pwc

GenAI in technology, media and telecommunications: From concept to reality

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Executive summary

In the past few years, technological disruptions in the technology, media and entertainment and telecommunications (TMT) sector have altered the business landscape significantly. Artificial intelligence (AI), particularly generative AI (GenAI), has not only revolutionised traditional methods but has also opened new avenues for innovation and efficiency across the TMT sector. TMT leaders perceive GenAI as a significant long-term disruptor, with 43% leaders expecting to witness its impact within this year. Recognising GenAI's potential, more than two-thirds of companies who participated in the survey, placed it among their top five priorities, with most of them reporting significant investment for implementation. Technology firms lead in adoption, with 80% having at least one GenAI application, compared to 50% in the media and entertainment (M&E), and telecom sectors. GenAI's capability to transform business models and enhance value propositions is driving this adoption, with 70% of respondents citing improved customer experience, engagement and changes in labour outsourcing as key value proposition and areas of impact.

When it comes to the implementation approach, organisations in the technology and M&E sectors are opting for external consultants, while telecom firms are exploring in-house implementation of GenAI solutions. Across the TMT sector, a custom deployment model is being preferred, with technology and M&E companies often deploying on-private cloud infrastructure and telecom companies demonstrating a preference for on-premise platforms. 83% are utilising GenAI for innovation and research across the TMT sector, facilitating the creation of new products and services. Impact areas vary by sector, with technology and M&E focusing on product/service amplification, while the telecom sector emphasises cost optimisation. To facilitate GenAI adoption among their workforce, TMT companies are actively conducting workshops and providing learning modules.

Majority of technology companies are employing GenAI for integration and deployment, and product development, with GenAI's use cases already in place. In the M&E sector, content generation – including audio, video and text – is a popular use case expected to be implemented within a year. These use cases are anticipated to help companies in the technology and M&E sector achieve product/service amplification. Telecom companies have adopted GenAI for real-time support in provisioning and maintenance, leveraging features like digital assistance, AI powered chatbots and automated fault detection. Across various functions, IT, and sales and marketing are poised to be impacted the most by GenAI's implementation.

Though a popular choice in recent times, there are a few concerns which businesses must be aware of while adopting GenAI solutions. For technology companies, a key concern is the availability and readiness of data for the training models. In the M&E sector, inadequate technological infrastructure poses a hurdle to GenAI's adoption, while telecom companies struggle with integrating GenAI into existing systems. The TMT sector is aware of the various issues related to the use of GenAI such as data security and privacy and bias and is managing them majorly through board-level reviews and discussions or with the chief information security officers' (CISO) review. Additionally, TMT organisations are also collaborating with third parties to mitigate the environmental impact associated with GenAI's implementation.

Key highlights of the survey

The primary objective of the survey was to understand the extent of GenAI's use and its impact on TMT companies in India. The key focus areas of the survey include adoption level and use cases, implementation approach, impact on operations and services and understanding and navigating the challenges in GenAI's adoption.

76%

Ranked GenAI among their **top five strategic priorities** with 42% placing it in the top three

58%

Already implemented their first GenAI solution

65%

Either have a **full strategic roadmap for implementation or at least one enterprise-wide GenAI application available** or both

40%

Are **already seeing the impact of GenAI and are on track for the desired ROI** and another 21% expect to witness it within the next year

Most adopted use case area: **Product/service amplification**

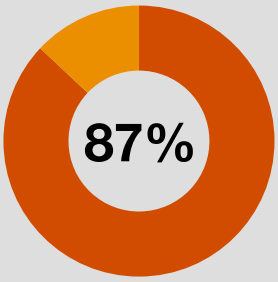
Major impact and value proposition: **Labour outsourcing, revenue assessment, and customer experiences**

Function to experience the most disruption: **Sales and marketing** with the most disruptive use case as 'Customer segmentation and targeting'

Area having maximum opportunities: **Innovation and research**

Challenges and mitigation strategies

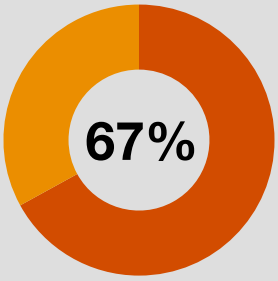
Tech infrastructure readiness is the top business challenge faced by organisations for the implementation of GenAI



Opt for **board-level review and discussion** to mitigate the adoption challenges

Policy frameworks

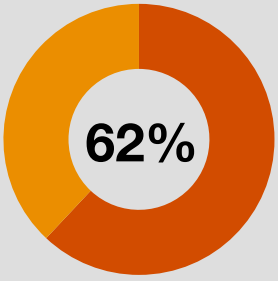
Security and privacy is the top concern with GenAI adoption



Indicate that their **policy framework is not mature enough to address security concerns**

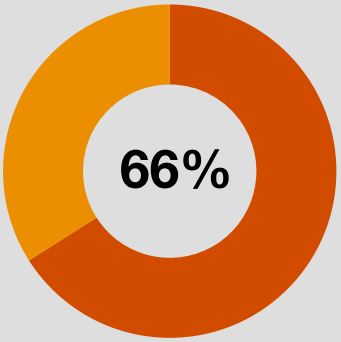
Workforce elevation

Conducting targeted workshops and learning modules is the top approach to prepare employees for GenAI benefits



Have **increased funding towards their employees' initiatives** to encourage them for GenAI adoption

Technology



Among those prioritising it in their top five, **66% report 'high' investments in GenAI initiatives**

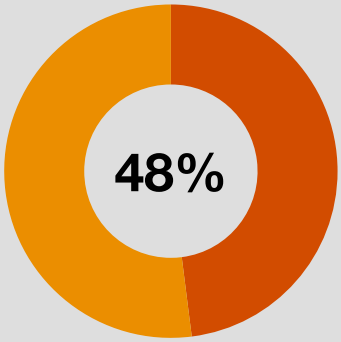
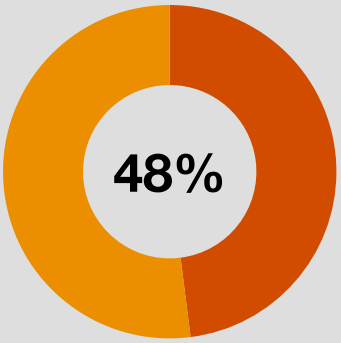
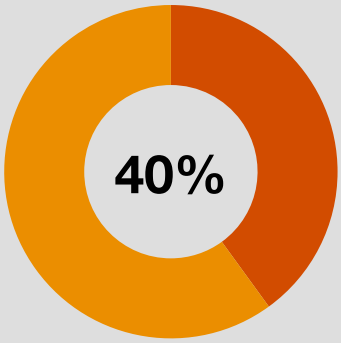


Exhibit **'very high' knowledge about GenAI,** however frequency of use is only 26%



Lean towards **co-sourcing with external consultants for GenAI** implementation



Have a **full strategic roadmap for implementation** while 26% are in the evaluation phase

Most preferred platform with deployment model: **Private cloud with custom model**

Top impact: **Change in labour outsourcing and prompting a reassessment of global revenue streams and cost structures**

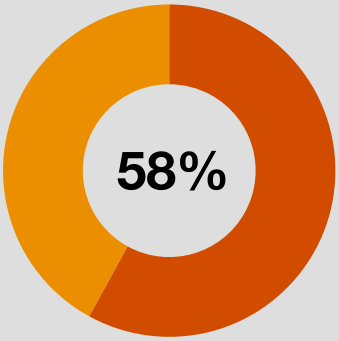
Top mode of incentivising employees to encourage for GenAI adoption: **Rewards and recognition**

Top concern for the implementation: **Data availability/ readiness**

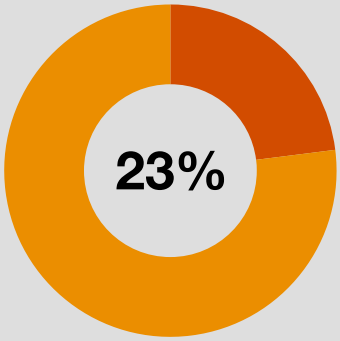
Most relevant use cases and their nature of impact:

- **'Product development (automated coding and testing)' and 'integration deployment'** emerged as the most relevant use cases for the technology companies
- For automated coding and testing, the primary impact area is expected to be **'innovation and new product development',** while for integration deployment, it is anticipated to be **'product/service amplification.'**

M&E



Among those prioritising it in their top five, **58% report 'medium' investments in GenAI initiatives**



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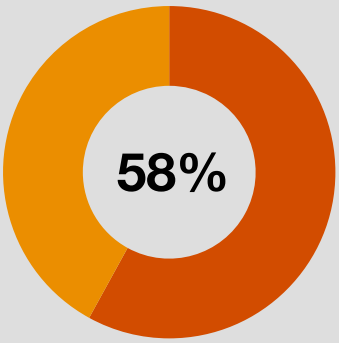

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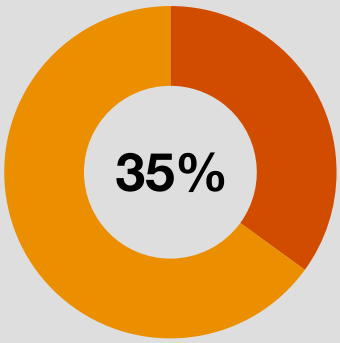
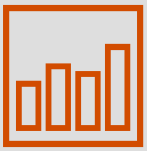


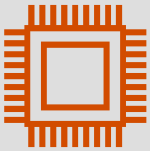
Are in the **evaluation phase** of GenAI adoption while 25% have a full strategic roadmap for implementation

Most preferred platform with deployment model: **Private cloud with custom model**

Top impact: Utilising it for **personalised customer experiences and enhancing engagement**



Top mode of incentivising employees to encourage for GenAI adoption: **Increased funding towards their initiatives**

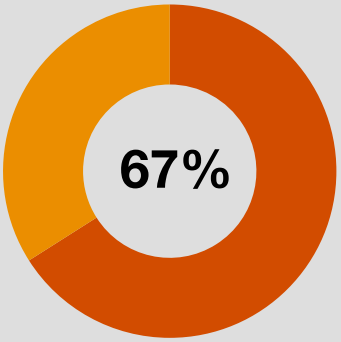


Top concern for the implementation: **Tech infrastructure readiness**

Most relevant use cases and their nature of impact:

- **'Content generation'** and **'personalised marketing'** emerged as the most relevant use cases for the M&E companies
- For content generation, the primary impact area is expected to be **'product/ service amplification'** while for personalised marketing, it is anticipated to be **'go to market'**

Telecom



Among those prioritising it in their top five, **67% report 'high' investments in GenAI initiatives**

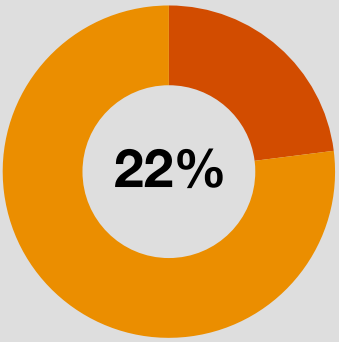
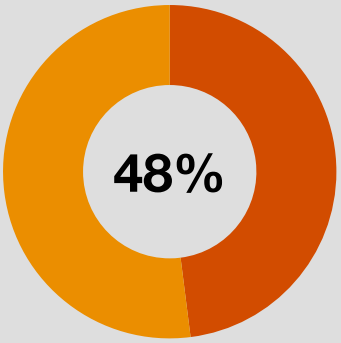
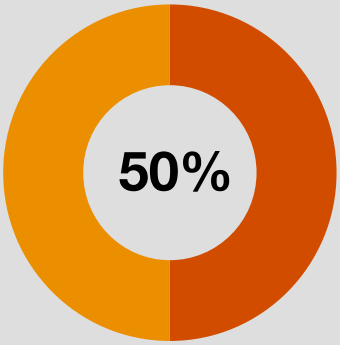


Exhibit **'very high' knowledge about GenAI,** while frequency of use is 20%



Are exploring **in-house/ in-source** for GenAI implementation



Are in the **evaluation phase** of GenAI adoption while 30% have a full strategic roadmap for implementation

Most preferred platform with deployment model: **On-premises with pre-trained open-source model**

Top impact: **Coming up with new offerings, entering into new partnerships, and changing their profit and loss**

Top mode of incentivising employees to encourage for GenAI adoption: **Increased funding towards their initiatives**

Top concern for the implementation: **Integration complexities with existing systems**

Most relevant use cases and their nature of impact:

- **'Real-time support in provisioning and maintenance' and 'personalised promotion and pricing plan'** emerged as the most relevant use cases for the telecom companies
- For real-time support in provisioning and maintenance, the primary impact area is expected to be **'Innovation and new product development',** while for personalised promotion and pricing plan, it is anticipated to be **'go to market'**

Introduction

GenAI is being adopted across various industries due to its ability to create content, automate repetitive tasks and enhance decision-making processes by generating insights and processing large data sets. In the TMT sector, GenAI is being integrated into tasks related to developing personalised content, automating customer service, product development and improving the overall operational efficiency of an organisation. The rapid adoption of GenAI is primarily driven by the advancements in AI technology and the competitive market landscape where most industries are leveraging GenAI for innovation in the dynamic business landscape. Although businesses are eager to implement this technology and most companies are contemplating GenAI's adoption, the actual integration of GenAI into workflows remain modest. Many company's CXOs are aware of the advantages of integrating GenAI in their workflows but are hesitant to embrace it due to uncertainty of return on investment (RoI), inadequate infrastructure, data privacy and security concerns.

