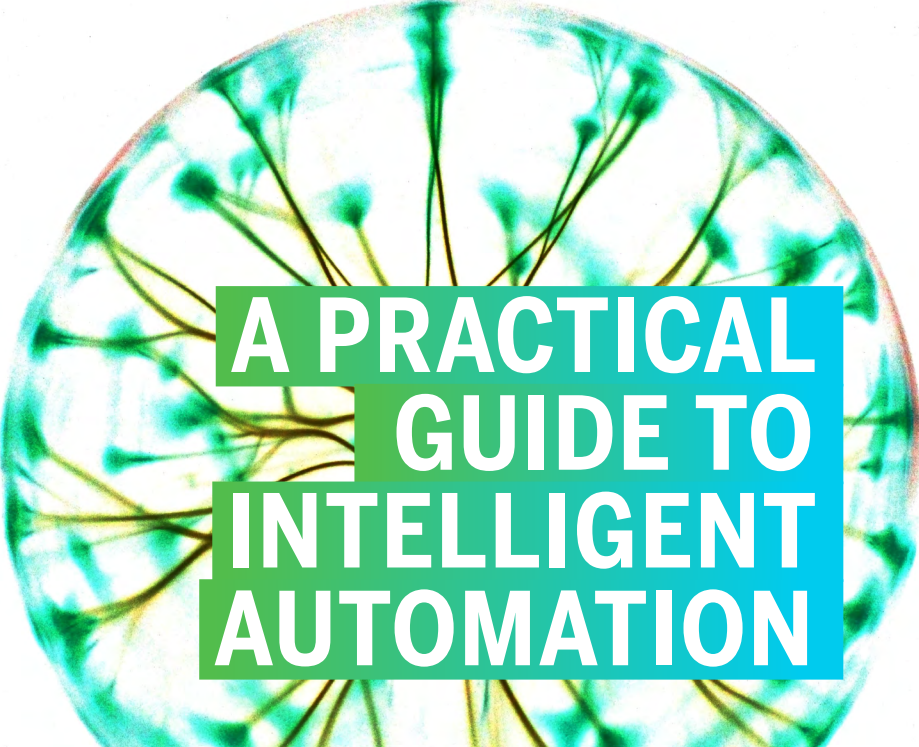




Deep Analysis



# A PRACTICAL GUIDE TO INTELLIGENT AUTOMATION



Sponsored by

Hyland

By Alan Pelz-Sharpe  
& Dan Lucarini

## Deep Analysis

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**E**very organization, whether large or small, uses technology to automate tasks and processes so that they work faster, better, and cheaper. This can be as simple as auto-filling an address field in an online form, or as complex as automating an entire manufacturing process.

Work activities have been targeted for automation since the advent of business computing, but over the past few years interest in “intelligent automation” has grown significantly. Businesses are reframing, rethinking, and reimagining their activities and figuring out how to intelligently improve them. The tech sector has responded with a plethora of automation tools and terms, such as robotic process automation (RPA), artificial intelligence (AI), machine learning (ML), and even “hyperautomation.”

What does it all mean? The choices and differing approaches to automation can seem overwhelming. This eBook provides the information you need to understand how to automate your business intelligently, and provides a practical guide to answer questions such as:

- Should my organization be embracing intelligent automation?
- How should we go about it?
- How do automation tools differ from one another?

# NOW IS THE TIME

**Critical business factors are driving the urgency of every organization to adopt intelligent automation, and most of them predated the sudden surge of remote working brought on by the pandemic.**



Although the pandemic brutally exposed the weaknesses of outdated IT systems, the reality is that there was increasing pressure on organizations to work faster and smarter long before COVID-19:

- One major pressure that has always existed is providing a better customer experience than one's competitors. Because of this, every customer-facing department has invested in digital transformation technologies to reduce wait times and increase online sales.
- Another growing pressure is the expectation by customers that business will be conducted online.
- A third force towards intelligent automation is the reality that as an organization grows through market expansion and/or acquisition, so do the amount and complexity of information and data to manage and control.
- Finally, there's the original driving force for intelligent automation: to realize efficiency gains that lead to impressive reductions in operational cost and risk.

