Intelligent automation: The future of digitalisation in organisations

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Preface

In 2020, 94.7% of Indian organisations fast-tracked some level of digital transformation programmes. Further, 92.3% are reinventing their business models.¹ These staggering statistics indicate an unprecedented scale of change in the organisational landscape.

Thus, with the objective of capturing the role and impact of the digital enterprise, IAMAI's Digital Transformation Council, with the help of its knowledge partner PwC India, decided to study the key pillars of digitalisation, the value of technologies like intelligent automation (IA), the impact of COVID-19 on its adoption, its expected evolution, its growth drivers, and the skill set requirements.

In the preface to this report, it is important to note that digital transformation is not only the adoption of the latest technologies – it's also about data, processes and overall organisational change. It's about operational, strategic and cultural transformation. The forecasts suggest that the global market for the internet of things (IoT) end-user solutions is expected to grow to around USD 1.6 trillion by 2025,² even though 65% of risk management leaders believe that risks from transformation adoption and tech will increase in 2021.³

Artificial intelligence (AI)is expected to increase economic growth exponentially over the next few decades. Research also suggests that 64% of Indian organisations expect to increase demand for cloud computing as a result of COVID-19 alone.⁴ The combination of digital and physical technologies like AI, IoT, additive manufacturing, robotics, cloud computing, and others is expected to disrupt established business models and challenge the status quo of how organisations operate, what employees and customers expect from them, and how they compete in the market. Hence, digital transformation is a top strategic objective today.

This study reveals that IA itself has delivered significant benefits, including immediate reduction in operational costs, rapid return on investment, and shifting priorities of the employee workforce to innovation, strategy, and other business development activities with speed, agility, resiliency, accuracy, and better regulatory compliance. It has also introduced increased employee satisfaction through a focus on high-value activities while driving real-time transactions and many other useful insights.

Digital transformation in an organisation could be powered by automated, intelligent, and transparent initiatives, ensuring wow customer, employer and supplier experiences. It is our pleasure to share this report with the hope that it will enable key stakeholders of the digital ecosystem to make an informed choice for the future.

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- 1 https://hbr.org/2019/05/the-ups-and-downs-of-indias-digital-transformation
- 2 https://www.statista.com/statistics/976313/global-iot-market-size/#:~:text=The%20global%20market%20for%20 Internet,around%201.6%20trillion%20by%202025.
- 3 https://www.pwc.com/us/en/library/risk-management-leader.html
- 4 https://www.idc.com/getdoc.jsp?containerId=prAP46454420

Digitalisation: An imperative for organisations today

Rise of the digital enterprise

According to PwC's 24th Annual Global CEO Survey, nearly 49% of CEOs plan to increase their rate of digital investment by 10% or more over the next three years.5 With digitalisation fast becoming a precursor of growth, organisations today are recognising the importance of creating a business strategy that aligns closely with their digital strategy. Organisations across industries are increasingly adopting enterprise architecture (EA) to realise the benefits of digital transformation and stay ahead of the digital curve. As a result, we see the evolution of digital enterprises. These are businesses that implement a complete digitalisation strategy to make the best use of digital tools and technologies across the length and breadth of their operations. As a growing number of organisations are redefining their operational processes around emerging technologies and ensuring consistent delivery of services, they want to use these capabilities to become more customer centric. Digital enterprises focus on the conversion of informational resources into digital formats and automation of business processes with scalable technologies - cloud computing, internet of things (IoT) artificial intelligence (AI), machine learning (ML) and various technology-driven solutions. Software automation technologies are the key towards creating robust and resilient infrastructure that is capable of being scaled up to meet this exponentially increasing demand for agile, digitally empowered organisations.

Role of intelligent automation in the digitalisation journey

Technologies such as big data, intelligent automation (IA) and Al are at the forefront of the next wave of digitisation. Big data allows companies to gather large amounts of data and extract meaningful insights that can be used to make strategic business advancements, minimising costs and maximising results. However, only gathering large amounts of data is rarely enough. Organisations are including data analytics in their ecosystem to mass-customise offerings, optimise and improve customer experience, mitigate risks and further utilise data-transforming and modelling capabilities to lay out a future roadmap. Combining automation with data analytics can help organisations to deliver quicker outcomes through increased accuracy and enhanced operational efficiency. Advancements in analytics, IA and AI are enabling businesses to improve performance and productivity, reshape organisational structure, permanently upgrade the ways of working, and have a significant impact on the economy.

