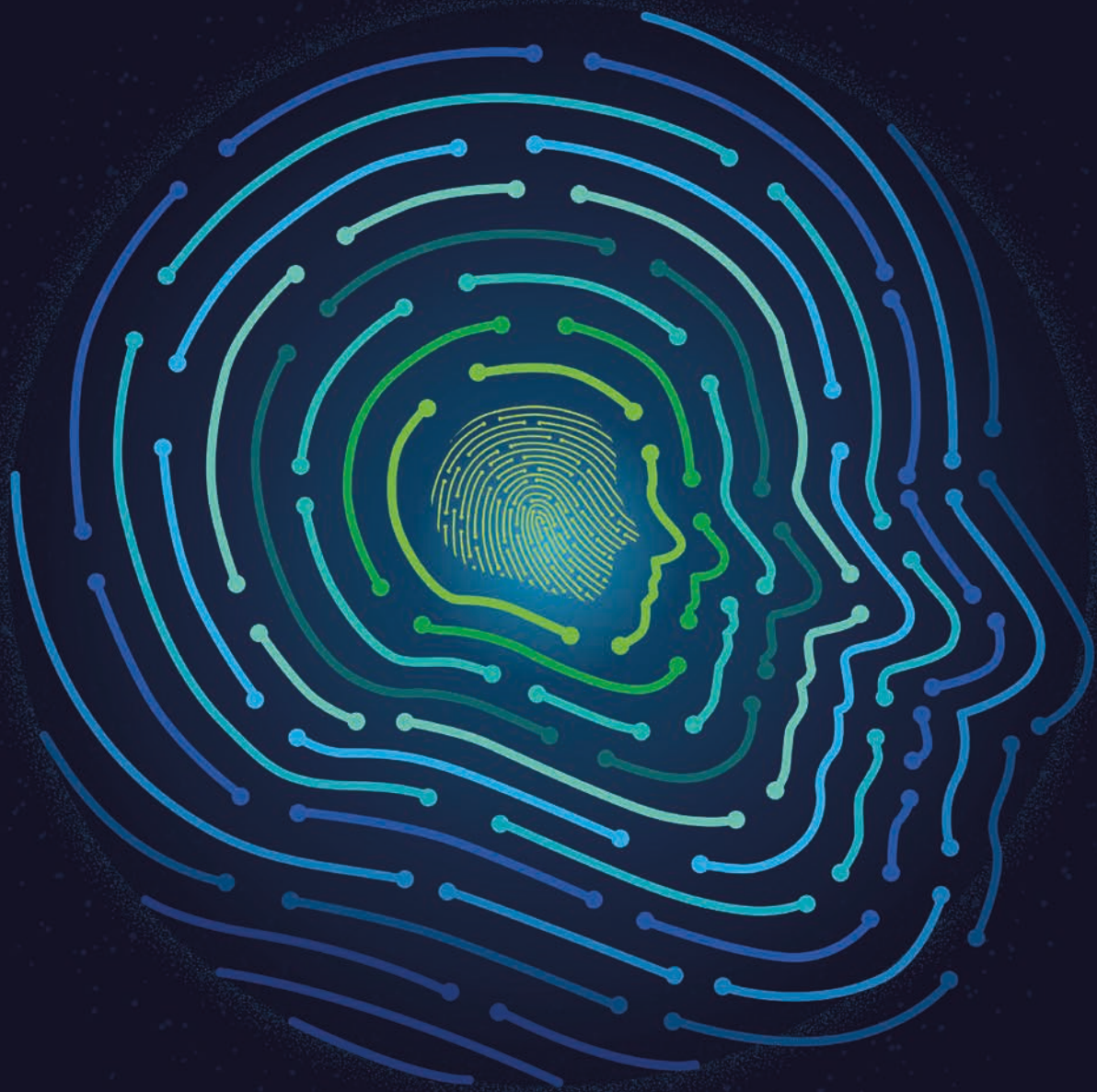


**Deloitte.**  
Insights



# Automation with intelligence

Pursuing organisation-wide reimagination

Deloitte provides a portfolio of services and assets to imagine, deliver and run intelligent automation. Through immersive events we expose and explore opportunities to define the vision, strategy and business case for widespread adoption across the enterprise. We help executives refine the design, tools and methods necessary in order to rapidly scale up automation. As the business transformation takes shape and the benefits are realised at scale, Deloitte provides bot management, maintenance and enhancement. Learn more on [Deloitte.com](https://www.deloitte.com).

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## DEFINITIONS

**Artificial Intelligence:** AI technologies can process unstructured data and automate tasks that previously required human intelligence or judgment, such as extracting meaning from images, text or speech, detecting patterns and anomalies, and making recommendations, predictions or decisions. They include machine learning, deep learning, natural language processing and natural language generation.

**Business Process Management:** BPM is the discipline of managing processes (rather than tasks) to improve business performance outcomes and operational agility. BPM software tools are used to model, implement, execute, monitor and optimise end-to-end enterprise business processes.

**Intelligent Character Recognition:** ICR is the next generation of Optical Character Recognition (OCR) technology, which uses AI to enhance the quality of data extracted from documents through context and machine learning.

**Low-code:** This refers to automation tools that have graphical interfaces, enabling a wide population of non-technical users (rather than trained software technicians) to build automations.

**Optical Character Recognition:** OCR is a technology that enables the conversion of non-editable documents, such as scanned paper or PDF files, into digital text.

**Orchestration:** This refers to how automations are managed and scheduled to optimise workflow. Orchestration can be manual or scheduled, or it can use data and algorithms to determine the best time to perform tasks.

**Process mining:** This refers to the use of specialised data mining algorithms to identify trends, patterns and details contained in event logs recorded by an information system, to define and understand the underlying business process.

**Process monitoring:** This refers to the use of tools as part of the BPM discipline to identify process bottlenecks and resource overload.

**Robotic Process Automation:** RPA is business process automation in which software performs tasks that can be codified by computers. It is often referred to as 'robotics' or 'robots' and is defined as the automation of rules-based processes with software that utilises the user interface and can run on any software, including Web-based applications, ERP systems and mainframe systems.

# Introduction

Humans have always been afraid of the unknown. And yet, even as children, our curiosity inexplicably compels us to explore further afield or to reimagine our own bright but small worlds. Our preoccupation with the unknown has changed: The folklore of the Brothers Grimm gave way to authors and poets like William Blake and Mary Shelley, who gave way to the ubiquity of 20th-century science fiction. But even as nature gave way to technology, the act of creation has remained central to the unknown. Humans imagining and reimaging.