**Delaying automation initiatives that enable remote working, reduce tedium, and improve customer and employee experiences alike brings the risk that an organization will stagnate.**

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# DEFINING INTELLIGENT AUTOMATION

Intelligent automation describes a wide range of technologies and strategies deployed to reduce human intervention in business processes by predetermining criteria, tasks, relationships, and related actions, and then encoding these structures in machines.



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Modern automation systems represent a major shift in the technology available to organizations; rather than being a replacement for legacy automation systems, they offer additional options for transformation.

Some tasks and processes remain unchanged over time and may not benefit from intelligent automation. But other processes across every organization should be under consideration for intelligent automation. For your guidance on where to start, we will outline examples where an automation solution should yield impressive process improvements while also mitigating regulatory compliance risks.

## Things to remember

1. The core purpose of automation is to reduce human work activities.
2. Automation entails digitizing (encoding) work activities.
3. Employees and customers will always be impacted by automation.
4. **Automation requires – as a foundational step – a detailed understanding of the activities making up a business process that is to be automated. Without this, an automation project will likely fail.**

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# THE INTELLIGENT APPROACH

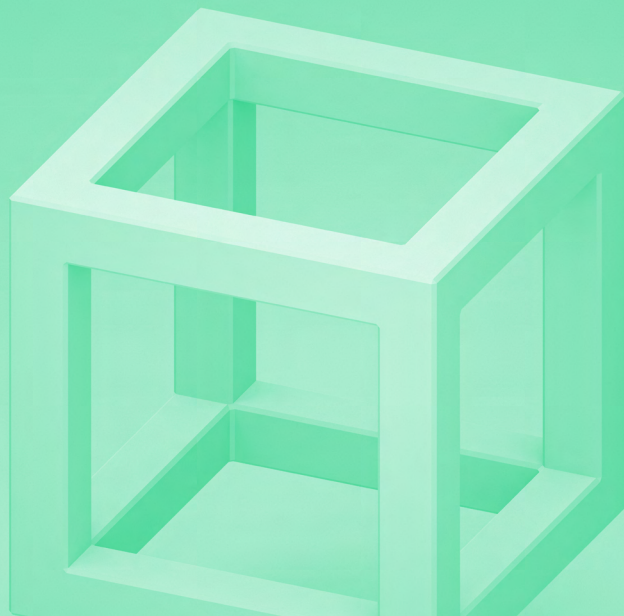
One size does not fit all, and every enterprise has different needs and requirements. Moreover, every organization has different resources, whether human or technical, to draw upon. For example, you may have 20 years (or more!) of client data, and you likely have many different IT systems and business applications running.

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Traditionally, automation projects have been driven by technology advances. Today, however, automation projects are increasingly being driven by a more considered, holistic, and intelligent mindset that starts with the business challenges to be resolved rather than with the technology.

Taking this more pragmatic, intelligent approach to automation will help you make much better use of what you have today. You will better integrate disconnected systems to allow them to work “intelligently” together. If you have CRM, HR, ERP, and finance systems, along with multiple different data and file stores, you are not alone. (Indeed, you are in the majority.)

But rather than simply ripping and replacing them with expensive technology you may not need, you can intelligently engineer and automate these systems so that they can work in harmony. Doing so will deliver much more value in terms of efficiency gains, improved customer and employee experiences, reduced costs, and increased adaptability to unexpected change.



# TYPES OF INTELLIGENT AUTOMATION TOOLS

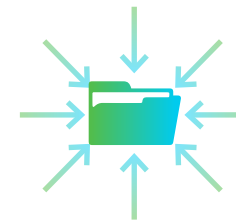
Automation tools are as varied as automation projects. There is no “magic bullet,” and you should run away from any technology vendor that claims their product can fix all your automation needs.

In this section we provide you with summaries of common automation technologies.



## RPA – Robotic Process Automation

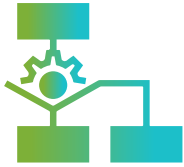
These tools leverage bots to perform and automate repetitive tasks within organizational processes – think copy/paste, form filling, or form evaluation, for example. RPA is an efficiency-driving tool that can be used for high-volume, repetitive activities. The key to using RPA effectively is identifying the time-consuming, repetitive tasks that cause bottlenecks in your processes.