GenAI offers a myriad of applications and its implementation can be adjusted to cater to the specific needs of the company. Issues requiring transparency, supervision, accountability, technical robustness, safety, privacy, data governance and environmental well-being can be addressed by carefully choosing the right implementation and deployment model. The implementation approach can vary from in-house development to M&A with companies proficient in GenAI while the choice of deployment model depends on the budget, availability of a skilled workforce and the degree of privacy and data security requirements.

Despite the challenges, TMT companies have been leading GenAI's adoption as compared to other sectors in India, which has triggered both innovation and disruption of the business models of the organisations in this sector.

However, as early adopters, TMT companies are also among the first to tackle the risks and uncertainties related to the technology. To maximise GenAI's value in the long run, TMT companies must pursue a strategic approach and ethically integrate the technology into their operations. Devising robust policy frameworks for responsible adoption, assessing GenAI use cases and its applications, allocating ample resources and funding to facilitate the adoption and collaborating to offset the risks are some of the steps that can be taken to adopt GenAI.

This survey seeks to uncover insights into the current state of GenAI adoption within the Indian TMT industry, shedding light on key trends, challenges and best practices shaping the journey towards AI-driven transformation. Top industry experts participated in the survey and shared their valuable perspectives on the opportunities and obstacles in the adoption of GenAI in the sector.

By synthesising the perspectives and experiences shared by industry stakeholders, this survey aims to inform strategic decision-making, foster dialogue and catalyse collaborative efforts towards responsible and sustainable GenAI adoption in the TMT sector of India. Based on the survey results, the report also recommends approaches to GenAI's adoption to identify opportunities and areas of impact while assessing ROI, choose the right implementation approach, select the deployment model and prepare the workforce to use GenAI.

The insights presented herein can serve as a valuable resource for organisations, policymakers, researchers and other stakeholders invested in shaping the future of GenAI in India's TMT landscape.

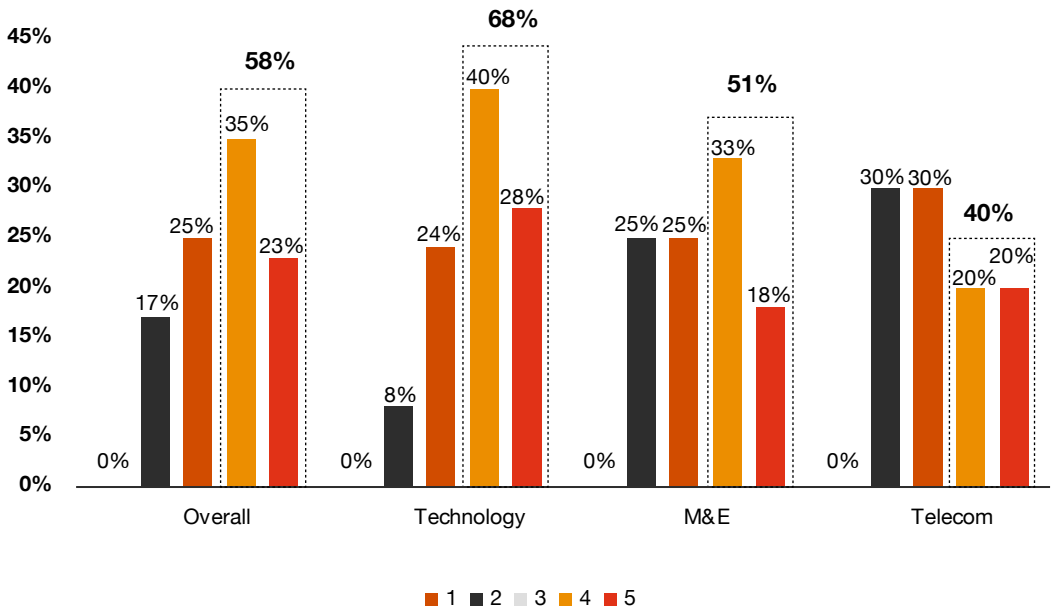
GenAI and the TMT sector

Though the use of GenAI in the TMT sector in India is on the rise, the level of awareness and implementation varies within the TMT sector. TMT companies are capitalising on GenAI's benefits including improved personalisation, predictive analytics and cost reduction. However, concerns persist around data privacy, ethical considerations and job displacement. The industry is striving to strike a balance between GenAI powered innovation and efficiency while addressing the challenges that come with the technology's adoption.

Expected timeline of the disruption caused by GenAI

The TMT sector is exhibiting a positive outlook towards GenAI with the technology sector emerging as the foremost adopter followed by M&E. The telecom sector is also exploring GenAI and its potential applications, resulting in a mixed response from C-level executives. Indian tech services providers are eyeing greater opportunities and expansion in the AI segment in 2024, and have also taken steps to infuse GenAI technology internally as well as in client offerings.

Question: On a scale of 1 to 5, where 1 represents minimal disruption (short-term trend) and 5 represents maximum disruption (long-term disruptive force), choose the potential impact of GenAI for your organisation



58%

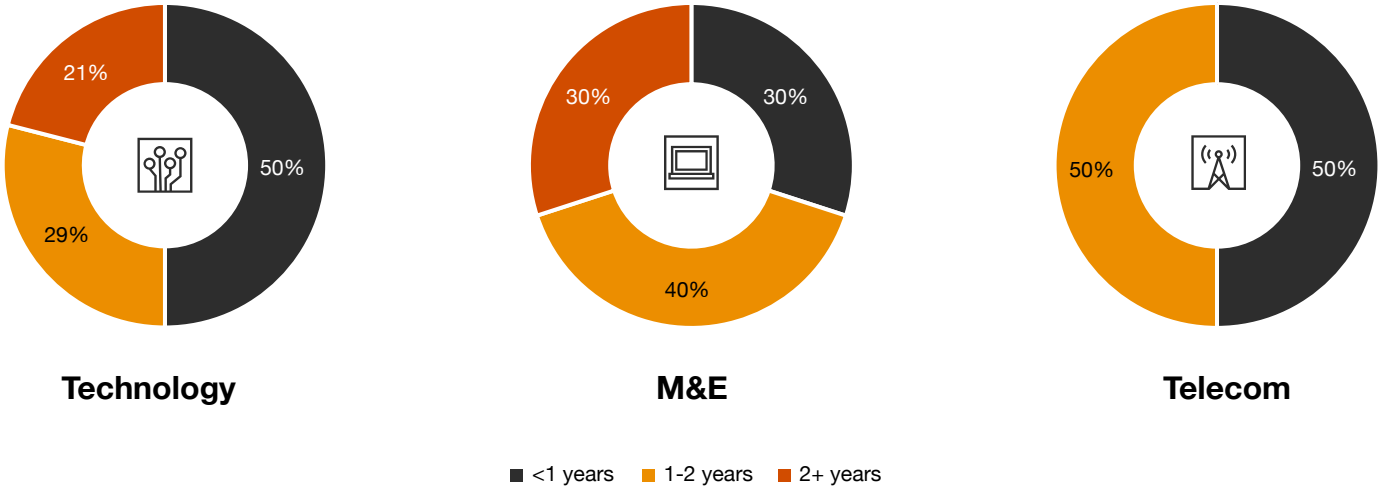
of organisations in TMT consider GenAI as a long-term disruptor acknowledging its potential for considerable transformation within the sector.

In the technology sector, 68% of respondents perceive GenAI as a long-term disruptive force, followed by M&E with 51%, and the telecom sector with 40%. None of the respondents view GenAI as a short-term trend.

When asked about the timeframe for measuring the impact of GenAI and witnessing the changes within their organisations, half of the respondents from the technology sector indicated that they are already witnessing the impact of GenAI's adoption. 40% of the respondents in M&E anticipate noticeable changes in their business within 1–2 years, reflecting a positive stance towards GenAI's adoption. In the telecom sector, respondents are equally split. While 50% expect its true impact to materialise in a year, another half anticipate it within 1–2 years.

In the Technology and Telecom sector, half of those who view GenAI as a long-term disruptor expect its effects to manifest in the near future (defined as occurring within the next year). Additionally, 30% of respondents in the M&E sector share this anticipation.

Question: What time horizon will it take for the true impact to materialise?



The dissemination of GenAI can be attributed to the easy availability of GenAI tools such as Gemini, ChatGPT, and GitHub Copilot.[1] These applications offer user-friendly interfaces and pre-trained models, making it easier for individuals and organisations to leverage GenAI in their projects and workflows. Technology companies have higher awareness and usage of GenAI among the companies of TMT sector.

To conclude, one can observe that GenAI is expected to influence many areas of the telecom industry including marketing, customer service, data analysis and product creation. It can also help M&E and technology companies to bring out personalised content for users of all ages, streamline the content development process and explore innovative concepts.

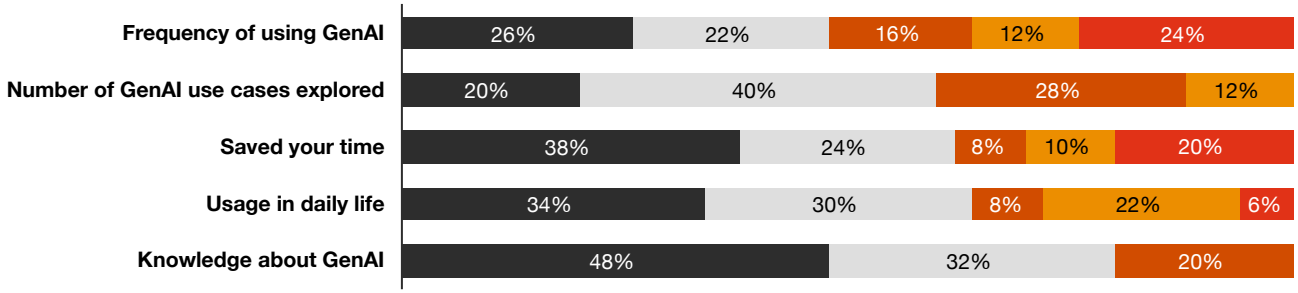
1 https://www.topcoder.com/blog/generative-ai/

GenAI maturity: Adoption and aspiration

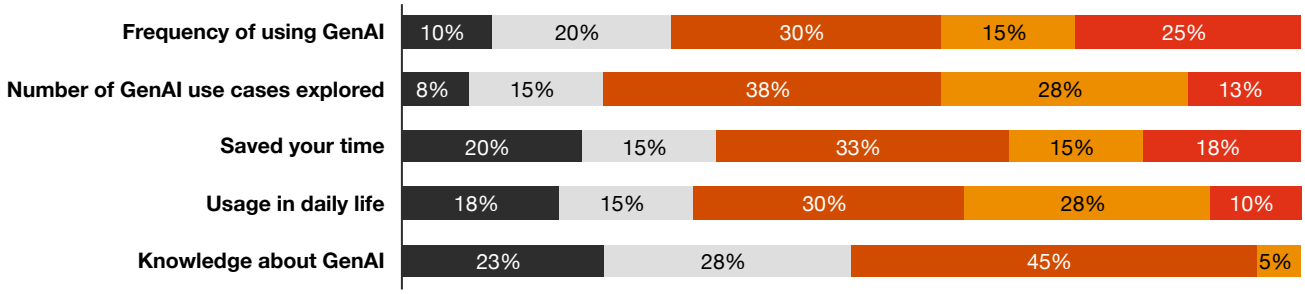
Though GenAI has been around for quite some time, its utility has only been recognised unanimously, across the industry, in the last couple of years. While many companies are still apprehensive or exploratory in their approach towards GenAI, most have acknowledged its benefits and importance in making workflows easier, quicker and less resource-intensive.

In the technology sector, nearly half of respondents exhibit very high knowledge about GenAI. In the telecom sector, 40% of respondents claim very high usage of GenAI in their daily routines. Furthermore, in the M&E sector, knowledge about GenAI ranges from moderate (45%) to high (28%) levels among respondents.

