Deloitte.

State of AI in India
Second edition

December 2022

Contents

Introduction

Although Artificial Intelligence (AI) as a concept and technology has had a long gestation period, it is rapidly bridging the gap between designing and deployment. Despite being a new and rapidly developing technology, AI has already become a part of people's day-to-day life.

In our inaugural State of AI in India survey conducted last year, we attempted to understand the extent and nature of AI adoption amongst Indian businesses and their outlook for the future. In the intervening year, AI investment in the country has seen impressive growth,

bucking the overall cautious investment sentiment. Indian organisations appear to remain confident with respect to AI's value proposition and their ability to realise returns on their investments.

This second edition of the State of AI in India survey discusses India Inc's experience with AI over the past year, changes that AI triggered at these organisations, and roadblocks encountered during AI adoption. It also highlights some actions Indian organisations are taking to accelerate AI adoption.

Executive summary

To know how AI is transforming organisations, Deloitte surveyed 200 Indian business leaders and 2,620 business leaders globally, between April 2022 and May 2022. In the second edition of Deloitte's State of AI in India study, we gathered insights from these leaders to get a sense of how AI has crossed the chasm in India Inc and is gradually becoming a "mainstream technology." The study also deciphered the impact AI has had on Indian businesses and how Indian businesses are upping their game to make the most of AI opportunities.

Improved business outcomes will drive increase in AI investments

There is an increased confidence in AI as businesses plan year-on-year increases in their AI investments compared with the past year (82 percent in 2021 and 88 percent in 2022). However, the fear of a global economic slowdown has introduced some caution in terms of the scale of increase in investments. We expect businesses to refrain from making large capital-intensive AI investments and stick to incremental investments focused on maximising returns from existing AI assets.

The positive sentiment towards AI is supported by the fact that more respondents this year said they were able to achieve intended business outcomes from their AI initiatives to the highest possible degree. An exceptional improvement in payback periods proves AI's ability to deliver on its promise. Nearly half of the respondents were able to achieve quicker-than-expected paybacks on their AI investments this year compared with less than one-tenth last year.

There is a move towards greater AI decentralisation and democratisation

Over the past year, businesses in India appear to have shifted their focus from AI centralisation towards a balanced mix of centralised and decentralised AI practices. Success in achieving business outcomes and tangible returns from AI investments and increasing popularity of democratising technologies (such as low code–no code, and greater proficiency and comfort within the workforce in working with AI) seem to be the key drivers of this change. However, businesses have not completely abandoned practices that help them maintain control and ownership of AI. Establishing AI centres of excellence, creating AI-specific roles, and forming AI ethics boards are amongst the popular governance practices in use.

The ability to scale AI projects is key to sustaining business outcomes

Businesses faced challenges throughout the lifecycle of an AI implementation project and found scaling the project more difficult than starting one. After the pilot phase is over, continuing to prove business value and maintain ongoing support, and integrating the project into longstanding business processes become roadblocks. The wider adoption of and adherence to best practices, such as MLOps/AIOps is key to sustaining AI initiatives in the long run.

The time has come to build the culture of working "With" AI

Despite the excitement around AI and active measures being taken by businesses to promote the benefits of AI and the general good it can do for stakeholders, there is a palpable and persistent fear amongst the workforce for AI and its ultimate role in job cuts. What makes it a stubborn problem to solve is that this fear is grounded in some truth – most businesses did count automating jobs amongst their top AI use cases. Businesses need to proactively chart out and communicate an acceptable transition plan for jobs that AI will inevitably replace.

Organisations are taking proactive action for AI success

Businesses in India are taking several concerted actions to accelerate AI adoption while maximising value from AI initiatives. Ensuring transparent communication around AI vision and value of working, effective change management, and enabling and incentivising democratic adoption of AI across the workforce, help develop an AI-ready culture.

Businesses have scaled up their efforts to mitigate perceived ethical risks of AI over the past year. This has resulted in more respondents being confident of their organisations' ability to implement ethical AI. However, adoption of standard AI best practices remains low, limiting organisations' ability to scale and sustain AI implementation.

Businesses have made progress in imparting AI skillsets to existing workforces. However, that does not appear to have eliminated the need to hire from a highly competitive talent market. This increasing demand for AI talent is further fueled by organisations' rising preference to build in-house AI teams (rather than relying on external sources).

Businesses are being selective in choosing AI use cases for themselves. Across industry sectors, focus is on niche, industry-specific use cases that would help strengthen core business value drivers and sustain competitive advantage.

AI maturity, investment sentiment, and challenges

Level of AI maturity in India

We segmented survey respondent into six segments in terms of width and depth of AI implementations. The yardstick to measure width of AI maturity is the number of AI applications in exploration, development, and deployed stages in the organisation. Whereas the depth is measured by the number of years AI has been implemented at these organisations across various use cases. The distribution of segments used in this report, based on width and depth, is mentioned below:

Respondents divided into six segments by width and depth of AI applications

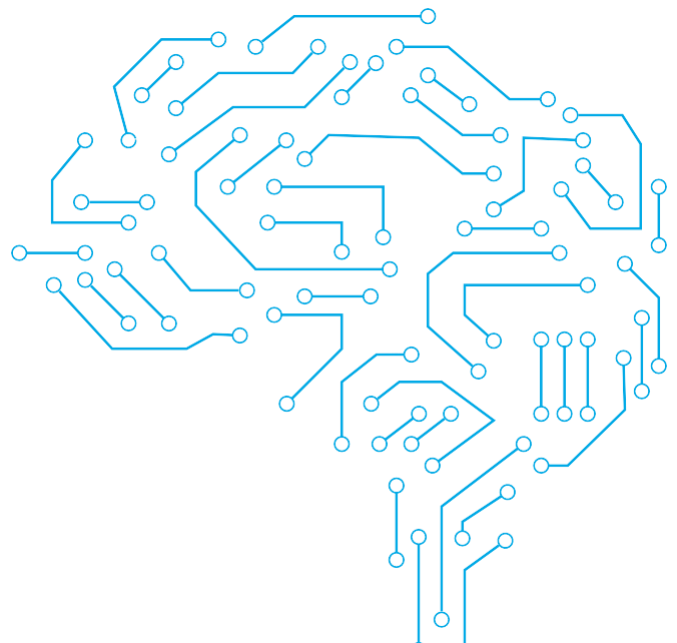| Segmentation logic					
Width	>=12 AI applications	43%	**Wanderers** 8% (16 respondents)	**Progressive (Ambitious)** 26% (52 respondents)	**Trailblazers (Masters)** 9% (19 respondents)
	<12 AI applications	57%	**Initiators** 14% (28 respondents)	**Intermediate** 25% (49 respondents)	**Steadfast (Niche SMEs)** 18% (36 respondents)
			22%	51%	27%
Total of 200 respondents			< 2 years of AI use	3-6 years of AI use	7+ years of AI use
			Depth		

We have used this segmentation framework to enhance our insights wherever possible throughout the report.

Most organisations in India plan to increase AI investments

The past couple of years have been promising for AI investments in India. The bullish sentiment for AI was apparent in the past year's survey and has only strengthened further – from 82 percent businesses planning to increase AI investments in 2021 to 88 percent this year. However, the overall global economic uncertainty appears to have affected businesses' plans of increasing AI investments. Only 39 percent of the represented businesses are looking to increase AI investments by more than 20 percent this year against 50 percent past year. We expect businesses to invest in enhancing existing AI infrastructure and defer major capital-intensive investments until the general business sentiment improves.

That said, only 6 percent respondents from Energy, Resources, and Industrials confirmed their organisations' plan to increase AI investments by 20 percent or more. Other industry sectors appear to be betting much bigger on AI – 60 percent respondents from Life Sciences and Health Care; 56 percent from Financial Services; 45 percent from Technology, Media, and Telecom; and 35 percent from Consumer Services said that their organisations plan to increase AI investments by more than 20 percent.

Organisations' investment in AI

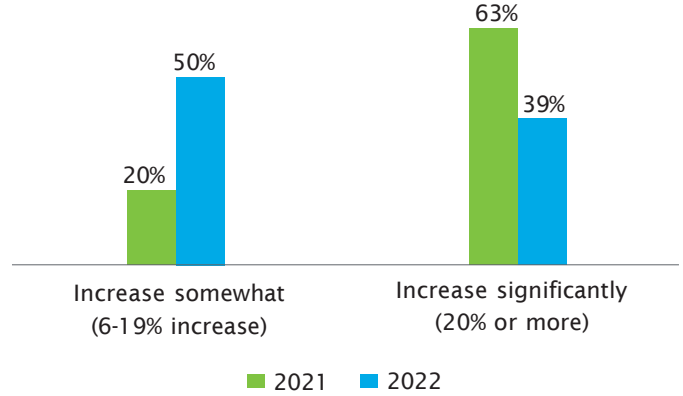|	2021	2022
Decrease/unsure	9%	5%
Stay/mostly the same(-5 to +5%)	9%	8%
Increase	82%	88%

■ 2021 ■ 2022

Scale of AI investment

	2021	2022
Increase somewhat (6-19% increase)	20%	50%
Increase significantly (20% or more)	63%	39%

■ 2021 ■ 2022
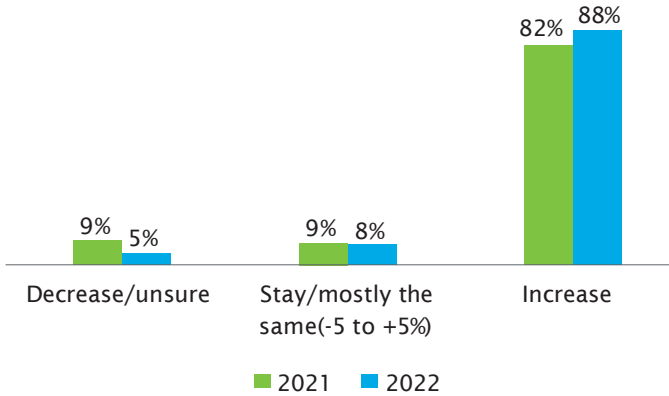
Expected or faster payback on AI investments for a vast majority of businesses justifies optimism

Payback period experienced by the responding organisations

	2021	2022
Quicker than expected	9%	47%
In line with expectations	45%	37%
Slower than expected	46%	16%

■ Quicker than expected
■ In line with expectations
■ Slower than expected
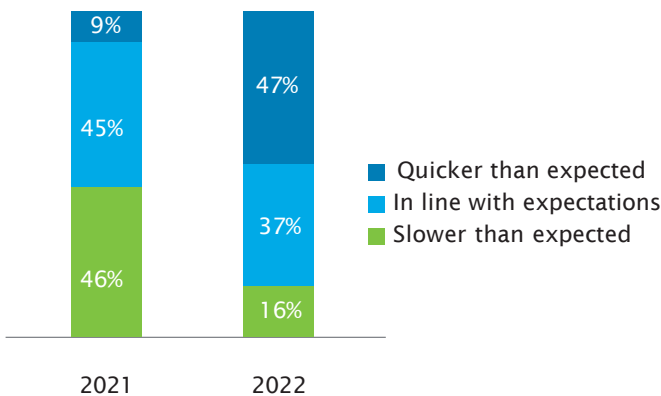
Compared with the past year, the payback period for AI investments shrunk for most of the responding organisations. While past year only 9 percent respondents said that their organisations achieved a quicker-than-expected payback period, this year nearly half of the respondents confirmed this finding. The percentage of respondents reporting a slower-than-expected payback saw a corresponding decrease – from almost half of the respondents past year to only 16 percent this year.

However, the Financial Services, and Life Sciences and Health Care sectors appear to have a lower-than-average success rate with achieving planned payback periods. Although still the minority, a significant number of respondents from these sectors said that their organisations have achieved slower-than-expected payback periods from AI.