## Case Management

These systems are used to manage highly volatile and human-centric process activities, where multiple different sources of data and information are required to feed a single “case.” Case management works by automating the collection of all relevant information into a single “case” or working folder. That case or folder will likely be populated automatically with data and information and further augmented by human information and decisions.





## Rules Engine

A rules engine automates the application of predefined business, compliance, or procedural rules (i.e., an organization's policies and practices). It understands that *"IF this happens, THEN that happens."* A rules engine can handle complexity, as rules or sets of rules can be chained together. The system itself can be configured (based on rules) to apply specified rules in specified cases.



## Cognitive Capture

These tools are a modern progression of traditional document capture technologies. Traditional document capture basically consists of scanning a document, creating a TIFF or PDF file, and possibly running optical character recognition (OCR) against the captured document to produce an indexed text file. Cognitive capture systems bring a much deeper level of automation into play by using AI and ML. Building on techniques such as natural language processing (NLP) and even natural language understanding (NLU), these systems read and make sense of captured documents and intelligently automate their further processing.



## BPM – Business Process Management

These systems are used to automate complex processes and can be used to automate entire business activities. They are capable of running and orchestrating multiple complex and parallel process activities, and they are often used as the cornerstone to integrate multiple data stores, applications, and people. BPM systems are powerful; when used wisely they become the most critical systems running within and across your business.



## CCM – Customer Communication Management

Communicating with customers through an ever-growing number of channels is challenging. Ensuring consistent, accurate, engaging, and compliant messages in bulk, while personalizing them to individual customers' needs, is a complex undertaking. Manually doing this kind of work is cumbersome and error-ridden; hence, we have CCM systems that automate much of the work. These systems allow you to automate access to key content and data sources, compose formats and structures, and deliver messages across multiple different delivery channels.



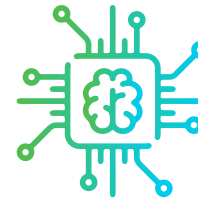
## Content Services Platforms

Content services platforms (or ECM systems) can capture, organize, and manage all of the content in a library from across the enterprise. The software creates metadata about, and extracts data from within, the content. Then, the software makes this data available to RPA or enterprise business systems such as ERP and HR. Since every automation project depends on a steady stream of reliable and clean data, a central content repository is a useful foundation. ECM typically includes automation tools such as cognitive capture, workflow, and integrations to enterprise business systems.



## Integration

Here, we are referring to integrations between content platforms and business applications. ERP, accounting, HCM, claims processing, loan origination, electronic medical record (EMR) management, student information management, and many other critical systems drive the core processes of an organization. Each application needs access to documents and their related metadata to complete assigned tasks.



## Artificial Intelligence & Machine Learning

These technologies are used extensively, either as embedded elements of broader automation systems like cognitive capture or as standalone automation systems. AI is a huge topic, but in simple terms AI and ML systems can be thought of as the “decision-making” tools of automation. AI automates the reading and understanding of document content, and AI can also be used to take on highly complex analysis and decision-making work.



# HOW INTELLIGENT DOES YOUR AUTOMATION NEED TO BE?

**Only a few automation projects require the sophistication of ML and AI, and in some cases the flexibility of such advanced intelligent technology can be a disadvantage.**



Many automation projects require you to define fixed parameters for the automation that either will never change, or will only change when you decide they need to change. These are not situations where you need ML or AI.

Conversely, some automation challenges do require flexibility and the ability to adapt to change automatically. In these cases, ML and AI are likely the solution. In short, “intelligent” tools have huge potential to advance the automation of ever more complex situations – business situations that previously could not be automated. But that doesn’t mean they are a fit for every scenario. Each tool is different, and though at times there may be overlap, the point is that you need to select the right tool for the right job.

The excitement in the industry regarding AI tools for intelligent automation is not so much about being *better*. AI-driven intelligent automation tools do not make things like case management, content services, or RPA redundant. Rather, when used selectively, they open up new opportunities for automation where complex reasoning and constant adaptation is required.

