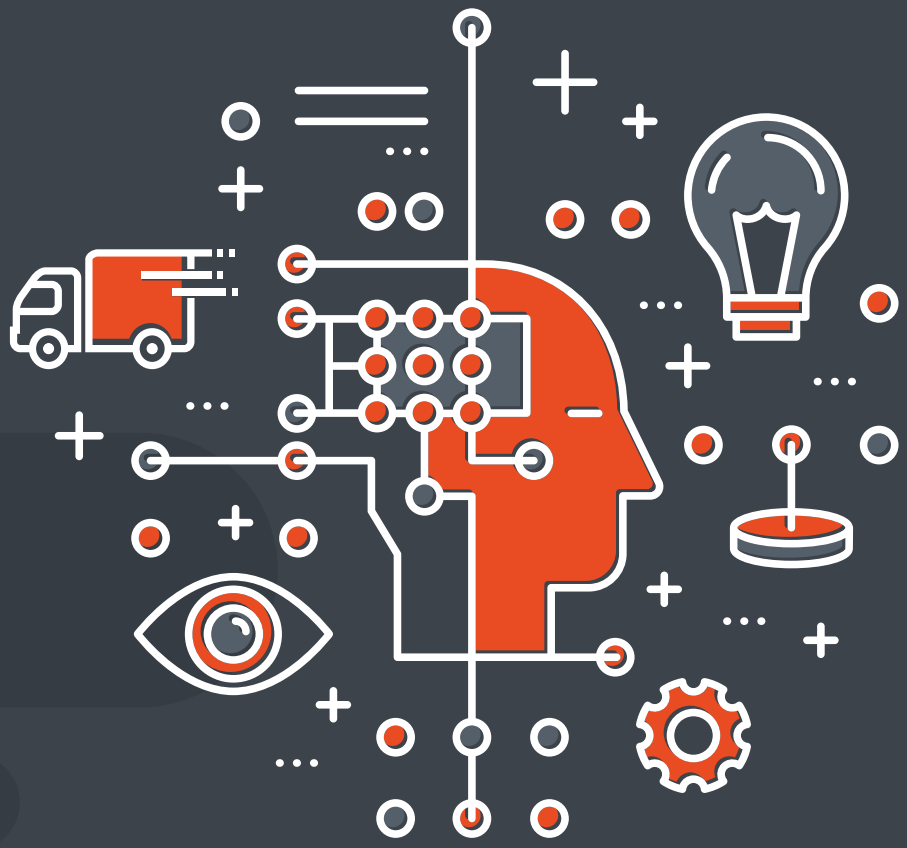
Your Intelligent Automation Journey

AI Business
eBook Series



Insights for every stage of your digital transformation

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WorkFusion

Working **smarter**, not harder

Over the past ten years, the way we do business has changed irrevocably. Enterprise tasks, processes, and now entire roles are being automated, driving unprecedented efficiencies and eliminating the drudgery of repetitive manual labor. This transformation is being supercharged by a combination of Artificial Intelligence (AI) and Robotic Process Automation (RPA) solutions; in other words, Intelligent Automation (IA). This inaugural edition of the **AI Business** eBook series provides a comprehensive overview of the Intelligent Automation journey for enterprises – from choosing an initial proof of concept (PoC), all the way up to scaling across the organization.

Powered by **WorkFusion**, *Your Intelligent Automation Journey* includes the latest case studies, alongside interviews with banking, AML, healthcare, and transport industry leaders, bringing together thought leadership and practical hands-on guidance. If you're a senior enterprise decision-maker looking to start, grow, or scale your automation efforts, look no further.

Ciaran Daly | Editor | AI Business

The value of Intelligent Automation

40%

of enterprises to deploy AI alongside RPA in 2019

*Source: **Forrester, 2018***

5%

of occupations subject to full automation

*Source: **McKinsey, 2017***

9/10

enterprises will use process automation technologies by 2020

*Source: **ISG, 2018***

What is Intelligent Automation?

IA is best described as an approach to automating processes and workflows using a combination of AI technologies and human expertise. The first steps often involve modernization of simple back-office processes with RPA, before moving into fully automated decision-making using a variety of machine learning and natural language technologies.

Market overview:

30%+ of enterprises are already investing more than

$50m

in Intelligent Automation

*Source: **HFS, 2019***

Growth in enterprise AI adoption

270%

over the past 4 years

*Source: **Gartner, 2019***

Productivity gains enabled through AI by 2035

40%

*Source: **Accenture, 2016***

$14.6 Trillion

wages associated with technically automatable activities

*Source: **McKinsey, 2017***

Technologies can include:

- Robotic Process Automation (RPA)
- Deep Learning (DL)
- Natural Language Processing (NLP)
- Natural Language Generation (NLG)
- Machine Learning (ML)
- Chatbots

Robotic Process Automation is widely considered the foundation for Intelligent Automation