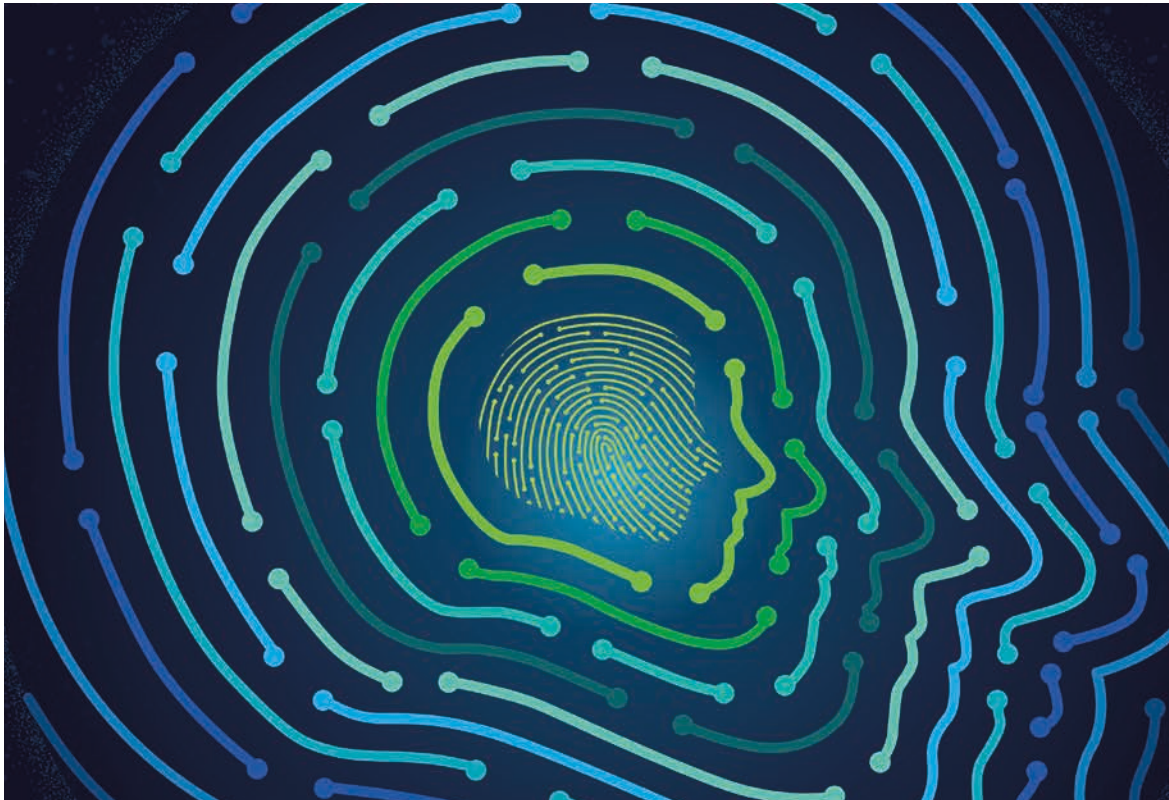
**O**UR IMAGE OF the robot, shaped by popular culture and modern-day fairy tales, is one of contradictions, partly rooted in our fear of the unknown. Robots are regarded as unintelligible intelligent machines, heralding a dark dystopian near future, first in our homes and then in our workplaces; or they are seen as digital co-workers, who help us be more human by taking on our most tedious tasks, freeing us to create, collaborate and communicate. Our ability to reimagine work, society, the climate and the economy will determine what becomes of the robots of the near future. How we use and benefit from any kind of intelligent automation, robots included, depends on us: humans.

The global market for automation technologies, such as Robotic Process Automation (RPA), is expanding at a compound annual rate of growth of 40.6 per cent a year; it is likely to reach \$25.66 billion by 2027.<sup>1</sup> Deloitte's findings from a survey we conducted in mid-2020 reflect this growth. Having invited executives to open up about their intelligent automation strategies, the role of cloud and automation-as-a-service, and the impact of COVID-19, we found that the number of organisations that have implemented more than 50 automations has, after five annual surveys, finally reached double figures. Thirteen per cent of our survey respondents stated they are now implementing automation at scale.

## METHODOLOGY

To obtain a global view of how organisations implement and scale intelligent automation technologies, Deloitte surveyed 441 executives from 29 countries and a wide range of industries. Of the respondents, 67 per cent were from Europe and Africa, 21 per cent from the Americas and 12 per cent from Asia-Pacific. The range of participating executives included heads of automation (20 per cent), CFOs or finance directors (19 per cent), CIOs or IT directors (17 per cent), shared services leaders or global business services leaders (13 per cent) and COOs or operations directors (6 per cent), 25 per cent held 'other' roles. Deloitte also conducted a series of in-depth telephone interviews with clients and automation experts, to gather their automation stories for case studies.

In 2015, we published our first article exploring automation, "The robots are coming". At that time, only 13 per cent of organisations reported plans to increase automation in the coming months by investing in RPA.<sup>2</sup> Today, 78 per cent of our survey respondents have already implemented RPA and 16 per cent plan to do so in the next three years. But the potential of automation does not lie in a single technology; it lies in an ever-increasing range of technologies, tools and techniques that have yet to be used to their full potential.



Organisations that are implementing automation at scale differ from early adopters, in one particularly pronounced area: their approach to change. Those that have implemented more than 50 automations are more likely to reimagine what they do, not just redesign tasks or re-engineer processes. They are re-envisioning how work can be done, which allows them to expand their ambition, and evolve from taking small steps to achieving radical change.

The COVID-19 pandemic has created unique circumstances, with organisations needing automation solutions that offer scalability and rapid deployment. For some, their pandemic response allowed them to reimagine work. For others, automation enabled them to maintain core services during workforce disruption. In total, two-thirds of our survey respondents used automation to deal with the impact of COVID-19, and one-third accelerated their investment in cloud-hosted automation as part of their response to the pandemic.

**The COVID-19 pandemic has created unique circumstances, with organisations needing automation solutions that offer scalability and rapid deployment.**

To truly realise the value that intelligent automation can offer, automation leaders should keep in mind that transformation is not only about new technologies; it is also about human capital. Many organisations have not yet considered whether their workers have seen changes to their roles as a result of automation – an exercise that could unlock critical insights and pave the way to change workers' perception of automation. By adopting a human-centred, holistic approach to intelligent automation, an organisation can tap into the full value of available tools and technologies.

# Realising the potential of intelligent automation

## Robotic process automation and beyond

In the past few years, we have seen organisations embrace digital ways of working, and many have incorporated robotics and artificial intelligence (AI) as part of their transformation journey. Now we see a wider range of tools and technologies being adopted, including Optical Character Recognition (OCR) or Intelligent Character Recognition (ICR), Business Process Management (BPM), process monitoring and process mining. Implementing a wider range of technologies allows organisations to simplify business processes, increase the amount of work that can be automated and expand the range of potential use cases.

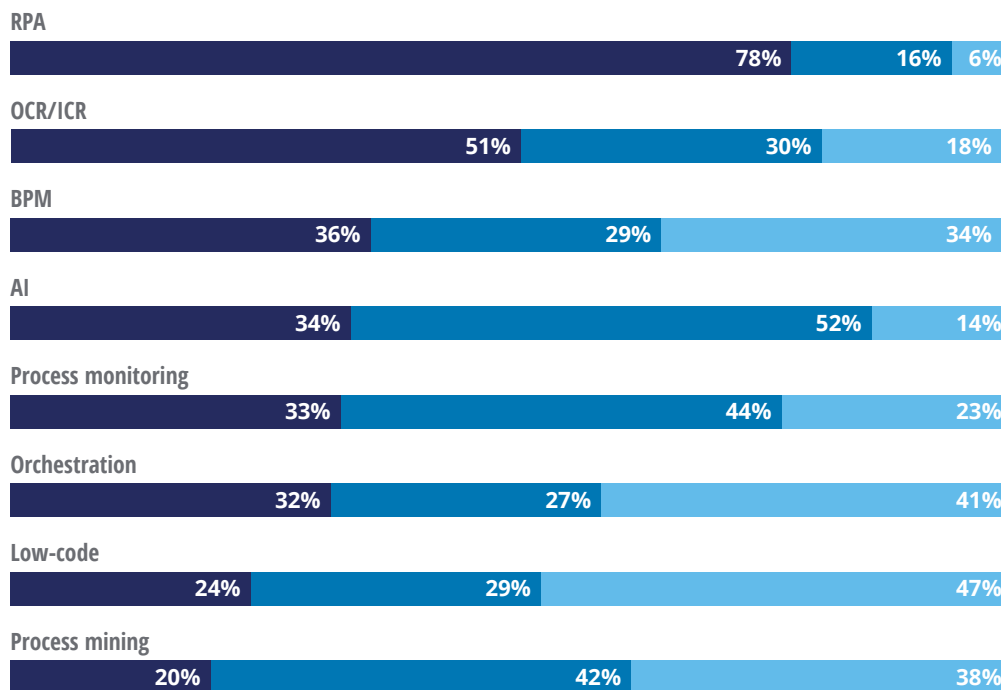
In 2020, as in previous years, RPA remains the most popular automation technology: The majority of respondents have already implemented RPA or will soon. But it is clear that most organisations use, or plan to use, more than one automation technology. Beyond RPA, the most implemented are OCR/ICR, BPM and AI.

**Implementing a wider range of technologies allows organisations to simplify business processes and increase the amount of work that can be automated.**

FIGURE 1

### Technology portfolio of respondents to support intelligent automation strategy

■ Already implementing ■ Plan to implement in the next three years ■ Currently no plans to implement



Source: Deloitte analysis.

n=320



## Many more have started their intelligent automation journey

Deloitte's analysis reveals that significantly more organisations have started their intelligent automation journey, compared to last year: 73 per cent versus 48 per cent. Of these, 37 per cent are piloting (1–10 automations), 23 per cent are implementing (11–50 automations) and 13 per cent are scaling (51+ automations). The number of survey respondents who said their organisations are deploying at scale has nearly doubled since 2019.