5 https://www.pwc.com/gx/en/ceo-agenda/ceosurvey/2021/report.html#digital-acceleration

The four pillars of digitisation



Source: PwC analysis

Organisations across sectors and industries are harnessing the potential of digital technologies to gain significant competitive advantage. As per a PwC report, emerging technologies (augmented reality, drones, virtual reality, IoT, robots, blockchain and AI) are driving rapid cross-functional innovation and making organisations smarter.⁶

IA is a crucial component of the digitisation agenda. The layering of automation and intelligent technologies such as smart optical character recognition (OCR), natural language processing (NLP)/ natural language generation (NLG) and ML enable organisations to transform the way they work. IA is fast becoming mainstream

as organisations move higher up the digitalisation maturity curve. Fast-evolving product capabilities complemented by ease of use for non-developers are fuelling market growth and enabling citizenled innovation in IA adoption.

Furthermore, this exponential increase in the adoption of IA is driven by the increased capabilities of cognitive technologies to solve practical challenges and their proven ability to deliver tangible results such as decreasing costs and increasing revenues. Firms are exploring new avenues of moving up the automation maturity curve as more competitors adopt IA.

Understanding the components of IA

IA combines the capabilities of robotic process automation (RPA) with smart OCR, conversational AI and cognitive intelligence:

RPA: RPA can be defined as technology that configures or interacts with computer software to capture and interpret information, thereby enabling transaction processing, data transfer, data comparison, etc.

Smart OCR: OCR/intelligent character recognition (ICR) is the conversion of images into machine-readable format. Using OCR/ ICR is the first step towards converting images/scanned documents into editable and searchable data.

Conversational AI: Conversational AI is a set of technologies that allows human-like interactions with computers. It enables computers to understand natural language (including speech and text) and respond in a manner that mimics human conversation.⁷

Cognitive intelligence: Cognitive intelligence is a set of pretrained algorithms/skills that replicate human decision-making abilities and seamlessly integrate them within the bot ecosystem. It uses ML to make predictions based on historic data and NLP to understand, generate and process text.

Furthermore, hyperautomation is an increasing trend among organisations as IA capabilities evolve and organisational demand for end-to-end automation grows. Process-mining tools, business process management and advanced analytics are being increasingly used by organisations to expand the scope of IA and realise greater benefits.

- Process mining supports the analysis of data, including diving deeply into how teams work to show them what to automate.
- Business process management automates a complete set of tasks involved in an end-to-end workflow.
- Advanced analytics helps in unlocking the value of data to provide deeper insights that enable real-time decision making.

7 https://genietalk.ai/what-is-conversational-ai





Source: PwC analysis





IA tools can also be used for low-code and drag-and-drop methods of solution development, making the adoption of citizen-led automation possible and beneficial for organisations across sectors.



Cost reduction

Software robotics brings immediate reduction in operational cost beyond labour arbitrage, and realises rapid return on investment.



Value-focused talent

The priorities of the employee workforce shift to innovation, strategy and other business development activities.



Scalability

A virtual workforce can respond to growth events (e.g. organic, acquisitive) with speed, agility and resiliency. Once developed, automated solutions can be used to ramp up/down volumes easily.



8

Employee and customer satisfaction

Increased employee satisfaction through a focus on higher value activities will, together with fewer errors, result in more satisfied customers.

Source: PwC analysis



Quality and compliance

The automated nature of software robotics reduces errors and leaves a digital audit trail that increases accuracy and regulatory compliance, enabling programmable controls.



Revenue enhancement

Software robotics increases revenue growth through shorter cycle time to service customers.

There is a one-to-one relationship between a bot and the tasks it automates for a single worker (full-time equivalent or FTE). In others, a single bot automates tasks performed by three to five workers. Savings are easy to calculate.