Payback period at overall level
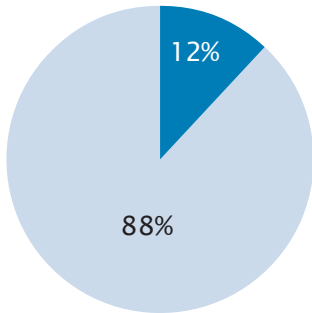
Payback period for financial services

Payback period for Life Sciences and Health Care

12%

88%

38%

62%

25%

75%
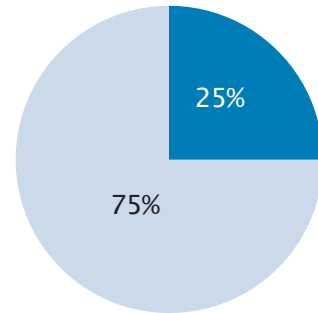
◼ In line with or quicker than expected ◼ Slower than expected

How distributed or focused an organisation's AI implementations are, also has an impact on its probability of achieving planned payback periods. On an average, organisations are taking a more broad-based approach to AI in terms of the number of AI application areas with a slightly lower success rate in achieving planned payback periods (Trailblazers – 90 percent, Progressive – 92 percent, Wanderers – 76 percent vs Steadfast – 86 percent, Intermediate – 82 percent, Initiators – 71 percent).
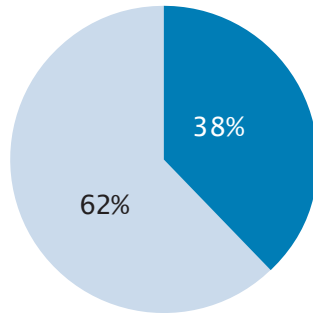
As organisations use AI for a longer period, they begin to realise quicker-than-expected paybacks on their AI investments. While only ~27 percent Initiators and Wanderers (<2 years of AI use) witnessed quicker-than-expected

paybacks on investments, this number increased to ~43 percent for Intermediates and Progressives (3-6 years of AI use), and further to ~70 percent for Steadfast and Trailblazers (7+ years of AI use), respectively.

Smaller size, flexible operations, and short-term investment strategy enable smaller firms to achieve quicker payback on their AI investments. The survey revealed that 65 percent organisations with an employee count of fewer than 5,000 witnessed quicker-than-expected payback, whereas only 35 percent with an employee count between 5000 and 20,000 and 17 percent with over 20,000 employees were able to achieve that.

Quicker-than-expected payback periods experienced per the organisation size

<5,000

68%

5,000-19,999

35%

>20,000

17%
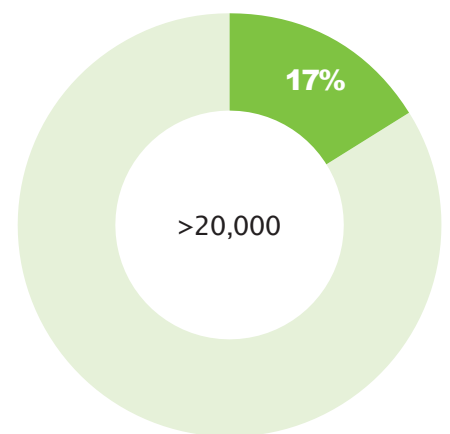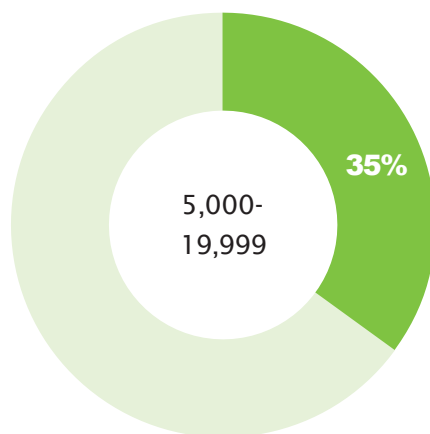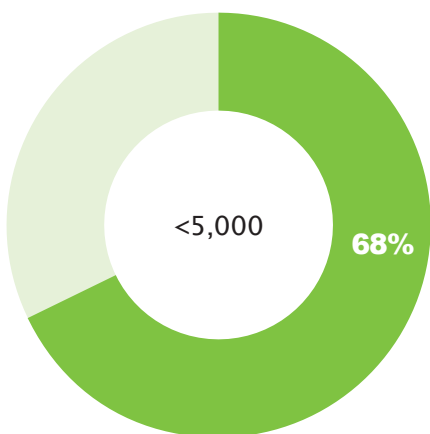
Half of the respondents from organisations with more than 20,000 employees received slower-than-expected returns on their AI investments.

In line with or quicker-than-expected payback periods experienced per the organisation size

95%	95%	81%	92%	50%
500 to 999	1,000 to 4,999	5,000 to 9,999	10,000 to 19,999	20,000 or more
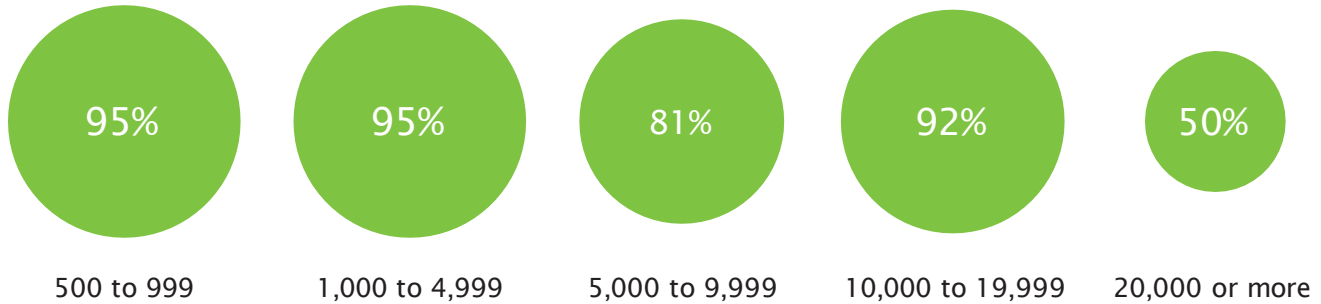
Improved payback periods, in addition to encouraging further AI investments, also appear to have made businesses more confident in managing their AI and analytics initiatives. More organisations are willing to take a decentralised approach to their AI operations and distribute control of AI initiatives across the business.

Preferred approach to implement AI capabilities across organisations

2021

51%	34%	15%
Centralised, organisation-wide approach	Hybrid of both approaches	Decentralised across departments approach

2022

40%	27%	33%
Centre of excellence	Hub and Spoke AI infrastructure	Spread throughout the business
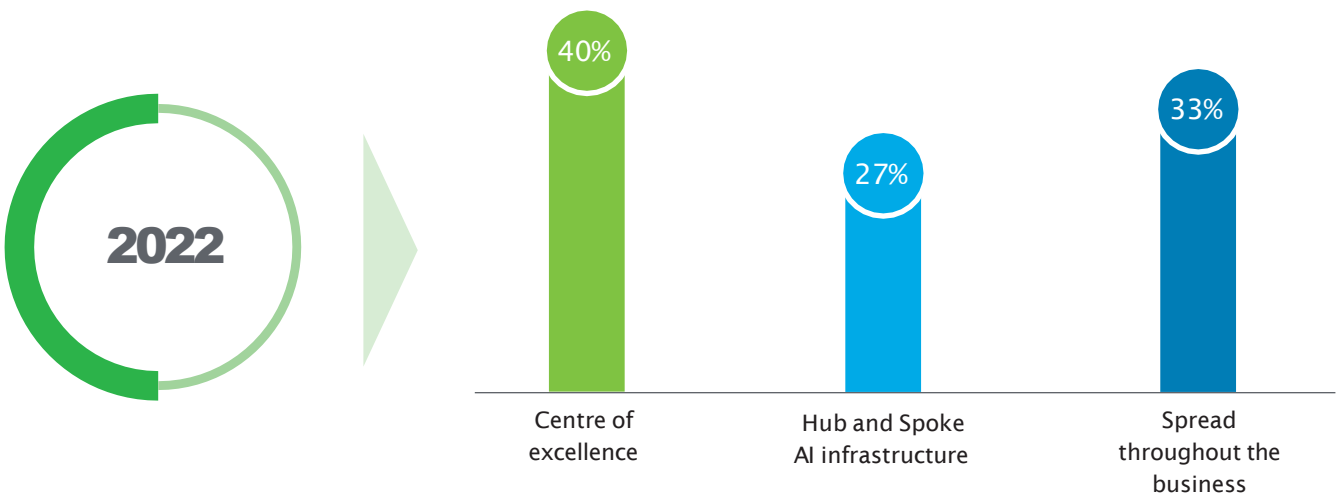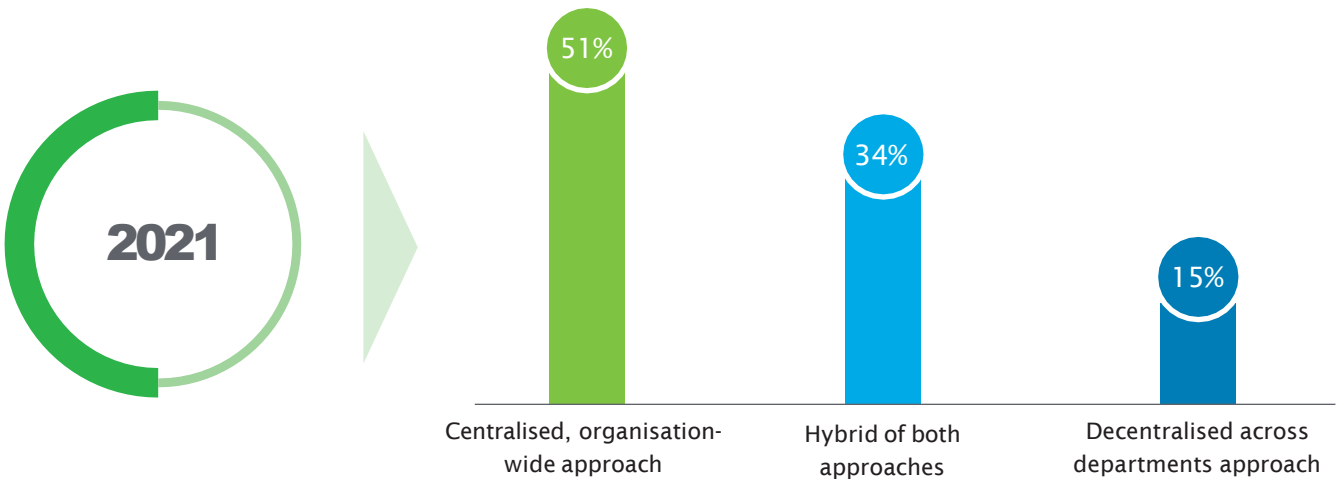
Organisations' belief that AI helps them achieve real business outcomes strengthened