When we asked the executives to assess their transformation, a slight increase in automation maturity was revealed. After being asked to “imagine an ideal organisation transformed by intelligent automation”, respondents compared their organisations to that ideal, and rated them on a scale of 1 to 10 (1 indicating ‘not close at all’ and 10 indicating ‘very close’). The average rating increased from 4.24 in 2019 to 4.41 this year, suggesting that although progress is being made, executives clearly realise the potential to take intelligent automation further.

## By the time organisations implement and adopt new technologies, the market has already moved on.

One reason further progress has not been made is the pace of innovation, which continues to outstrip the pace of adoption; by the time organisations implement and adopt new technologies, the market has already moved on. There is still a long way to go before all automation opportunities are realised.



## High expectations and growing ambitions

Adopting and scaling intelligent automation technologies can provide significant benefits, as our survey respondents acknowledged. They voiced their growing ambitions in terms of cost reduction, increased productivity, improved accuracy and enhanced customer experience.

On average, organisations expect their automation strategies to drive a 15 per cent increase in revenue in the areas they are targeting; in 2019, survey respondents expected only an 11 per cent increase. Those organisations that have moved beyond piloting automation indicated that they have already achieved a 9 per cent increase in revenue in the areas they are targeting, on average, up from 5 per cent in 2019.

Deloitte is seeing that more mature organisations have moved away from an intelligent automation strategy that simply aims for ‘FTE replacement’. For example, one participant in our research interviews reported that automation has enabled collection of debts that were previously written off when the cost of chasing a payment was greater than the value of the payment.

Cost reduction is a priority for many organisations, and intelligent automation is now a proven route to achieve this. Survey respondents expect an average cost reduction of 24 per cent over the next three

years in the areas they are targeting. In 2019, survey respondents expected to achieve a cost reduction of 22 per cent. Those organisations already implementing or scaling their automations reported that they have achieved a cost reduction of 24 per cent, up from 19 per cent in 2019. Cost reduction through intelligent automation is real and significant, and it increases with organisational maturity.

## Deloitte is seeing that more mature organisations have moved away from an intelligent automation strategy that simply aims for ‘FTE replacement’.

It is well established that automation can increase the productive capacity of the human workforce, and intelligent automation solutions can deliver on ambitions for increased productivity. Ninety per cent of executives surveyed expect their automation investments to increase their workforce capacity over the next three years. Those organisations that have already implemented or scaled automation indicated that they have achieved a 12 per cent workforce capacity increase since they began their automation journey.

### **PAYBACK UNKNOWN**

Despite organisations’ burgeoning ambitions, a surprisingly large number of survey respondents have not calculated the payback period of automation projects. Among organisations in the pilot phase, half have not estimated the payback period. Of those implementing and scaling solutions, over a third (36 per cent) have not done so either.

## Winning strategy for intelligent automation

To succeed in intelligent automation, executives must make a conscious choice about what they want to achieve, based on the ‘art of the possible’. Having a robust and realistic intelligent automation strategy is critical for success. But only 26 per cent of piloting – and 38 per cent of implementing and scaling – organisations told Deloitte they have an enterprise-wide intelligent automation strategy. In addition, only 40 per cent of piloting and 65 per cent of implementing and scaling organisations claimed to have a clear and accepted vision and ambition for intelligent automation.

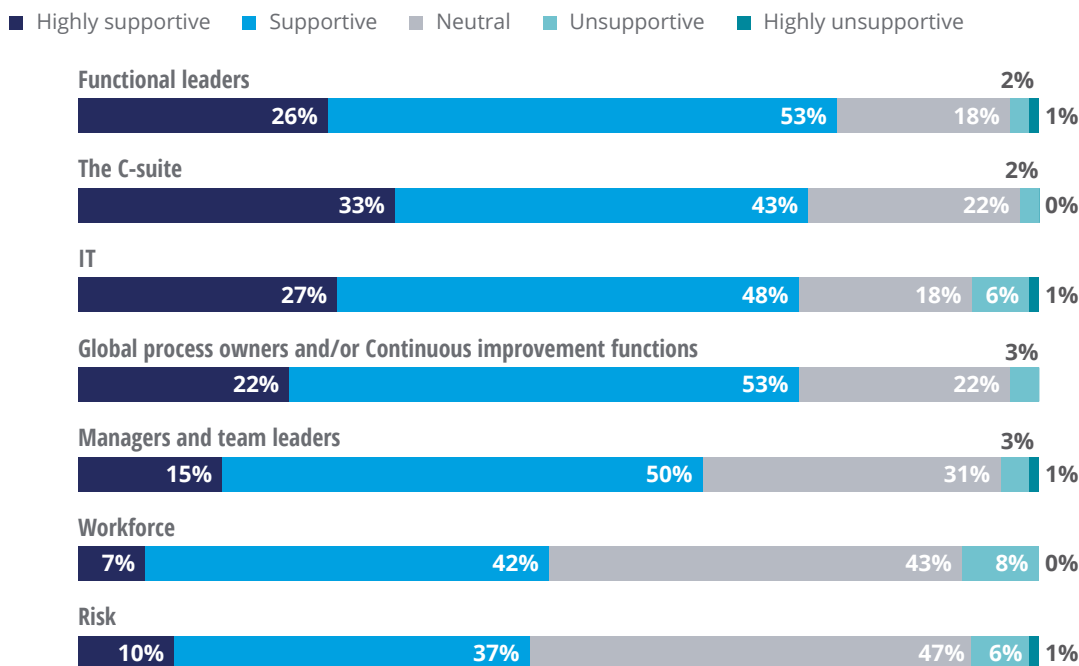
The delivery of a successful strategy is typically not possible without the right support from senior leaders and the workforce. Our analysis shows

that the top three most supportive stakeholder groups are functional leaders, the C-suite and IT. In organisations that are implementing and scaling, the workforce is more supportive than in their piloting counterparts. This is not a surprise, as workers at scaling organisations will generally have had more exposure to, and experience with, new automation technologies, enabling them to understand and embrace their full potential.

**Having a robust and realistic intelligent automation strategy is critical for success. But only about a quarter have one.**

FIGURE 2

### Level of support for intelligent automation strategy, by stakeholder group



Source: Deloitte analysis.

n=320

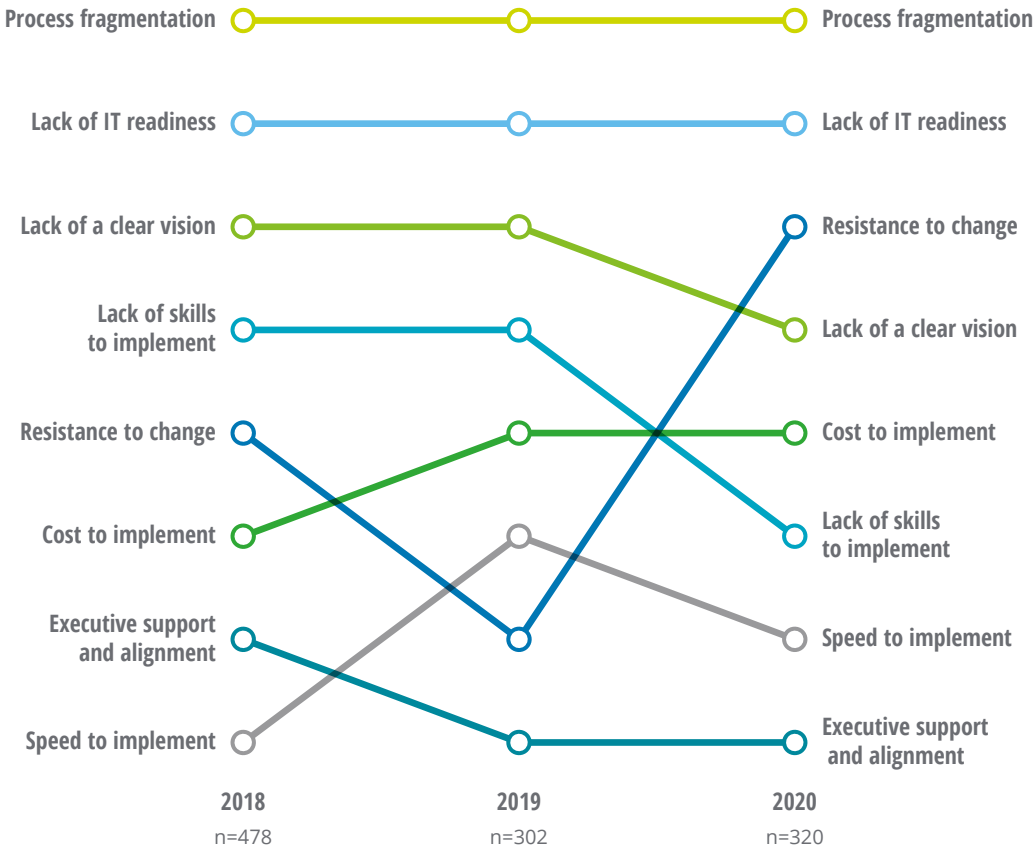
# Overcoming barriers to deliver value at scale