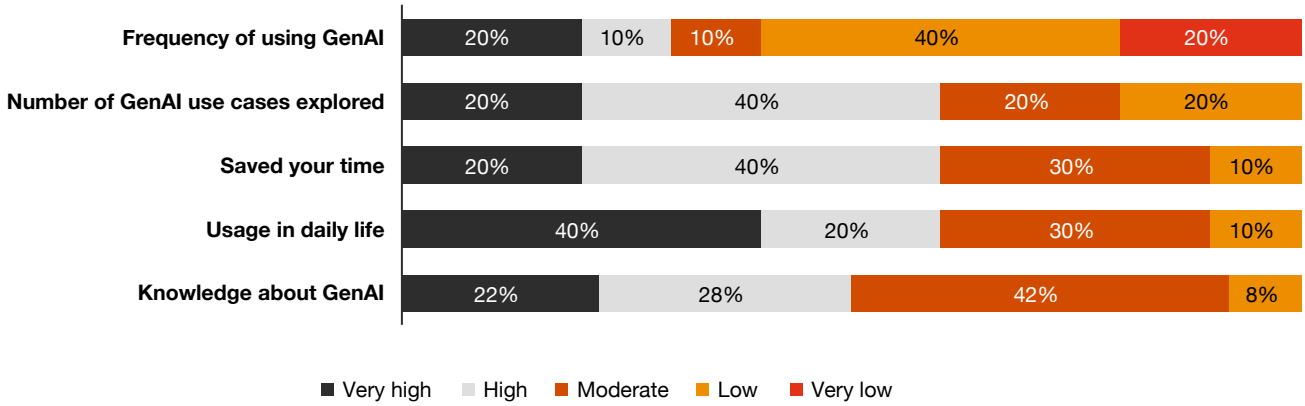
Technology



M&E



Telecom



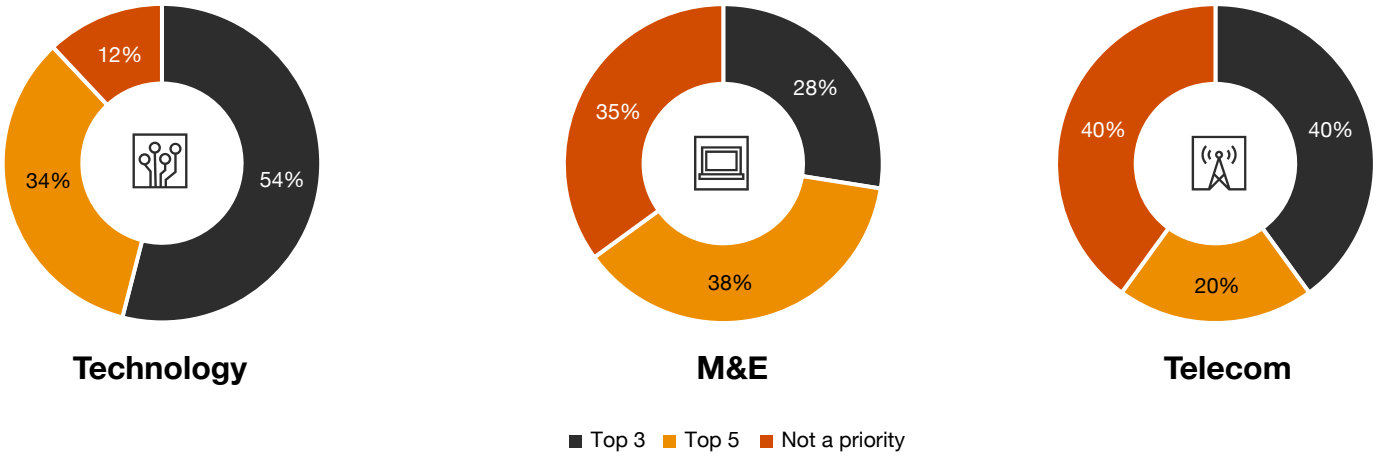
In contrast to the M&E, the telecom sector demonstrates a notable increase in the exploration and use of GenAI and the benefits they can derive from it with 60% reporting a 'very high' or 'high' level of use in daily life which helps them save their time at work and their willingness to explore various use cases of the technology.

GenAI – priority and investment

Experts in various organisations have identified GenAI's potential to enhance productivity, which could result in substantial economic growth. Recognising its potential and the opportunity to seize the first mover advantage, the majority of respondents have prioritised GenAI among the top five priorities in their organisations. However, 35% of the respondents in the M&E sector and 40% in the telecom sector do not perceive GenAI as a priority.

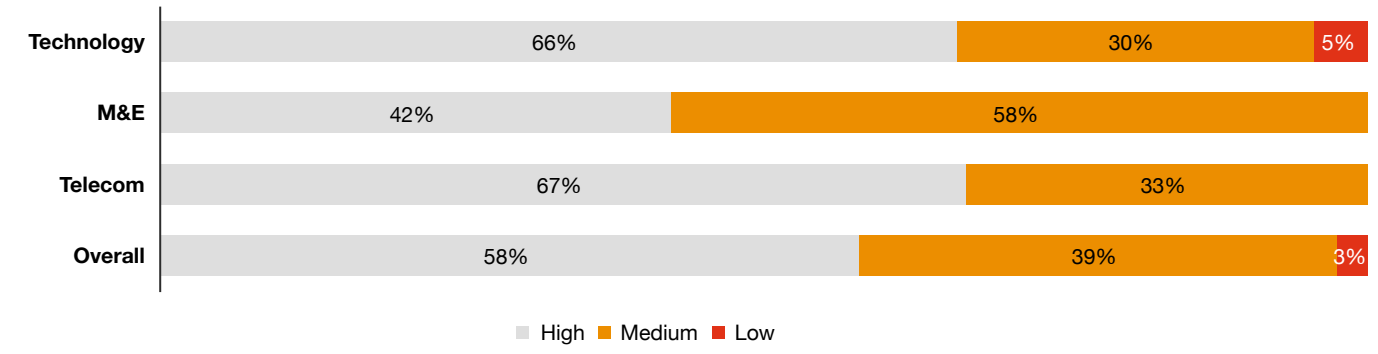
Within the technology sector, GenAI is highlighted as a major focus areas, with 54% of respondents placing it among their top 3 strategic priorities. In the M&E sector, there is a greater emphasis on GenAI within the top 5 priorities, with 38% of respondents recognising its significance. In the telecom sector, 40% prioritise GenAI within their top 3 strategic initiatives.

Question: Where does GenAI currently rank within your organisation's top strategic priorities?

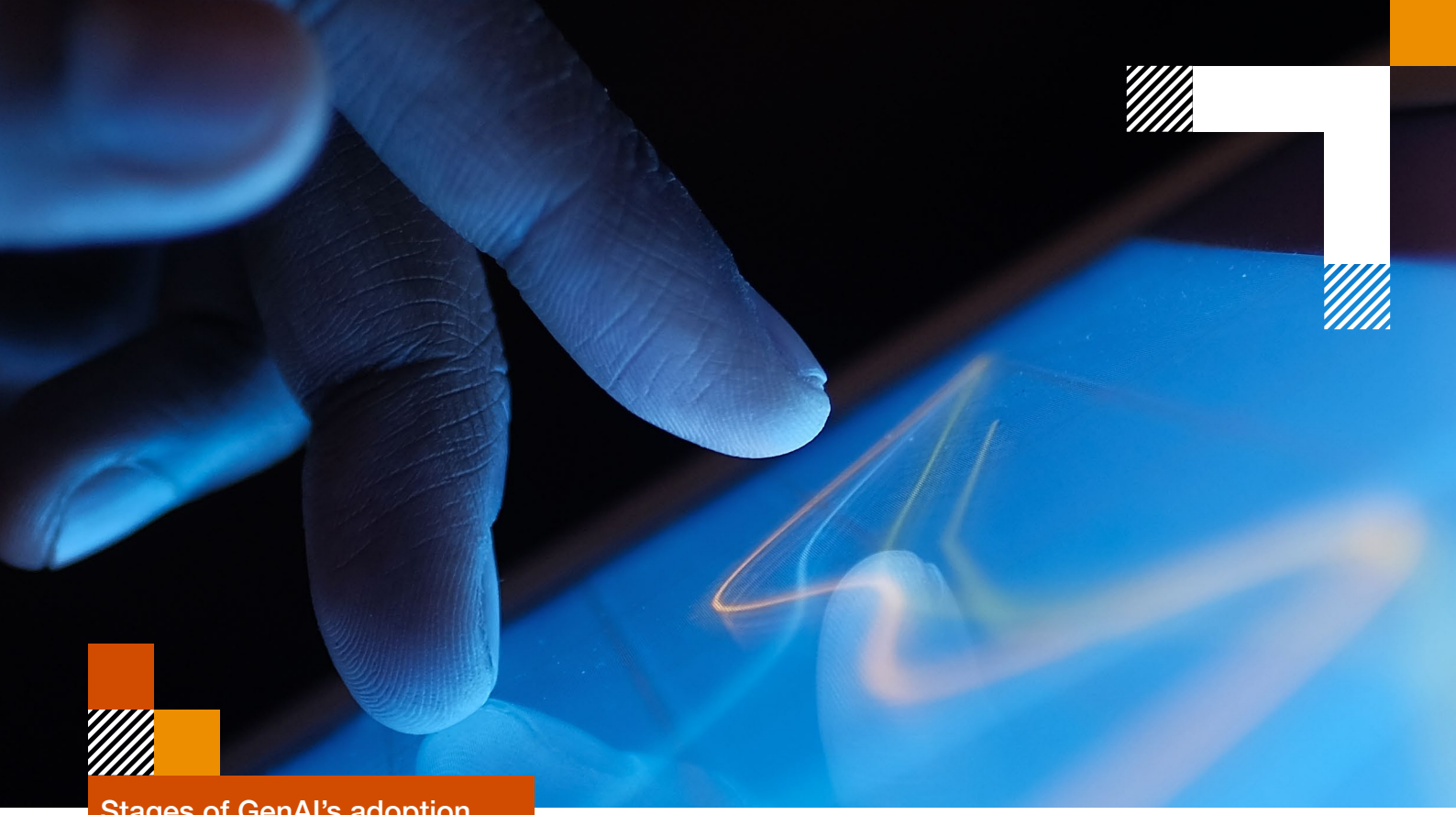


Among those prioritising it in their top three or top five, ~66% report 'high' investments in GenAI initiatives in the technology and telecom sectors.

Question: How heavy is your investment into GenAI-led transformation or intervention, in context of the size and scale of your firm?



When it comes to prioritising GenAI within their top three or top five, about 60% of M&E respondents choose 'medium' level investments in GenAI initiatives.

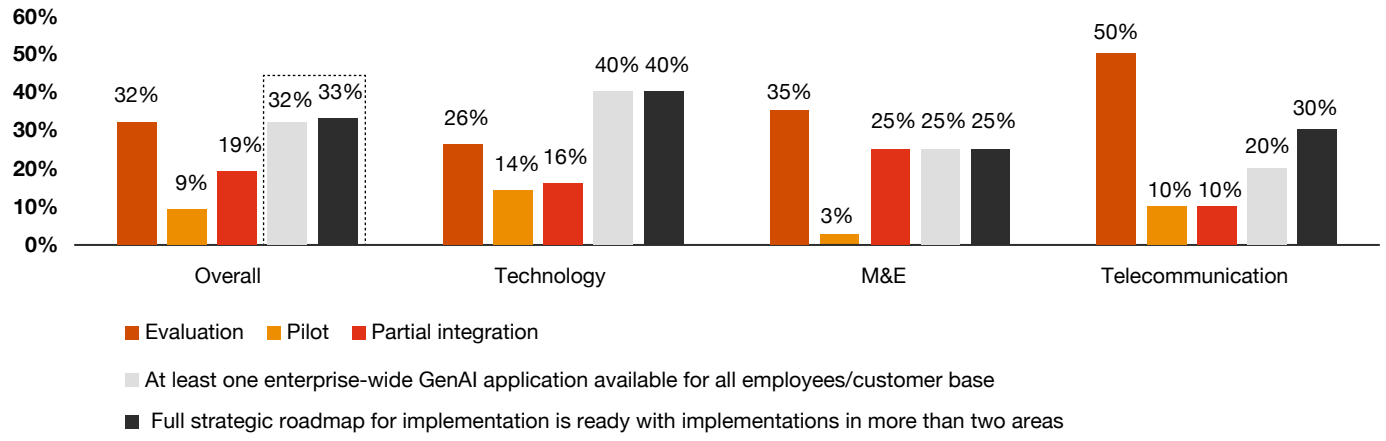


Stages of GenAI's adoption

C-suite executives recognise the strategic importance of GenAI and its potential to transform the way products are built and services are delivered. They are also implementing various use cases of GenAI in different sectors at various stages. Technology sector is an early adopter, with most organisations in the sector already having at least one GenAI use case. The adoption of GenAI is motivated by various factors, including the need to meet customer expectations, shifts in the labour market and staying competitive within the industry.

33% of TMT organisations have a full strategic roadmap ready for implementation with additional 32% having at least one enterprise-wide implementation of GenAI application.