$151.2m
Enterprise spending on RPA in 2016

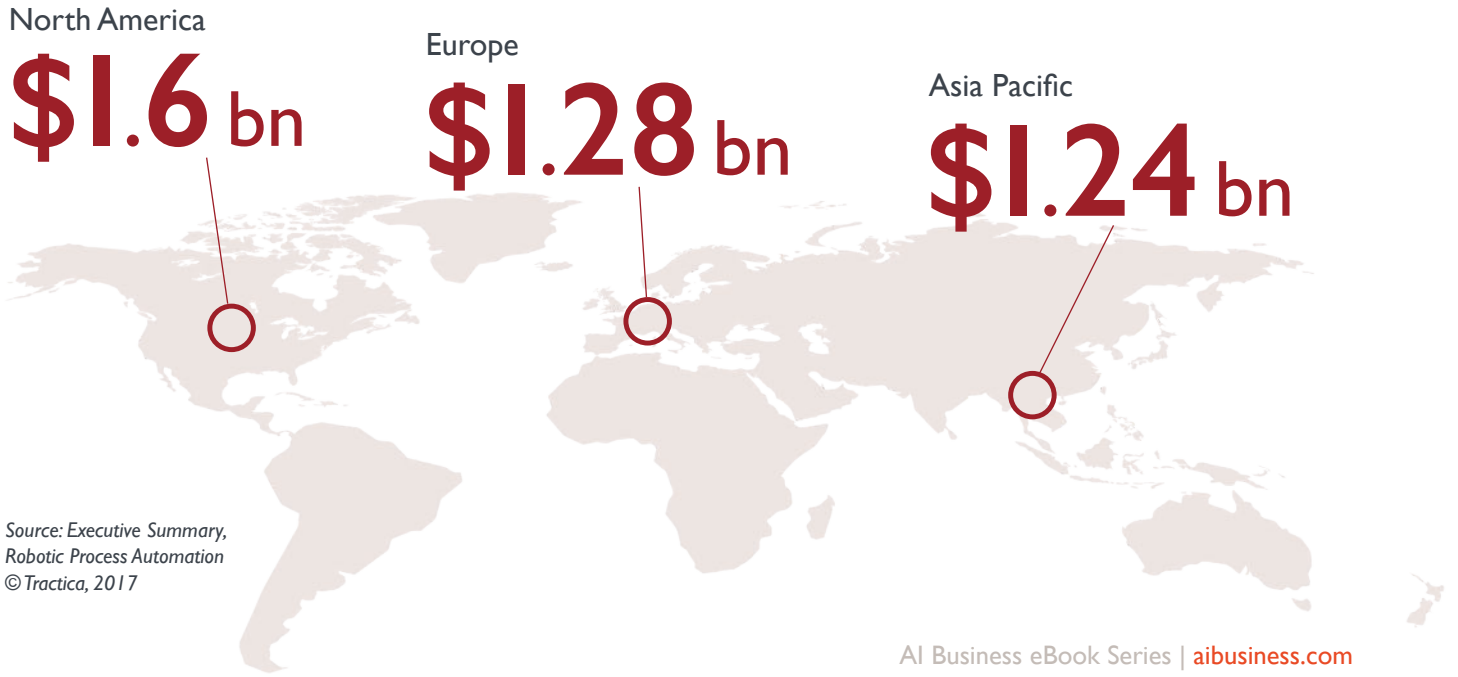
$5.1 bn
Estimated enterprise spending by 2025

47.9%
The compound annual growth rate of the global RPA market

> There's opportunities across banking, finance, health, insurance, and other industries – whether that's using software robots to process claims, or deploying advanced analytics to make better and more intelligent investment decisions.

Alex Lyashok, WorkFusion CEO
(Turn to page 10 to learn more)

Regional RPA growth by 2025



Source: Executive Summary, Robotic Process Automation

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Intelligent Automation: The key to fighting financial crime?

Further Reading
AML Use Case

> There's ... a lot of concern around people being replaced by bots – but the overall aim is to make investigation teams more efficient, not obsolete.

John Sabatini leads the Americas Anti-Money Laundering (AML) team at PwC. For the past fifteen years, he has focused on financial crime and anti-bribery. Today, John is responsible for multiple financial crime units that aspire to combine business knowledge with new IA technologies to make AML processes run more efficiently and productively.

The financial crime landscape

We've seen the market change really rapidly over the last couple of years. This is a high-spend area for banks, and they've recognized over the last three or four years that throwing bodies at this problem is completely unsustainable. Some banks were spending hundreds of millions of dollars on growing AML teams, and now they have really started investing in automation, AI, and more thoughtful ways of doing things.

PwC's key focus areas

We've invested in three key areas of automation and AI. Digitizing the investigative procedures was our first step. Here, we've focused on focal entity consolidation – aggregating customer activity across accounts so we can see it all at once. Then, there's network analytics. There are a lot of common networks, payments, and relationships that investigators spend a tremendous amount of time trying to piece together. Today, you can make maps of recurring payments and transactions without having to do it from scratch every time, and therefore speed up decision-making. Finally, there are common fact patterns (CFP). Once you've investigated someone and you've come to a resolution, you can identify a CFP, and if nothing has substantially changed in the relationships or the activity, you don't need to do the work all over again – thanks to automation.

The second area involves designing more intelligent models. Here, we've aimed to bring some of the common investigative procedures into the monitoring models themselves, so the models can produce more effective, intelligent alerts based on the results of prior investigations and common relationships in the data.