As organisations move along the automation maturity curve, many consistent barriers continue to hold them back from adopting automation at scale. Process fragmentation and a lack of IT readiness remain the top two barriers, as they have in the past two years. Survey responses showed resistance to change as the third, closely followed by lack of a clear vision. Examining each of these obstacles can help uncover practical solutions.

## PROCESS FRAGMENTATION

Immature and fragmented processes have been cited in our past three surveys as the most significant barrier to delivering intelligent automation at scale. Process fragmentation happens when business-critical processes are not managed in a unified workflow. They become a series of handoffs among departments, teams and systems, introducing a risk of error and delay with each handoff.

FIGURE 3  
Top barriers to scaling intelligent automation



Source: Deloitte analysis.

The actual differences among processes also cause fragmentation; sometimes there are legal, regulatory or critical business reasons to do things differently, but most of the time there are not. RPA is well attuned to address these issues, working as the 'glue' between disconnected systems and processes. However, as organisations start to use low-code and BPM tools, rather than just RPA, they need to rethink how to tackle fragmentation.

Our survey showed only 38 per cent of organisations have mature process definitions, standards and management. This magnifies the challenge of embracing intelligent automation but can be overcome by making process excellence a part of every intelligent automation programme. This approach allows you to review business-critical processes, identify pain points or blockers, and understand their upstream and downstream counterparts. Then processes can be simplified or eliminated before delivering task-based automation. Or, even better: End-to-end processes can be reimagined before making use of intelligent automation technologies.

#### LACK OF IT READINESS

Most organisations still rely heavily on their IT function to enable the automation they want to implement. Even though having a highly supportive IT function, equipped with the right technology, infrastructure and cybersecurity, is crucial, only 37 per cent of organisations reported that they have appropriate standards controlled by an intelligent automation centre of excellence. In many cases there is only a limited capacity to investigate, experiment and scale new technologies – trying to do all this at the same time, in a rapidly evolving technology landscape, can prove challenging even for the most advanced IT functions.

#### RESISTANCE TO CHANGE

Engaging the workforce in co-creating automations prompts workers to think about how their work will change by having a digital co-worker. By involving the workforce from the beginning in identifying, designing or even developing automations, organisations can also accelerate development and onboard new, digital co-workers faster.

Co-creating change is often met with less resistance than dictating how change should look. In Deloitte's experience, support from the workforce can also be earned by holding training and knowledge transfer sessions on different digital solutions, thereby demystifying proposed changes. Such engagement generates interest and excitement, especially if people can see examples of what automation can do.

#### LACK OF A CLEAR VISION

Survey respondents identified a link between successfully automating at scale and having a clear vision and strategy for intelligent automation. It is essential to make a conscious and well-informed choice about how and where intelligent automation might be applied to maximise the impact on business performance and return on investment, as well as the level of change the organisation is ready to undertake. Once the direction is set, organisations can more effectively prioritise the right processes for automation, develop and deliver solutions, and follow a road map to enable the growth of intelligent automation.

# Matching ambitions to reality

HERE IS A CLEAR difference between organisations that are piloting automations and those that are implementing and scaling their efforts. The latter are more likely to reimagine what they do and incorporate process change across functional boundaries, improving returns from automation. But in the piloting stage, organisations are more likely to automate current processes, with more limited change. The most advanced are transitioning away from the traditional approach of incremental, continuous improvement and re-engineering of their existing processes; they are now pursuing organisation-wide process reimagination.

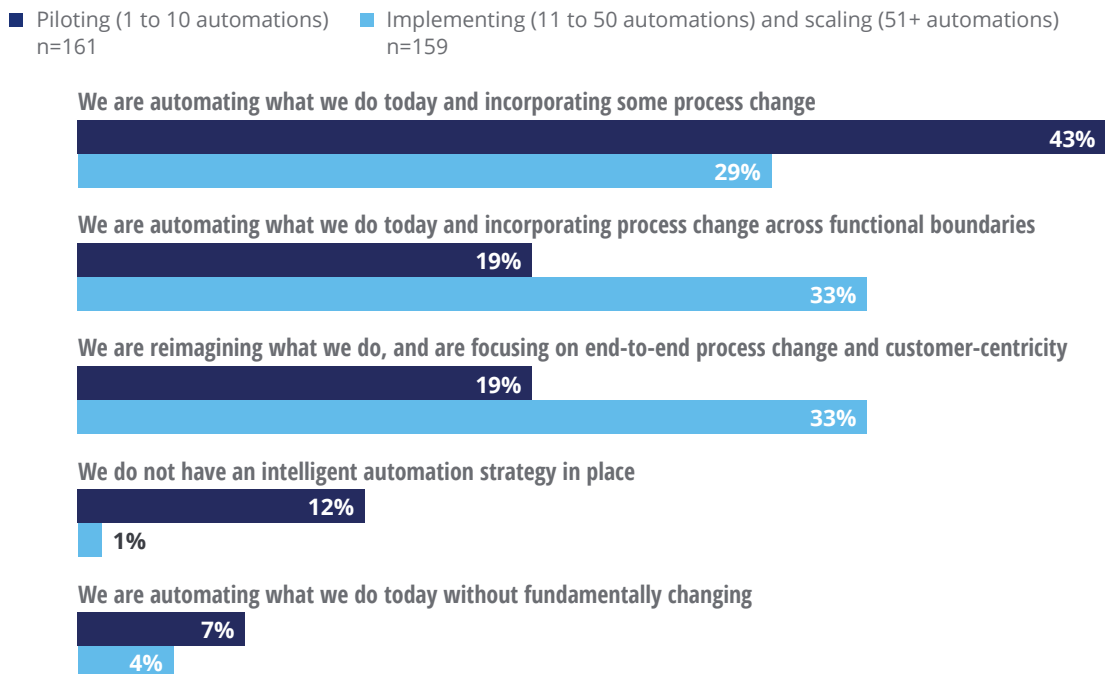
## From process re-engineering to reimagination

To deliver end-to-end intelligent automation, organisations must break down functional and process silos. They must also augment business processes through an effective combination of complementary tools and technologies, with BPM and low-code at the centre.

Our survey respondents stated that nearly half (49 per cent) of their automations require some form of process change, such as eliminating, simplifying or standardising.

FIGURE 4

### Scope of intelligent automation strategy ambition



Source: Deloitte analysis.

Given that process fragmentation is the number-one barrier to achieving scale, we can conclude that integrating process change with intelligent automation solutions is a critical lever for success.

These results highlight the trend toward organisation-wide process reimagination. To deliver the best outcome for an intelligent automation strategy, it is essential to understand the potential value that can be achieved through a range of process optimisation techniques.

Fifty-eight per cent of organisations surveyed said that they are using Lean to change processes (see figure 5). Lean is a well-established methodology to increase process efficiency by eliminating non-value-adding activities. When combined with task-based automation, this often offers ‘quick win’ benefits, including redeploying people away from low-value activities. Although Lean is a common first step to improve process efficiency and effectiveness, to get the most value from automation, organisations must move beyond it.

### **LESSONS FROM THE FRONTLINE** *Reimagining client due diligence*

A UK bank wished to create a digital operations function that would enable a frictionless service for the bank’s internal and external stakeholders, and differentiate itself in the market. The bank leaders’ ambition was to fix broken processes and automate manual operations to increase operational efficiency. They also wanted to be able to quickly adapt to increases in transaction volumes and reduce operational risk through better controls.