# HOW TO DECIDE WHAT YOU NEED

With so many available options, how can you determine what type of automation project and tools your organization needs? Ideally, you'll first determine your "as is" and "to be" processes.

**"As is" simply means understanding the current situation. This typically requires three layers of insight:**

- What is really happening at an IT/data level.
- What tasks and subtasks your employees (or customers) follow to get things done.
- The high-level conceptual "journey map" of your customers and employees.

"To be" is your desired outcome: a faster process, fewer exceptions/errors, and/or cheaper, for example. After mapping out your "as is," you can design your "to be" and consider all the ways the project will impact your organization.



# 7 Steps to Automation Decisions

1



## ANALYZE

Analyze your organization's existing business processes, steps, and tasks, and evaluate them for potential improvement.

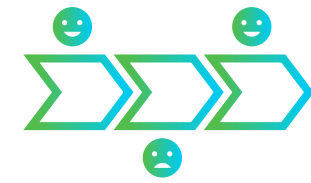
2



## PROCESS MINING

Use process mining tools that automate the discovery of what really happens to data at the system level.

3



## JOURNEY MAPPING

Create a journey map. Marrying the system-level picture with the human-level picture is key, but it still may not provide the full story.

4



## DESIGN TO-BE

Design your "to be". This is the easiest stage and the most fun, as you can be as creative and ambitious as you like.

5



## RECOGNIZE

Recognize all the people, processes, and technology elements that will be involved.

6



## GET ADVICE

Get good advice and make sure that the automation technology you buy is the right fit for the job.

7



## FOCUS ON VALUE

When planning to use intelligent automation and ML/AI, focus not on the underlying technology but on the quality of data and the outcomes you require.

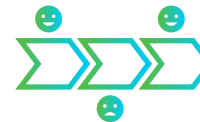


## Steps to help your automation decision-making:

1. Analyze your organization's existing business processes, steps, and tasks, and evaluate them for potential improvement. Find the "as is." Many methodologies exist for approaching this type of business analysis. Regardless of which methodology you use, you will ultimately be discovering and drawing a map of the current situation. This tells you *who* currently does *what*, and *when, how, and in what order* they do it. It tells you what information and systems they access, and to some extent how that information and data is processed by your IT and business applications. **The number one reason that automation projects fail is because this analysis is not carried out properly.** Management and staff often assume they know how processes are actually done, when in fact they do not.



2. Use process mining tools that automate the discovery of what really happens to data at the system level – uncover root causes and identify where the bottlenecks are, where things are running smoothly, and where there is redundancy. Remember that the system, data insights, and maps that these tools provide need to be correlated with the human activities and hand-offs that your processes also involve. Without a thorough understanding of how things currently work, no matter how inefficiently, you cannot improve the situation.



3. Create a journey map. Marrying the system-level picture with the human-level picture is key, but it still may not provide the full story. Business and process analysis can be a Pandora's box – you never know what you are going to find, and you risk ending up in a state of analysis paralysis. In this case, journey mapping can help you to find the right balance. The exercise of understanding the journey a customer or an employee follows to complete a purchase or work deliverable provides a high-level sketch that complements the detailed work of business analysis and process analysis. Creating a journey map can be as simple as compiling a series of user actions into a basic timeline. That timeline can then be filled out with users' thoughts and even emotions to build a narrative.



4. Design your “to be”. This is the easiest stage and the most fun, as you can be as creative and ambitious as you like. Start by asking, “How would this process or task work if it were perfect?” Conceptually, the “as is” and the “to be” are the beginning and end scenarios – bookends to build a staged or phased set of work activities.



5. Recognize all the people, processes, and technology elements that will be involved. Your automation plan should answer questions such as these:

- Your ideal automated state may involve fewer employees, so how will you manage and plan for that transition?
- Your new desired state may impact other processes, applications, systems, and activities in your organization; how will you manage and plan for those touch, integration, and handover points?
- What technology do you already have?
- What technology must you acquire to make this change?



6. Get good advice and make sure that the automation technology you buy is the right fit for the job. Navigating through the marketing hype can be difficult. It is not about selecting “leaders” from an analyst chart for your shortlist; it is about doing your homework, comparing options, and making the right selection for your needs.