24/7

Robots never sleep and many of today's digitally enabled processes can be orchestrated to operate autonomously 24x7, driving real-time transactions.



Speed to value and low risk

Software robotics has a quick time to delivery and avoids the invasive traditional system integration. Weeks or months instead of years.



As organisational strategies and operating models vary, so do the benefits envisaged from implementing automation programmes and the metrics used to track progress. The objectives of such implementation is to enable human-digital workforce collaboration and make it as seamless as possible. This in turn should translate into increased productivity, reduced costs, redeployment of employees to more cognitive functions – depending on what the goals are, how the automation strategy is defined and the current automation maturity. While the focus is on error-free processing and reducing turnaround time in the early stages, mature automation programmes can enhance scalability and compliance.

The large-scale and growing adoption of IA has enabled businesses to automate more than just repetitive rule-based activities, create greater value from their human resources and streamline workflows/processes to accelerate their digital transformation journey. The key aspects that help businesses leverage IA to drive competitiveness are mentioned below:

Using AI and IA to upgrade business processes/systems without disrupting current operations

Although many businesses have started implementing Al to advance their digital transformation strategies, they are also alarmed by the perceived difficulties in implementation. A key concern amongst businesses is that the implementation of Al capabilities can impact existing IT systems and daily operations, leading to increased complexity and added efforts.

Organisations are wary of the risks posed by incidents that impact critical operations. They are increasingly looking at platforms and tools that can seamlessly incorporate AI capabilities such as ML and NLP into existing processes and systems without disrupting current operations. Such demands are enhancing the maturity of AI products and services, and vendors are prioritising these parameters when coming up with updates and new releases. This is enabling businesses to leverage IA to perform usual business operations as well as significantly upgrade their status quo.

Improved employee efficiency and job satisfaction

In today's technology-driven competitive landscape, maintaining a motivated and action-oriented workforce is important for businesses to advance. A widespread misconception about IA is that robots will replace the human workforce, ultimately leading to job losses. However, IA capabilities help in the better execution of tedious and rule-based tasks, thus enabling humans to focus on more strategic value-add activities.

A 2019 survey conducted by a US-based business magazine found that out of 300+ senior executives who had explored IA, 96% reported increased employee efficiency and 93% observed enhanced employee satisfaction.⁸

Improved employee satisfaction and efficiency result in lower attrition and increased productivity, both of which are important factors to create a sustainable competitive advantage.

Using IA capabilities to harness the value of data and propel informed decision making

Businesses today have access to large amounts of data that can be converted into relevant business insights and help in risk mitigation. Leveraging IA technologies allows businesses to better integrate gathered data into the current ecosystem. In case the data is unstructured, AI can be utilised to transform information into a robot-friendly format. Together, AI and IA can help in unlocking insights that enhance human decision-making capabilities.

Enhanced customer experience

Customer service has become a prominent differentiator in the digital age. With IA executing manual tasks and repetitive workflows, employees can now devote more time and effort to addressing customer needs and swiftly resolve their concerns. Employees can further work towards developing creative solutions and addressing unresolved customer issues. This enables businesses to deliver better customer service and strengthen their position among competitors.

8 Accelerating business value with intelligent automation, Forbes Insights, 2019

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The IA market in India

IA adoption is witnessing continuous growth across organisations. As more organisations understand the value of automation, service providers are developing products that are bridging the gap for the democratisation of IA. The COVID-19 pandemic has further accelerated IA adoption across industries.

According to a PwC report charting India's mid-term journey following the COVID-19 crisis, rapid acceleration of digital technologies will change many aspects of operations. Through their ability to build transparency, improve efficiency and develop resilience, process automation technologies such as chatbots, automated calling, voice assistants and RPA will gain further traction.⁹

There are a very few areas of business that are yet to undergo any kind of automation. Utilising bots for repetitive tasks is generating value and improving the efficiency and productivity of businesses in

every sector. Moving forward, most organisations will be using IA to drive business growth further and encourage greater productivity, creativity, leadership and innovation among their employees.