An initial review of the bank’s operations processes showed them to be highly manual and disparate, with numerous process handoffs and an absence of end-to-end ownership. Such process fragmentation breeds inefficiency and demands more effort to deliver value to the customer. It also diminishes the ability to adapt to environmental changes.

The process review documented 77 processes, identified pain points and issues in each, and classified the level of automation possible within each process area. The due diligence process across the operations function was then reimaged. With input from key stakeholders across the organisation, a new process design was created. The new design made use of workflow tools and technologies, such as AI, OCR and RPA; it enabled the same portfolio of services to be offered, but in a streamlined and consolidated manner.

The first process automation was developed, tested and deployed using a cloud-based, automation-as-a-service (AaaS) solution, within just eight weeks. The process selected was a client onboarding solution, which was draining 40 to 50 per cent of manual effort from the Client Due Diligence (CDD) team.

The process was reimaged to include:

- an automated case management and workflow solution, accessible via online portal
- a new digital audit trail, eliminating significant residual risk
- automated generation of improved management insights

In addition to the manual effort reduction, the new process slashed the number of onboarding forms used per case, by 40 per cent, and also lowered risk. Digitising the process made it scalable and enabled the team to handle higher volumes without additional manual effort.

To accommodate the bank’s ambition for broader transformation, the automation was developed in a way that its components could be reused for other CDD processes, reducing development time in the future. The bank then created a road map to automate the remaining processes.

Thirty-six per cent of survey respondents said they use service design, closely followed by organisation design (34 per cent), to change processes and organisational structures. These methodologies extend the opportunities with intelligent automation because they extend the focus to include users, rather than just the process. They can aid in breaking down organisational siloes, better support a medium- to long-term vision, and enable the aspirational outcomes available through reimagination.

Our survey showed that organisations that are scaling automations are more likely to deploy agile, multidisciplinary teams to implement their strategy than those that are piloting.

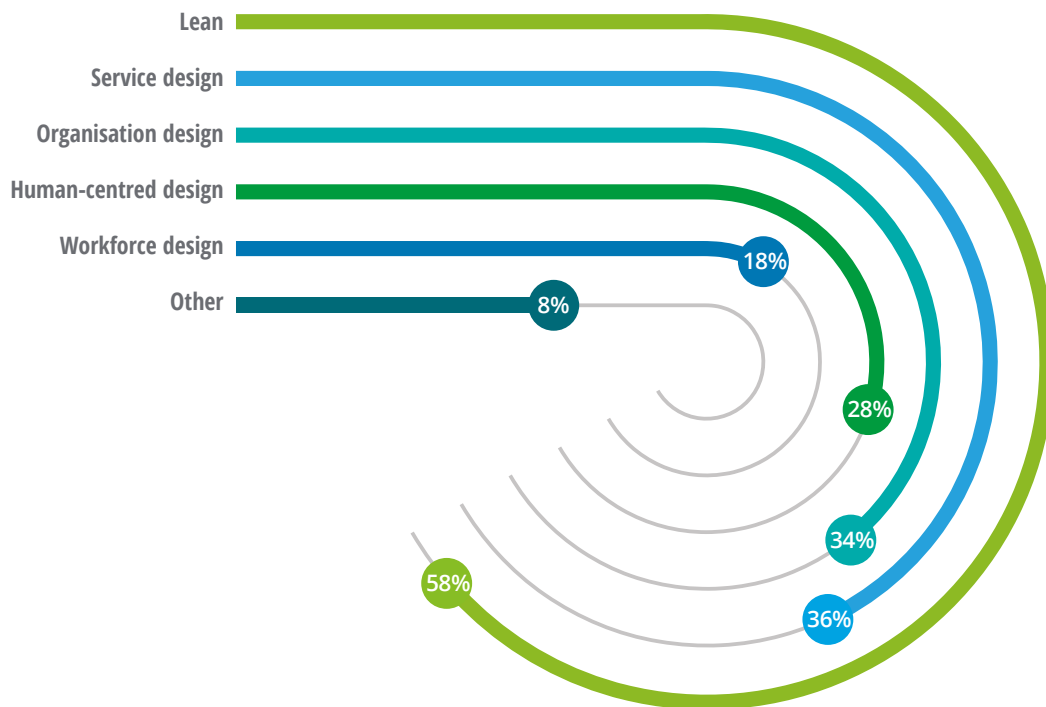
To achieve great returns from an automation programme, business leaders must fundamentally challenge the premise of what the organisation is doing to deliver that change. A collaborative combination of organisation, process, technology and data skills is needed to define the future state.

By deploying multidisciplinary teams, implicit and explicit beliefs can purposefully be challenged; this can uncover new ways of working that will create or deliver value. When left unchallenged, traditional ways of thinking tend to shape strategies, holding organisations back from truly innovating and reimagining their future offering and customer experiences.

**To achieve great returns from an automation programme, business leaders must fundamentally challenge the premise of what the organisation is doing to deliver that change.**

FIGURE 5

**Methodologies used by respondents to redesign processes**



Source: Deloitte analysis.

n=320

## Mining and monitoring for optimal outcomes

Survey respondents overwhelmingly agree there is a core benefit to using process mining and monitoring, although the adoption of those technologies does not yet match that belief.

Organisations can use mined data to compare real-life process execution with process design and identify improvement or process reimagining opportunities. For non-standardised processes, mining provides deep insights into the causes driving complexity and process deviations, so processes can be streamlined and automated in a more targeted way.

Eighty per cent of respondents said they agree that process mining drives better outcomes, but only 20 per cent stated they currently use it. There is clearly a significant opportunity for process mining to grow as a source of insight into business performance.

Because the quality of process mining depends heavily on the input, extracting event data suitable for mining can require considerable effort. For example:

- event data may be distributed over a variety of sources, be incomplete or contain outliers
- system logs may cover events at various levels of granularity
- finding, merging and cleaning any event data, as well as integrating process mining software into a technology suite, can be complex and time-consuming.

Process monitoring tools are used as part of the BPM discipline for managing processes (rather than tasks) to improve business performance outcomes and operational agility, and optimise end-to-end enterprise business workflows. Performance parameters allow measurement and evaluation of business processes. They make it possible to identify key problems and improvements, as well as measure the actual impact of the changes through key performance indicators.

Although 84 per cent of respondents agree that using process monitoring drives better outcomes, only 33 per cent already use it. One key barrier to adoption has been concerns over data privacy. For example, earlier in 2020 a UK-based investment bank was criticised by privacy campaigners after piloting monitoring software in its headquarters. The perceived threat to job security from low productivity and performance measurements is a very real concern for many workers.

**Eighty per cent of respondents said they agree that process mining drives better outcomes, but only 20 per cent stated they currently use it.**



**LESSONS FROM THE FRONTLINE*****Process analytics accelerates intelligent automation***

A large UK bank wanted to support its customer complaints function to deliver improved customer outcomes. The aim was to transform the complex, time-consuming and repetitive manual processes hampering important interactions with many banking customers.

It was clear that using traditional discovery methods would take months and carry the risk of being error prone. Instead, a cloud-based mining service was used to provide a sustainable backlog of opportunities for delivery.

The data-centric approach to business process analytics was developed specifically for intelligent-automation transformations. The tailored solution tool uses a combination of process mining and task mining; this way it highlights process complexities, provides fact-based insights and exposes opportunities for elimination, simplification and automation through a fully visualised end-to-end process dashboard. It proved to also remove subjectivity and emotion from automation choices.

In this case, 50,000 customer complaints were processed and 50 complaint handlers' desktops were mined to create a full end-to-end view of the complaints process within the bank. The tool helped fast-track certain opportunities that aligned with the bank's immediate strategic priorities.

Among the opportunities was an approach to ombudsman escalations: a predictive analytics engine was installed to discern which customers are more likely to escalate complaints to the ombudsman and an AI (Natural Language Processing) engine to help with the logging of complaints. The bank is now looking to roll out this tool across the entire retail bank.