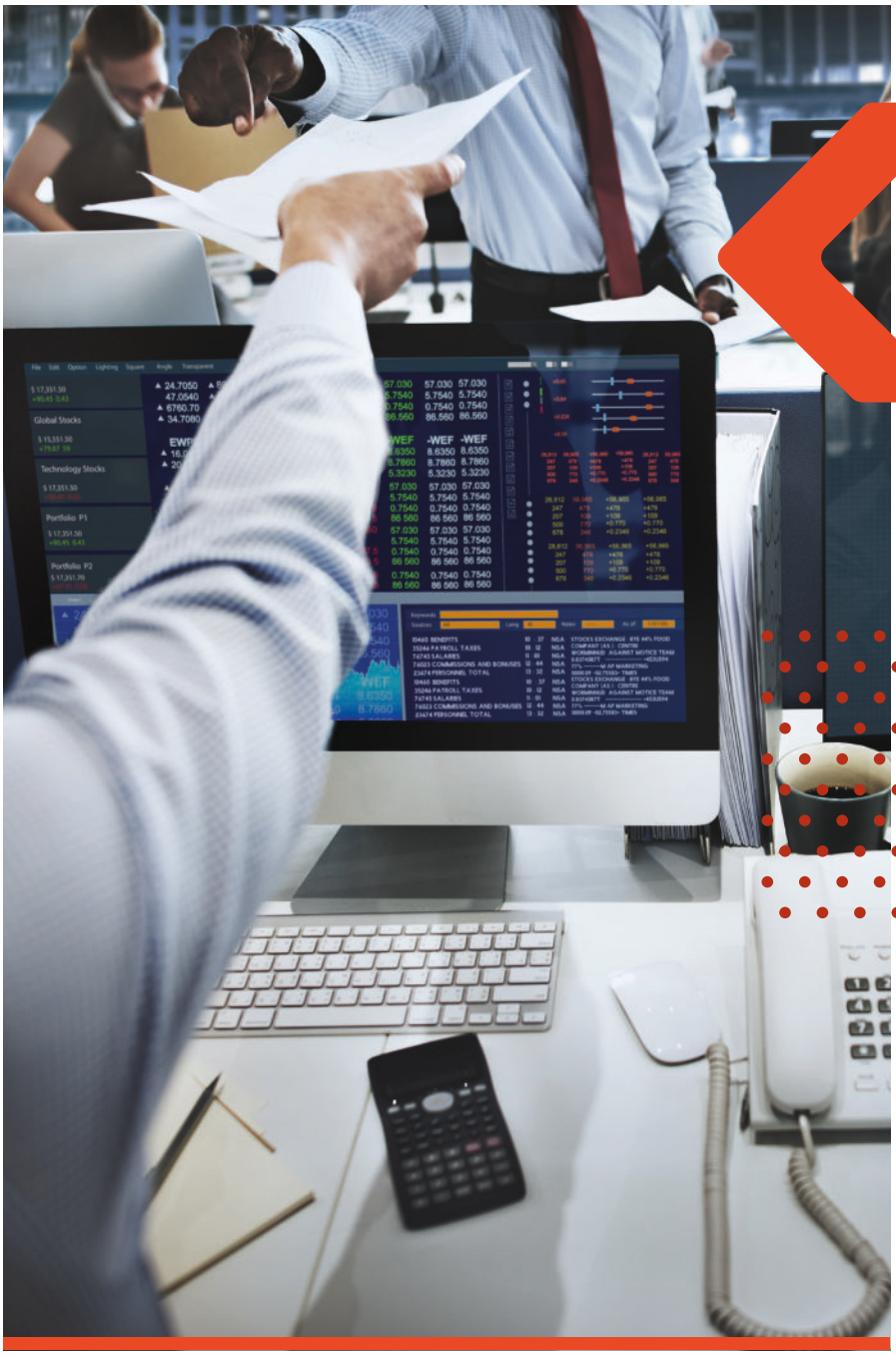
The third area is dynamic KYC (know-your-customer) modelling. We use AI and automation to modify the customer risk scoring model to ensure outliers are identified and properly scored within the model.

On the cultural challenges ahead

Many financial institutions have developed a culture of empire-building around investigation teams. What we're seeing now instead is companies building sustainable programs that leverage the latest automation and AI technologies to improve quality, use teams more efficiently, and reduce the number of staff. By reducing the amount of highly repetitive manual activity, firms are able to keep their most talented people reviewing more complicated cases, and use automation to do things more consistently. There is some cultural resistance to this, with a lot of concern around people being replaced by bots – but the overall aim is to make investigation teams more efficient, not obsolete.

Then, there's the benefit of timeliness. An activity which previously took four hours to complete can now be done in just two, thanks to automation. Everybody on the team is happy, and the output quality is good. We'll go back, and the same person has still taken four hours, because people are used to taking that amount of time – they plan their day around doing one case in the morning and one in the afternoon.

You really need to implement effective management and governance to ensure that culturally, financial crime teams feel more comfortable with automation. Our approach involves educating people on how machines augment human decisions, rather than replace employees.



The legacy challenges

There are data issues in three different areas. Firstly, there's a whole host of problems around reliability of customer data. There's information that could be years old that may have changed over time without being corrected.

Secondly, there's the challenge of aggregating information across silos. There could be really good information filled with inconsistencies. As you collect individual datapoints, through something like focal entity consolidation, you'll see a lot of disparity in the data that needs to be reconciled.

Finally, even in transactional data, there are a lot of missing pieces. Many payment networks out there may not require specific information to process a transaction. There may be some data on the originator, but very little information on the beneficiary. What we're seeing a lot of companies do today is force correspondent banks to provide that information. Instead of just processing consumer data, compliance officers should be processing transactions on the condition that proper monitoring of the necessary information is carried out.

Starting with AML automation

Everyone is trying to fix the entire data collection process before applying automation to it, but that's where they fail – they're taking on too much. Instead, you need to start looking at the very repetitive processes that are using a lot of time and labour (what I call the major muscle groups), isolate them, then identify the points of automation. We've seen this bottom-up approach being much more successful. If you try coming at AML from the perspective of a technology looking for a solution, well, we've seen that fail repeatedly.

Weak supervision: An automation game-changer for enterprises

> Global businesses are starting to realize the once-in-a-generation opportunity that AI presents to cut costs, deepen customer relationships, and generate new revenue.

A manager in claims underwriting at a large insurance company is tired. Tired of her team getting swamped by tedious, time-consuming work of the claims appeal process. Tired of budget cuts leading to headcount reductions. Tired of customer satisfaction falling for the fifth consecutive quarter.

It's time to change the way they work. So, she sends a link to a simple browser-based user interface to three people on her team. Through this UI, they spend a few hours tagging and highlighting the key information in customer appeal submissions.

After manually processing fewer than one hundred different appeals, a machine learning (ML) model has learned enough about the process to teach itself the rest. By the end of the same workday, AI-driven automation software has taken over the claims appeal process, saving the company over $2 million per year and reducing customer response times by a factor of ten.