Indian businesses are finding value in the use of IA

The Indian outlook towards automation is particularly optimistic because the country has gained extensively from previous software booms. India's largely young population makes automation a key priority for the economy. Acquiring the right skills in automation is essential for India to retain the advantages of its demographic dividend. Organisations across the country expect their key business metrics such as profitability and customer retention to improve as a result of automation.

9 https://www.pwc.in/assets/pdfs/research-insights/full-potential-revival-and-growth

Automation in front offices

As automation objectives evolve to tackle customer-centric functions using cognitive tools and technologies, there is an increase in automation adoption in front offices as well. While highly repetitive back-office tasks in IT, finance and human resources (HR) departments were the most automated functions in business processes when organisations were just getting started with RPA, businesses are now also increasingly introducing IA in consumer-facing functions such as marketing and sales.

The Indian economy has grown consistently – from a USD 0.47 trillion¹⁰ economy in 2000 to a USD 2.87 trillion¹¹ economy in 2019. This growth of India's economy has been fuelled by factors such as economic liberalisation, financial reforms, favourable business dynamics, a large graduate pool, digitalisation and globalisation. The Government aims to make India a USD 5 trillion economy by 2025. To achieve this transformation, it is necessary to foster sustainable growth through drivers such as technology. IA can increase productivity, enhance scalability and reduce processing time and costs across sectors and businesses, thereby accelerating growth across all the sectors at the grassroots level.

GDP growth of India (in USD trillion)



Source: https://data.worldbank.org/indicator/NY.GDP.MKTP. CD?locations=IN

10 World Bank GDP Data: https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=IN

11 Ibid.

12 https://www.prnewswire.com/in/news-releases/hyper-intelligent-automation-spend-by-global-enterprises-will-reach-usd-4-7-billion-in-2020-says-zinnov-873983712.html

13 https://www.pwc.com/gx/en/issues/crisis-solutions/covid-19.html

The IA market in India has huge potential for growth since the adoption of IA is relatively in its early stages. While organisations across industries continue to explore IA, there is immense scope for large-scale incorporation of automation as an integral part of an organisation's operating model. The demand for IA has grown significantly across various sectors in India over the past few years to improve business-process efficiency. The BFSI sector has been one of the early movers in adopting IA by automating core business functions to reduce costs and focus on strategic value-add activities. IA adoption has also gained momentum in sectors such as telecom, retail and consumer goods, transport and logistics, healthcare and manufacturing over the past few years. Education, oil and gas, small and medium enterprises (SMEs) and government offices are gradually implementing IA as well.

While most organisations started with pure-play RPA initiatives, India is now witnessing a strong shift towards the adoption of more sophisticated tools and technologies to handle more complex, end-to-end processes via automation. The IA market in India is estimated to grow at a compound annual growth rate (CAGR) of 55%, with large enterprises expected to spend approximately USD 340–350 million in IA capabilities in 2024.¹² The overall expenditure is expected to exceed this figure since the market now also includes start-ups and various SMEs.

Impact of COVID-19 on IA adoption

The COVID-19 pandemic has brought about unprecedented changes in how organisations function. It is the need of the hour for organisations across the world to re-engineer the ways of doing business. It is also of utmost importance for organisations to refocus on key support functions of businesses that will enable them to stabilize in this new atmosphere and develop new strategies for what's next.¹³ Organisations need to transform themselves into modern workplaces that enable the synergy between their human and machine workforce, with the former assuming responsibilities for strategic and customer-centric initiatives and the latter executing repetitive activities.

The pandemic has further increased the adoption of emerging technologies. As organisations witnessed the impact of a resilient operating model amidst the pandemic first-hand, COVID-19 has proven to be an opportunity , giving organisations a chance to repair (emerge from the present crisis), rethink (plan for transformation) and reconfigure (make fundamental updates to the modus operandi and achieve sustainable competitive advantage).

Organisation-level processes and requests as well as high-volume and repetitive tasks which were once carried out in person can now be automated. Entire workflows across departments should be mapped out to figure out their automation potential. All such workflows should be automated to improve operational efficiency and reduce processing time. IA is helping businesses to deal with the crisis and find ways to move forward as more organisations shift towards digital.