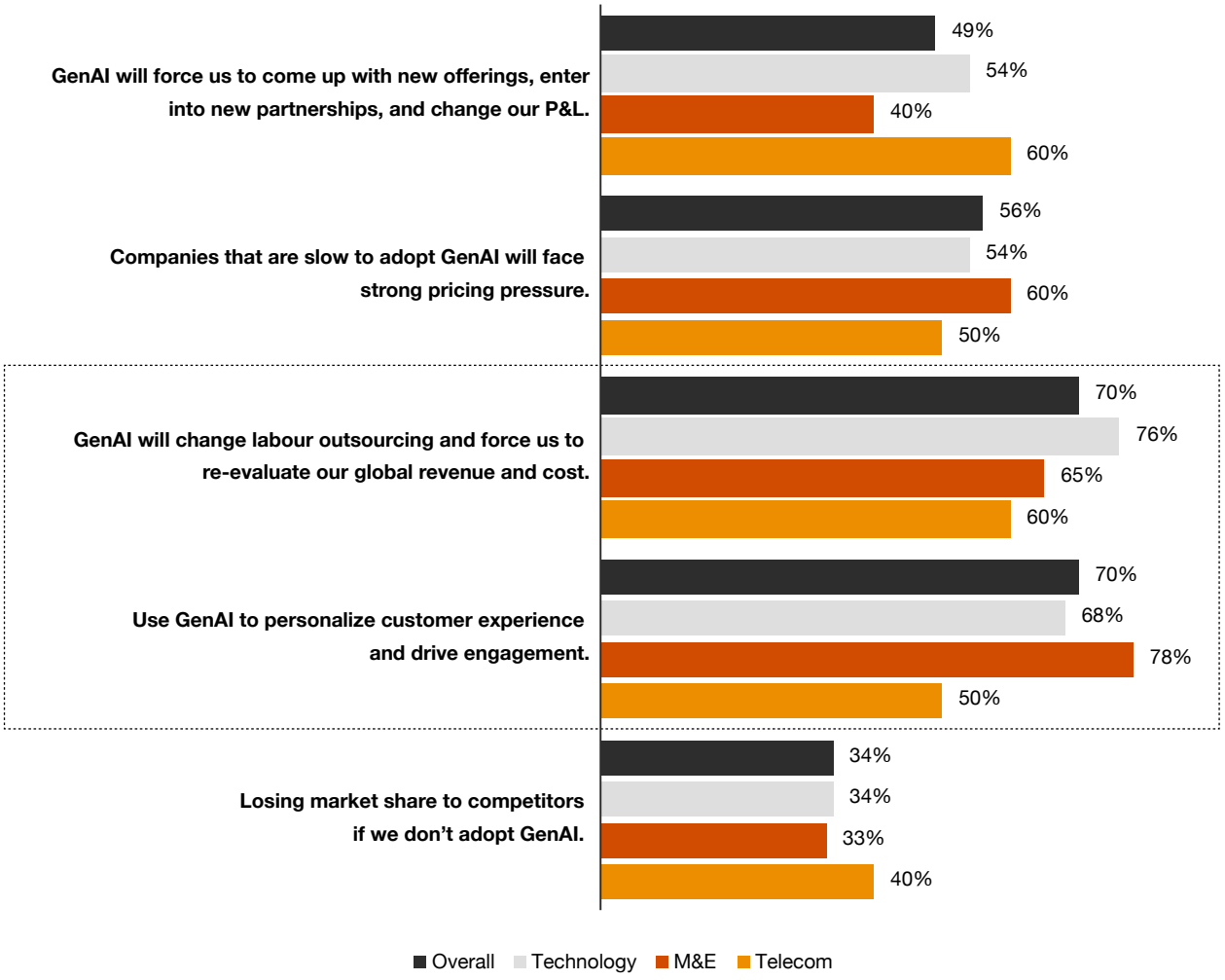
Question: What is the current state of adoption of GenAI within the organisation?



Within the technology sector, there is a notable focus on GenAI integration, with 40% having applications prepared for deployment as well as a full strategic roadmap ready for implementation in more than two areas. Meanwhile, the M&E sector displays a range of adoption stages, with 35% in the evaluation phase. Additionally, in the telecom sector, 50% of the respondents are currently in the evaluation stage.

Most respondents (70%) anticipate GenAI to influence labour outsourcing, revenue assessment, and customer experiences

Question: How do you expect GenAI to impact your current business model and differentiated value proposition?



M&E sector executives (78%) believe that customer experience will be most impacted by GenAI, while in the technology and telecom sectors, respondents anticipate changes in outsourcing and revenue evaluation. Additionally, GenAI's adoption might also lead to the development of new offerings, partnerships and operational changes. According to a report by BCG and NASSCOM, 66% of the tech companies in India have done a detailed impact analyses and defined new roles for AI. Moreover, leading companies which have run pilots leveraging CoPilot with their software engineers have shown a 60–75% increased satisfaction and well-being.[2]

2 https://web-assets.bcg.com/f6/5a/abdb70be44749d78ef21fafc89c5/ai-powered-tech-services-a-roadmap-for-future-ready-firms.pdf

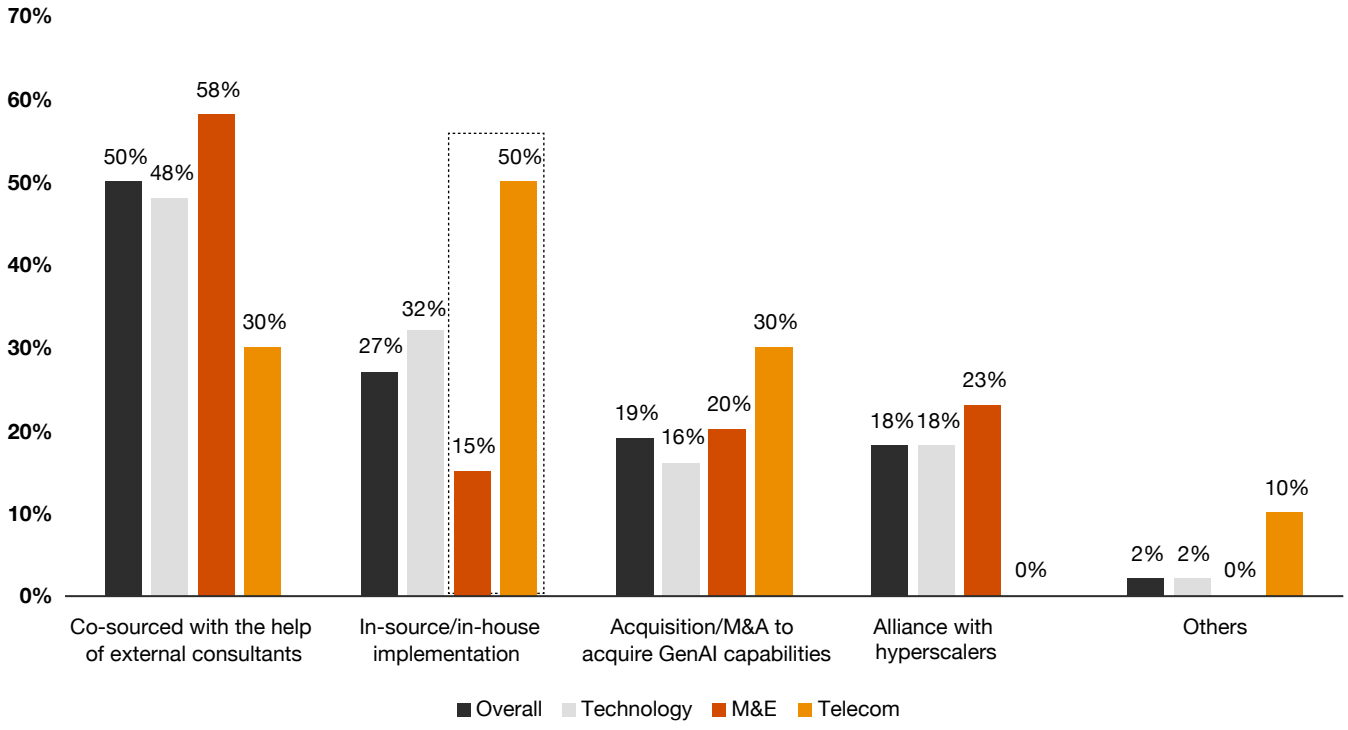
Strategies for the implementation of GenAI

For companies to remain competitive and relevant in the coming years, decision-makers need to understand the importance of GenAI and develop robust strategies to implement it in their business processes. The key parameters for the adoption of the technology are the needs of the business, the budget which can be allocated for research and development (R&D) and implementation, and the areas in which the company can benefit from the use of GenAI.

Implementation approach for adopting GenAI-based tools

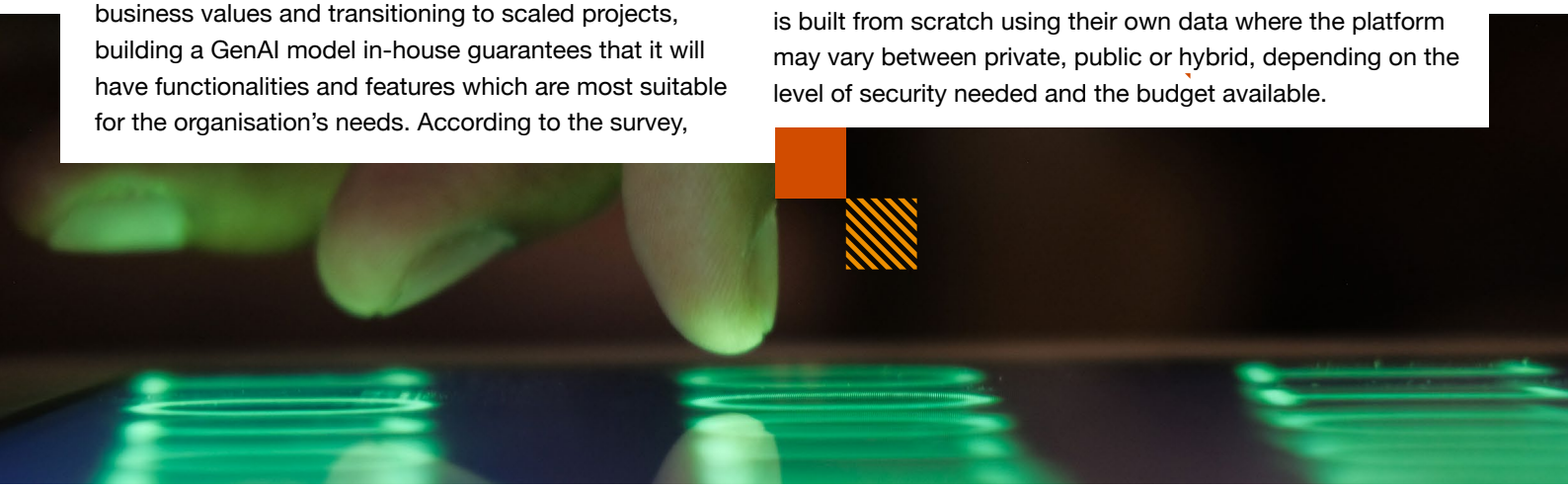
Technology and M&E companies lean towards external consultants for GenAI implementation, while telecom companies prefer in-house development of GenAI's implementation strategies.

Question: How is your organisation planning or implementing GenAI use cases?



Implementation of various GenAI-enabled tools are already underway in the TMT sector across various operations. Determining the implementation of GenAI depends on various factors such as organisation's technical proficiency, resource allocation, time limitations and other specific nuances of each use case. While co-sourcing GenAI use cases with external consultants helps organisations to jumpstart GenAI initiatives quickly from brainstorming to development to assigning business values and transitioning to scaled projects, building a GenAI model in-house guarantees that it will have functionalities and features which are most suitable for the organisation's needs. According to the survey, half of the technology and M&E companies' co-source with external consultants, while telecom companies prefer in-house implementation of GenAI.

There are different deployment models and platforms for implementation which the companies can choose from. Pre-trained, open-source models are easily accessible such as BERT and LLaMa,[3] while pre-trained proprietary models such as GPT-4, Gemini/PaLM 25 require a license for their use. Some companies prefer custom model where the whole model is built from scratch using their own data where the platform may vary between private, public or hybrid, depending on the level of security needed and the budget available.



39% of organisations in the TMT sector chose private cloud to deploy their GenAI solution. Among these, majority of them prefer a customised model approach, wherein the model is trained from scratch using their own data.

Question: On which type of platform have you deployed or are planning to deploy your GenAI solution?

Which deployment model is generally preferred in your organisation?