Business outcomes achieved to the highest potential by responding organisations using AI
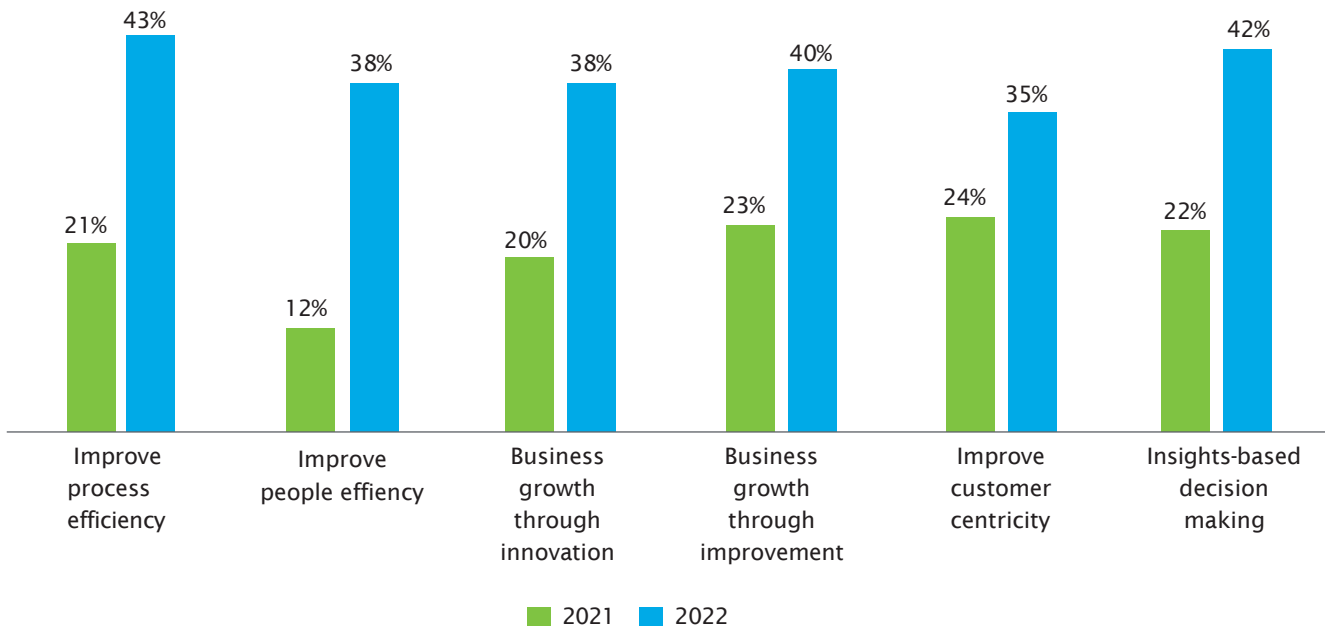
The percentage of respondents who felt confident that AI has helped their organisations achieve business outcomes to the highest potential has almost doubled over the past year across most outcome areas. AI appears to be equally capable of delivering outcomes across areas of incremental improvement (improving process and people efficiencies and business growth through improvements) and transformative change (improved customer centricity, insights-based decision-making, and innovation-led business growth).

However, the Financial Services sector appears to have a different perception of AI's ability to deliver business outcomes. A significantly lower percentage of respondents from the sector believe that AI has helped them achieve outcomes across areas other than supporting insights-based decision-making. In fact, less than one in five respondents from the sector believed that AI had helped them achieve business growth through improvement or innovation; only 6 percent said that AI had helped them significantly improve people efficiency.

On an average, organisations that used AI for a longer time such as those in the Trailblazers and Steadfast segments appear to have achieved greater success in achieving AI-supported business outcomes across areas. This is especially true for achieving innovation-led business growth, where the difference in reported success rates between these and other segments with less AI experience was most pronounced. This should be encouraging for organisations in the early stages of their AI journey as they can expect to reap more competitive advantages as they grow in AI maturity.

Large organisations find it more difficult to drive maximum benefits from AI initiatives. Only 1 in 4 or fewer respondents from organisations with a headcount of more than 20,000 believed that AI implementation was helping them achieve the best possible business outcomes. Just like any significant transformation, large organisations will face increased integration and change management challenges with their AI initiatives. However, even incremental change has the potential to deliver higher value.

Organisations find it more difficult to sustain AI projects after the launch

The development of an ecosystem for AI appears to have had a greater impact on easing the entry into AI for business and less on helping sustain and scale AI projects after the launch. For each of the 15 key challenges listed in the survey with regards to AI projects, more respondents said that their organisations experienced these more in the scaling phase rather than the starting phase.

The challenges that appear to most commonly escalate during the scaling phase for AI projects are – being able to continue proving business value after the project launch, sustaining initial AI implementation with maintenance and ongoing support, and integrating AI into day-to-day operations and workflows. This indicates that most businesses continue to consider AI initiatives as limited-time projects rather than a cornerstone of overall business strategy. Institutionalising AI as a permanent team and function within an organisation and assigning ownership of outcomes would help address these challenges to a great extent.

Challenges in starting and scaling AI projects

	Starting a project	Scaling a project
Challenges proving business value (e.g., ROI)	17%	51%
Lack of maintenance or ongoing support after initial launch	19%	42%
Difficulty integrating AI into the organisation's daily operations and workflows	22%	43%
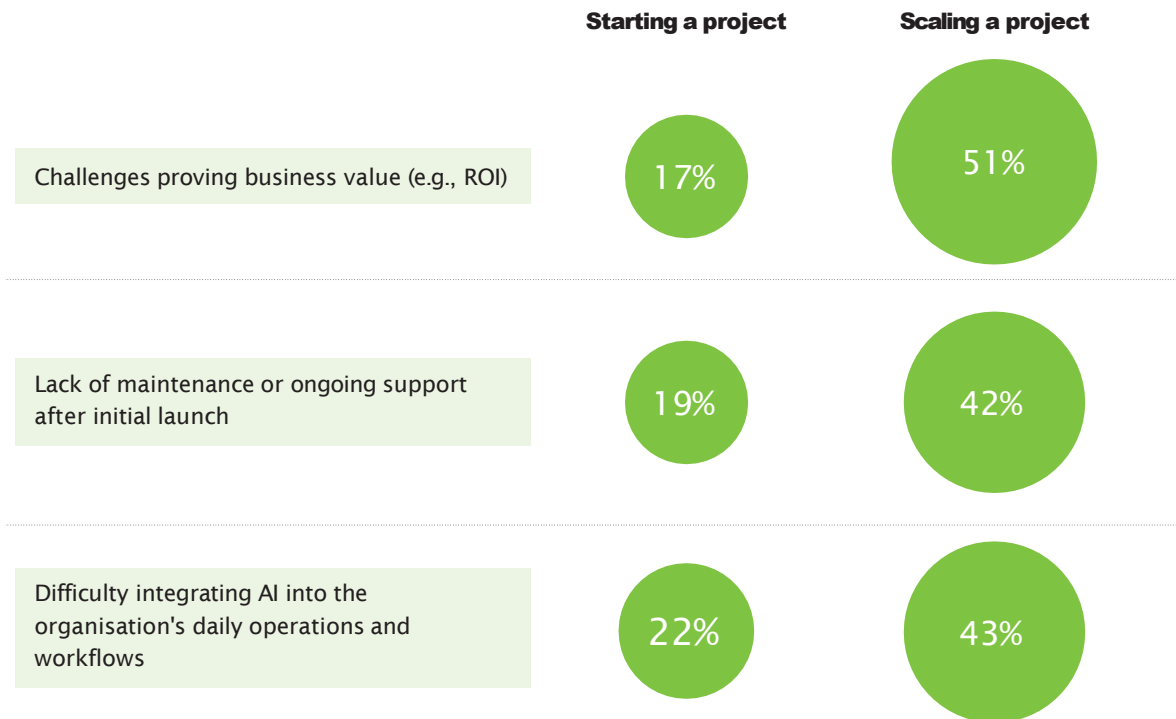
Path to AI success for businesses in India

Considering India Inc's current sentiment and outlook towards AI and some of the underlying levers and challenges, this study focuses on the key actions businesses in India are taking to accelerate AI adoption while maximising value of achieved outcomes. To understand this, we categorised potential actions into four areas – (1) investment in culture and leadership, (2) transforming operations, (3) orchestrating technology and talent, and (4) selecting use cases that help accelerate value.

Action 1: Invest in culture and leadership

The survey revealed that the must-haves to develop an AI-ready culture are leadership vision for how AI will be used (59 percent), transparent communication around value created by/with AI (57 percent), support for the human–AI collaboration from leadership and through talent practices (56 percent), and trust that AI will not put jobs at risk (52 percent). Respondents' organisations appear to be cognizant of these factors and are making attempts to address these. About 93 percent respondents mentioned that their organisations' senior leaders communicate a vision for AI, 92 percent said that they had an organisation-wide alignment between corporate strategy and AI strategy, and 88 percent confirmed that their leadership had communicated their AI strategy to the workforce and the use of AI was critical to their organisations' success. However, organisations appear to have had minimal success in allaying fears with regards to AI replacing jobs.

Impact of AI on people and culture

Most respondents saw their organisations undergoing considerable changes after increasing AI adoption. These changes include significant modifications in the process of creating teams and managing workflows; investing in change management; offering incentives and training activities to help people integrate AI into their work; and nurturing, training, and retaining AI-skilled professionals. These changes helped organisations to empower people to make better decisions, enhance performance and job satisfaction, and inspire people to trust AI-derived insights more than their intuition.

Impact of AI adoption on people and culture within an organisation

Statement	Percentage
Employees trust AI-derived insights more than their own intuition	81%
Employee in my organisation believe that working with AI technologies will enhance their performance and job satisfaction	88%
AI empowers people at our organisation to make better decisions	91%
My organisation actively works to nurture, train, and retain AI-skilled professionals	89%
My organisation invests in change management, incentives or training activities to help people integrate new technology into their work	84%
My organisation has undergone significant changes in how we create teams and manage workflows to take advantage of new technologies in the last five years	84%

However, respondents from the Financial Services sector appear to have some reservations in trusting AI's decision support abilities. Only 56 percent respondents from the sector said that their employees trust AI-based insights more than their own intuition, whereas the percentage of respondents with the same view from other industry sectors is more than 70 percent. This may be due to the level of complexity involved in some decisions that people in the Financial Services sector are required to take and greater need to make decisions in line with regulatory requirements.

Somewhat counterintuitively, size of an organisation by headcount appears to have an inverse impact on the workforce's fear with regards to AI. Amongst the survey respondents from organisations below an employee count of 10,000, 95 percent showed fear, whereas 82 percent from organisations with more than 10,000 employees suggested the same. In fact, fear amongst respondents from organisations with an employee count of greater than 20,000 was as low as 47 percent. It appears that people's perception of AI being a threat to their jobs is linked to organisations' existing high reliance on human capital.

Changes in management, culture, and processes to encourage AI adoption

Some of the more popular approaches amongst organisations to accelerate AI adoption are measuring and rewarding AI adoption, using AI for decision making at senior levels, and assigning ownership for AI adoption. To measure and reward AI use, 60 percent respondents said that their organisations use innovation rewards or incentives to run AI pilots and 42 percent have put in

place AI-specific KPIs. Half the respondents said that their organisations use AI to assist in decision making at the senior level. Organisations are also adopting different approaches to assign ownership of AI initiatives. These approaches include appointing leaders responsible for effective human and AI collaboration (50 percent), assigning ownership of AI models and their performance to lines of business (50 percent), and creating an AI centre of excellence (46 percent).

Organisations also understand the need to make AI more approachable to their workforces. To inculcate the culture of working "with AI" rather than "using AI", they are taking proactive actions, such as educating workers on when to apply AI and how to have effective, satisfying interactions with AI systems (47 percent respondents); redesigning talent practices in light of a mixed workforce of humans and AI (46 percent respondents); including workers in participative, human-centered design of collaborative human/machine work (43 percent respondents); and providing user-friendly AI systems accessible to non-technical/non-specialised workers (42 percent respondents).

Organisations willing to embed AI across more business use cases focus on educating their workforces on when to apply AI and how to maximise value of AI interactions (Trailblazers – 58 percent, Progressive – 54 percent, Wanderers – 50 percent vs Steadfast – 39 percent, Intermediate – 41 percent, Initiators-43 percent).