According to a survey conducted by PwC in August–September 2020, the crisis has brought automation technologies to the forefront and led to a surge in automation investment. Furthermore, the nature of challenges related to adoption has changed from purely technical to business-related factors.¹⁴ Organisational priorities have shifted, and more organisations have started adopting digital tools and technologies. This initially helped support basic business operations and is now allowing them to emerge with more robust digitally empowered operating models:





Shifting priorities for IA adoption

Source: PwC research and analysis

14 https://www.pwc.in/assets/pdfs/data-and-analytics/ai-an-opportunity-amidst-a-crisis.pdf



Organisations that were already ahead on the maturity curve were more resilient throughout the disruption. One year into the crisis and with the pandemic far from over, India is now going through a second wave of infections. Witnessing the gaps between pioneers in automation and laggards is likely to have accelerated the pace of adoption as organisations adapt to the new normal.

How we expect the IA market to evolve in the future

IA is a dynamic technology which empowers businesses with advanced capabilities to help carry out agile processes and enhance performance. IA enables businesses to increase process efficiency and improve overall customer experience. Organisations can also optimise operations, mitigate risks, reduce costs and redeploy the workforce to focus on cognitive activities which create strategic value.

Due to such vast applications and usability, the IA market is growing at an unprecedented rate. According to Analytics Insight, the global IA market is predicted to grow at a CAGR of 14.5%¹⁵ – from USD 13 billion to USD 25.7 billion and USD 50.5 billion by 2025 and 2030 respectively.¹⁶



Global IA market (in USD billion)

Source: https://www.analyticsinsight.net/

A comparison between the different sectors that have adopted IA capabilities indicates that the banking, financial services and insurance (BFSI) sector will lead the race with a CAGR of 16.1% in the next ten years. The BFSI sector is closely followed by the telecommunications and healthcare sectors, which are predicted to grow at a CAGR of 16% and 15.1% respectively.

¹⁵ https://www.analyticsinsight.net/analytics-insight-predicts-north-america-europe-witness-maximum-growth-intelligent-automation-market/

¹⁶ Ibid

Growth drivers for IA

To understand what is causing this surge in IA adoption, it is worthwhile to understand both how organisational requirements are evolving and how product and services are becoming more competent in addressing these needs. The demand is particularly fuelled by business requirements that no longer operate in a vacuum but must continuously adapt in line with the competitive environment. On the supply side, both automation product vendors and the service industry are working in tandem to deliver valuable innovation continuously.

Demand-side drivers

- · Rising organisational needs to achieve efficiency in operations
- · Proven value of IA in various industries
- Focus on enriching customer experience and reducing customer TAT

Operational efficiency: Automation enables businesses to focus on strategic value-add activities, customer experience and leadership, while robots perform supporting tasks effectively and seamlessly. This can result in increased operational efficiency due to better optimisation of resources.

Proven value of IA: BFSI has been one of the early adopters of IA. Intelligent adoption has helped the sector to improve the overall customer experience, enhance security, speed up account processing, mitigate risk and reduce human hours spent on addressing repetitive tasks. The visible benefits of IA have led to growth in demand across industries.

Focus on enriching customer experience and reducing

customer TAT: A good customer experience maximises speed and efficiency and builds a foundation for loyalty while maintaining a human element that is embedded within automation, AI or other technologies. It leaves consumers feeling content, satisfied and appreciated, and has a tangible monetary impact on businesses. Based on a survey conducted by PwC,¹⁷ 75% of customers indicated that they would want to interact with real people more as technology improves. Automation reduced human effort on menial tasks, enabling employees to be more engaged with customers, provide better services and get necessary support from technology to provide a truly seamless customer experience.