7. When planning to use intelligent automation and ML/AI, focus not on the underlying technology but on the quality of data and the outcomes you require. Yes, the technology is important, but you don’t need to be a data scientist or technical expert. You need to ensure the system learns on the best and most accurate data, and that your expertise is used to guide it through the learning process to achieve your goals.

These steps are not as onerous as they may seem; typically, we are talking days or at most a couple of weeks to complete the first four. And it is worth the effort. You will find surprises and learn about your business at every step. Such exercises can reveal the true simplicity or complexity of work activities. Some projects may reveal themselves to be too complicated to tackle, but more often this prep work gives you a firm direction and map for your automation efforts. It becomes the grounding and reference point for your project plan, buying decisions, and metrics for success.

# THE LIMITS OF AUTOMATION

**Automation has limits as well as potential, and the success of any automation project depends on early consideration of its full implications, outcomes, and risk. Always keep in mind that automation involves humans.**



- Nearly all automation projects augment human activities rather than replacing them. Conversely, “humans” may augment the work of automation technology. This means that the focus of any automation project should be on doing business better, not on doing business with as few human beings as possible.
- Humans and technology work best together. Technology can do many things better than any number of humans, but at the same time, humans can do many things better than technology. The key to success is in finding the right balance when you are at the planning stages – not once you have spent time and money on new technologies.
- Always bear in mind that the purpose and true potential of automation, particularly intelligent automation, is not to re-create what we already have. Instead, it is to build a partnership with the technology to achieve our goals. Intelligent automation provides us an opportunity to rethink and to reframe how our organization works. Digitally replicating human-based activities is ultimately of limited value.

# CASE STUDIES

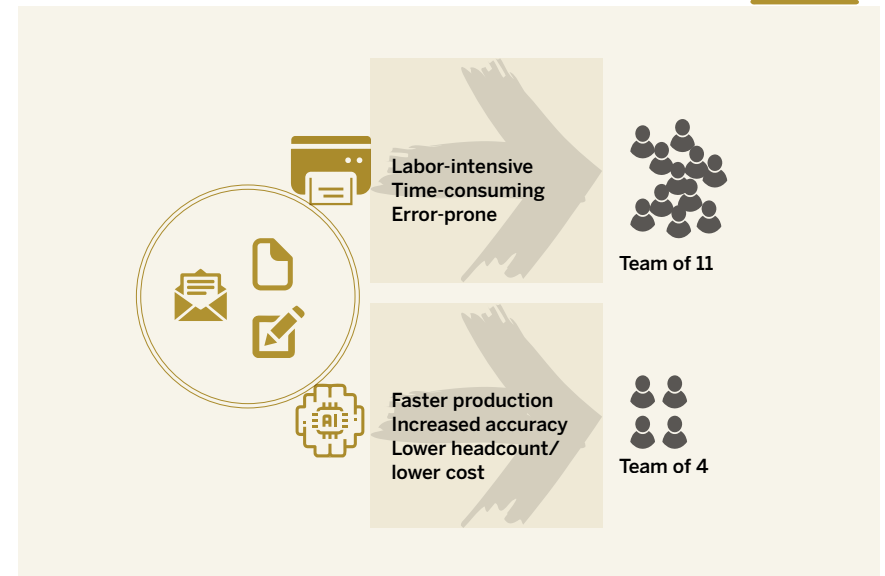
The following case studies show how some of the world's leading companies have approached intelligent automation enablement in their organizations.



## Intelligent automation approach to financial services

A New York financial services firm wanted to streamline the creation of investment analysis reports. The work involved 11 employees who manually pulled relevant information, data, and graphics from various documents, typically located in email attachments, for their research activities. On average it took one week to assemble a report before it was passed to brokers who use it to evaluate investments.