Platform type	Platform with deployment models		
	Pre-trained open-source model	Pre-trained proprietary model	Custom model
Private cloud (39%)	18%	28%	54%
Hybrid cloud (23%)	30%	22%	48%
On-premises (18%)	33%	39%	28%
Public cloud (14%)	43%	21%	29%

In the technology sector, nearly half of the respondents chose private cloud among which, over 50% respondents opted for a custom model for deployment. In the M&E sector, nearly one-third preferred private cloud, with 46% of them selecting a custom model. In the telecom sector, 40% chose an on-premises platform, with majority of them opting for a pre-trained, open-source model.

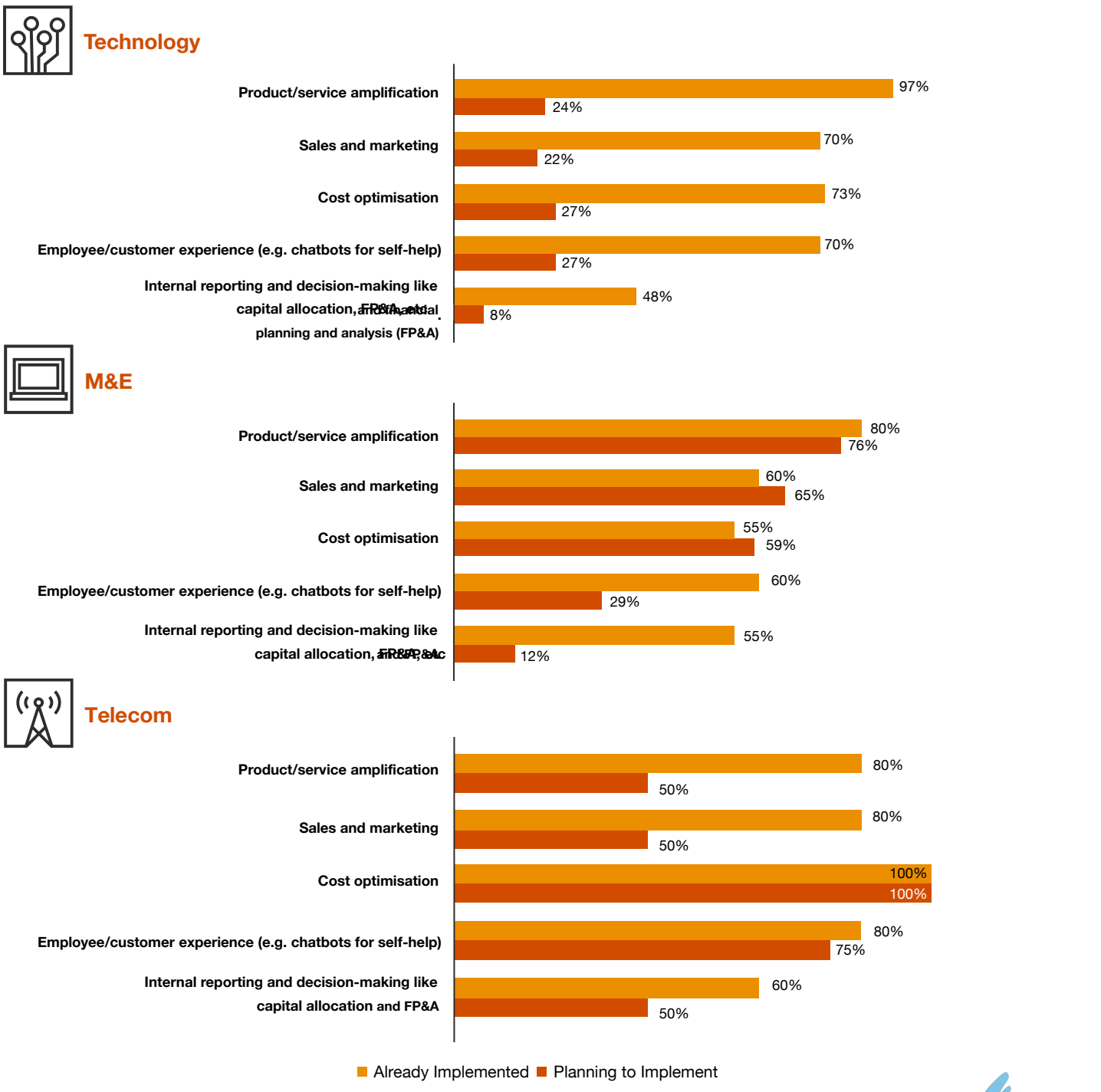
3 https://arxiv.org/html/2402.06196v2

Focus areas for GenAI's implementation

From data analysis and product design to content generation and personalised chatbots, GenAI offers a wide-range of capabilities. However, it is not a one-size-fits-all solution. Instead, its effectiveness depends on tailoring it to specific business challenges and objectives by training it on relevant datasets. Cost optimisation, product/service amplification, sales and marketing, employee/customer experience, internal reporting and decision-making are some of the areas which have noticed a positive impact of adopting GenAI.

Among the companies that have already implemented their initial GenAI solution in the technology and M&E sectors, the focus is on product/service amplification (97% and 80% respectively), while the telecom sector places a distinct emphasis on cost optimisation (100%).

Question: If you have already implemented a GenAI use case (or are in the process of implementing one) in your organisation, which area was the use case specific to?

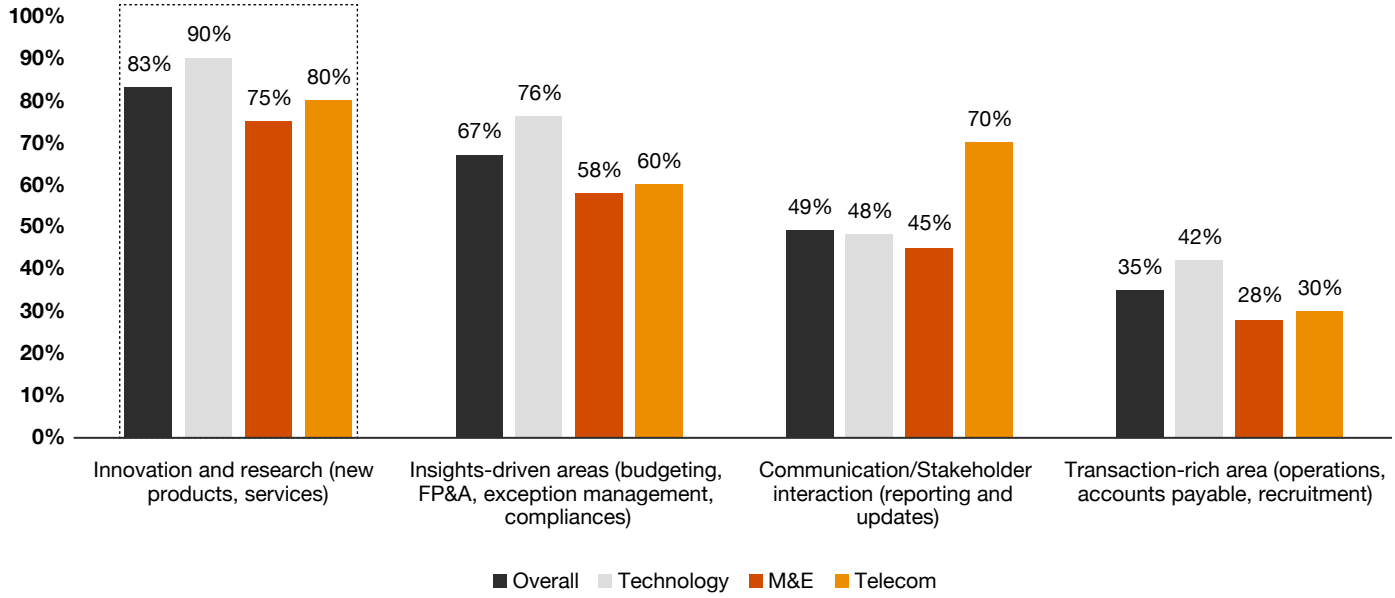


Regarding GenAI's implementation areas, the technology sector prioritises cost optimisation and improving employee/customer experience, while the M&E sector leans towards enhancing product/service amplification, and the telecom sector continues to prioritise cost optimisation.

Maximum opportunities and RoI

Across all sectors, respondents perceive maximum opportunities for GenAI implementation in innovation and research (ranging from 75% to 90% across sectors), indicating that this area has the highest impact of the technology's adoption.

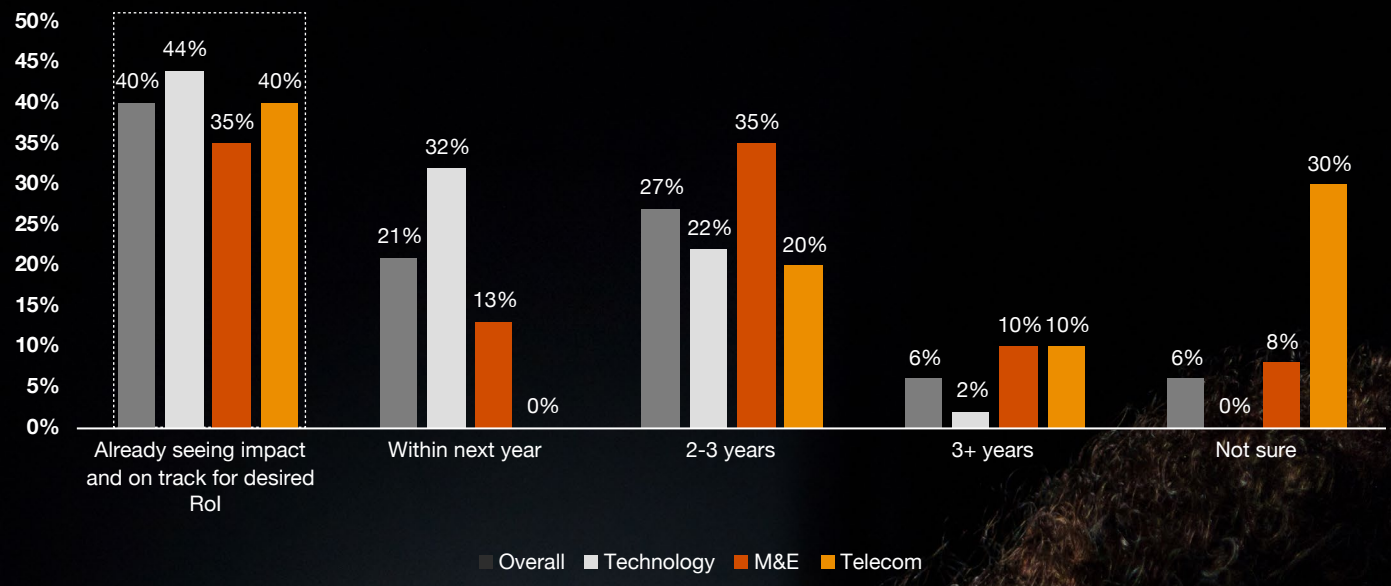
Question: In which areas do you envision maximum opportunities for GenAI implementation?



Implementation of GenAI technology requires allocation of various resources such as financial investment, skilled personnel, computational infrastructure and comprehensive training programmes. A company would consider investing in a new technology only if there is RoI and, in the case of GenAI, the RoI is positive.

A significant portion of respondents across all sectors, particularly in technology and telecom (44% and 40% respectively), are already witnessing the impact of their implemented GenAI use cases and are on track to achieve the desired RoI.

Question: How soon do you expect already implemented (or being implemented) GenAI use cases to yield the desired RoI?



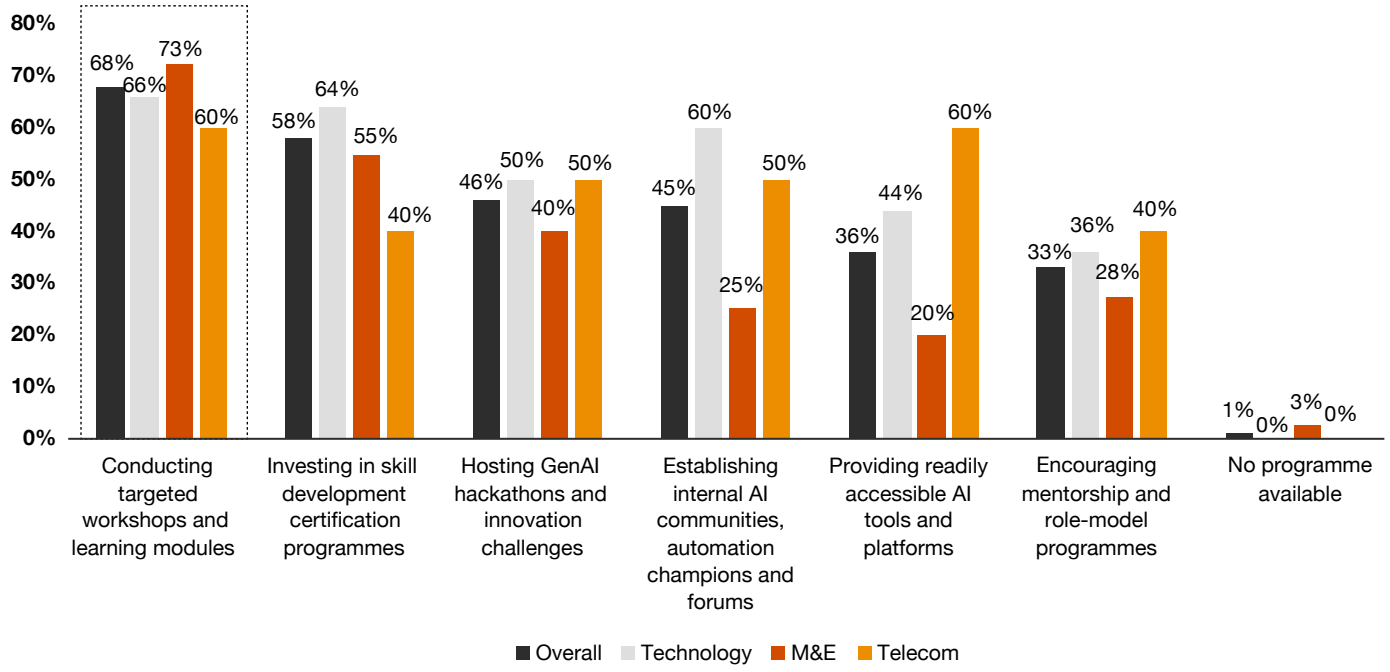
Additionally, technology (32%) sector respondents anticipate realising the desired RoI within the next year. However, 30% of the respondents in the telecom sector expressed uncertainty about the timeline for achieving the desired RoI.