## Big little details: Productivity, trust and data

The workplace technologies described above are reshaping the debate on monitoring and surveillance. They are raising important questions about productivity, trust and data in the modern world of work. Forty per cent of survey respondents agreed that, in increasing remote working, their organisations have increased process monitoring; but only one-third of respondents said they have policies to ensure ethical development of their intelligent automation strategy.

Implementing a wider range of automation technologies reveals a wider range of use cases suitable for automation. Process monitoring and process mining tools can also speed the discovery of inefficiencies. As the scope of potential automations

increases, decisions about what and how to automate become more complex, yet the value of those opportunities significantly increases. To capture the value, the workforce needs assurance that they are trusted to be productive and efficient. Any process monitoring technology implementation should be accompanied by a clear message that the technology is being used ethically and used to capture data only on select applications used for business purposes.

**Forty per cent of survey respondents agreed that, in increasing remote working, their organisations have increased process monitoring.**

# Cloud+automation

Over the past decade, cloud has proven its value as an enabling technology supporting numerous successful corporate strategies and new business models. Cloud investments are expected to double their share of IT budgets over the next three years.<sup>3</sup>

AS DELOITTE'S "TECH TRENDS" predicted in 2017, the use of cloud infrastructure has given rise to everything-as-a-service (XaaS), and that includes automation.<sup>4</sup> Fast-forwarding to 2020, a third of surveyed organisations (31 per cent) said they have accelerated their investment in cloud-hosted automations in response to the COVID-19 pandemic. Deloitte sees cloud as the future enabling technology for automation.

## Scalability, speed and cost benefits

Our survey found that only 11 per cent of organisations are not using, and do not plan to use, cloud infrastructure for their automation solutions. Almost half already use it for some

of their automations, and 13 per cent run automations solely on cloud infrastructure. Scalability, faster deployment and lower cost are the three main reasons respondents gave for using cloud infrastructure for their automations.

Cloud infrastructure has been proven to keep pace with demand and has the ability to be scaled up or down, to ensure capacity is always optimised: a key benefit in minimising future operating costs. As a result, most respondents said they believe the barriers to scaling cloud-hosted automations are lower than the barriers to scaling on-premise automations.

### **FLEXIBILITY AND SECURITY IN CLOUD ARCHITECTURE**

There are three key considerations when exploring the use of cloud infrastructure for automation solutions: security, data and applications. In addition to existing cloud security guardrails, organisations should have a dedicated secure client container (VPC) that hosts the capabilities required to automate a business process.

The VPC should, for example, host digital workers and document understanding capabilities. Any associated data should also be held in this container, to prevent contamination or compromise, and the VPC's security should be ensured through penetration testing.

The container has an encrypted site-to-site VPN with the organisation's network, and the principle of least privilege should be applied to access. An 'infrastructure as code' automates the process of scaling up or down, to match the demand for digital workers to accommodate spikes in transaction volumes.



## The great potential of automation-as-a-service

In Deloitte’s article “Thriving in the Era of Pervasive AI”, we pointed out that AI adopters tend to buy their capabilities, rather than build them.<sup>5</sup> More broadly, we found that 66 per cent of our survey respondents believe AaaS will become a critical way to deliver intelligent automation in the next three years.

To gain a better understanding of how organisations use AaaS, we asked survey respondents to describe their current use. More than one in three respondents (36 per cent) reported that they do not use AaaS. The remainder use some form of it, most popularly for end-to-end development, management and maintenance of automations,

and development of automations. They expect AaaS to deliver scalability with faster and cheaper deployment than more traditional methods.

For those organisations still considering or assessing AaaS, three deeply connected factors can prove valuable:

- a cloud-based intelligent automation platform that is scripted for rapid set-up
- a service that ensures robust hosting, monitoring and operation of live automations
- an ability to connect the service to transformation

### IMPLEMENTING AaaS

To support multiple business processes and extend the scope of automation, a robust process is needed to assess new capabilities and ensure the correct tools are implemented. This extends to the technology architecture and how it fits in the cloud platform, as well as vendors, which should be assessed to compare features of comparative tools, licensing and the total cost of ownership.

# Keeping people in the picture

Many organisations are actively seeking ways to integrate automation into their teams to make the most of complementary human-machine capabilities. Deloitte uses the term 'superteam' to refer to the combination of people and automation to solve problems, uncover insights and create value. The ambition of superteams is promising but hindered by a readiness gap.

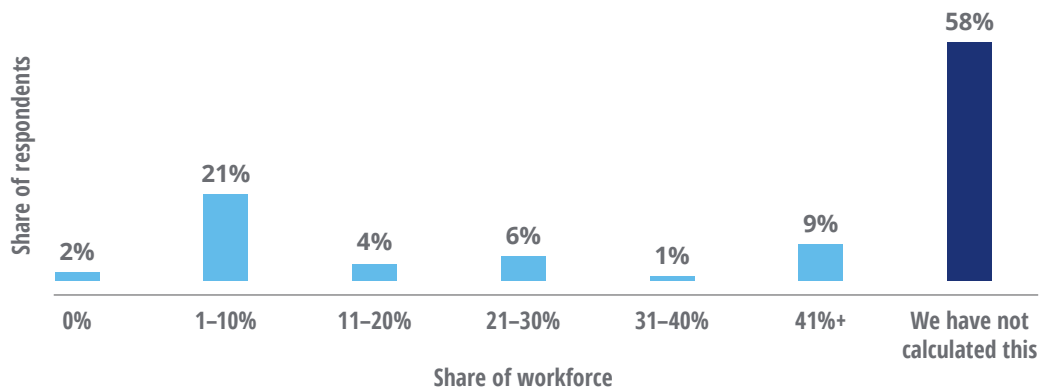
## Calculate to calibrate change

Performing work by combining human and artificial intelligence implies far-reaching change in an organisation; according to our survey respondents,

they are not as ready for this change as they could be. Despite the opportunity presented by super-teams, 58 per cent of organisations have not yet calculated how their workforce's roles and tasks, and the way tasks are performed, will change.

FIGURE 6

### Share of workforce that has seen changes to their roles, tasks and ways of working as a result of intelligent automation (implementing and scaling respondents)



Note: These responses exclude "We have not yet started our automation journey" and "We are piloting (1-10 automations)"

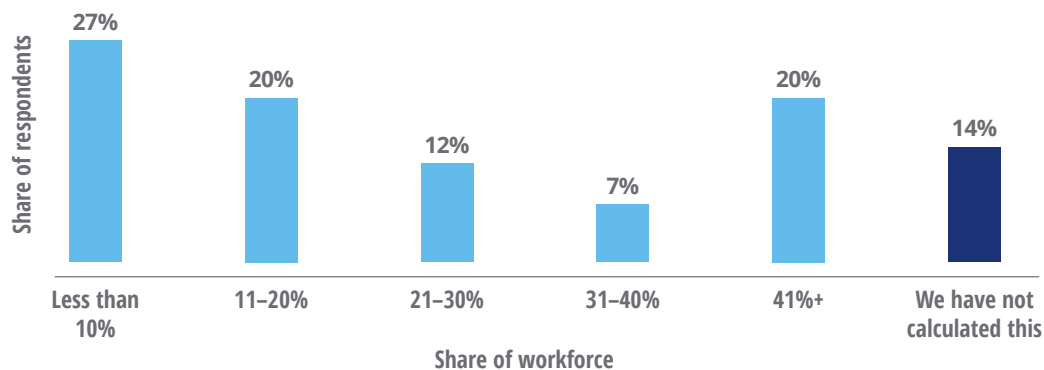
Source: Deloitte analysis.

n=159

According to survey respondents, on average, 23 per cent of workers have seen a change to their roles and ways of working because of the implementation of intelligent automation. This is an increase from the 2019 average of 19.5 per cent of workers.

FIGURE 7

### Share of workforce needing to retrain in next three years as a result of intelligent automation (piloting, implementing and scaling respondents)



Source: Deloitte analysis.

n=274

The question is no longer whether automation will impact the workforce but how. In Deloitte’s “2020 Global Human Capital Trends”, 54 per cent of chief human resources officers stated that they believe the number of jobs in their organisations will remain the same, but that the nature of these roles will change.<sup>6</sup> Our survey respondents indicated that one in ten workers has already had to retrain because their role has been affected by automation. This number will grow; over the next three years, survey respondents expect that they will have to retrain 34 per cent of their workforce because their roles have sufficiently changed as a result of automation.