### FINANCIAL SERVICES FIRM



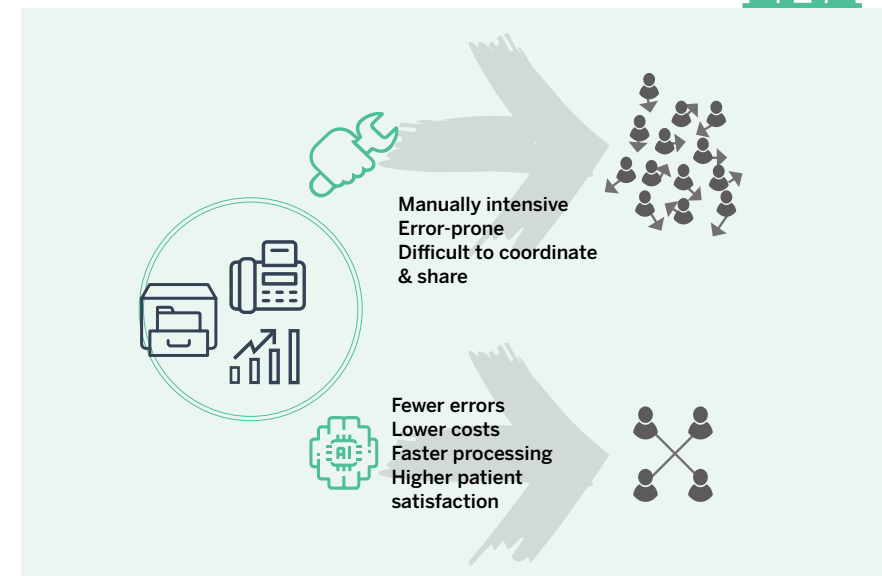
By using a combination of technologies such as OCR, NLP, and rules engine, the firm was able to intelligently search and read the contents of the email attachments and automatically assemble around 70% of the report. This resulted in a reduction of staff to four employees and reduced report preparation time to approximately one day. After initially deploying this system, the firm added further automation to intelligently route the finished reports to the relevant brokers, again reducing the cost, time, and complexity of the work while increasing the accuracy of the reports' contents.

## Intelligent automation approach to healthcare

A US healthcare department tasked with organizing hundreds of outpatient transportation requests wanted to transform its operation. The department relies on patients' receiving authorizations for specific transportation requests from their doctors. These requests were received in the form of faxes and supporting phone calls, which resulted in many manual errors when hand keying information into IT systems. All too often these errors led to transportation being scheduled incorrectly or not at all.

The department replaced the faxes with an online form that could not be submitted until all the information was input correctly, which involved lookups such as matching zip codes to addresses, etc. This resulted in more accurate data input, lower administration costs, faster processing times, and improved patient satisfaction. Moreover, the department discovered that it also provided a digital shared library of relevant patient information that could be cross-referenced and correlated automatically with financial billing and other associated after-care services. The digitization of one small "pain point" became a catalyst for further positive change and measurable benefits across the healthcare system.

### HEALTHCARE DEPARTMENT



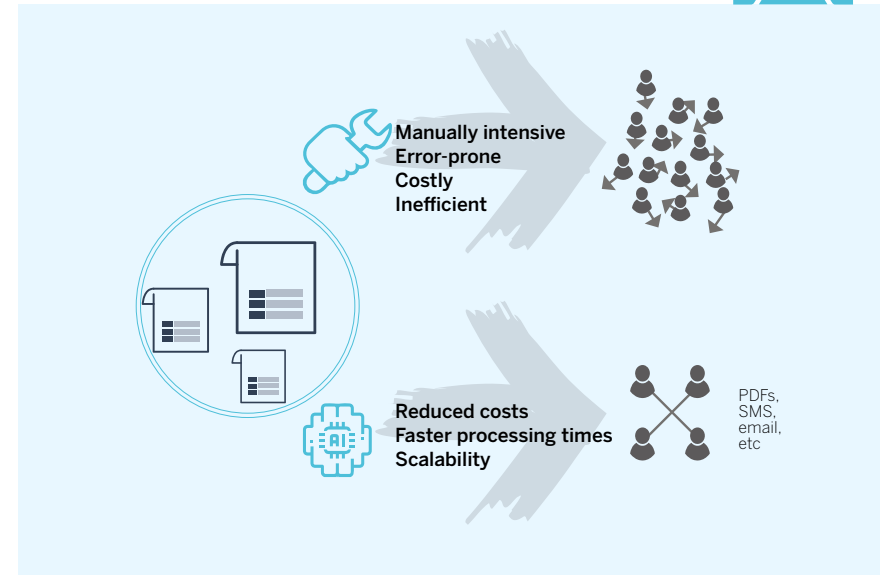


## Intelligent automation approach to government

A government department is responsible for many different types of communications that are sent to citizens filing their tax returns. These include assessment forms, returns, and refund and penalty notices. Managing the sheer volume of mailing so many documents was problematic. Budgetary pressure and a general lack of resources for the department further added to their challenge. Their goal was to increase the efficiency and accuracy of the work, while simultaneously reducing the associated costs.