Supply-side drivers

- · More sophisticated tools and products with better capabilities
- Low-code/no-code automation solutions
- · Lower cost of licensing



17 https://www.pwc.com/us/en/press-releases/2018/experience-is-everything-heres-how-to-get-it-right.html



More sophisticated tools and products with better capabilities

The leading IA products are those that started as pure-play robotic process automation (RPA) products but have continuously evolved to bring in more capabilities. Leading RPA vendors have all started to offer hyper automation capabilities. RPA serves as the starting point for adopting cognitive technologies and other advanced tools such as process mining tools, workforce enablement capabilities and advanced analytics. With hyper automation, organisations can achieve both scale and increase the speed of delivering automated solutions into production. Enhanced capabilities through the use of evolving AI technologies empower business, IT and citizen developers to contribute to the automation transformation journey. Robots thus act as complements to the existing workforce and end-to-end processes can be automated more quickly instead of following a band-aid approach.

Low-code/no-code automation solutions

Various automation solutions have been tailored to automate repetitive, structured and non-cognitive processes. However, with the emergence of technology where RPA is integrated with evolving AI technologies, it is now possible to create a digital workforce for end-to-end business automation. Moreover, the focus has shifted to enabling citizen developers across the organisation to start automating tasks they do repeatedly as a part of their routine work.

Easy drag-and-drop functionalities along with better tool capabilities increase adoption across business teams, allowing the IT teams to focus on providing the right infrastructure and managing reusable components across functions and departments.

Lower cost of licensing

The adoption of IA is growing at an unprecedented rate. According to PwC's 24th Annual Global CEO Survey, 36% of CEOs are focusing on productivity through automation and technology, a 124% increase compared to 2016.¹⁸ The IA software market is expected to transform in the next five years, with large multinational IT companies already entering the IA market through acquisitions or partnerships. The increased competition among vendors will force them to try and cement their position by acquiring a sizeable customer base. One way to do that is by offering superior capabilities at better licensing costs. As more and more players enter the market, the licensing cost is expected to decrease, which will further boost the adoption of IA.

Over the past few years, RPA has acted as a driving force that allowed organisations to slowly experiment with software robotics for straightforward, low-risk processes and gradually advance towards cognitive automation technologies. As a non-intrusive, standardised technology, organisations reaped quick gains from RPA while also increasing their digital acumen. With the increasing adoption of cognitive technologies, this line between RPA and IA seems to be blurring. More and more organisations are skipping the stepping stone of RPA to directly automate end-to-end processes and pilot RPA, smart OCR, NLP and predictive analytics in the early stages of automation technology adoption.

18 https://www.pwc.com/gx/en/ceo-survey/2021/reports/pwc-24th-global-ceo-survey.pdf

Moving ahead with IA

One of the major challenges for businesses when using IA to automate their business processes is how to scale up and sustain this practice. In reality, many businesses are not able to really push their automation projects forward in the business ecosystem, but merely use the technology in-house to operate a few automated processes. Businesses therefore require a holistic IA practice to deliver consistent and continuous gains on an ongoing basis.

Challenges to scaling up automation



People fear change and accepting new technology can be stressful for them as they may experience shifts in their responsibilities. The new normal and adoption of digital tools have led to considerable changes in required skillsets. Implementation of IA with an unstructured and unsustainable approach leads to chaos and acceptance issues.

Lack of guidance on selection of processes for automation and assessment of suitable tools and RoI is still an inherent challenge for organisations.

Organisations need to build infrastructure that supports future growth and can evolve as technology advances. Flexibility and adaptability to new solutions/tools and technologies are important.

Increasing pressure to innovate and digitise processes are sometimes not accompanied by the oversight and protocols required to manage a digital workforce.

Centralised control, a vital element of IA, is often overlooked by enterprises. This may result in the achievement of short-term benefits, while the longterm impact of a rapid scale up is neglected. For a business to achieve maximum scale, it needs to go through various phases of automation. The figure below illustrates how businesses unlock value as they go through each phase of automation:

Scaling up the automation programme					
	$ \begin{array}{c} $	Industrialise	Institutionalise		
Strategy	Define vision and target operating model for automation.	IA is a core component of the technology stack. Maximise use of digital workforce.	Establish IA CoE (hub and spoke model). Create group hub governance and implementation guidelines.		
Structure	Define organisational roles as well as broader changes to support RPA. Establish governance, KPIs and support model.	Future organisational design decisions include embedding digital workforce as an integral part of operating teams.	Bots created on demand and sold as a shared capability across functions/regions Split work between digital and human workforce.		
Process	Set up and roll out standardised approach towards RPA implementation. (Discover - design - develop - debug - deploy - maintain - decommission)	Showcase automation to the broader organisation. Gamify the programme and use benefit realisation as a measure for further traction.	Run strategic automation campaigns focused on specific issues/key business drivers. Analytics-driven demand generation/reporting		
People	Identify and train core RPA team – set up CoE.	Use core team to train and mentor new team members in line with team expansion. Incentivise staff on contribution towards automation.	Upskill/reskill staff to enable a cohesive human digital workforce.		
Technology	Establish infrastructure, environments and architecture to support initial process automation.	Establish IA best practices (design, coding standards, reusable components). Implement resilient BCP/DR capability.	Fully virtual automation environment Alignment between RPA and Al		
	BPA	ΔΙ	A powered by data		

AI

IA powered by data

Source: PwC analysis

To truly convert from a traditional enterprise to an intelligent enterprise, a robust methodology needs be adopted from the very beginning. Below are certain factors that can help businesses to scale up IA and derive ongoing value across various operations and departments:

Incorporate IA into business strategy: Businesses should implement a top-down approach where the leadership team sets the stage for incorporating automation into every department. To scale up and sustain IA adoption, a three-step approach is required: (1) Define an automation approach that takes into account the customer experience, resources, investments and performance for an end-to-end transformation. (2) Lay out a roadmap for the automation journey, estimate the value generation and define success metrics to track performance. (3) Lock the commitment towards automation across departments, identify automation drivers and have an established priority mechanism.

Establish a robust IA 'centre of excellence' (CoE): A robust CoE will act as a central backbone for governance, helping the business achieve automation transformation at scale. Governance facilitates scale by standardising automation processes and

providing a central library for knowledge management. Governance via a CoE will also methodise tools and frameworks followed for opportunity identification, process assessment and resource allocation.

Assess opportunities: Assessing the technical feasibility and complexity and identifying process automation opportunities that will generate the maximum benefits is crucial for a successful automation transformation journey. At the start, the focus should be on easily implementable processes which can generate high benefits in terms of manual hours saved, cost cutting and improved customer experience. In due course, automation decisions should be aligned with the strategic business objectives while leveraging reusable or existing technical and operational capabilities.

Enable the workforce: For a successful IA transformation, it is imperative to build new skill sets that may not be available at the start of the journey. Hence, it is important to set a strong foundation with specific automation capabilities, workforce and governance to integrate the IA training and learning programme into the business ecosystem. One such way to do that is through the citizen-led development approach.

Citizen-led development approach

The enterprise-led automation approach followed in the past has not been able to achieve the desirable scale. An alternative approach where an organisation enables infrastructure that allows its people to play a significant role in the digital transformation is called citizen-led development.

Up-knowledge	Upskill	Up-perform			
Create awareness Create a digital hub – a one-stop knowledge portal for details on the programme, use cases, demos and thought leadership. Help the citizens understand the why- what-how of the programme through orientation and awareness sessions, thereby encouraging participation.	 Train the selected citizens Provide virtual classroom and hands-on training on automation/transformation tools. Evaluate the participants through hands-on assessments and offline assignments. Provide on-demand support/feedback. Distribute badges and certificates of completion to encourage citizens to keep innovating. 	Scale up the upskilling programme Design elements of governance which can orchestrate the success of the programme. Enable sharing of automation ideas and solutions across the organisation through a common platform.			
Programme planning and set-up					
 Programme charter Target and objectives Launch and communication Tracking and monitoring 	 Create customised material for orientation workshops. Cover an introduction to the programme, art of possible, benefit to the individual and market overview. 	 Prepare customised material, agenda and schedule. Design the format of the knowledge-imparting sessions. 			
Overall programme Digital hub	Orientation workshop Cohort structure for upskilling	Virtual classroom sessions Assignments and Assessments			

Source: PwC analysis





IA is being widely adopted across different sectors, transforming not only the nature of work but also the workplace itself. IA will take over some tasks performed by humans and complement them on others. It also has the potential to perform tasks beyond human capabilities. As a result, employment opportunities in certain fields will decline, while others may see a growth in opportunities.