The entrepreneurial ethos of smaller organisations is evident in their widespread use of rewards and incentives

Educating workforce on AI applications and ways to maximise interaction with AI across the segments

	Wanderers	Progressive	Trailblazers
>=12AI	50%	54%	58%

Width of AI Deployment

	Initiators	Intermediate	Steadfast
<12AI	43%	41%	39%

<2 years of AI   3-6 years of AI   7+ years of AI

Depth of AI use
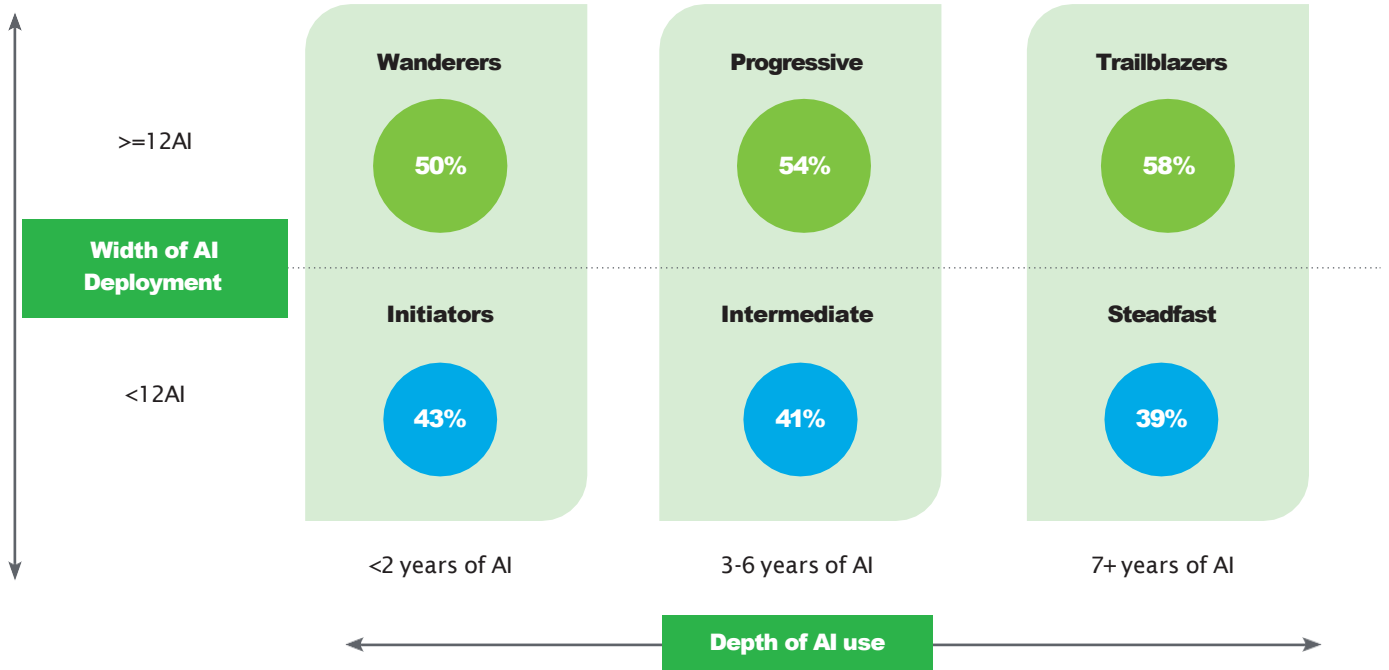
to improve AI adoption. About 80 percent respondents from organisations with a headcount between 500 and 999 said that their organisations provide innovation rewards or incentives to run AI pilots.

On the other hand, larger organisations appear to favour more systemic approaches to assign ownership for AI adoption, presumably to ease overall management of AI operations and investments. Nearly 70 percent respondents from organisations with more than 20,000 employees plan to appoint AI-focused leaders, create AI centres of excellence, and define KPIs to measure the success of AI efforts.

Fear of AI potentially replacing jobs

Despite the efforts made by organisations to bridge the AI–workforce divide, about 77 percent respondents said fear that increasing AI adoption will lead to job cuts exists within their organisations. This feeling of fear is also observed across industry sectors – with 3 in every 4 respondents from the Energy, Resources, and Industrials; Life Sciences and Health Care; and Technology, Media, and Telecom industry sectors; and 65 percent from the Consumer industry. The only exception appears to be the Financial Services sector with 62 percent respondents denying having observed such fear within their organisations.

These concerns may not be completely unfounded as about 70 percent respondents from the Energy, Resources, and Industrials; Technology, Media, and Telecom; Life Sciences and Health Care; and Consumer industry sectors said

that their organisations want to automate as many jobs as possible with AI. The Financial Services sector remains the exception, with only 55 percent respondents believing automating jobs as one of the major areas for using AI.

In terms of size, companies with a larger workforce are relatively less keen on automating jobs using AI. While ~85 percent respondents from organisations with fewer than 20,000 employees agree that their organisations want to automate as many jobs as possible with AI, only 44 percent from organisations with over 20,000 employees are either unsure or disagree that this is true for their organisations.

This is also validated through actions. About 35 percent and 38 percent respondents from organisations with an employee count of 500 to 999 and 1,000-5,000, respectively, said that their organisations have reduced overall employee headcount because AI has replaced many jobs. Only 11 percent and 13 percent respondents from organisations with an employee count of 10,000-20,000 and greater than 20,000, respectively, had the same observation.

The duration for which an organisation has been working with AI and consequently, the number of opportunities the workforce had to observe the capabilities of AI also appear to be directly proportional to fear this technology causes within employees. The more experienced Trailblazers and Steadfast segments had 84 percent and 86 percent respondents, respectively, mentioning that AI initiatives have created fear or concern amongst their workforces. This percentage is lower for the less experienced Progressives

(77 percent) and Intermediates (78 percent) segments, and lowest within the least experienced Wanderers (63 percent) and Initiators (64 percent) segments. As businesses further integrate AI into their organisations, they need to make a concerted effort to address these concerns. A collaborative process to build an organisation level, inclusive of AI vision, might be a powerful tool to help promote greater acceptance and comfort with AI.

Changing job roles

We broadly classified changes in job roles as a result of AI implementation into two themes. First is democratising changes that involve enabling AI and humans to work together seamlessly to achieve desired business outcomes. The second type of changes focus on limiting the development and use of AI to certain roles and teams (everything related to AI is done by a few specific people). The survey found an even leaning towards both approaches amongst organisations.

Changes in job roles: Democratisation of AI

We encourage a wide range of employees to create their own AI with low code/no code AI	51%
We use AI to support employees in making decisions that previously needed to be approved by managers	50%
We use AI to coach employees in how to do their jobs more effectively	39%
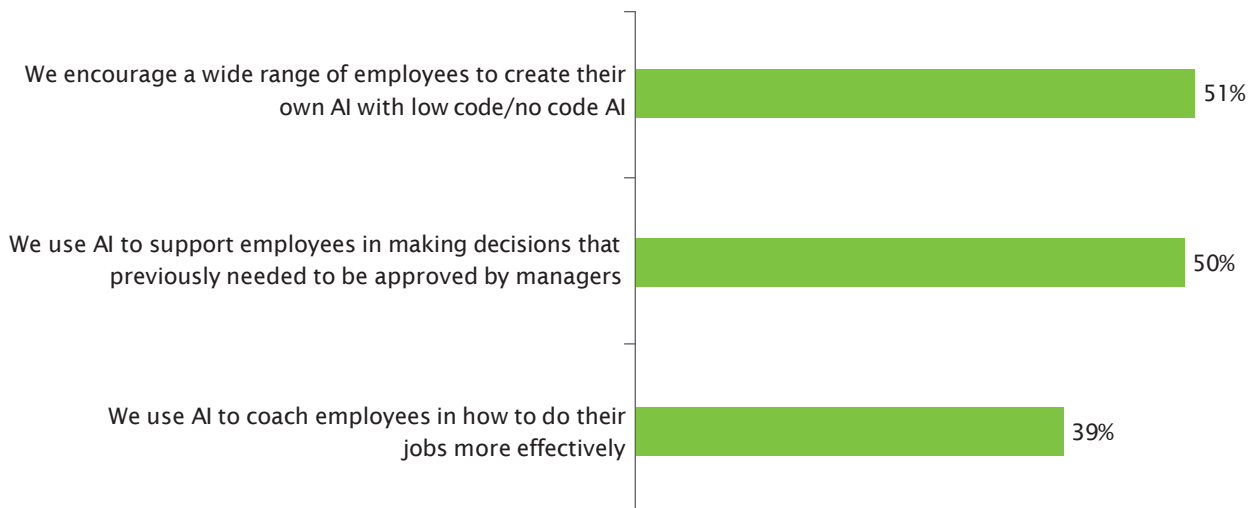
Changes in job roles: Limiting use of AI

We have created new AI job roles/functions to maximise AI advancements	50%
We have established an AI centre of excellence to help departments gain more AI expertise	50%
Interaction with AI is the domain of a few, highly specialised employees	49%
We are hiring new talent specifically for their AI expertise	47%
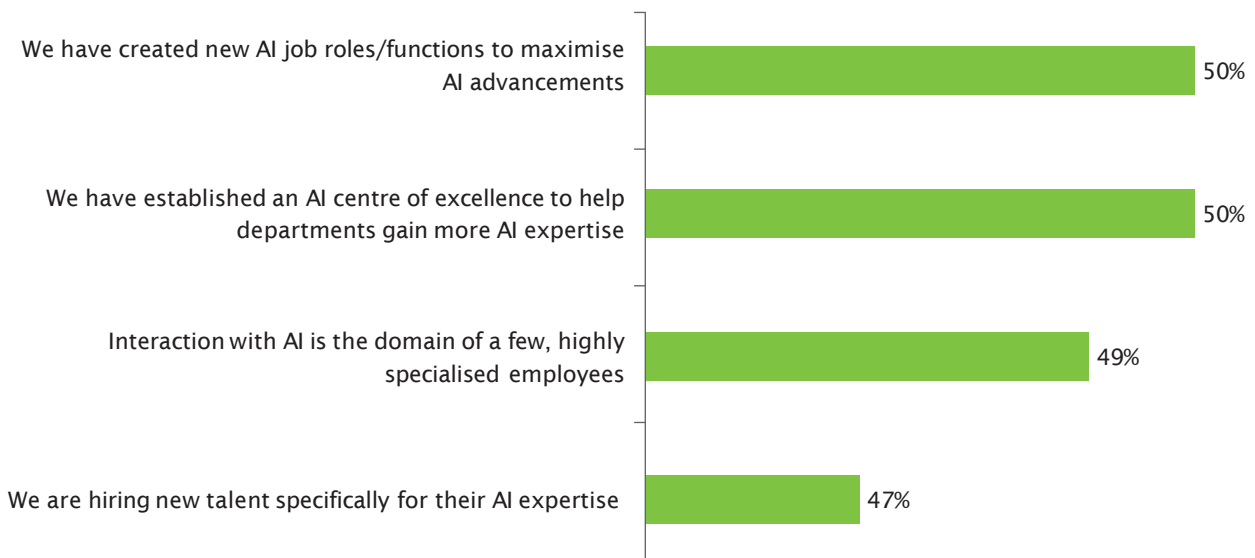
Action 2: Find the right ways of working with AI

Adherence to AI practices by responding organisation

Practice	Percentage
My organisation follows a documented AI model lifecycle publication strategy	51%
My organisation has documented processes for cataloging and governing the data used by AI models and ensuring its quality	49%
My organisation uses human-centered design. This approach to design involves listening to people and observing their behaviour to understand their needs or wants before starting to develop the solution. Principles in the development of AI models and applications	46%
My organisation addresses the cybersecurity risks of AI throughout a project's lifecycle	45%
My organisation tracks the ROI of deployed AI models and applications	42%
My organisation uses an AI quality and risk management process and framework to assess AI model bias and other risks before models go into production	42%
My organisation leverages a common and consistent platform for AI model and application development	37%
My organisation follows documented MLOps procedures, including for testing and continuous improvement planning, when developing an AI solution	32%

A key indicator of organisations' AI maturity is typically the adoption of and adherence to standardised AI practices. The fact that only half or fewer of the represented businesses in India appear to be following any of the eight listed AI practices has worrying implications for long-term sustainability of current AI initiatives.

The only segment that appears to have a high adherence to AI practices is Trailblazers – organisations with the maximum AI experience and use cases implemented. More than half of the respondents from Trailblazers adhered to at least six of the eight listed practices. Adherence to even a relatively advanced practice, such as MLOps, was as high as 58 percent in the segment. Organisations with a lower AI maturity would begin adopting these standard practices in the early stages of their AI journeys when the implementation and change management overheads would be lower.