The department approached this situation through an intelligent automation approach that enabled them to augment and eventually supplant the paper communications with emails. In the process, they added tracking capabilities to confirm receipt of the documents. The new system automatically extracts relevant citizen data and creates PDFs, leveraging templates to reformat for print, SMS, and email channels. The system was also integrated with an online self-service application to enable citizens to request duplicates and in some cases to input their data directly. This project resulted in reduced costs and faster processing times, and delivered a system that can scale easily in the future.

### GOVERNMENT DEPARTMENT



# CONCLUSIONS

**Automation is critical to all businesses, large and small. Even projects that automate tiny but critical tasks can have a huge impact on your efficiency, adaptability, and profitability.**



So, whether you are looking to undertake a hugely ambitious digital transformation of your organization, or simply trying to bring some order and automation to your currently inefficient back-office activities, you are not alone. Intelligent automation tools underpinned by AI and ML can occasionally open up activities that were previously difficult or impossible to automate.

We all like to think our problems are unique, but they seldom are. The likelihood is that someone somewhere has already dealt with a similar situation to yours, and you can learn from their mistakes and successes. There is a wealth of advice and support available beyond this eBook.

The analysts at Deep Analysis cannot claim to have seen it all, but we have seen and been involved in many automation projects over the years. Those projects have ranged from the simple to the most complex, but all have been critical to the enterprises involved. Automation, whether in the form of simply defining business rules, automating a repetitive human task, or using powerful and advanced AI with intelligent automation tools, is exciting and truly transformative. But it does need to be applied wisely. No one approach to automation is

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the right approach, and no one technology is the right technology. Automation is ultimately a mix and match affair that needs to be driven by your organization's specific and measurable needs.

Keep that in mind, follow the advice we have given you in this book, and you are going to be off to a flying start. Good luck and let us know how you get along on your automation journey!

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## ABOUT DEEP ANALYSIS

**Deep Analysis** is an advisory firm that helps organizations understand and address the challenges of innovative and disruptive technologies in the enterprise software marketplace.

Its work is built on decades of experience in advising and consulting to global technology firms large and small, from SAP, Oracle, and HP to countless start-ups.

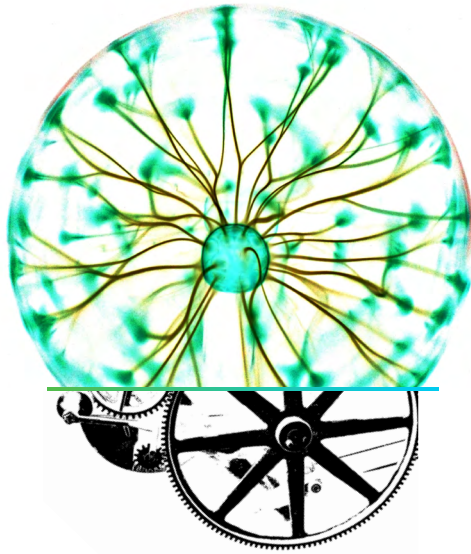
Led by Alan Pelz-Sharpe, the firm focuses on Information Management and the business application of Cloud, Artificial Intelligence, and Blockchain. Deep Analysis recently published the book "Practical Artificial Intelligence: An Enterprise Playbook," co-authored by Alan and Kashyap Kompella, outlining strategies for organizations to avoid pitfalls and successfully deploy AI.

Deep Analysis works with technology vendors to improve their understanding and provide actionable guidance on current and future market opportunities.

Yet, unlike traditional analyst firms, Deep Analysis takes a buyer-centric approach to its research and understands real-world buyer and market needs versus the "echo chamber" of the technology industry.

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