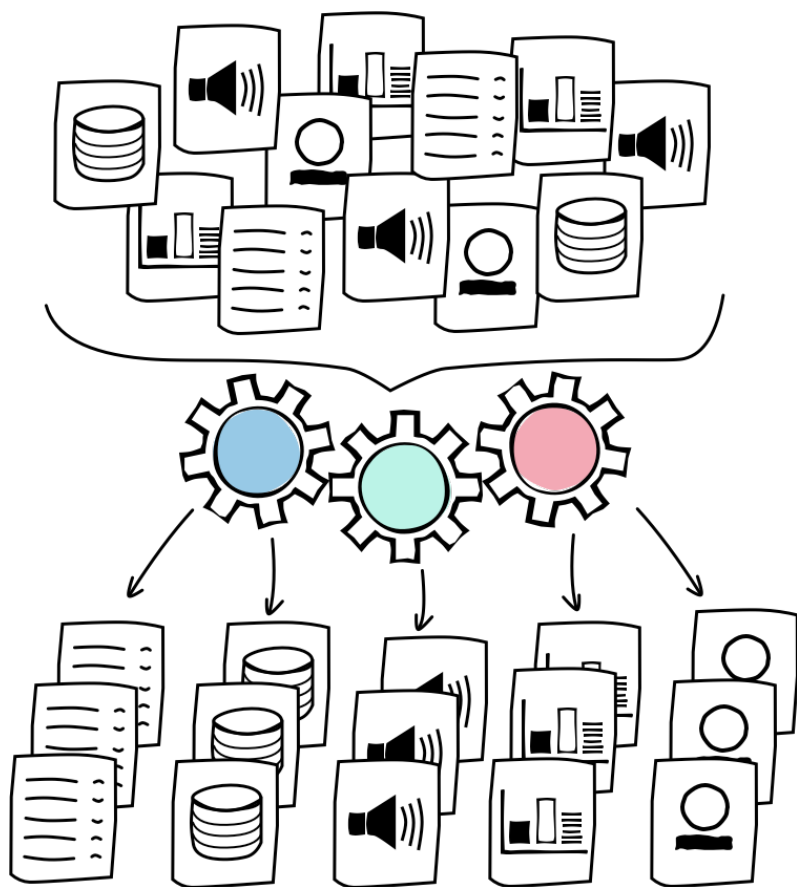
A solution to manage all of your electronic content.

Data capture

Every day your enterprise produces and receives massive volumes of documents including a multitude of scans, images, PDF files, and emails, which are typically stored as-is in an Enterprise Content Management repository. Data capture enables you to automatically classify these documents and extract meaningful data to make this content more actionable and valuable to your organization.

TO BE DIGITAL, OPERATE ON FULLY DIGITIZED CONTENT

Multichannel capture. Ingest documents from various sources and process them with customizable rules and logic.

Capture workflow. Orchestrate the different steps of the data capture process.

Document recognition. Classify the type of document based on techniques such as rules, machine learning, pattern matching, ontologies, text analytics.

Data extraction. Apply a combination of Optical Character Recognition (OCR) techniques, ontologies and other methods to automatically identify and extract relevant information within documents. Tools and workflows then verify and validate the extracted data before transferring it to downstream business applications.

$\oplus$ **Learn more**

Use IBM's Reference Architecture for Capture.
https://www.ibm.com/cloud/architecture/architectures/captureDomain

Invoice

Account representative

Customer

Service date

Itemized services

Total bill

Acme Inc.

From:

To:

Date:

Invoice:

Total:
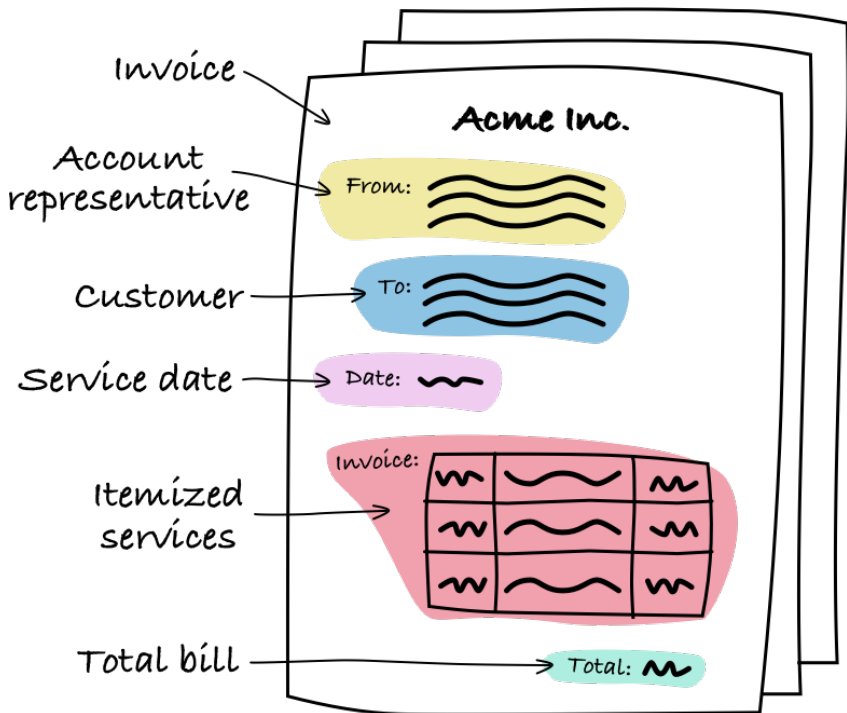
Extract digital data from scanned documents.