Based on an analysis done by PwC UK,¹⁹ the impact of IA on jobs will vary across industries over time. The analysis shows that while the finance and insurance industry will see the most impact on jobs in the initial years, this impact will subsequently peak, with around 30% of potential jobs at risk. Similarly, the transportation industry will see minimum impact on jobs in the near future, but will be the most impacted (50% potential jobs at risk) in the latter half of the 2030s. The difference in potential jobs at risks across industries is driven by the composition of tasks that can be automated. People employed in the manufacturing and transportation industry spend a major portion of their time on manual tasks that have high automation potential, and these tasks can be completed with increased speed and accuracy through automation. On the other hand, people employed in the education sector take on tasks which require creativity and social skills and are less likely to be automated.

The potential job losses will be offset by additional job opportunities in the form of new roles created from advancement of technologies. These new job opportunities will require specific skill sets. Employees working hand in hand with IA will see an increase in their output and productivity, which can further lead to increased earnings. As more and more tasks are automated, innate human skills such as logical thinking, problem solving, decision making, creativity and leadership will be sought after. Education systems will need to evolve – policymakers/governments and education providers will have to work together to develop an education system with more emphasis on human skills and prepare the younger generation for the future. IA will push us to become skilled at being creative and acquiring the ability to create better solutions by leveraging the many benefits these digital tools offer at every step. As automation takes up more than just repetitive and standardised tasks, there is bound to be an increase in meaningful work for employees across the experience spectrum. This in turn will lead to a better quality of jobs and work-life balance.

The trend of automation creating more jobs than it destroys has already been evident over the past few decades. According to a report by the Asian Development Bank (ADB), robots and automation are creating more jobs in Asia than they destroy. ADB's analysis also revealed that adoption of automation would eliminate 101 million jobs. But at the same time, ADB expects 134 million new jobs to be created, meaning an overall addition of 33 million jobs.²⁰ As always, skills are critical for long-term employability.

In the fast-evolving world of automation, an optimistic outlook is therefore well justified from the perspective of both efficiency and employment. IA is key to augmenting business performance with technology innovation and human capabilities, and to solving important problems today. The increasing switch to digital technology is visible all around us, and it has become imperative for organisations to effectively align business strategies, not only as a response to this change but also to pave the way for digital transformation.

19 https://www.pwc.com/hu/hu/kiadvanyok/assets/pdf/impact_of_automation_on_jobs.pdf

20 https://internetofbusiness.com/robots-ai-creating-more-jobs-in-asia-than-they-destroy-repo

About IAMAI

Established in 2004, the Internet & Mobile Association of India (IAMAI) is a not-for-profit industry body and the country's only organization representing the digital services industry with over 320 Indian and multinational corporations as its members, which include established companies in diverse sectors of the digital ecosystem as well as start-ups. Its mandate is to expand and enhance the online and mobile value added services sectors. It is dedicated to presenting a unified voice of the businesses it represents to the government, investors, consumers and other stakeholders. IAMAI represents varied sectors like Digital Advertising, Digital Entertainment, TraveITech, Online Gaming, Digital Payments, FinTech, Digital Commerce, Edutech, Healthtech, Agritech, Blockchain, Big-data, ML, AI & IOT, AR/ VR, LogisticsTech etc.

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About PwC's Intelligent Automation (IA) practice

PwC India's IA practice assists clients in their IA journey from strategy through execution. With their extensive experience, our professionals support a transformation approach to automation, including continuous improvement and innovation to create a cutting-edge 'IA value proposition'. Our practice has diverse service offerings covering strategy, governance set-up, automation feasibility and tool selection, centre of excellence set-up, implementation and deployment, BOT-managed services, functional and technical training, and risk assessment. The practice has a wide range of domain professionals and technical consultants with wide experience with global clients and in multiple industries/domains. Further, our team has strategic partnerships with top-tier market-leading IA vendors and has considerable experience in integrating bots with niche cognitive automation technologies, including smart OCR and conversational bots.

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