**The question is no longer whether automation will impact the workforce but how.**

### From automating work to augmenting workers

Reskilling and revised role definitions that are based on how the human workforce will interact with machines should be baked into intelligent automation adoption plans. But the initiative should not end there; in Deloitte’s “2020 Global Human Capital Trends” we proposed that organisations must go further, not just in how they train workers but how they design and organise work.

Simply deploying automation, substituting intelligent machines for human workers, may reduce costs but will not necessarily translate into value and new meaning. To capture significant productivity gains, technologies need to work in concert with one another to deliver new work outcomes. Work must be reimagined, by business leaders pushing outside the boundaries of process maps, looking beyond the limitations of currently used technology and using automation to fundamentally transform the way that work gets done.

## DESIGNING SUPERJOBS

To understand what jobs will look like in the future, organisations should imagine the key work outcomes – not tasks – of future roles. By doing this, leaders can begin to envision the changes needed to enable the future of work across:

- work: activities, responsibilities and team
- workforce: skills, experience and talent programmes
- workplace: tools, technologies and workspaces

Through day-in-the-life interviews of current employees and workforce benchmarking, leaders can identify where capacity will likely be freed and activities will change. This insight can then be used to design the future of each selected role, including outcomes for which the employee is responsible, skills and capabilities required, tools involved, collaboration patterns needed and potential sourcing options.

This exercise can inform learning and development plans to upskill current staff based on future needs. It can also provide a view of potential new experiences and credentials, which can inform recruitment strategies, such as to find new talent sources. Moreover, this lays a foundation for workforce planning and talent review discussions.

A good starting point is to design superjobs, which requires finding new human dimensions of work. Superjobs combine the work and responsibilities of multiple traditional jobs, using technology to augment and broaden the scope of work performed and engage a more complex set of domain, technical and human skills. Superjob roles reflect the significant productivity and efficiency gains that can arise when people work with technology.

Superteams extend this concept beyond the individual to the group,<sup>7</sup> deploying technology that will enable people, teams and intelligent machines to work together. This greater degree of transformation brings meaning for workers and customers, while driving gains in cost and value.

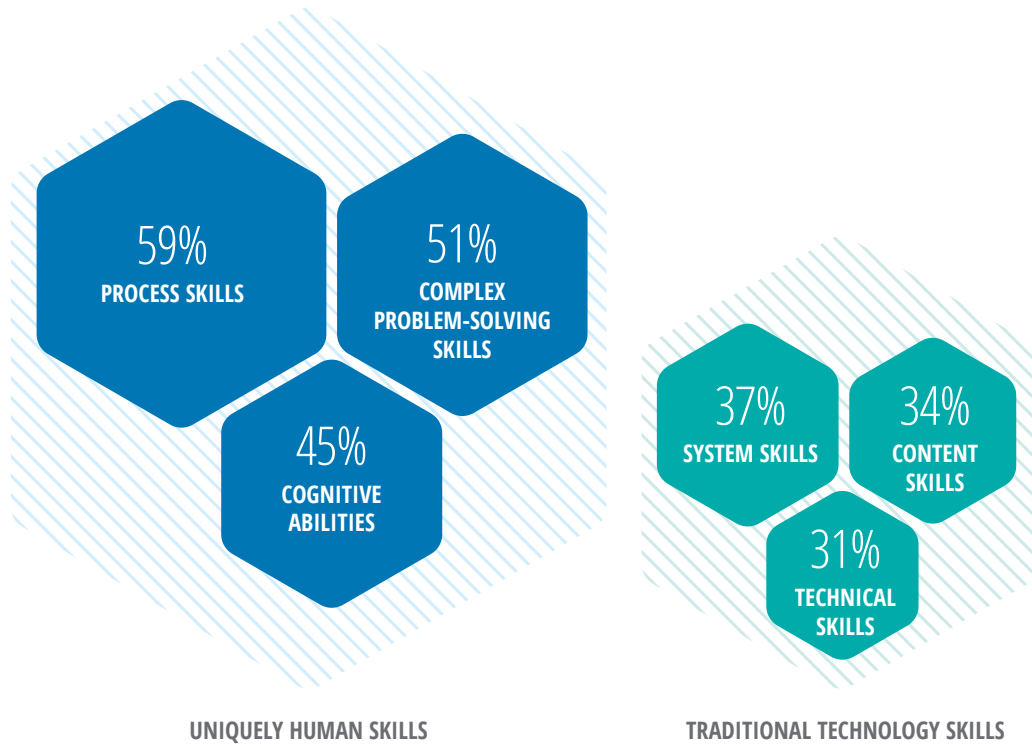
## Focus on uniquely human skills

Where training is being offered to workers who have been affected by automation, it seems there is an emphasis on developing uniquely human skills. Fifty-nine per cent of surveyed organisations are providing retraining that focuses on process skills, like active listening and critical thinking, see figure 8. Moreover, over half of organisations are offering retraining in cognitive abilities, such as creativity and problem solving.

This suggests a move away from traditional technology user training, toward enabling workers to effectively use newly implemented technology in a way that augments and adapts their roles. By focussing on truly human skills, organisations can create a continuous learning culture and reduce impact as some capabilities become obsolete.

FIGURE 8

### Focus of retraining opportunities



Source: Deloitte analysis.

n=218

### Re-architect work to create new meaning for the workforce

Deploying automation without reimagining processes and re-architecting work may reduce costs but will not necessarily translate into value and new meaning for organisations. To capture significant productivity gains, technologies need to work in

concert with one another towards the objective of new work outcomes. To re-architect work, organisations must push outside the bounds of process maps, look beyond the limitations of the technology currently in place and use automation to fundamentally transform the way that work gets done. By deploying technology to enable people, teams and intelligent machines to work together, new value and new work outcomes will be created.

**To capture significant productivity gains, technologies need to work in concert with one another towards the objective of new work outcomes.**

# COVID-19 and intelligent automation

Most survey respondents told Deloitte their organisations are rethinking how work is done in response to COVID-19. The shift to remote working, and the configuration required to provide COVID-secure worksites, is expected to increase the use of automation among the workforce.

**T**WO-THIRDS OF SURVEYED organisations have used automation in their COVID-19 response. Most notably, automation has enabled more remote working and addressed rapid increases in processing requirements. Twenty-three per cent of survey respondents said they have prioritised automations that improve their organisational resilience.

However, survey responses did not point to a conclusive view of how COVID-19 has affected investment in intelligent automation. Some respondents have seen an acceleration in investment, but a similar number noted the opposite. Nine per cent of organisations said they launched their investment in automation in response to the challenges posed by the pandemic.

## LESSONS FROM THE FRONTLINE

### *Lockdown automation live in seven days*

To help address the unprecedented challenges of enforcing new COVID-19 regulations, the Police Service of Northern Ireland (PSNI) decided to rapidly develop an RPA solution that would alleviate fluctuating demand on their Contact Management Centre (CMC). The issue had begun after new laws and guidelines were introduced in March 2020 and PSNI introduced an online reporting platform to allow the Northern Ireland public to report 'lockdown' breaches.

Initially every report made generated a PDF document, which the CMC staff then had to re-key into a PSNI command control system to create a record and enable a decision about action. The first weekend that the system was operational, 2,300 reports were made – coinciding with good weather – but, over the next days and weeks, use of the online platform fluctuated. A day with good weather might see 800 reports, but a rainy day might see only 150 reports.

To accommodate the days of high use, additional staff was required to process the reports, which was difficult to achieve as some staff members were self-isolating or shielding and many others were working remotely, following government guidance. Timely responses were critical in maintaining public confidence in the online platform and the new COVID-19 regulations more broadly. However, a backlog soon developed, and the decision was made to automate the connection between the online reporting platform and the command control system.

The PDF produced by the online reporting platform was mapped to fields in the command control system. With the involvement of the CMC staff who had been re-keying the data, and using existing technology, an automation was designed, developed and deployed within seven days.

The effect was immediate. Bots pulled data from the PDF to input in the system, and the automation created batches and prioritised reports. Every five minutes two bots would re-key three batches of four reports. Previously, a call handler had needed 11 to 12 minutes to re-key one report, but automation freed up time for them to enact timely responses. It also enabled the CMC to introduce a feedback loop, which informed the public of what action was taken as a result of their report.