Organisation size also appears to have an impact on the adoption of standard AI practices. On an average, organisations with an employee count of more than 10,000 show relatively less adherence to AI practices compared with those with fewer than 10,000 employees. This might be because adopting and monitoring the adherence of practices across an organisation is difficult as employee size increases.
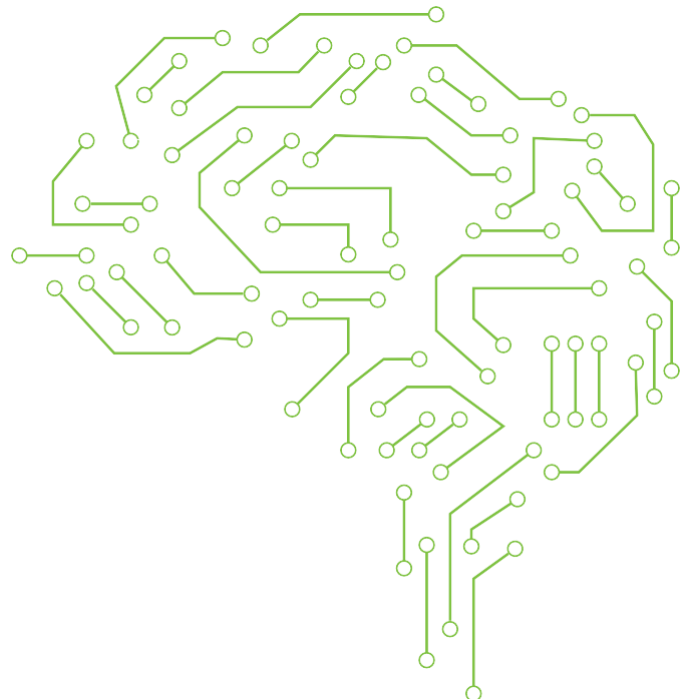
Adherence to AI practices in organisations across organisation size

Practice	<10,000	> 10,000
Following documented AI model lifecycle publication strategy	54%	43%
Using human-centered design	52%	30%
Documenting processes for cataloging and governing the data used by AI models and ensuring its quality	51%	44%
Addressing the cybersecurity risks of AI throughout a project's life cycle	49%	35%
Tracking the ROI of deployed AI models and applications	46%	27%
Using an AI quality and risk management process and framework to assess AI model bias and other risks before models go into production	46%	30%
Leveraging a common and consistent platform for AI model and application development	39%	32%
Following documented MLOps procedures, including for testing and continuous improvement planning, when developing an AI solution	34%	26%

■ <10,000   ■ > 10,000

Managing ethical risks related to AI

Although familiarity with AI has increased over the past few years, a significant percentage of the population and consequently workforce still have some serious and fundamental concerns with regards to ethical risks posed by the technology. Over half of the respondents reported concerns around AI's inability to ensure data privacy and manage consent. More than 1 in every 3 respondents also shared that their workforces had concerns that AI algorithms are unsafe, non-transparent, and potentially biased; they can be used for surveillance or as a means to manipulate people's thinking that AI can lead to job cuts.

Ethical risk related to AI most commonly sensed by respondents

Risk	Percentage
Inability to ensure data privacy or appropriately manage consent	51%
Safety concerns about AI-powered systems	46%
Use of AI for surveillance	44%
Lack of explainability and transparency in AI-derived decisions	44%
Using AI to manipulate people's thinking and behaviour	43%
Potential bias or low quality results of AI algorithms	37%
Elimination of jobs due to AI-driven automation	34%

Organisations appear to be making efforts to mitigate these risks and allay the resulting fears. On an average, there is an appreciable increase in the percentage of respondents confirming that their organisations are taking the mitigating actions listed in the survey. The maturing of AI ecosystems is reflected in the sharp rise in the percentage of organisations relying on external parties to partner on best practices and conduct independent audits of AI systems. Leadership-driven actions, such as assigning ownership and responsibility of AI risks to a single executive or appointing an AI ethics board appears to have gained significant traction since the past

year's survey. This indicates recognition of the need for AI risks to find place on the leadership agenda.

These actions have contributed to organisations feeling much more confident in their ability to ensure ethical AI. In the past year's survey, only 25 percent respondents reported that their organisations were well prepared to address AI risks; this year 75 percent respondents felt their organisations could deploy AI initiatives in an ethical manner respecting fairness, robustness, security, data privacy, accountability, and transparency.

Actions taken by organisations to manage the risks around AI implementation

Monitoring evolving regulations to ensure compliance in each of our markets
- 2022: 41%

Providing training/support to help employees foster productive, positive relationships to AI
- 2022: 31%

Collaborating with external parties on leading practices around AI ethics (e.g., academia, other companies, government, and industry bodies)
- 2021: 27%
- 2022: 48%

Using outside vendors to conduct independent audit and testing for AI systems (e.g., ensuring accuracy, regulatory compliance, and lack of bias)
- 2021: 27%
- 2022: 45%

Conducting internal audit and testing for AI systems (e.g., ensuring accuracy, regulatory compliance, and lack of bias)
- 2021: 45%
- 2022: 37%

Having a single executive in charge of AI-related risks
- 2021: 14%
- 2022: 37%

Establishing policies or a group/board to guide AI ethics for our organisation
- 2021: 35%
- 2022: 47%

Training practitioners who build AI systems how to recognise and resolve ethical issues around AI (e.g., bias in training data and algorithms)
- 2021: 39%
- 2022: 46%

Aligning AI risk management with organisation's broader risk management efforts
- 2021: 38%
- 2022: 43%

Keeping a formal inventory of all AI implementations
- 2021: 45%
- 2022: 50%

Completing a due diligence process to evaluate that our AI vendors provide unbiased systems
- 2021: 37%
- 2022: 36%

■ 2021   ■ 2022

An organisation's size and the resulting complexity in ensuring compliance to AI risk management practices appear to have a pronounced impact on its confidence in ensuring ethical AI. A significantly greater percentage of respondents from smaller organisations in the survey felt that their AI deployments were ethical across most parameters compared with respondents from larger organisations.

Distribution of respondents that are very confident in ethical application of AI in organisations by headcout

Legend: Fair/Impartial | Robust/Reliable | Safe/Secure | Responsible/Accountable | Transparent/Explainable | Privacy
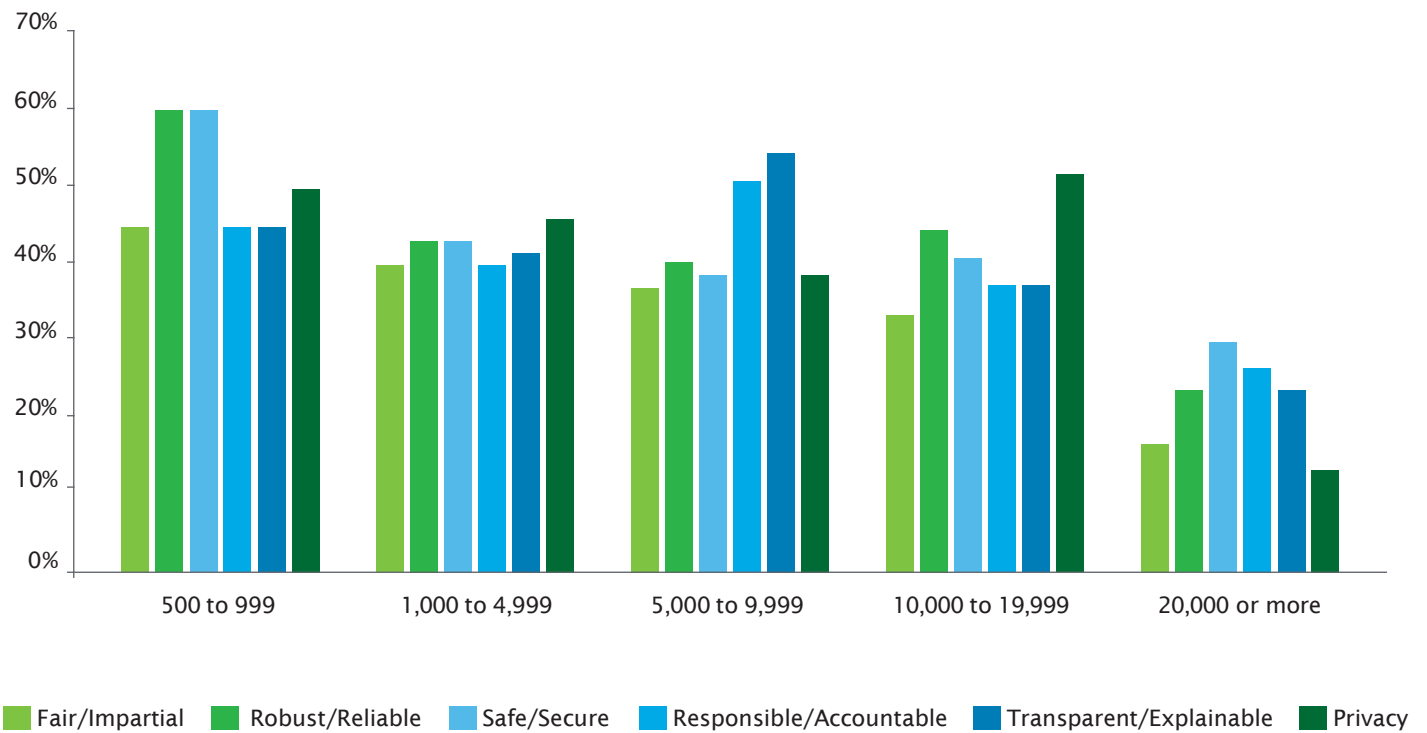
Action 3: Orchestrate tech and talent

Primary sources of AI workforce for organisations

Businesses in India acknowledge the importance and value of having access to in-house AI talent in the future. Close to 3 in every 4 respondents listed options that would help their organisations build in-house teams (AI trained/to be trained existing internal resources or AI talent hired externally) amongst their organisations' top two choices for source of AI skills.
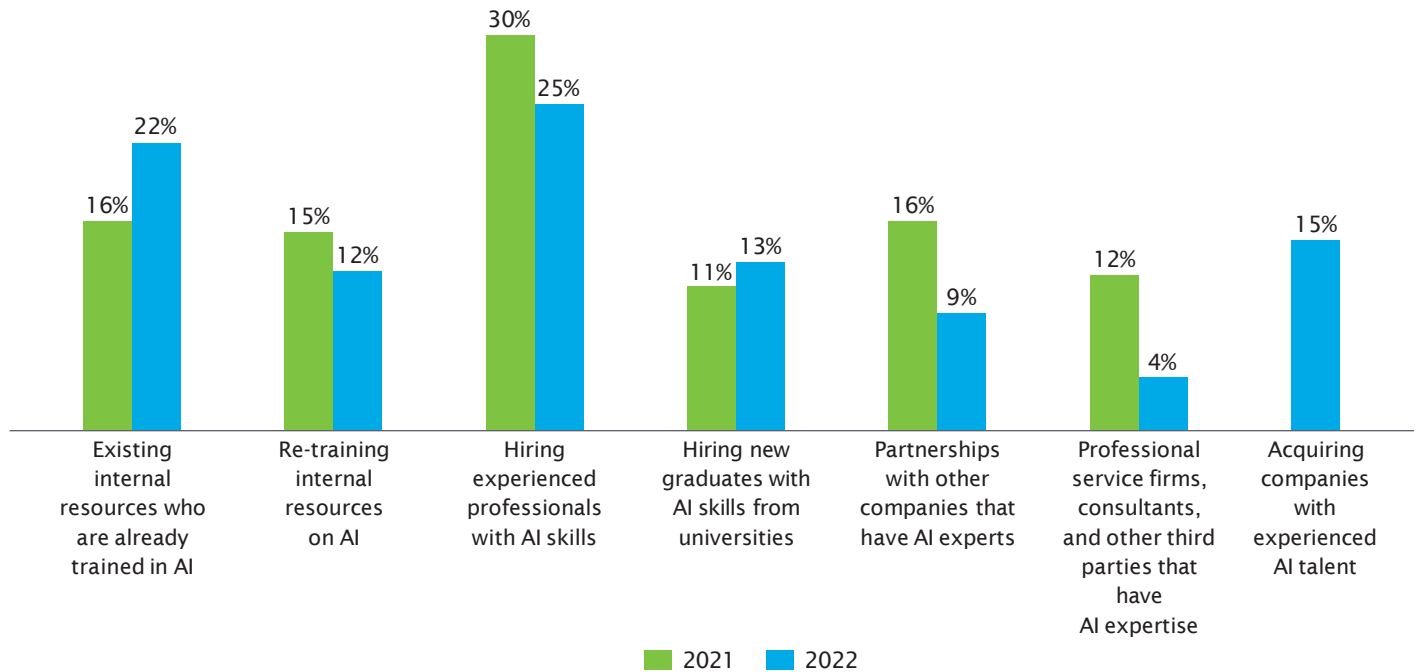
Organisations appear to have made significant progress in re-training their workforce in AI. Past year the proportion of respondents who said that their organisations relied on already trained AI employees and those who conveyed that they relied on re-training employees in AI was almost equal (15 percent and 14 percent, respectively). However, this year percentage of respondents relying on already AI trained workforce jumped to 22 percent. The percentage of respondents relying on yet-to-train AI workforce though

has not moved significantly (12 percent), indicating that organisations continue to invest efforts in AI enabling their workforce.