Sound like business science fiction? It isn't.

Global businesses are starting to realize the once-in-a-generation opportunity that AI presents to cut costs, deepen customer relationships, and generate new revenue. The problem, however, is that most companies today think of AI as the rocket fuel for "moonshots": grand, sexy, and ambitious new business initiatives that can take a great deal of influence to green-light and many millions of dollars to launch. When reality bites, the initiative falls short – and stakeholder support for AI can plummet.

Today, the smartest companies aren't shooting for the moon. Rather, they are gearing their AI-driven transformation efforts towards operations. While there's no magic bullet, new advances in machine learning techniques have now made practical case studies, such as that of the global insurance company, a reality. Central to these advances is a new technique in AI: weak supervision.

Breaking down barriers

Previously, companies looking to implement AI were hamstrung by the large-scale personnel and technical efforts required to build effective training datasets. On top of this, companies had to introduce large data science departments to apply that training data to models. After SMEs identified and classified valuable data within countless documents, PDFs, TIFFs and other forms of unstructured content, data scientists would take clean datasets, select appropriate machine learning models, apply the data to the models, select features and run experiments until model accuracy reached acceptable levels.

If that wasn't enough, AI proved a burden on IT departments, with third-party AI products requiring extensive integration and configuration to work within the complex landscape of enterprise systems and applications. Pairing two separate RPA and AI products – a common approach to process automation – compromises

data fidelity, poses additional risk by sending data into the cloud, and inhibits analytics.

Thankfully, these barriers have since been lowered with a combination of automated data tagging for ML training, automated ML model selection and training, and the native integration of RPA and AI in a single platform.

Automating data tagging

Not all tasks are equally complex. Some are entirely repetitive and follow an invariable set of rules. For these tasks, RPA is ideal. Other tasks have fewer parameters and don't require large training data sets, which makes hand-labeling data manageable. But many tasks within banks, insurance companies, healthcare organizations and other data-intensive enterprise operations have high volumes of unstructured information and require natural image and language processing.

The work of identifying and tagging the valuable fields in unstructured data like documents, email messages, and PDFs in processes such as customer onboarding in banking, claims handling in insurance, and pharmacovigilance in the pharmaceutical industry, could take a team many months.

This is where weak supervision comes in. Rather than tagging each and every sample, SMEs tag a small subset of data, and weak supervision machine learning creates heuristics to tag the rest of the data based on the limited learning generated by those first few samples.

Automating model training

Weak supervision on its own automates only the first part of the self-service AI assembly line. Critical to making AI easy for business people is automating the complex data science work of model selection and training.

AutoML, a term popularized by Google, automates the work of selecting and training the right models for a given business process. With sufficient training data, AutoML performs hundreds, sometimes thousands of experiments in unison to determine the optimal model and features to automate a cognitive task. After bringing the model up to a minimum threshold of completeness and accuracy, AutoML turns the model into a bot that replaces manual effort. This allows someone with no knowledge of data science or ML to automate decision-based work. Google pioneered AutoML for image recognition with its **Neural Architecture Search (NAS)**, and WorkFusion pioneered AutoML for automating knowledge work in its product called **Intelligent Automation Cloud (IAC)**.

> The last frontier in business efficiency is the automation of decision-based cognitive work, which represents 60–70% of the typical business process.

What's the benefit?

The faster and more efficiently a company can deliver a service, the wider its margins. Outsourcing increased margins in the '80s and '90s by moving functions to lower-cost labor markets. IT projects in the late '90s and early 2000s automated functions by turning manual functions into custom lines of code.

Both delivered linear improvements to efficiency, but both required significant capital investments. RPA has grown in popularity because it requires less capital expense and lets business people integrate systems that don't have usable APIs, but businesses have found that maintaining rules-based RPA is costly due to exceptions and constant bot retraining.

The last frontier in business efficiency is the automation of decision-based cognitive work, which represents 60–70% of the typical business process in most industries.

The combination of weak supervision and AutoML puts the ability to automate this more variable, expensive but ultimately repetitive work entirely in the hands of the business people who understand the processes and outcomes.

It reduces the time and effort to create automation, and it makes Intelligent Automation more autonomous and more reliable. Analysts expect this new breed of Intelligent Automation to scale rapidly in 2019.

CEO interview: Building demand for Intelligent Automation

> We're in a world where it's no longer just people working on the process anymore – it's robots, too.

Alex Lyashok *is CEO and President of WorkFusion. He has been working in the software industry since 1997. His experience ranges from helping build network operation support systems for national telecommunications carriers in the US to advising the Andrew W. Mellon Foundation on its global initiative in Africa and Latin America. We sat down with Alex to find out more about how enterprises can prepare the ground for effective IA implementation.*

Although the benefits of IA are by now well-documented, enterprise adoption on the ground level still lags behind. While interest is growing, a PwC survey finds that only 20% of business executives plan to deploy AI enterprise-wide in 2019.

Onboarding your teams with AI-powered automation technologies is no mean feat. Of course, there's numerous cultural and management considerations, whether that means upskilling your staff or just helping them change their mindset. But more than anything else, successfully rolling out Intelligent Automation in your organization depends upon the technology being accessible and easy-to-use for workers.

Alex, you've been with WorkFusion for over four years. What drew you towards AI and workplace automation?

Clearly, a lot has changed across the technology landscape with the emergence of cloud, big data, and AI technologies. The confluence of these trends makes things possible that previously weren't. Our company formed around the idea that we could use technology to amplify and improve knowledge work – the work that takes place not in the factory or the fields, but in the office.