Business decision automation

Your enterprise makes thousands of operational decisions every day. Many decisions are well-defined, based on your current business policies and industry regulations rather than personal judgment. Capture and automate repeatable business decisions to remove manual work from the decision process, improve responsiveness and consistency, and streamline your business process.

STREAMLINE REPEATABLE DECISIONS WITH BUSINESS RULES

Validate. Determine whether the context of business information, such as a loan request or an insurance claim, is complete and agrees with the enterprise's business policies and industry regulations.

Calculate. Automate the key calculations that drive your business operations, such as determining eligibility for a service or calculating prices, taking into account all the variants, adjustments, and exceptions across different channels, geographies, or specific client relationships.

Assess. Operationalize your explicit risk and reward models to guide your next best action during interaction with customers, based on your own KPIs and business priorities. This rule-based assessment often works in tandem with predictive models built from analytics, artificial intelligence (AI), and machine learning methods.

⊕ **Learn more**

Use IBM's Reference Architecture for Business Decision Automation.
https://www.ibm.com/cloud/architecture/architectures/
businessDecisionAutomationDomain
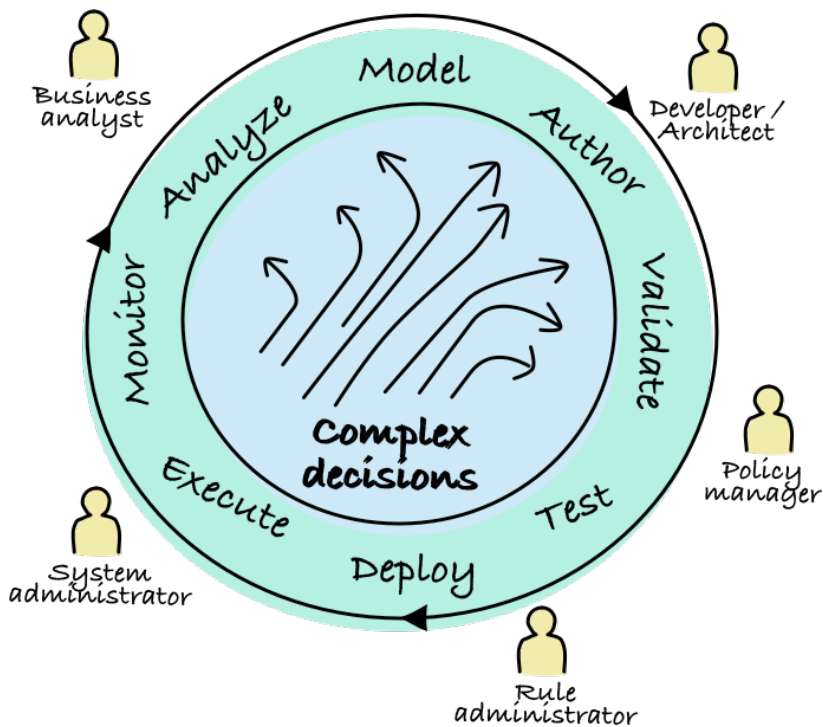
A business-friendly platform to author, govern, and execute business logic.

Operational intelligence

Inefficient processes cost time and money. Bottlenecks, complexities, and a lack of understanding mask opportunities for process improvement. With process modeling, you gain better visibility into business operations, which help you create efficiencies at scale. Consider every decision that needs to be made as part of a business process. Processes are greatly enhanced when you get a recommendation based on previous decisions in similar situations.

OBSERVE, UNDERSTAND, AND IMPROVE BUSINESS OPERATIONS

Create a complete and cohesive vision. Systematically collect and link the business events from the different business automation components sources (workflow, decisions, content...) then make them available both in short term storage to produce descriptive analytics and long term storage for predictive analytics.

Understand business operations. Provide visual insights through dashboards, reporting on raw business events as well as synthetic ones that result from correlation across the different steps of your business processes.