However, the efforts towards re-training existing workforce have not helped in significantly reducing the need to hire AI talent from external sources. The hiring mix appears to have shifted slightly from hiring experienced professionals to fresh graduates. This is likely an indicator of the increasing scarcity and cost of experienced AI talent in the market. The takeaway is clear – the demand for AI talent will continue to outpace supply and businesses will have to work closely with academia to rapidly expand the pool of available AI talent in the country.

Buying companies with experienced AI talent was seen as another viable option to acquire AI skills. Consequently, organisations' reliance on external sources, such as partners, professional services firms, or consultants for AI skills decreased from 28 percent last year to only 13 percent this year.

Top two preferred AI talent sources in responding organisations

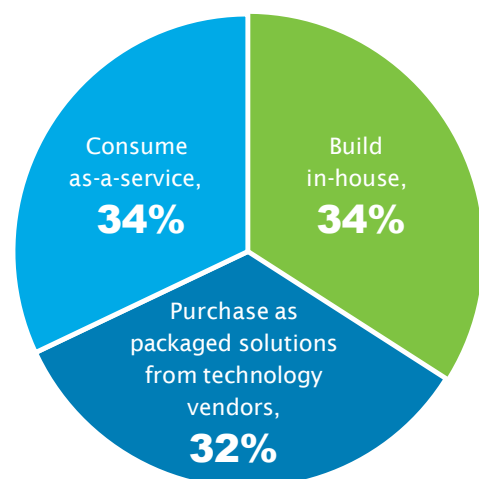|	2021	2022
Existing internal resources who are already trained in AI	16%	22%
Re-training internal resources on AI	15%	12%
Hiring experienced professionals with AI skills	30%	25%
Hiring new graduates with AI skills from universities	11%	13%
Partnerships with other companies that have AI experts	16%	9%
Professional service firms, consultants, and other third parties that have AI expertise	12%	4%
Acquiring companies with experienced AI talent		15%

In terms of organisation size, smaller firms tend to rely heavily on training existing resources in AI as their most preferred source of AI talent – 44 percent respondents from organisations with under 1,000 employees listed this as a preferred choice. This approach would help them manage costs in the short term as well as develop an AI-ready workforce for the longer term. However, bigger organisations that can afford to hire AI-ready professionals or have the market power to form AI-centric partnerships appear to see this as a quicker way to reap benefits from AI. About 37 percent respondents from organisations with more than 20,000 employees listed these two as their preferred sources of AI talent.

Building in-house vs. buying/subscribing

Only about one-third of the respondents said building in-house solutions was their organisations' preferred approach to AI. The key factors contributing to this are requirement of highly specialised and scarce skillsets, unwillingness to make large capital investments in an emerging and evolving area, and the increasing availability of product/service based commercial models for AI. The rising number of opex-based infrastructure options and increasing penetration of AI skills within the workforce will lower entry barriers for businesses to build their own AI assets. However, as-a-product and as-a-service, AI alternatives will also become easily accessible and affordable. We expect businesses to adopt a mixed approach to their AI deployments. One way they might do this is by keeping the development and maintenance of core-to-business AI assets in-house while using vendor ecosystems for more commonplace AI applications.

Respondents from the Initiators segment did lean more towards building in-house AI assets, with 44 percent selecting this as the preferred implementation approach. This may be due to two reasons – their desire to build an AI-centric business from early on in their journeys and their unwillingness to make significant spend on AI during the experimenting phase.

Distribution of organisations on the basis of preferred AI implementation approach

Consume as-a-service, **34%**

Build in-house, **34%**

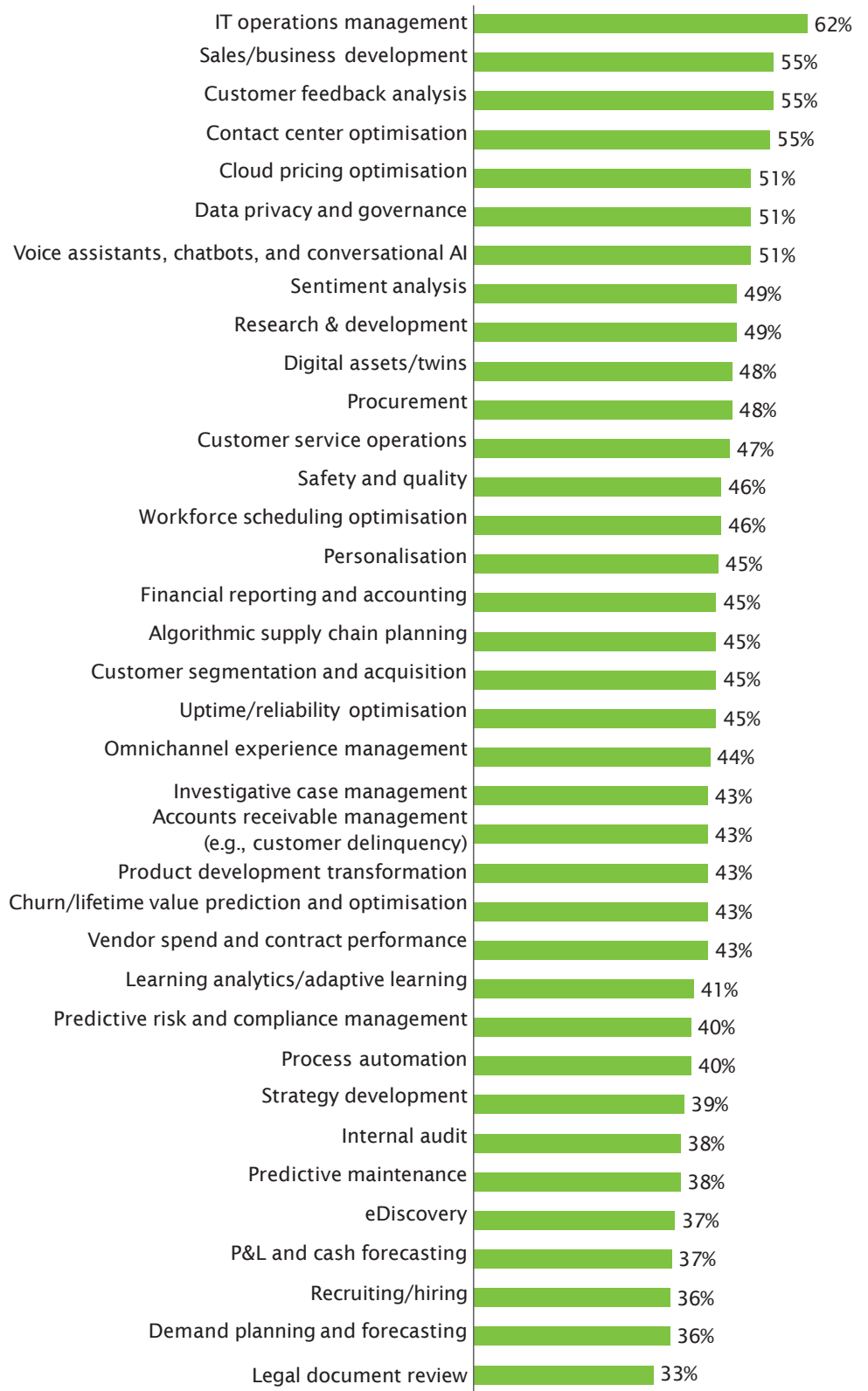Purchase as packaged solutions from technology vendors, **32%**

Preferred AI ecosystem

Big IT companies were the first to develop commercial AI products and services. They continue to be perceived as the most critical relationship within the AI ecosystem by over one-third of the represented organisations. However, almost 1 in 5 respondents said that the most important ecosystem relationship for them was with cloud vendors or professional service companies. This reflects the increasing need amongst businesses in India for more flexible AI solutions and a business value centric and strategic approach to AI. Cloud vendors were especially popular amongst respondents from organisations with relatively lower AI experience (31 percent amongst Wanderers and 29 percent amongst Initiators), emphasizing the need for operational agility and financial flexibility in the early stages of an organisation's AI journey.

Action 4: Select use cases that can help accelerate value

The most popular AI use cases across the survey respondents revolved around areas with the most direct impact on reducing costs or improving sales and customer experience. The two themes emerging from the most popular AI use cases were managing backend IT and technology operations, and understanding and interacting with customers. Over half of the respondents said that their organisations were using AI for backend use cases, such as IT operations management, cloud pricing optimisation, and data privacy and governance. A majority of the respondents also reported that their organisations use AI in customer-centric areas, such as sales and business development, customer feedback analysis, contact centre operations, and for voice assistants, chatbots, and conversational AI.

AI use case implementation by organisations

Use case	%
IT operations management	62%
Sales/business development	55%
Customer feedback analysis	55%
Contact center optimisation	55%
Cloud pricing optimisation	51%
Data privacy and governance	51%
Voice assistants, chatbots, and conversational AI	51%
Sentiment analysis	49%
Research & development	49%
Digital assets/twins	48%
Procurement	48%
Customer service operations	47%
Safety and quality	46%
Workforce scheduling optimisation	46%
Personalisation	45%
Financial reporting and accounting	45%
Algorithmic supply chain planning	45%
Customer segmentation and acquisition	45%
Uptime/reliability optimisation	45%
Omnichannel experience management	44%
Investigative case management	43%
Accounts receivable management (e.g., customer delinquency)	43%
Product development transformation	43%
Churn/lifetime value prediction and optimisation	43%
Vendor spend and contract performance	43%
Learning analytics/adaptive learning	41%
Predictive risk and compliance management	40%
Process automation	40%
Strategy development	39%
Internal audit	38%
Predictive maintenance	38%
eDiscovery	37%
P&L and cash forecasting	37%
Recruiting/hiring	36%
Demand planning and forecasting	36%
Legal document review	33%

The industries (such as Consumer, Technology, Media, and Telecom, and Life sciences and Health Care) that face high pressure for customer acquisition and retention find more value in leveraging AI to enhance customer experience by adopting personalisation and customer feedback analysis. About 68 percent respondents from Consumer; 60 percent from Technology, Media, and Telecom; 55 percent from Life Sciences and Health Care use AI for customer feedback analysis. In terms of providing personalised experience, more than 50 percent respondents from Consumer, Life Sciences and Health Care, and Technology, Media, and Telecom have already implemented AI for personalisation-centric use cases.

On the other hand, sectors with relatively higher levels of customer lock-in tend to focus on AI use cases that help them make customer interactions more efficient and cost effective. While more than half of the respondents from the Energy, Resources, and Industrials sector reported already using AI for contact centre optimisation (53 percent), a majority of the respondents from the Financial Services sector reported deployment of use cases around conversational AI (69 percent), contact centre optimisation (69 percent), and customer service operations (63 percent).