What we are seeing as a consequence is a paradigm shift – one which enables the democratization of these technologies. We're seeing the creation of intelligent software systems shift away from the realm of pure science and engineering, towards being something that everybody can do. Thanks to increasingly humanized user interfaces, you can now train a software system much like you train a person.

Make no mistake, the stakes are high. This is a vast opportunity. Billions of dollars are being spent by companies and organizations worldwide on work that we think could be done better. There's opportunities across banking, finance, health, insurance, and other industries – whether that's using software robots to process claims, or advanced analytics to make better and more intelligent investment decisions. I joined WorkFusion to make this a reality.

What is the key driver of value in Intelligent Automation – and why should an enterprise go out and invest in these technologies?

Intelligent Automation makes it

possible to automate work previously considered to be too complex. For example, if a back-end process involves a document, it is usually too difficult for software to read because documents come in a range of sizes and formats – plus the content varies dramatically. As a result, many organizations resort to hiring people because it's just too difficult to codify how this data is handled within the enterprise otherwise. If you need to deal with this unstructured data, you should be looking at Intelligent Automation.

What kind of critical business problems can IA solve for the enterprise?

The main operational challenges our customers are looking to overcome are:

- Handling more volume with their pre-existing operational capacity to ensure business growth;
- Improving the accuracy of decision-making to deliver a better customer experience and stronger compliance;
- Streamlining their operations and increasing agility to reduce costs.

What challenges and roadblocks around IA need to be considered by enterprises when starting out?

Trust, which encompasses information security and compliance, is absolutely one of the key challenges. Even though it is very easy to assess within a single day whether automation can be deployed within six weeks, many companies struggle to build the trust necessary to shift the organization away from the manual way of doing things to something that is automated. Governance is of course a key issue, but so is data privacy. In some parts of the world, there are now increasingly strict regulations for locations where personal data can reside and how it should be handled.

Meeting this can be a challenge. Replicating controls around risk and compliance is never easy, but particularly when we're in a world where it's no longer just people working on the process anymore – it's robots, too.

What use cases spring to mind when you think about IA?

Anti-Money Laundering (AML) is one area of banking that we focus on. There are certain sets of regulations that require banks to essentially monitor transactions and comply with sanctions that governments around the world impose. Financial institutions also need to be able to assist external and internal investigations around financial crime.

However, this area has become more complicated over the past few years and is very manual in nature because the decisions that people make require a lot of unstructured information to be gathered and prepared for case investigators to make decisions. We also continue to see the insurance industry struggle with intake. It has a long way to go before it becomes digital. Channels of interaction with customers are often undigitized, as well as being pre-mediated by brokers and agents. Consequently, there is a lot of unstructured information that is submitted by customers that needs to be processed and handled across products and markets globally. Those are just two examples, but we also target solutions in other industries such as healthcare, product lifecycle management, supply chain management, and retail.

How can enterprises scale IA from a few use cases to an organization-wide practice?

Focus on agile-as-a-methodology, self-service, and educating individual members of operational teams. That's how you build ground-up support and a wider demand for automation.

Where do you see the key developments during the next year?

The continued development of AI technology is key to making automation simpler and better able to handle complex problems. Technologies such as computer vision, transfer learning, and other Machine Learning applications are making things simpler. We'll continue to pursue this mission and this journey.

The CIO view: Successful banking automation needs a long-term plan

> If you boil it down, digital transformation is about how you can best service your customers in a digital way and how you can automate processes and deploy technology optimally.

Fredrik Lindstrom *is group CIO of the Danske Bank Group, one of the largest retail banks and financial service providers in the Nordics. With responsibility for more than 2,300 staff and all IT development across multiple regions, he has a direct top-level view of the bank's automation efforts for its 2.8 million customers.*

Intelligent Automation is about serving customers better

If you boil it down, digital transformation is about how you can best service your customers in a digital way and how you can automate processes and deploy technology optimally. To be successful in a digital environment you have to be two things: convenient and personalized. When people walked into a branch 10–15 years ago, they expected to be met and addressed as the individual they were.

The same applies to a digital experience – what is right for me probably isn't right for you. To personalize our services for customers, we need to understand a lot about them – and the only way to do this is to understand what they do digitally and the data they generate.

A consolidated data platform isn't a panacea

From an AI perspective, we have a reasonably unique situation as a bank in that we have a consolidated back-end and a single consolidated core banking platform. Do we have an advantage because we have this consolidated platform? Yes, we do, but is our platform perfect? Absolutely not. It's consolidated, but it has grown organically over the past 30–40 years, so there's a fair bit of legacy to carry as well as some unoptimized workflows that are still an integral part of how we service customers.

At first sight, it is very tempting to just try to automate some of these workflows, but you need effective governance around doing so. You need to be very clear about the basis on which you deploy RPA and automation technologies. You can't take a very flawed process and deploy a robot and hope that the problem goes away. You're better off refining the process first, and then figuring out the best use of technology in that process.

> It's about giving (your team) the confidence to challenge and take ownership of the implementation process as opposed to being order takers.

Take a long-term view on automation in operations

So where should you typically deploy a robot? In operations, where the inner workings of the bank are not visible to the customer, and where you tend to have a number of unoptimized workflows.

Now, you may be tempted to conclude that because you've got things mapped out in a workflow tool, you might as well just automate them all with robots. The problem with this is you are often paving cow paths and automating something that may be mapped, but is most likely far from optimized. As a result, you get small, incremental efficiencies. If instead you take a thorough look at your processes and optimize them with a long-term, strategic view, you can often shave 10–20% off instead of 1–2%.

Empower the IT organization to secure effective enterprise-wide transformation

The way I drive automation as the CIO is by empowering my IT organization and giving them a mandate to dictate system and solution design. It's about giving them the confidence to challenge and take ownership of the implementation process as opposed to being order takers. Their job is not just to produce output, but to produce outcomes.