Preparing the workforce and incentivising the use of GenAI

To attain maximum utilisation of GenAI, it is important to include the employees in the process of adopting new technology. Companies are exploring various methods to improve the tech familiarity and productivity of their employees and which can help them to harness the technology to its full potential, thereby unlocking optimal performance for both the solutions as well as the people of the organisation.

Nearly 70% of the companies in the TMT sector are preparing their workforce to embrace and benefit from GenAI by conducting targeted workshops and learning modules.

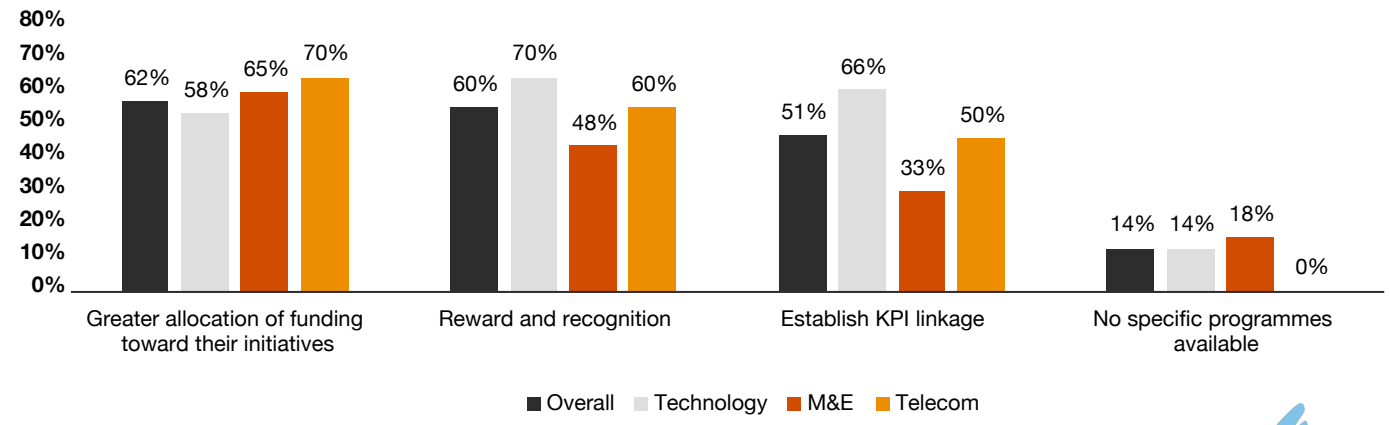
Question: How are you preparing your workforce to embrace and benefit from GenAI?



Technology and M&E companies are also dedicating resources to skill development certification programmes, whereas telecom companies are also prioritising easily accessible AI tools and platforms for their organisations.

In the M&E and telecom sector, increased allocation of funding serves as the main driver for promoting GenAI adoption initiatives amongst employees, whereas within the technology sector, employees are motivated to embrace GenAI through incentives such as rewards, recognition, and alignment with key performance indicators (KPIs).

Question: How are you incentivising and rewarding employees for adopting GenAI technologies?



Use cases of GenAI in the TMT sectors

In the technology sector, 80% of tech leaders have marked ‘product development and integration deployment’ as the most relevant for their organisations. Among tech leaders who have chosen product development (which includes coding and testing), 40% have already implemented this approach, further solidifying its popularity.

Technology

The technology sector is using GenAI across various applications. Popular tools such as GitHub Copilot and Tabnine help in code completion, while Selenium and Appium-based testing tools specialise in robust code testing by creating diverse test cases. These functionalities significantly contribute to product development by streamlining processes, saving time and optimising resource allocation. In the hardware sector, GenAI can help in product design and enable businesses to explore diverse concepts to create innovative and optimised designs. Since software engineers continuously integrate and deploy their work into the mainline, GenAI can play an important role by tracking changes, maintaining version history and automatic bug detection and rectification. This functionality is expected to further help in the amplification of products or services.by enhancing development speed, reliability and efficient user feedback integration.

Use cases/top insights	Internal operations (people operation, finance ops)	Sales enablement through hyper-personalised offerings	Support and maintenance	Integration and deployment	Product development (automated coding and testing)
% of respondents (most relevant use case)	26%	60%	70%	80%	80%
Nature of impact	Internal decision-making	Go to market	Go to market	Product/service amplification	Innovation/ new product development
Implementation timeline	Already implemented	Within 1-2 years	Already implemented	Already implemented	Already implemented

Least disruptive → Most disruptive

Product development including automated coding and testing emerges as the most impactful area for GenAI’s application, securing high ratings of 4 and 5 on a disruptive scale of 1 to 5, with 5 indicating the highest level of disruption. Within the technology sub-segments of hardware and software, product development, integration and deployment are considered the most disruptive. Additionally, B2B services prioritise support and maintenance while B2C focus on sales enablement.

M&E

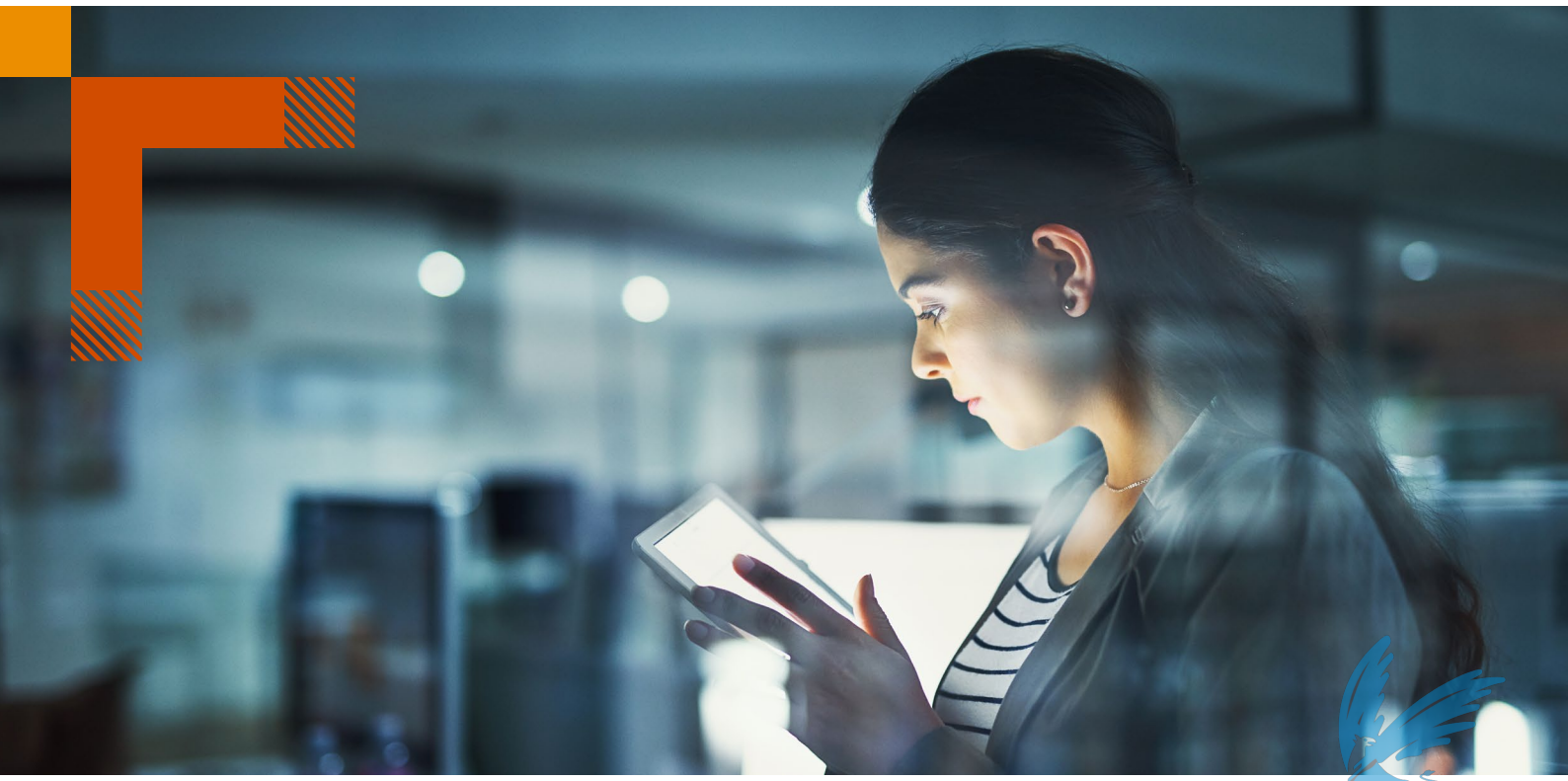
GenAI has the potential to transform the M&E sector with its ability to enhance content generation, personalised marketing and interactive storytelling. By incorporating the technology into their workflows, organisations are elevating the content creation and curation process, tailoring it to individual preferences and enriching the overall user experience. Leveraging advanced algorithms and neural networks, GenAI seamlessly converts text into captivating images, enhancing visual storytelling capabilities and broadening creative horizons within the industry.

Within the M&E sector, 'content generation' was chosen by 90% of the companies, while 77% have opted for 'personalised marketing'. This use case is around completion, with 50% planning to implement it within 1 year. Additionally, 70% of organisations are leveraging GenAI to amplify their services.

Use cases/top insights	Subtitles generation in multiple languages	Hyper-personalised recommendation	Real-time translation and localisation	Interactive storytelling	Personalised marketing	Content generation (video/ audio/ text)
% of respondents (most relevant use case)	50%	48%	48%	50%	78%	90%
Nature of impact	Innovation/ new product development	Go to market	Innovation/ new product development	Go to market	Go to market	Product/service amplification
Implementation timeline	Already implemented	Within 1-2 year	Within 1-2 year	Within 1-2 year	<1 year	<1 year

Least disruptive — Most disruptive

Subtitle generation in multiple languages has been selected by 50% of the respondents. However, it received a low rating on the impact scale, positioning it as one of the least disruptive use cases. In the M&E sub-segments including traditional, digital media and other sports and hospitality sectors, a similar trend emerges where content generation and personalised marketing are expected to be the most disruptive use cases.



Telecom

The telecom sector is in a constant state of evolution and the integration of GenAI introduces promising new prospects. It provides solutions to build, test and optimise telecom-focused scenarios such as customer care, business operations, sales and network operations. Indian telecom players have implemented solutions that improve customer and employee experience. GenAI offers real-time assistance to support maintenance personnel by providing personalised guidance and proactive troubleshooting suggestions. This is achieved through the analysis of network data and customer behaviour, enabling swift and effective resolution of issues.

In the telecom sector, the primary use cases encompass 'real-time support in provisioning and maintenance' (90%) and 'personalised promotion and pricing plans' (80%), indicating a potential revolution in current management methodologies. Among firms that prioritise real-time support, 44% have already implemented it.