Sectors that stand to benefit the most from demand planning and forecasting due to their reliance on larger customer volumes with typically smaller average bill values have taken a lead in AI use cases that help them do this better. About 47 percent respondents from Technology, Media, and Telecom have implemented AI in demand planning and forecasting, with another 43 percent already experimenting with it. Similarly, 70 percent respondents from the Consumer industry reported already piloting or experimenting with use cases in this area. Other industry sectors, such as Energy, Resources, and Industrials (53 percent) and Life Sciences and Health Care (50 percent) are also beginning to experiment with use cases in this area.

Use cases around workforce planning are a focus area for industries that tend to have a large proportion of their workforce working in shifts. Respondents from Energy, Resources, and Industrials (53 percent); Technology, Media, and Telecom (53 percent); and Life Sciences and Health Care (50 percent) are already using AI for workforce scheduling.
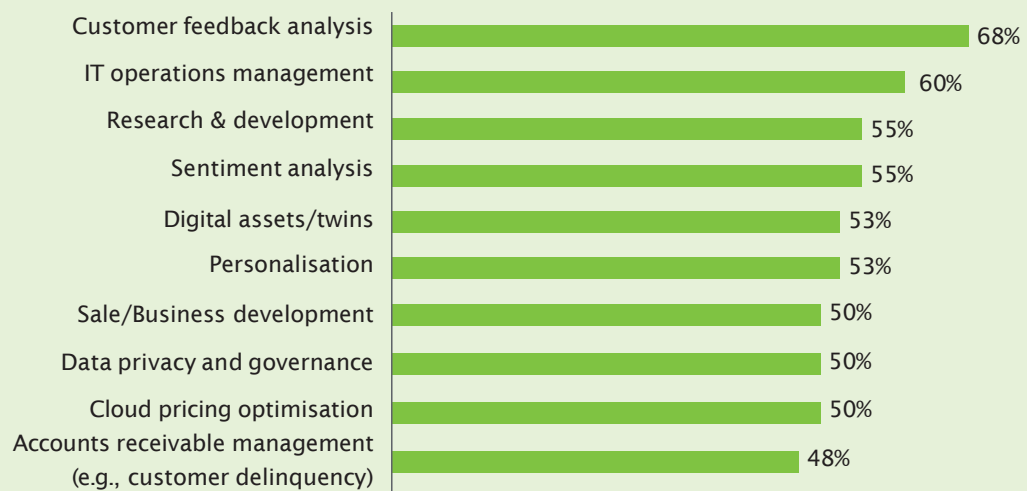
AI use cases by industry

Consumer

Amongst the top 10 AI use cases in the Consumer industry, four – customer feedback analysis, sentiment analysis, personalisation, and sales and business development – are around using AI to understand customers better and improve sales.

Top use cases implemented in Consumer Industry using AI

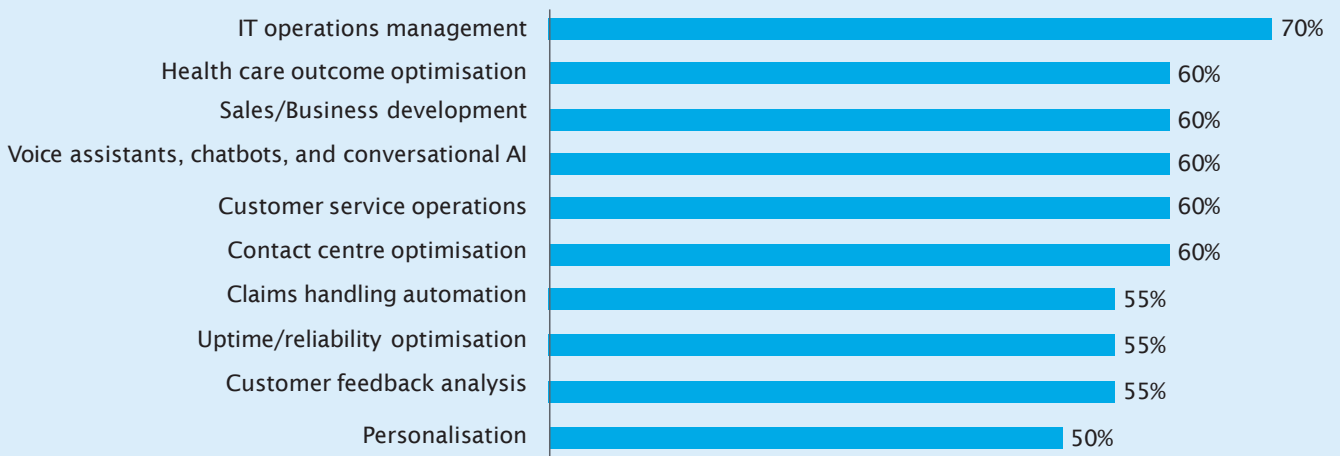| Use case	%
Customer feedback analysis	68%
IT operations management	60%
Research & development	55%
Sentiment analysis	55%
Digital assets/twins	53%
Personalisation	53%
Sale/Business development	50%
Data privacy and governance	50%
Cloud pricing optimisation	50%
Accounts receivable management (e.g., customer delinquency)	48%

Life Sciences and Health Care

Five amongst the top 10 AI use cases (voice assistants, chatbots, and conversational AI; customer service operations; contact centre optimisation; customer feedback analysis; and personalisation) implemented in the Life Sciences and Health Care sectors are around improving understanding of and response to customers. The sector also focuses on niche industry-specific use cases, including healthcare outcome optimisation and claims management automation.

Top use cases implemented in Life Sciences and Health Care using AI

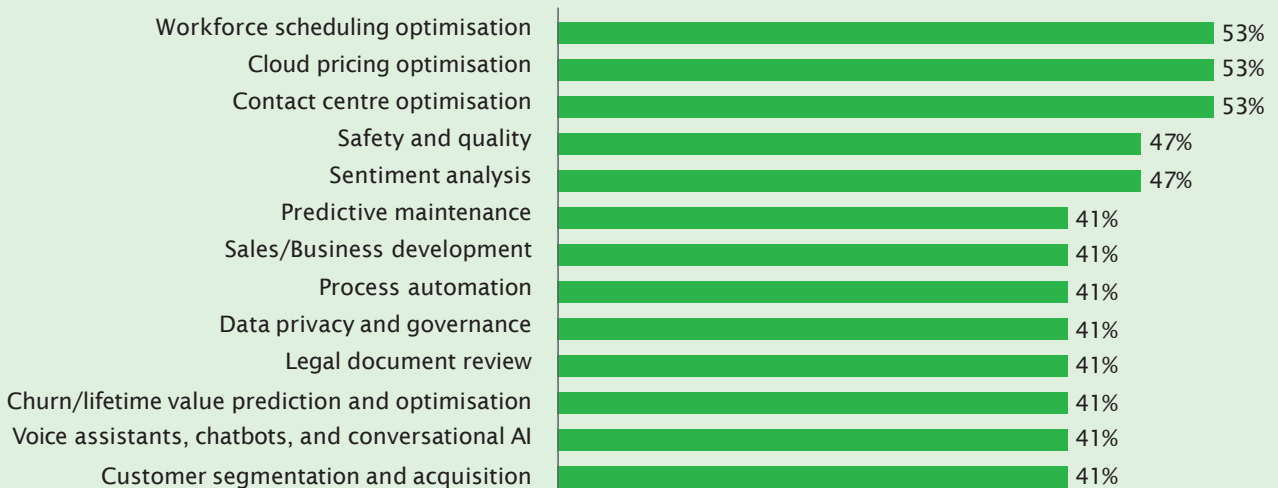| Use case	Percentage
IT operations management	70%
Health care outcome optimisation	60%
Sales/Business development	60%
Voice assistants, chatbots, and conversational AI	60%
Customer service operations	60%
Contact centre optimisation	60%
Claims handling automation	55%
Uptime/reliability optimisation	55%
Customer feedback analysis	55%
Personalisation	50%

Energy, Resources, and Industrials

Responses from this sector indicate the focus on prioritising industry-aligned use cases, such as workforce scheduling optimisation, safety and quality, predictive maintenance, process automation, and legal document review.

Top use cases implemented in Energy, Resources, and Industrials using AI

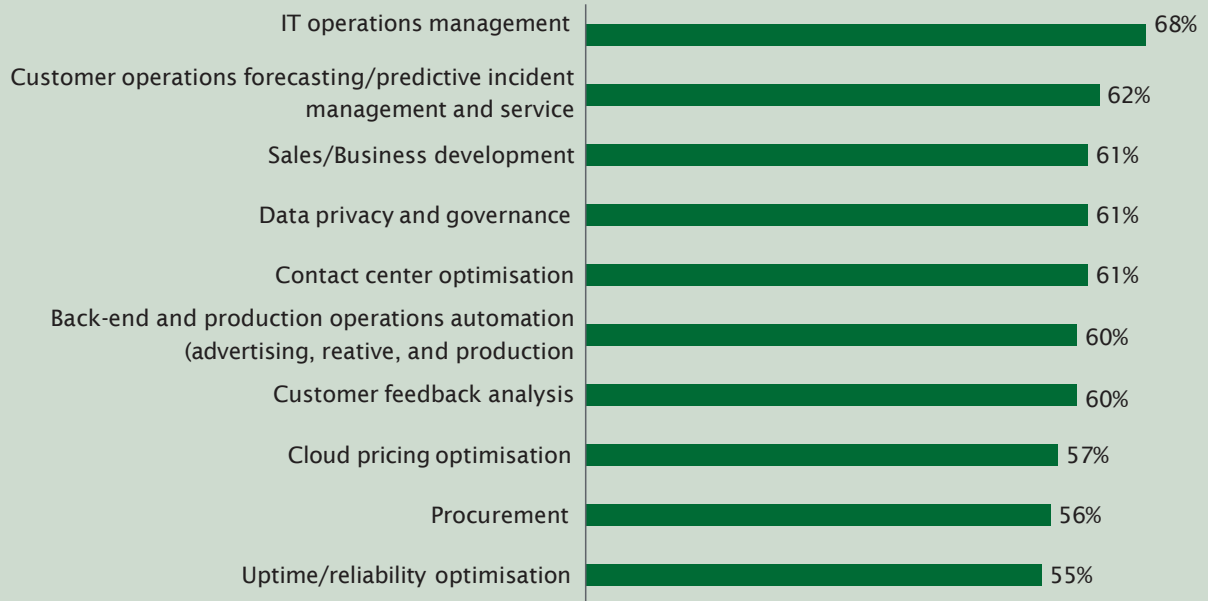| Use case	Percentage
Workforce scheduling optimisation	53%
Cloud pricing optimisation	53%
Contact centre optimisation	53%
Safety and quality	47%
Sentiment analysis	47%
Predictive maintenance	41%
Sales/Business development	41%
Process automation	41%
Data privacy and governance	41%
Legal document review	41%
Churn/lifetime value prediction and optimisation	41%
Voice assistants, chatbots, and conversational AI	41%
Customer segmentation and acquisition	41%

Technology, Media, and Telecom

Industry-specific, high-impact use cases that respondents reported their organisation had already deployed included IT operations management, operations forecasting and predictive incident management, back-end and production operations automation, cloud pricing optimisation, and reliability optimisation.