Automating transportation and logistics – without disruption

Further Reading
Customer Spotlight - Polaris Transportation Group

Polaris Transportation Group is just over a year into their Intelligent Automation journey; to gain a better idea of the impact the technology has had so far, we sat down with ***Dave Brajkovick****, CTO of Polaris.*

> By utilizing technologies such as RPA, Machine Learning, and AI, the industry will gain the ability to process data in the quickest possible mode.

Intelligent Automation has applications across every industry, but one of the most challenging is surely transportation and logistics. Physically carrying goods across continents has for many years been a largely analog process, with paper invoices and customs forms still making up the bulk of the data produced by haulage firms. But today, some of those firms are looking to modernize – and Intelligent Automation technologies are an obvious answer.

Polaris Transportation Group is a leader in transport and logistics in North America, and sits at the heart of many businesses' supply chains. It is, perhaps, best-known for its LTL (less-than-truckload) service, where it carries freight for multiple companies. Today, the company utilizes an IA solution designed by Northstar Digital and powered by WorkFusion's Intelligent Automation Cloud.

What is your interest in IA?
I was first exposed to RPA through finance, and the output of RPA combined with Machine Learning was something I quickly recognized as an advantage for other industry verticals. Over the last year or so, it's been my aim to really accelerate the RPA inputs for Polaris and optimize some very rigorous and labor-intensive administration processes. What I really wanted to do was ensure that the tooling and the technology we're going to use is realistic, not vaporware.

Why does IA matter for transportation and logistics?
Specifically within the transportation industry, many businesses are stuck in their ways. Most companies have not been exposed to these automation tools and they don't know what they can achieve – nor do they have the appetite necessarily to invest in these tools. IT is not a focal point for the industry – it is a support service for the operations. The main issue then is that all of the systems implemented by this industry are really focused on just getting the job done, and many of them are in silos. There's not a lot of integration.

What I think transportation really requires is to try and optimize the data

as much as possible, because data is an asset that transportation has lots of, and I don't think it is typically handled as efficiently and smoothly as it can be. By utilizing technologies such as RPA, Machine Learning, and AI, the industry will gain the ability to process data in the quickest possible mode. It will improve optimization, data cleanliness, complexity, accuracy, and ultimately, the physical movement of freight.

As long as the data is correct, it is going to lead to good physical transactions across the board. We're seeing that happen today. Ultimately, I think the big challenge over the next few years will be the need to basically turn the lights out on administration processing in the transportation industry's back-end.

What are some early results delivered by IA?

What we've ultimately gained is not just straight-through RPA, but the ability to tie-in and integrate other systems so they can talk to one another. AI and RPA combined in this way allow the system to process or digest previous legacy information and then basically integrate a path through the API layers back to the legacy systems. Without having to overhaul major legacy systems, the robotics platforms are adding integration layers.

What motivated your choice of vendor?

I think we had a very good handle on our processes and plenty of insights into our own workflow operations. After some consulting with vendors, we realized that we really needed OCR capabilities to crunch a lot of content – we deal with over 2,000 emails per day – and we knew that AI and RPA on a single platform was the route we wanted to go.

Furthermore, it's a challenge to support on-premises infrastructure internally, and as systems and processes change, the pressure on IT teams to expand it grows. If you haven't planned it out properly, you're going to keep throwing dollar after dollar not only to maintain and sustain, but also to grow and expand.

Selecting the business case wasn't challenging. We just had to decide which area we wanted to hit first between order entry and customs documentation, as we knew they were complex. We didn't really conduct a PoC. I'd say that from start to finish, we took about four months in the design, development, build, and deployment phase, and after six months of being operational we've steadily produced about 80 percent of the workflow through robotics rather than human touchpoints.

Transforming RPA into Intelligent Automation with AI

by Jelani Harper

***Jelani** is an editorial consultant focused on the information technology market, specializing in data-driven applications for semantic technologies, data governance and analytics.*

> Workplace automation shifts from automating low-level tasks to automating business decisions, directly impacting the bottom line.

Scale

Ultimately, the chief benefit of transitioning from workplace automation to Intelligent Automation (going from RPA to IA) is the capacity to realize benefits at scale. AI scales workplace automation horizontally (to include semi-structured and unstructured data) and vertically (to process greater quantities quicker). AI technologies are indispensable for making RPA less robotic, more cognitive, and capable of meeting the demands of the sheer volume and variety of data that organizations must process to remain competitive today.

The practical business value of workplace automation – increased efficiency and productivity – is indisputable. What's less clear, however, is how to scale those benefits across the enterprise, automate an organization's core processes, and optimize revenues while reducingng costs.

All these objectives are readily attained by supplementing conventional workplace automation methods with Artificial Intelligence. When applied to traditional Robotic Process Automation, AI exponentially expands the value of workplace automation to create truly Intelligent Automation.

Although similar in kind, the results of IA are profoundly different in scope to those of RPA. Approaches designed for back offices or fringe use cases become viable for front offices. Techniques developed for structured data excel at semi-structured and unstructured content, too. Efficiency and efficacy are improved by the same vector.

Most importantly, workplace automation shifts from automating low-level tasks to automating business decisions, directly impacting the bottom line.

Structured data limitations

The primary way in which AI technologies like Machine Learning scale RPA throughout the enterprise is by broadening use cases to not only include structured content, but semi-structured and unstructured content too. Traditional RPA methods simply "screen scrape" specific information (such as fields) from a primary system and deposit it into a secondary one. While these methods provide useful integration mechanisms for complicated legacy systems, typical RPA is brittle. When a font or logo size changes, its capacity to collect the desired data is compromised. Other automation approaches like Business Process Management (BPM) traditionally only work on structured data, pre-defined templates, and proprietary, organizational forms. These approaches usually require elaborate rules and heavy coding for semi-structured and unstructured content.