Use cases/top insights	Empower predictive maintenance and asset management	Network optimisation	Personalised promotion and pricing plan	Enhance customer experience and personalisation	Real-time support in provisioning and maintenance
% of respondents (most relevant use case)	30%	70%	80%	70%	90%
Nature of impact	Varied reponse	Product/service amplification	Go to market	Innovation/ new product development	Innovation/ new product development
Implementation timeline	Already implemented	Already implemented	2+ years	Already implemented	Already implemented

Least disruptive — Most disruptive

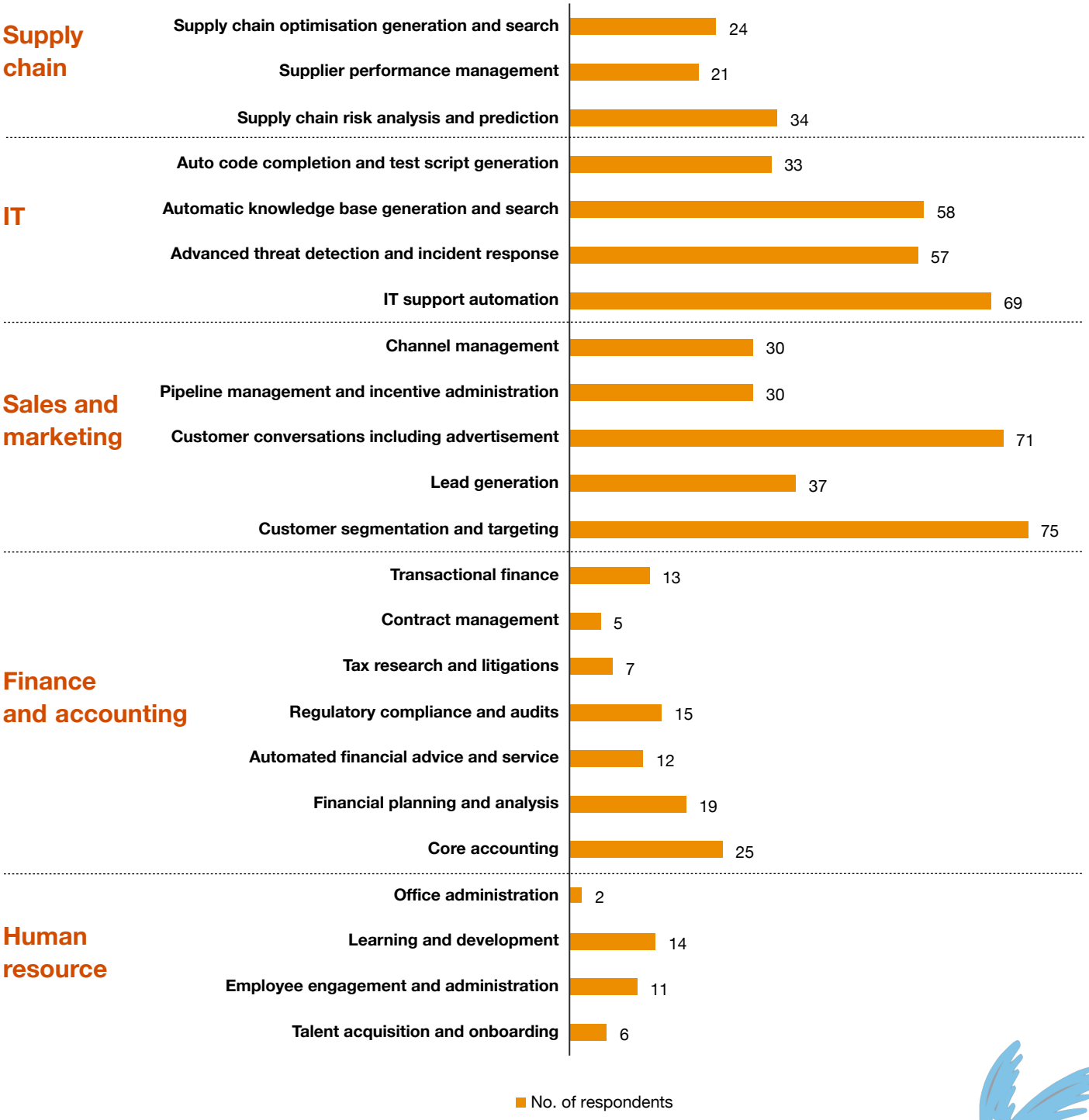
Within the telecom sub-segments – communication service providers (CSPs) and infrastructure and equipment providers – support and maintenance is the most disruptive use case. Additionally, for infrastructure providers, enhancing customer experience is critical while for CSPs, it's about personalised promotion and pricing plan as well as network optimisation.

Functions

The TMT sector is leveraging GenAI across different functions such as human resources, finance and accounting, sales and marketing, IT and supply chain to increase efficiency and productivity, improve decision-making and enhance customer experience. For instance, an ITeS company has various initiatives underway which are applying GenAI across human resource management, and sales and marketing functions, with client applications centered around cognitive chatbots, content creation and optimisation for marketing and media, automation in code generation and synthetic data generation.

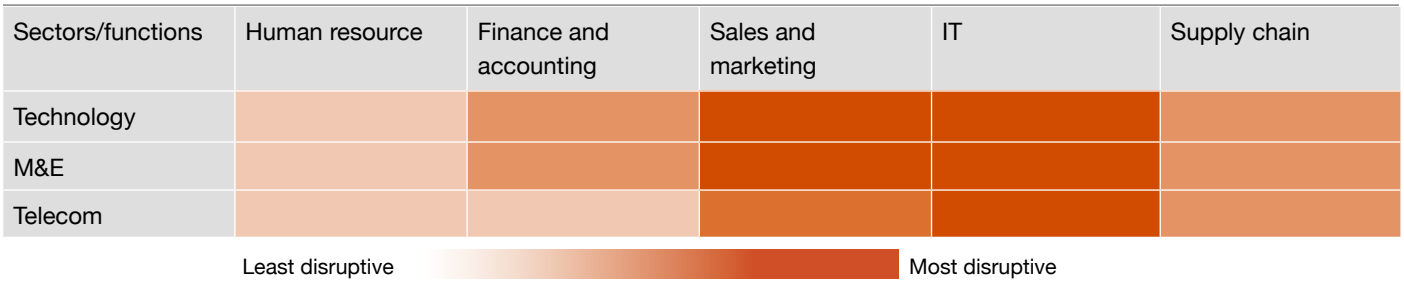
Majority of respondents choose sales and marketing and IT as maximum impact functions.

Question: For the work functions selected, which of the use cases are anticipated to have maximum impact?



As GenAI is being integrated into these fields, it is significantly changing the way they function. From optimising workforce management to automating financial tasks, predicting market trends, lead generation, supporting digital advertising, enhancing cybersecurity and refining supply chain logistics, GenAI is poised to have a huge impact on the entire value chain, making TMT companies more efficient and responsive to market dynamics.

According to 87% of the respondents, 'sales and marketing' function is anticipated to be the function which is experiencing the most amount of disruption due to GenAI, followed by 85% in IT.



Top two impacted use cases across function with their timeline for implementation and nature of impact

Human resource	Finance and accounting	Sales and marketing	IT	Supply chain
Learning and development	Core accounting	Customer segmentation and targeting	IT support automation	Supply chain risk analysis and prediction
Already implemented	Already implemented	Within 1-2 years	Already Implemented	<1 year
Employee engagement and administration	Financial planning and analysis	Customer conversations including advertisement	Automatic knowledge base generation and search	Supply chain optimisation
Already implemented	Already implemented	Already implemented	Already implemented	2+ years
Timeline for implementation of use case				

Nature of impact

Cost optimisation	Product/service amplification	Go to market	Innovation/new product development	Internal decision-making

Across the TMT sector, sales, marketing and IT departments will be most impacted by GenAI's adoption. Within sales and marketing, GenAI can offer valuable assistance in customer segmentation and targeting through analysing customer behaviour and pain points and providing actionable insights for strategic decision-making. Moreover, it facilitates the creation of personalised product offerings, thereby enhancing overall customer experience. GenAI also enables the generation of interactive and customised advertisements, which can help organisations in expanding their customer outreach and engagement.

In the IT department, GenAI can revolutionise support services by providing round-the-clock assistance, thereby reducing costs and alleviating the burden on human resources. Additionally, it enhances knowledge management by automating search processes and generating insights from vast datasets, which can be used for innovation and new product development while optimising operational efficiency and decision-making.

Responsible AI

Responsible AI involves developing and deploying AI systems in a way that is ethical, transparent, and accountable, to ensure which the use of AI is fair, safe and respects users' privacy and intellectual property, and human rights. GenAI's adoption can lead to numerous benefits, but it comes with its own set of challenges. Organisations must proactively address these challenges and implement responsible AI strategies to navigate the complexities of this new technology and unlock its full potential.

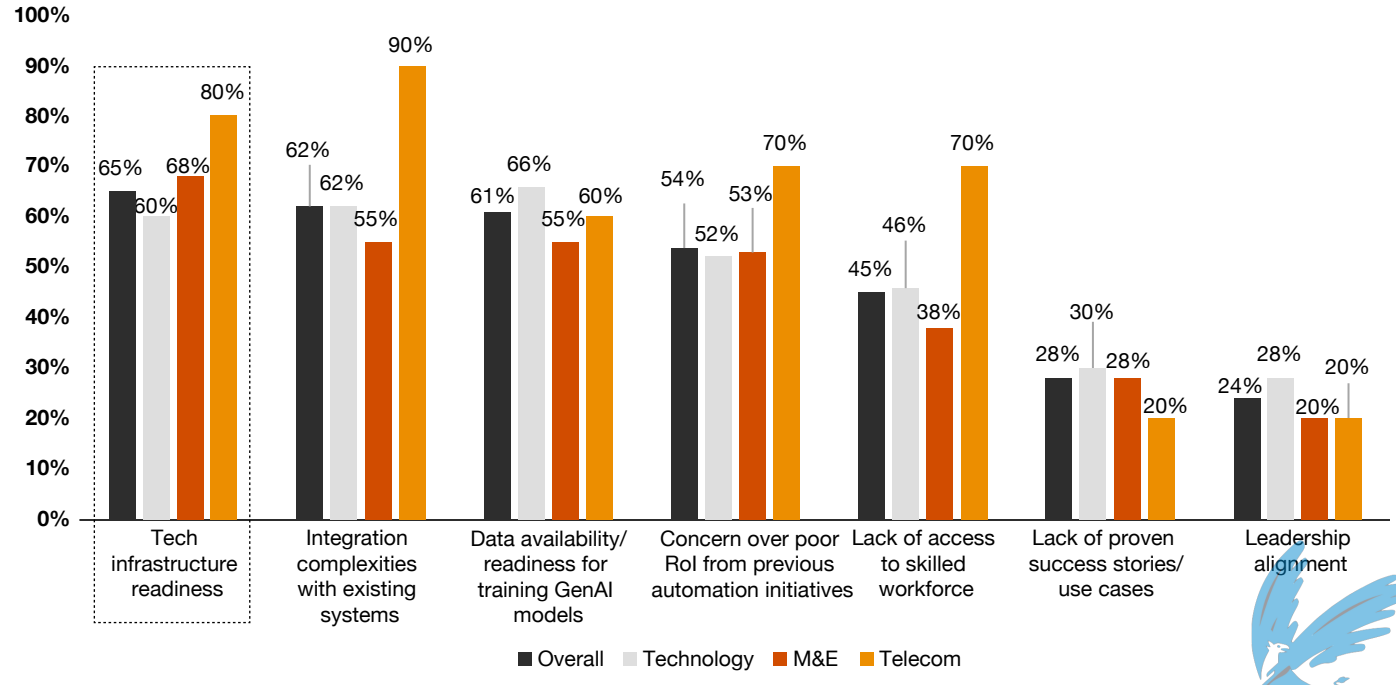
Challenges and risks of adopting GenAI

The challenges associated with the adoption of GenAI are multifaceted. From technological complexities to finding skilled workforce and leadership alignment, understanding these challenges and implementing effective risk mitigation strategies are essential for companies which are adopting the technology.

The survey shows that concerns over infrastructure readiness is among the top GenAI implementation challenges for businesses in the TMT sector. This can be attributed to the fact that TMT companies need to invest in new technologies and infrastructure to support GenAI leading to a complete overhaul in some cases.

Tech infrastructure readiness is among the top 3 business challenges faced by organisations in TMT sector for the implementation of GenAI.

Question: What are the key business challenges associated with the implementation of GenAI?



While GenAI has the potential to revolutionise the way the telecom sector operates, interacts with the customers and delivers services, a whopping 90% of telecom companies have recognised integrating complexities while implementing GenAI as a key deterrent, emphasising how integrating new systems with existing ones can be complex and time-consuming. Moreover, addressing resource-intensive GenAI solutions often requires additional computational resources and complex algorithms. This increased resource demand, if unmet, can limit the scalability and efficiency of GenAI systems.