Top use cases implemented in the TMT industry using AI

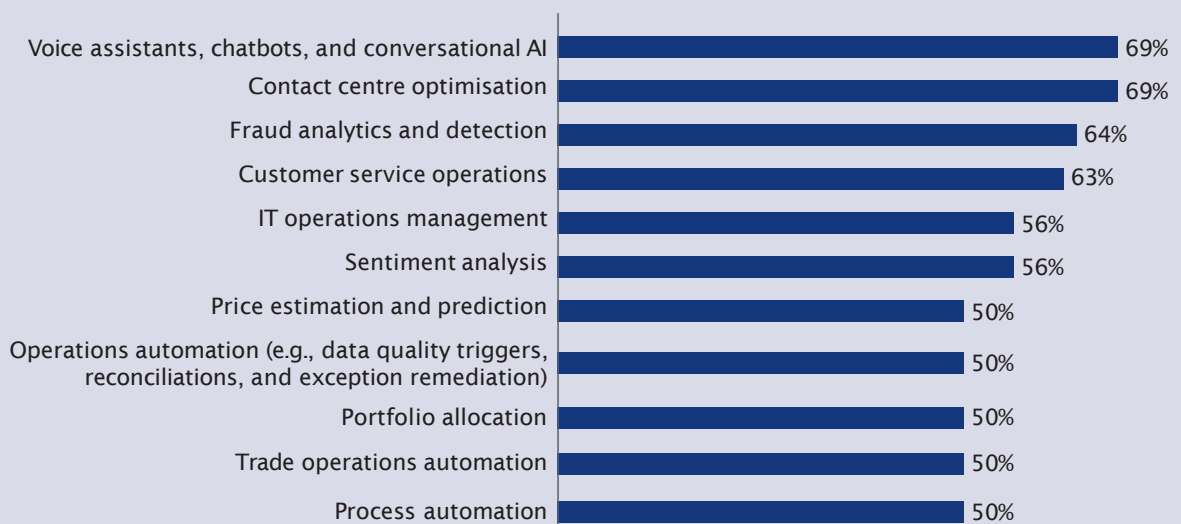| Use case	Percentage
IT operations management	68%
Customer operations forecasting/predictive incident management and service	62%
Sales/Business development	61%
Data privacy and governance	61%
Contact center optimisation	61%
Back-end and production operations automation (advertising, reative, and production	60%
Customer feedback analysis	60%
Cloud pricing optimisation	57%
Procurement	56%
Uptime/reliability optimisation	55%

Financial Services

The Financial Services sector seems to have a clear prioritisation for industry-specific use cases, such as fraud analytics and detection, operations automation (e.g., data quality triggers, reconciliations, and exception remediation), portfolio allocation, trade operations automation, and price estimation and prediction.

Top use cases implemented in the Financial Services industry using AI

Use case	Percentage
Voice assistants, chatbots, and conversational AI	69%
Contact centre optimisation	69%
Fraud analytics and detection	64%
Customer service operations	63%
IT operations management	56%
Sentiment analysis	56%
Price estimation and prediction	50%
Operations automation (e.g., data quality triggers, reconciliations, and exception remediation)	50%
Portfolio allocation	50%
Trade operations automation	50%
Process automation	50%

Government and Public Services

The public sector in India is leading the way in terms of AI investment and one of the key drivers for the Indian AI industry. Although use cases that the public sector is investing in are quite niche and focused around managing resources, environments, and concerns in the public sphere, they provide a strong impetus to the overall AI ecosystem in the country.

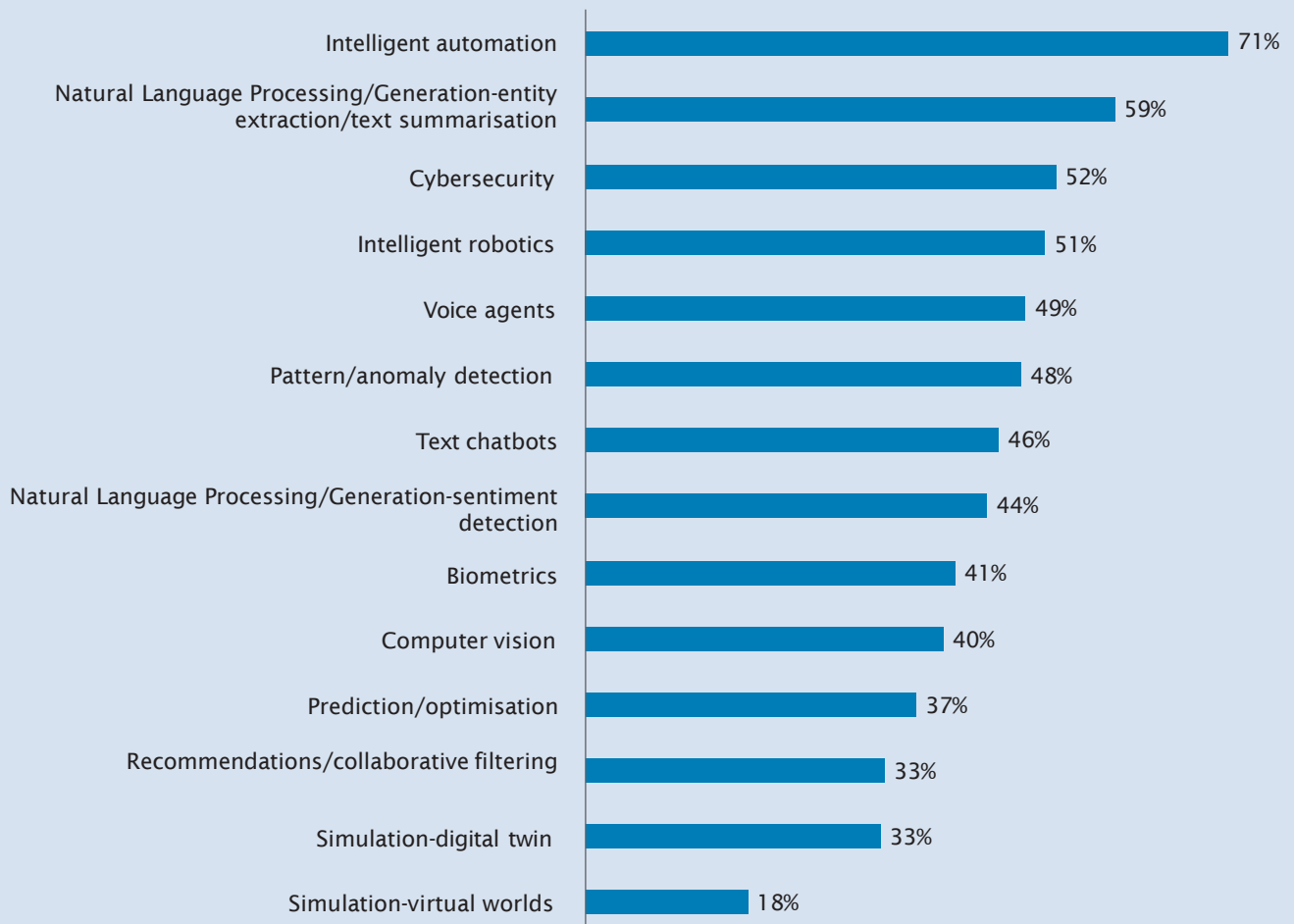**Top use cases implemented in Government and Public services using AI**

Use case	Percentage
Environmental modeling and monitoring/disaster recovery	70%
Intelligence	60%
Population risk support	60%
Safety and quality	60%
Product development transformation	60%
Financial reporting and accounting	60%
Omnichannel experience management	60%
Civil asset and infrastructure management	55%
AI-informed public intervention	55%
Disease outbreak prediction	55%
Service delivery optimisation	55%
Demand planning and forecasting	55%
Sales/Business development	55%
Workforce scheduling optimisation	55%
Cloud pricing optimisation	55%
IT operations management	55%
Vendor spend and contract performance	55%
Customer service operations	55%

Future expectations from key AI applications/technology adoption

Percentage of firms believing in AI applications to drive value in medium term (3-5 years)

Intelligent automation/robotics and Natural Language Processing/Generation (NLP/G) remain the application areas that respondents see as holding the maximum potential for the medium and long term. For NLP/G, organisations appear to be confident of being able to extract value from technically simpler use cases around entity extraction and text summarisation in the medium term. For more advanced cognitive areas such as sentiment detection, organisations appear to believe that they would only bear fruit in the longer term after becoming technically more adept at using AI.

A similar sentiment towards the need for technical maturity appears to reflect in response to areas such as computer vision. Interest in AI for cyber security is high for the medium term but drops significantly over the long term. Organisations appear to be of the opinion that once AI helps them put the right frameworks and policies in place for cyber security, the technology's incremental potential in the long term would diminish.

Application	Percentage
Intelligent automation	71%
Natural Language Processing/Generation-entity extraction/text summarisation	59%
Cybersecurity	52%
Intelligent robotics	51%
Voice agents	49%
Pattern/anomaly detection	48%
Text chatbots	46%
Natural Language Processing/Generation-sentiment detection	44%
Biometrics	41%
Computer vision	40%
Prediction/optimisation	37%
Recommendations/collaborative filtering	33%
Simulation-digital twin	33%
Simulation-virtual worlds	18%

Percentage of firms believing in AI applications to drive value in long term (5-10 years)

Application	Percentage
Intelligent automation	64%
Natural Language Processing/ Generation-entity extraction/text summarisation	55%
Natural Language Processing/ Generation-sentiment detection	54%
Intelligent robotics	53%
Voice agents	50%
Computer vision	47%
Cybersecurity	47%
Text chatbots	46%
Prediction/optimisation	45%
Recommendations/collaborative filtering	42%
Pattern/anomaly detection	41%
Simulation-digital twin	36%
Biometrics	36%
Simulation-virtual worlds	25%

Methodology

To understand how organisations are adopting AI, what are the preferred use cases for different industry sectors and what are the adoption-related challenges, Deloitte surveyed 200 senior executives across industries and business functions between April 2022 and May 2022.

The surveyed organisations included a mix of private- and public-sector organisations spread across six industry sectors – Consumer (20 percent); Energy, Resources, and Industrials (9 percent); Financial Services (8 percent); Government and

Public Services (10 percent); Life Sciences and Health Care (10 percent); and Technology, Media, and Telecom (44 percent).

The survey included C-level executives (41 percent), senior management (42 percent), and other key decision-makers (18 percent). Respondents are also grouped by organisation size, i.e., the number of employees working in the organisation, starting from 100 to 20,000 and more. The survey also took into consideration a wide cross-section of organisations based on their annual revenue.

Respondents %

- 10%
- 33%
- 29%
- 14%
- 15%

Legend:
- 500 to 999
- 1,000 to 4,999
- 5,000 to 9,999
- 10,000 to 19,999
- 20,000 or more

Organisation size by employee count
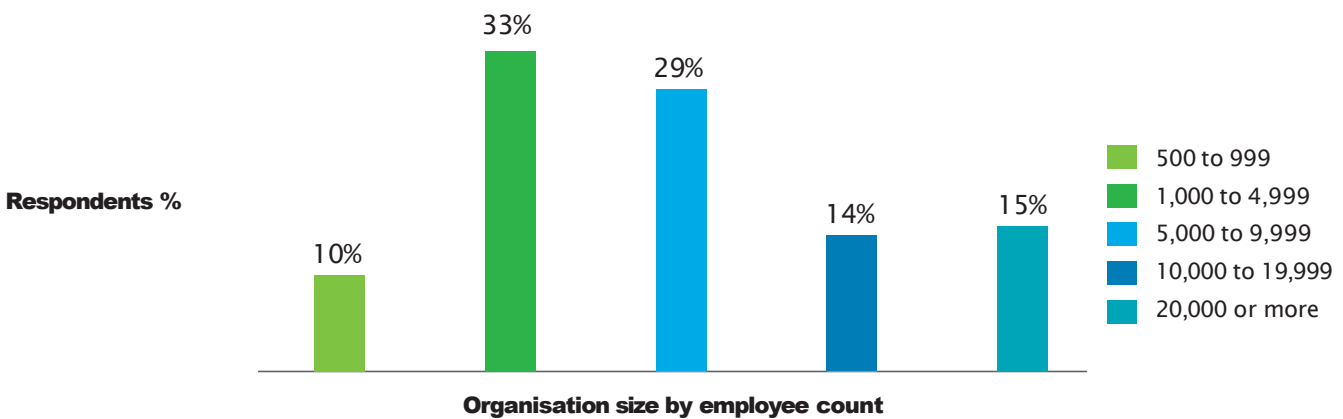
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