Semi-structured, unstructured data

By combining these methods with advanced Machine Learning models that understand the content of the data collected and can identify it, whether on a screen or in a document, organizations can scale their workplace automation to include semi-structured and unstructured data. The reality is over 80 percent of the data organizations encounter today is semi-structured or unstructured, even for fundamental business processes. Medical claims processing can involve parsing data from third-party sources, for instance.

By expanding the utility of workplace automation with Machine Learning models that improve over time, organizations can expedite such tasks, decreasing time to value for more lucid decision-making. Imbuing workplace automation measures with NLP capabilities to understand the context of unstructured data can increase the sources for know-your-customer in finance, for example, to include social media posts and sentiment analysis.

The 4 phases of transformation

	Early Stage	Mid-Stage	Growth	Maturity
To Do's	Assess strategic opportunities	Harden capabilities	Implement scaling training and capabilities	Apply Intelligent Automation enterprise-wide
	Benchmark current competencies	Benchmark current progress	Introduce team upskilling and change management	Standardize practices to build reporting capabilities
	Evaluate potential use cases and tools	Onboard your teams and begin enablement	Treat automation as business-led	
	Establish initial proof of concept (PoC)	Implement focus areas	Federate the program across the business	
Automated Processes	**<10** processes	**5-10** processes	**20-100** processes	**100+** processes
	• How have our customers changed and what do we need to do to deliver to them? • Which KPIs should be used to measure business value of Intelligent Automation PoCs? • What is our current approach to our processes?	• Which early delivery methodology will be most effective? • How can we best model a scaling pipeline? • What sort of value realization framework do we need to implement?	• How can we best make the tool configurable for non-technical staff? • What scaling decisions will impact cost the most? • Which areas of the business should prioritize implementation?	• What does effective long-term governance look like for me? • How can we embed IA into service optimization and sourcing? • How can we best facilitate continuous innovation?

Checklist: Choosing the right Intelligent Automation tool

Further Reading
Intelligence, Simplicity, and Scale with WorkFusion

> Your technology should be three things; humanized, democratized, and simplified.

With the number of AI and automation companies growing exponentially by the day, the noise from the industry can be deafening when it comes to selecting the right vendor for your business. This difficulty is compounded by the fact that, according to a study by MMC Ventures, 40% of startups listed by analytics firms as active in the AI space are not actually utilizing AI whatsoever.

In some cases, even firms that are claiming to offer AI and automation are simply deploying third-party tools to deliver outcomes for their customers. As a result, enterprises are waking up to the fact that the huge sums of money flowing into these firms from venture capitalists are not necessarily indicative of how good their solutions are – or even if they develop their own solutions at all.

The following checklist can be used to identify the correct IA vendor for you:

✔ **Are they genuinely an AI company?**
Firstly, you need to identify whether a vendor genuinely offers their own in-house robotics tools that can outdo traditional RPA, or whether they are simply reliant on integration with third-party tools. If it's the latter, this will be more costly and bring significant technical debt. Examine their in-house capabilities and try to understand whether they're able to offer you a truly bespoke solution.

✔ **Are you relying on "Big Tech?"**
Solutions from the big tech companies like Microsoft, Amazon Web Services, and Google Cloud can seem attractive for a number of reasons. They offer a wide variety of pre-built tools and pre-trained APIs, which are good for generic applications like translation. However, these are not well-suited to company-specific applications such as reading insurance claims or banking settlement instructions.

There are also several long-term strategic issues that could crop up. Firstly, in instances where a cloud-based solution is the only option, many large companies – particularly in regulated industries – may not be easily able to send their data to a third-party cloud for processing or data storage. Furthermore, if the so-called big tech vendor in question later becomes a competitor, it can prove to be exceptionally risky.

✔ **Does the solution provide continuous real-time learning?**
There is no such thing as a final iteration of a Machine Learning model or a software bot. A recent McKinsey study reports that one out of three use cases for ML require model refreshes on a monthly and even daily basis – particularly in marketing, supply chain management, and manufacturing. With many tools requiring hundreds of thousands of data points to produce useful and accurate models, the need to quickly create new software robots and update them is therefore critical.

✔ **Does the solution offer low-code agility?**
Last year, a LinkedIn jobs survey found that Machine Learning and data science skills were among the most in demand across all industry lines. In other words, there's a skills shortage – and enterprises can't wait around to hire often prohibitively expensive engineering teams.

Look for a vendor that offers low-code solutions and the ability to deliver without necessarily needing a data scientist to jump in. The agility this offers will not only allow members of your organization to upskill – it will enable continuous innovation across the board. Velocity and ease of implementation are vital pre-conditions for scaling your IA deployment.

✔ How quickly can we reach operational deployment?

One of the biggest stumbling blocks to getting started and scaling with IA is the lack of a clear timeline for iterating and getting a solution off the ground. Without this in place, projects can easily fall into what Gartner characterizes in their technology hype cycle as the "trough of disillusionment" – after a period of initial interest, the project can get bogged down in an endless proof of concept phase with implementation delayed. You need a program that offers clear progression from an initial PoC all the way up to deployment and production – think weeks and months, not years.

✔ Can the tool automate roles as well as tasks?

For several years now, any discussion of AI and automation has been heavily associated with widespread job losses and human obsolescence. However, it is increasingly clear that it is specific tasks and roles, rather than entire jobs, which will be automated, as a 2018 MIT paper argues (*to read this paper, see below*). To deliver ongoing transformation within an organization, you need to find a program which offers the flexibility to automate individual tasks across different roles. It therefore needs to be able to handle unstructured data in any language, any kind of input dataset, and any kind of application.