Improve business operations. Apply machine learning to business event history to create predictive models that you can integrate into your process. You can leverage this learning to, for example, assist in making the most appropriate choice in the course of a human task or readily make available the most relevant documents while processing a case.

⊕🔍	**Learn more**

Use IBM's Reference Architecture for Operational Intelligence.
https://www.ibm.com/cloud/architecture/architectures/
operationalIntelligenceArchitecture
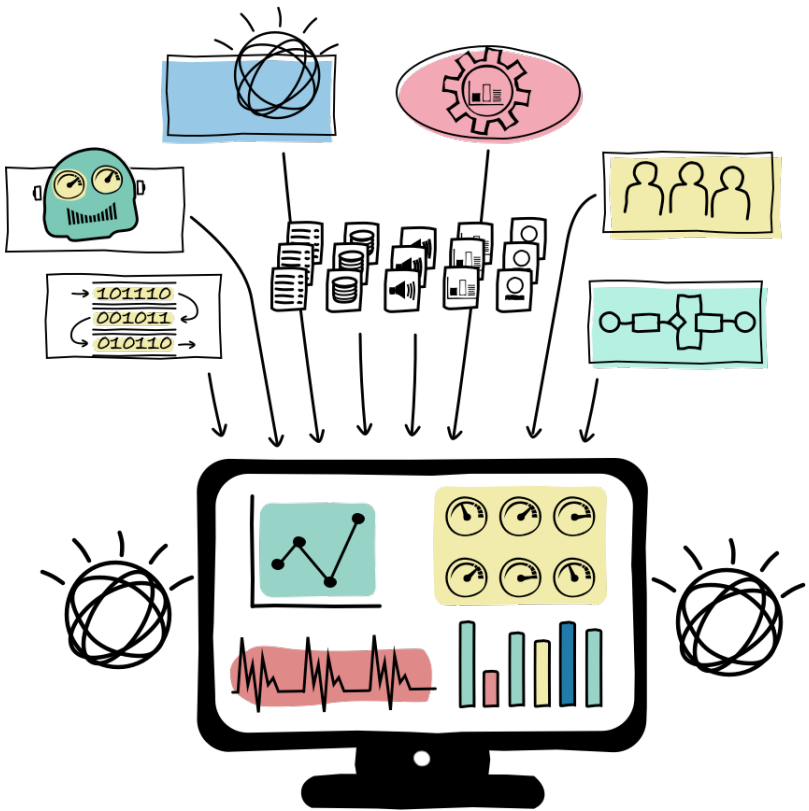
Display events on business dashboards and apply AI to derive insight.

IBM Cloud Pak for Automation

IBM Cloud Pak for Automation is the platform that provides DBA capabilities you can use based on where you are in your journey to cloud. Select a form factor based on your operating target. The Cloud Pak includes both VM-based and containerized offerings to enable you to move to the cloud at your own pace with a single and flexible licensing model.

FREE YOUR TEAM FOR HIGH-VALUE WORK

Multiple form factors. DBA capabilities are available either as classic virtual machines (VMs) running on premises or public clouds, in containers, or as SaaS offerings managed by IBM.

Portability across clouds. Packaging options enable you to use all the cloud benefits, ranging from private to hybrid to public clouds while deploying automation solutions to serve your line of business in the most appropriate and economical way.

Born on the cloud. To take advantage of cloud benefits, repackage legacy capabilities in containers or as SaaS offerings and create new DBA capabilities as containers. Examples include: Business Automation Studio, Business Automation Insights, Digital Workers, Business Automation Navigator, Automation Workstream Services.

Flexible licensing. Use the automation capabilities that best support each of your automation initiatives and solutions.

⊕ **Learn more**
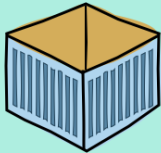
Check out the IBM Cloud Pak for Automation.
https://www.ibm.com/cloud/cloud-pak-for-automation

IBM Cloud Pak for Automation

Form factor / Capabilities	Classic VM	Container	SaaS
Workflow	✓	✓	✓
Content	✓	✓	✓
Capture	✓	✓	✓
Decisions	✓	✓	✓
Tasks	✓	✓	
Operational intelligence		✓	

Flexible deployment options to meet your cloud needs.

IBM Garage & Expert Labs: Accelerate your journey

Ready to take the next step towards digitizing your business, applying AI, or building a hybrid work force with humans and digital workers to achieve automation? Your goal is to accelerate value, deliver frequently, and reduce risk. We can help. Engage with IBM Garage or Expert Labs to get started.

WE HELP YOU ACCELERATE AND INNOVATE

Digitize. Activate content capture, storage and governance, decision management, workflow and task automation. Identify a business digitization opportunity, then define and build the MVP.