**LESSONS FROM THE FRONTLINE*****Accelerated decision-making***

Crédit Agricole Technologies et Services (CA-TS) wanted to accelerate its automation project validation process in order to help deliver a range of French government measures that would mitigate the economic impact of COVID-19.

The French government facilitated state-guaranteed loans to be delivered by financial institutions to eligible businesses from 23 March 2020. These loans were bound by strict timelines and the scheme was valued at €300 billion. In addition, the bank offered and secured loan rescheduling and postponement solutions to businesses and professionals with cash-flow challenges caused by COVID-19. These urgent measures significantly increased the volume of the back-office transactions and required additional resources at a time when many staff needed to work remotely or quarantine.

CA-TS had established an RPA centre of excellence in 2018 with the aim to increase efficiency and productivity for its 39 internal customers. Its automation programme was increasingly mature. However, to deal with the unprecedented circumstances, high demand and reduced workforce capacity, the RPA programme required adaptation. The established project validation process could take up to three months, which was not feasible if RPA was to be part of the solution.

The governance and decision-making process was revisited to accelerate project validation and induce as little delay as possible. RPA project requests were prioritised and validated depending on urgency level and business criticality, with COVID-19 measures being the most critical.

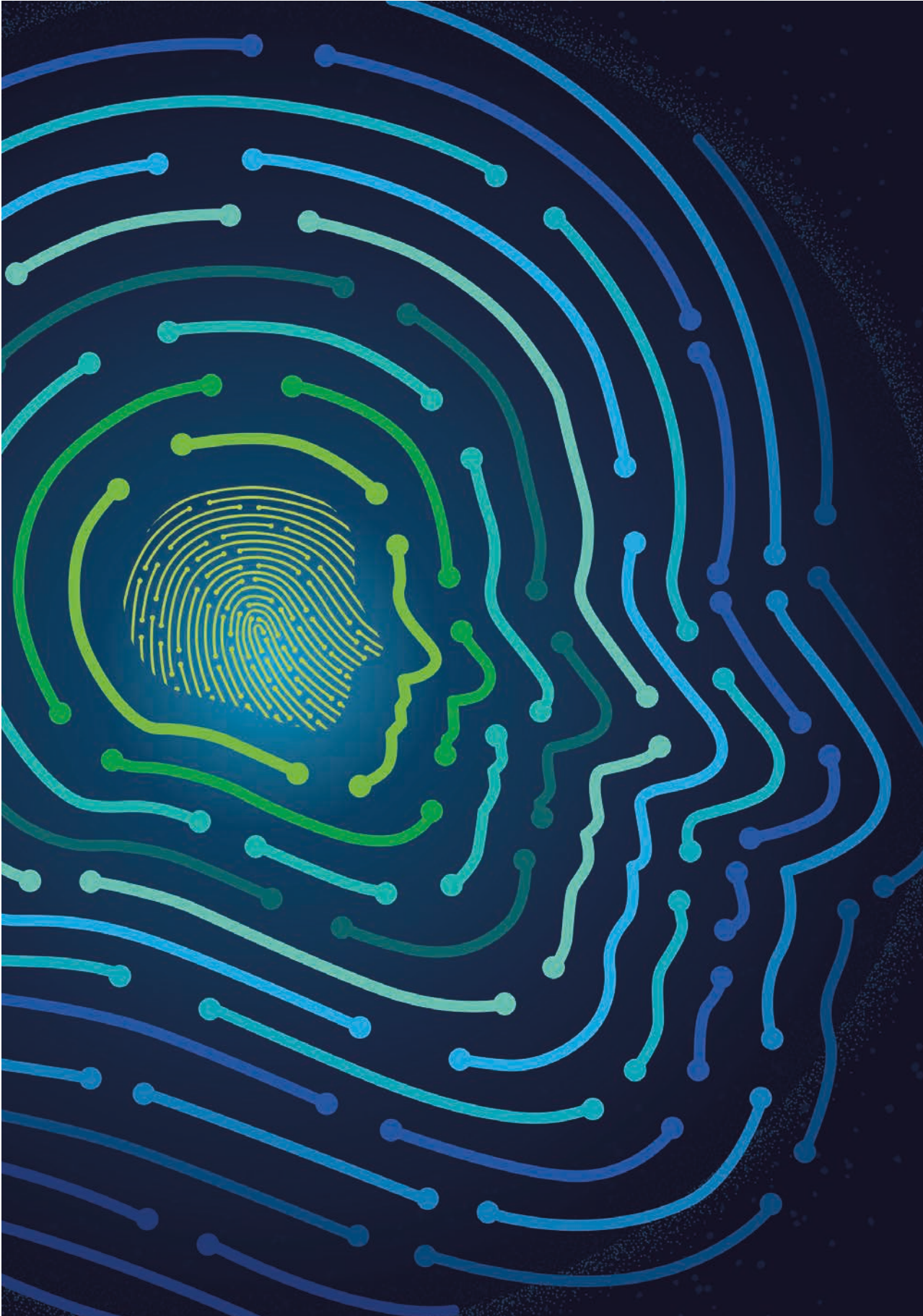
Obtaining agreement from the bank's business lines to change the governance and decision-making was of critical importance. Supported by the agile mindset of the main stakeholders, the bank was able to shorten the decision-making process. In addition, the design phase was accelerated and automation delivery simplified. The existing methodology was adapted to focus on standard use cases that excluded most business exceptions, and RPA project deliverables focused on minimum viable products. The time spent in meetings and developing presentation materials to support use cases was reduced, as meetings and presentations were conducted fully remotely. As a result, six urgent automations, with a shortened development time of three weeks, were validated. Before the pandemic, the standard project validation process took nine weeks, on average.

**Automation has enabled more remote working and addressed rapid increases in processing requirements. Twenty-three per cent of survey respondents said they have prioritised automations that improve their organisational resilience.**

# Conclusion

**A**LTHOUGH ORGANISATIONS ARE realising the potential to take intelligent automation further – and ambitions are growing in terms of reducing costs, increasing productivity, improving accuracy and enhancing the customer experience – the pace of innovation continues to outstrip the pace of adoption. Additional work is needed to break down these barriers to adoption:

- **Process fragmentation:** Organisations at all levels of maturity agree monitoring and mining technologies can drive better outcomes, but most are, so far, hesitant to use these technologies. We suggest making use of mining technologies to get a data-driven, accurate picture of the scale of fragmentation and complexity. In addition, any implementation of process monitoring tools should be accompanied by a clear message that the workforce is trusted to be productive and efficient, and that the technology is being used ethically.
- **Lack of IT readiness:** Despite IT being one of the most supportive stakeholders, organisations are still struggling with integrating intelligent automation tools into their technology suites. Cloud infrastructure should be a more popular solution, having proven its ability to keep pace with demand and scale up or down, to ensure capacity is always optimised.
- **Lack of clear vision:** A robust and realistic strategy at an enterprise level will help provide a clearer direction for intelligent automation investments. Such a strategy needs to consider the ‘art of the possible’ using automation technologies, reimagining how things are done. Enabling new ways of working with complementary tools and technologies can then align with the organisation’s medium- to long-term vision.
- **Resistance to change:** Organisations should redesign development training to reflect their expectations of future jobs, focus on truly human skills, and foster a continuous learning culture; this can reduce impact on the workforce as more traditional skills and capabilities become obsolete. Also, consider engaging the workforce in co-creating automations, to increase their support.



## Endnotes

1. Grand View Research, "Robotic Process Automation market worth \$25.56 billion by 2027", July 2020, accessed 7 October 2020.
2. Deloitte LLP, "The robots are coming", February 2015, accessed 29 September 2020.
3. Deloitte Insights, "2018 Deloitte CIO Global survey", accessed 29 September 2020.
4. Deloitte Insights, Tech Trends 2017, accessed 29 September 2020.
5. Deloitte Insights, "Thriving in the era of pervasive AI: Deloitte's state of AI in the enterprise, 3rd edition", 14 July 2020, accessed 29 September 2020.
6. Deloitte Insights, "The social enterprise at work: Paradox as a path forward, 2020 Deloitte global human capital trends", accessed 29 September 2020.
7. Ibid.

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