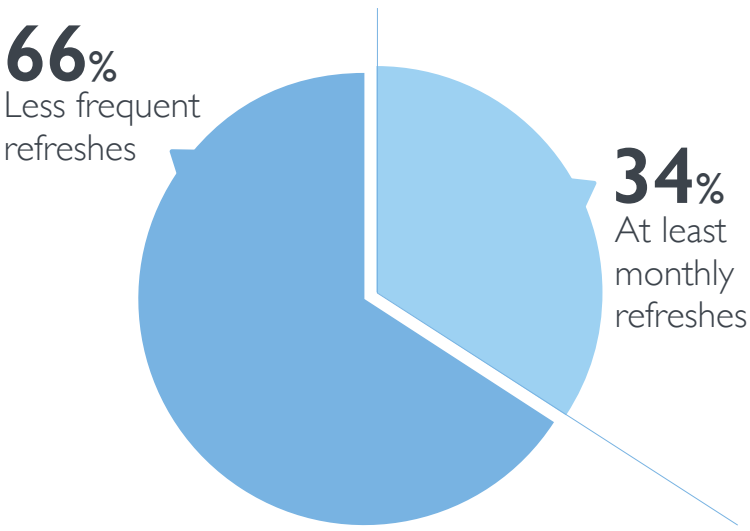
✔ Can you use normal hardware to implement?

Some AI vendors will push the need to buy expensive custom chips, GPUs, and powerful computers dedicated to Machine Learning. Even for large companies with sophisticated IT organizations and specialized resources, custom hardware may not be feasible, nor resource-effective. Programs that can run on your existing IT infrastructure will make role automation that much smoother without the need to embark on a disruptive hardware overhaul.

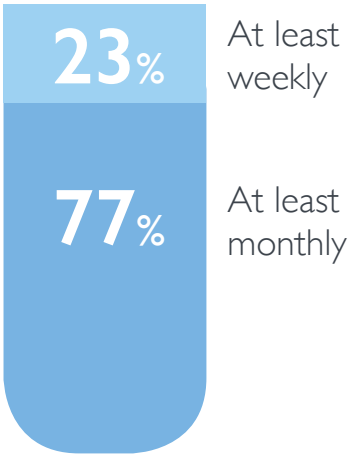
Download source PDF
What Can Machines Learn and What Does It Mean for Occupations and the Economy?

For about 1/3 of use cases, the models require frequent updating: around 3/4 of those use cases require monthly refreshes, while nearly 1/4 are at least weekly

Share of use cases



Frequency of refresh required



NOTE: Numbers may not add up due to rounding
Source: Mckinsey Global Institute analysis

Scaling Intelligent Automation: Pitfalls to avoid

Ciarán Daly

***Ciarán** is a journalist covering the critical issues, debates, and real-world use cases surrounding Artificial Intelligence – for executives, technologists, and enthusiasts alike.*

> A major error that enterprises often make is to approach their Intelligent Automation solution as a hammer in need of a nail.

You've chosen an Intelligent Automation tool that fits your needs, and perhaps even got a few PoCs off the ground. But the journey is nowhere near over yet, and as your Intelligent Automation project moves into the growth and maturity stage, there are some key pitfalls and obstacles that you should be wary of.

Failure to launch

One of the most prevalent obstacles to scaling IA efforts comes early in the journey: failure to launch. In a recent AI Business interview, Traci Gusher, Principal for Data and Analytics at KPMG, said this problem is "as much a technology issue as it is cultural." Organizations often become stuck in the lab, with very few solutions moving to production.

This speaks to the need for a clear iteration timeline, but as Gusher argues, it also demands a bolder appraisal of the intersections between technology and business functions within the organization. "Firstly, data scientists and engineers work differently than most IT teams. Data scientists and engineers are creative, experimental, and focused on modelling to an outcome," she explains. "Conversely, IT teams are program and project-focused, with deadlines and policies driving their work. It is critical to build a cultural bridge between these teams and closely integrate throughout the lab and industrialization processes."

"Secondly, for AI to drive value, the business must be ready to change as a result. It is as necessary for organizations to plan and work as hard at preparing to change processes, and even people, because of deployed AI, as it is to build the capabilities themselves."

Automating inefficient processes

A major error that enterprises often make is to approach their Intelligent Automation solution as a hammer in need of a nail. While automating an inefficient process can make that process marginally more effective, it can cause significant issues when it comes to scaling automation efforts.

Bill Gates once famously said: "The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency."

Before embarking on a wide-scale automation initiative, you firstly need to take a step back and assess the efficiency of each individual process. If one process in the chain set to be automated is inefficient, it can create a significant – and dangerous – bottleneck. This needs to be addressed ahead of time with a clear assessment procedure for each process subject to automation. Combine qualitative insights from your staff with any existing workflow data to identify where the timewasters already exist, and ensure any task is clearly defined before automating.

Ineffective maintenance

As you'll have discovered on your Intelligent Automation journey, deploying a robotic workforce is not merely a case of hitting the "start" button and taking a step back. Scaling the number of bot deployments means increasing complexity, and with

it, an increasing need to audit and maintain your deployments.

The solution is twofold. Firstly, develop and implement a clear governance framework across the organization. As the numbers of deployments increase, cross-department development standards need to be put in place to manage lifecycles, continuously assess risk and integration, and implement standardized control frameworks. Secondly, designate ownership of key deployments, ensuring that any errors are reviewed, addressed, and fed back into your knowledge base.

Removing human expertise from the equation

One of the most critical threats to the success of any Intelligent Automation project is the loss of human process expertise as a result of rapid growth. By scaling uncontrollably, the organization is at risk of removing humans – and therefore their process knowledge and expertise – from the loop too quickly. If changes to the deployments in question are then executed incorrectly and a task failure causes issues downstream, the organization is left vulnerable – and may no longer have the human experts in place to quickly address the problem.

Further Reading
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