Apply AI. Handle unstructured data extraction and classification, machine intelligent decision making, next-best task prioritization, and overall operational intelligence. Let us help you identify the right opportunity and co-implement the solution.

Automate to the next level. Free up knowledge workers time by optimizing processes and deploying digital workers. We can work with you to identify the best fit for the creation of digital workers and help you build your hybrid workforce.

⊕ **Learn more**

Check out the IBM Garage.
https://www.ibm.com/garage

Engage IBM Garage & Expert Labs!

Digital Business Automation roadmap

Ideate, Design, & Architect (workshops)

Plan MVP

Test, pilot, prove

Iterate with continuous feedback

Scale & prepare for enterprise deployment

Succeed!!
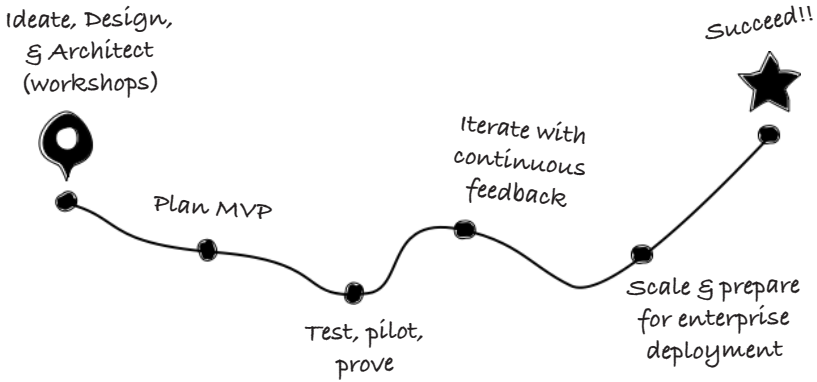
IBM Garage and Expert Labs are trusted partners, providing technology and prescriptive guidance to deliver immediate business value.

Automation option glossary

When automating a business process, you can choose any combination of the following automation options.

Modeling. The activity to discover and describe a workflow, a decision, or a document as a visual and declarative model that can be understood by business users and executed on the IT side.

Re-engineering. The activity of refining the as-is-state into to-be models.

Simulation. The ability to run a model to evaluate its impact and performance before investing in a full-fledge custom implementation.

Orchestration. The coordination of human activities without automation. The swivel chair is the orchestration function that tells users the task to work on and accepts notification by the user when the task is complete.

Monitoring & analytics (Business Activity Monitoring). The ability to gather operational data from the execution of human or systems tasks, build real-time dashboards to visualize KPIs (Key Performance Indicators), and derive insights from the collected data.

Guided UI. The creation of user interfaces to guide the user through the presentation and capture of appropriate business data at the right stage of the process.

Task delegation. The replacement of manual tasks and activities by computerized tasks, bots, digital workers.

⊕ **Learn more**

Learn about IBM's DBA Reference Architecture.
https://www.ibm.com/cloud/architecture/architectures/dba-architecture

Service integration. Collect and exchange information through system APIs versus getting information through various user interfaces.

Decision support. Help users make decisions with computer provided guidance.

Decision automation. Decision making by a computer without human intervention.

Service choreography. The sequencing and orchestration of system tasks and processes through APIs to render a business operation.

Content management. The ability to store, retrieve, visualize, and annotate content at the enterprise scale.

Case management. One type of business workflow corresponding to ad hoc team collaboration around a case, i.e.. a set of business meta data, and documents and folders.

Data capture & extraction. The capacity to recognizie a document type (classification) and extract and digitize particular elements or fields of a document.

Straight-though processing (STP). This corresponds to the full automation of a business process so it doesn't require human intervention. If needed, exceptions can interrupt the STP to involve humans through one or several automation options.

Explore DBA demos!

https://ibm.biz/dba-demos

Try it out! An end-to-end implementation.

https://www.ibm.com/cloud/architecture/architectures/dba-auto-insurance-claim-processing

Connect to the DBA user community.

https://www.ibm.com/community/automation/digital-business-automation/

Notices

IBM Digital Business Automation

Tasks

Hands ●
Manipulation (Tasks) and
smart work automation
(Digital workers)

Workflow

**Central
nervous system** ●
Orchestration of work
(Workflow)

Content

Memory ●
Share and govern
unstructured information
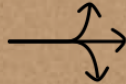(Content)

Capture

Eyes ●
Extract from
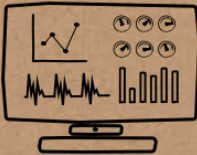unstructured
documents (Capture)

Decisions

Left Brain ●
Business policy &
business rules
(Operational intelligence
& Decision automation)

Operational Intelligence

Eyes ●
Get insights from
monitoring dashboards
(Operational Intelligence)

Right Brain ●
Cognition
(Operational intelligence
& Machine learning)