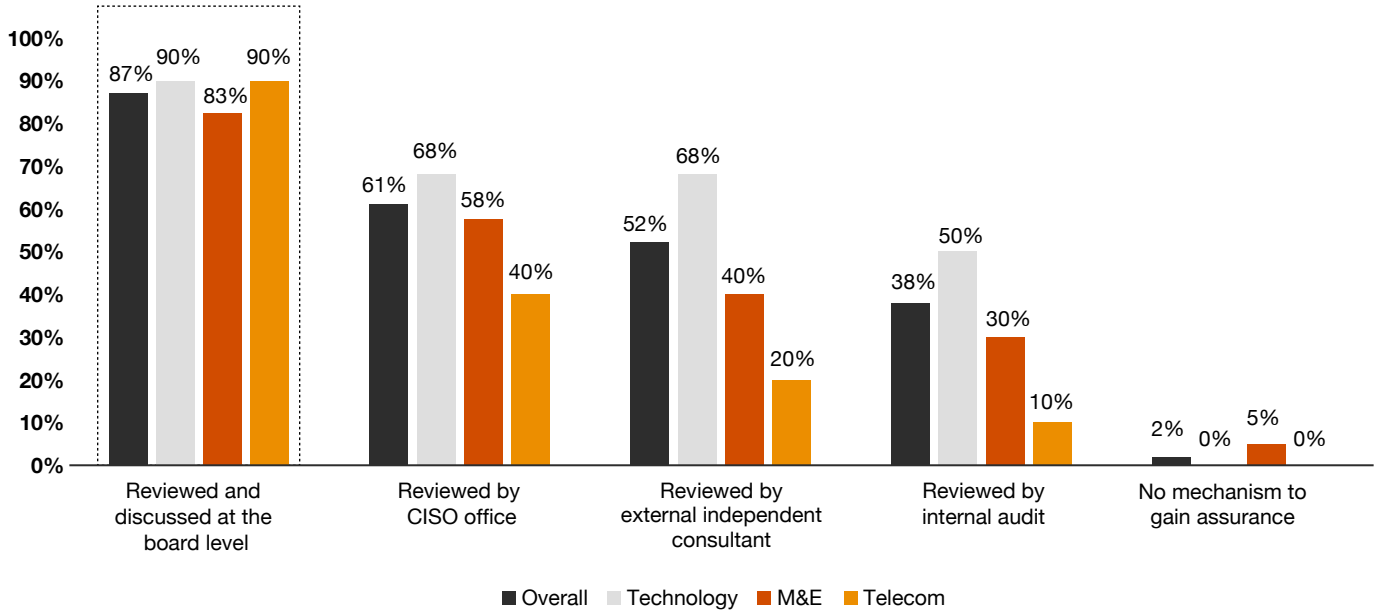
Other key takeaways from the survey include data availability (66%) and integration with existing systems (62%) being the primary concerns for tech leaders, while in the M&E sector, tech infrastructure readiness (68%) is taking precedence.

The survey highlights the TMT sector's confidence and interest in GenAI which can be inferred from the fact that almost 98% of company leaders have opted for some solution or the other to address and mitigate the challenges associated with adopting GenAI.

As per the survey findings, board-level review and discussion stands out as the predominant approach for mitigating risks linked to GenAI adoption. This outcome indicates a proactive stance among company leaders to involve board members in decision-making processes, thereby fostering confidence among all stakeholders. Furthermore, by actively participating in discussions on GenAI adoption, the board can offer strategic oversight to ensure alignment with the company's long-term goals, risk tolerance and corporate values. This trend is consistent across the three sectors – 90% in the technology sector, 83% in M&E and 90% in telecommunications who are opting for board-level review and discussion.

To address the adoption challenges, 87% of the organisations opt for board-level review and discussion, demonstrating significant attention and governance.

Question: Is there a review or assessment done into GenAI use cases and applications to manage the above risks?



61% of the leaders have involved their CISO office in the review process, emphasising the importance of data security. Furthermore, over half of the organisations have sought external validation, with 52% of respondents engaging independent, external consultants for assessments. Internal audit teams have also been involved, albeit to a lesser extent, with 38% participating in the review process.

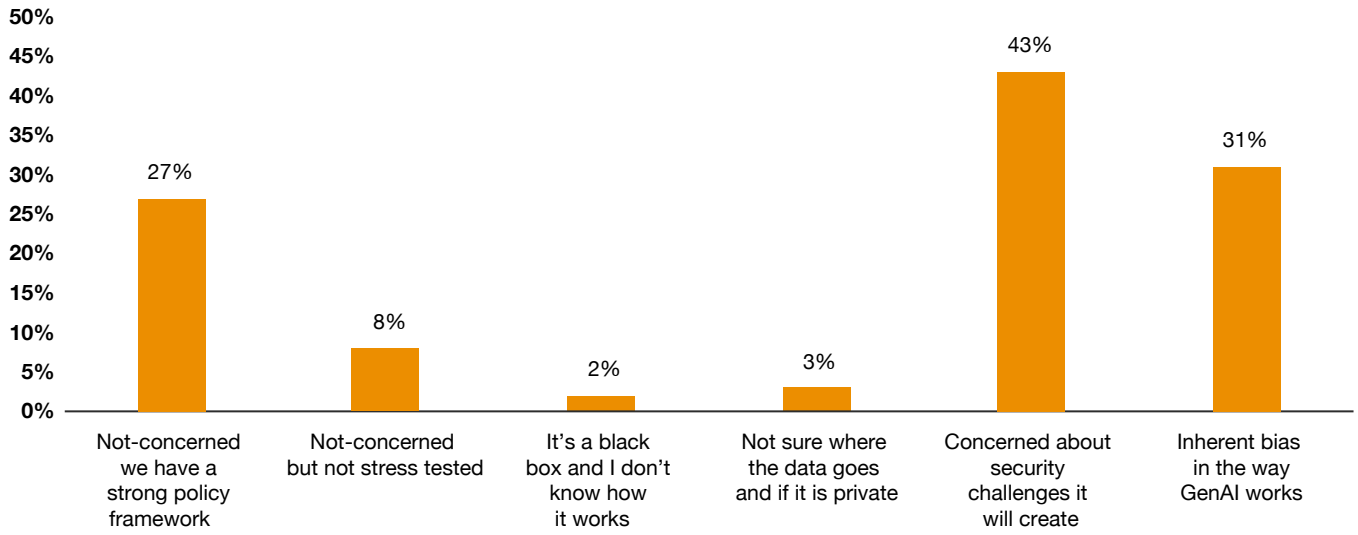
M&E is the only sector in TMT where 5% of the companies have no risk mitigation mechanisms while adopting GenAI. The challenge of originality and attribution in the industry arises as unrestrained use of GenAI blurs the lines between human and artificial content, prompting the need for clear guidelines on crediting AI-generated content. If this issue is not resolved, the industry might lose its opportunity for large-scale GenAI application. To address this, the M&E industry leaders should consider risk mitigating strategies to address these challenges.

Adoption of responsible GenAI

The rapid adoption of GenAI also brings with it the inherent risks associated with the technology and highlights the need for robust governance frameworks. Although AI regulations and best practices are developing at a swift pace with many countries actively drafting regulations to minimise the risks related to GenAI, it is still an area of concern since the technology is being adopted at a faster pace compared to the regulations being implemented. The graph below delves into the perspectives of TMT industry leaders regarding the efficacy of their policy frameworks in integrating GenAI into their workflows.

Majority of leaders within the TMT sector express a lack of confidence in the robustness of their policy framework.

Question: How do you perceive the robustness of your policy framework?



As GenAI becomes increasingly autonomous, concerns regarding control, safety and accountability of the technology are also gaining prominence. Companies are grappling with several significant challenges, including addressing ethical considerations such as bias and discrimination, preventing misuse and overuse, safeguarding data privacy and copyright protection, and ensuring transparency and explainability in complex algorithms. This is particularly evident in the case of foundational models like large language models (LLMs). According to a report by NASSCOM, most stakeholders are in the nascent stages of their ethical AI initiatives, with 60% having ethical policies focusing on concerns like bias detection.[4] Ethical data practices in AI are being implemented at two distinct stages:[5]

- while creating datasets: Leveraging analytics to ensure that sufficient diversity is built into the LLM
- while utilising datasets: LLM parameters are being defined to filter out any biases.

GenAI introduces additional complexities, such as concerns related to plagiarism, copyright violations, and, on a deeper level, a re-evaluation of fundamental concepts like truth and trust. GenAI's capacity to generate text, images, audio, or video content which closely resembles materials developed by humans challenges the perception of authenticity. For instance, the proliferation of deepfakes, which convincingly mimics real individuals, poses risks to individuals' reputations, propagates misinformation, and has the potential to sway public opinion. These highly realistic synthetic creations contribute to broader societal and political harm by fostering a general sense of skepticism towards news and other content.

In response to these challenges, companies and their governing boards are facing mounting pressure from regulators and shareholders to establish internal frameworks for AI governance. While some common frameworks are emerging, their widespread implementation remains limited.

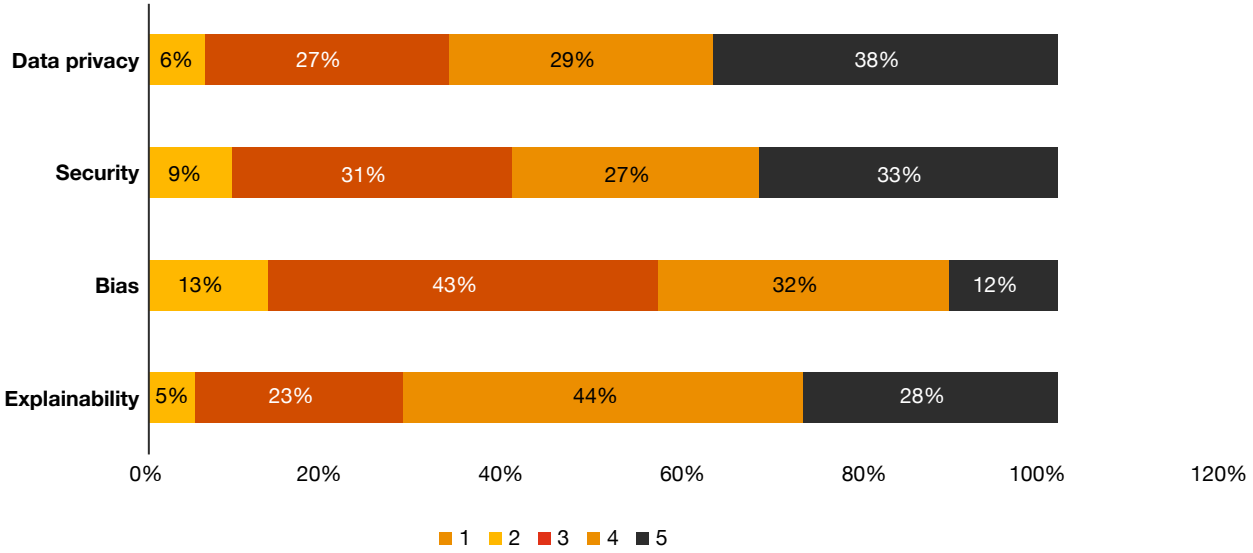
4 https://www.business-standard.com/companies/news/60-of-businesses-in-india-embrace-responsible-ai-practices-nasscom-123122600840_1.html
5 https://web-assets.bcg.com/f6/5a/abdb70be44749d78ef21fafc89c5/ai-powered-tech-services-a-roadmap-for-future-ready-firms.pdf

In response to these challenges, companies and their governing boards are facing mounting pressure from regulators and shareholders to establish internal frameworks for AI governance. While some common frameworks are emerging, their widespread implementation remains limited.

TMT sector leaders shared their apprehensions regarding the security challenges posed by GenAI (43%) and the inherent biases (31%) embedded within its functioning.

38% have rated their framework as fully mature i.e. 5 for data privacy and 44% of respondents rated their policy 4 in terms of explainability.

Question: How do you rate your policy framework on a scale of 1 (not aware) to 5 (fully mature and implemented)?



Data privacy is important as it gives individuals control over their personal information and protects it from unauthorised access. It also helps prevent fraud and cybercrimes and establishes trust between individuals and organisations. In tightly regulated sectors like TMT, GenAI raises apprehensions regarding data security. The intricate nature of unstructured text and multimodal data necessitates the use of inventive anonymisation methods and if left unchecked, the results can be catastrophic. For instance, cybersecurity firm CloudSEK unveiled a massive security breach exposing personal information of an astonishing 750 million people in India. This breach included vital details such as names, mobile numbers, addresses, and Aadhaar information and poses significant risks to both individuals and organisations.[6]

This can be a plausible reason why 38% of the survey participants rated their policy framework 5 on a scale of 1–5. With formidable investments in the field by TMT companies, governments are also making an effort to prevent frauds and data breaches. For instance, the introduction of the Digital Personal Data Protection Act, 2023, is making it mandatory for FinTech companies to invest and build better customer data management to ensure compliance with the provisions of the Act.

33% of respondents have rated their policy framework 5 on a scale of 1–5. Regarding bias, 43% of respondents rated their frameworks as a 3, which aligns with the ranking from 80% of respondents in the telecom sector.

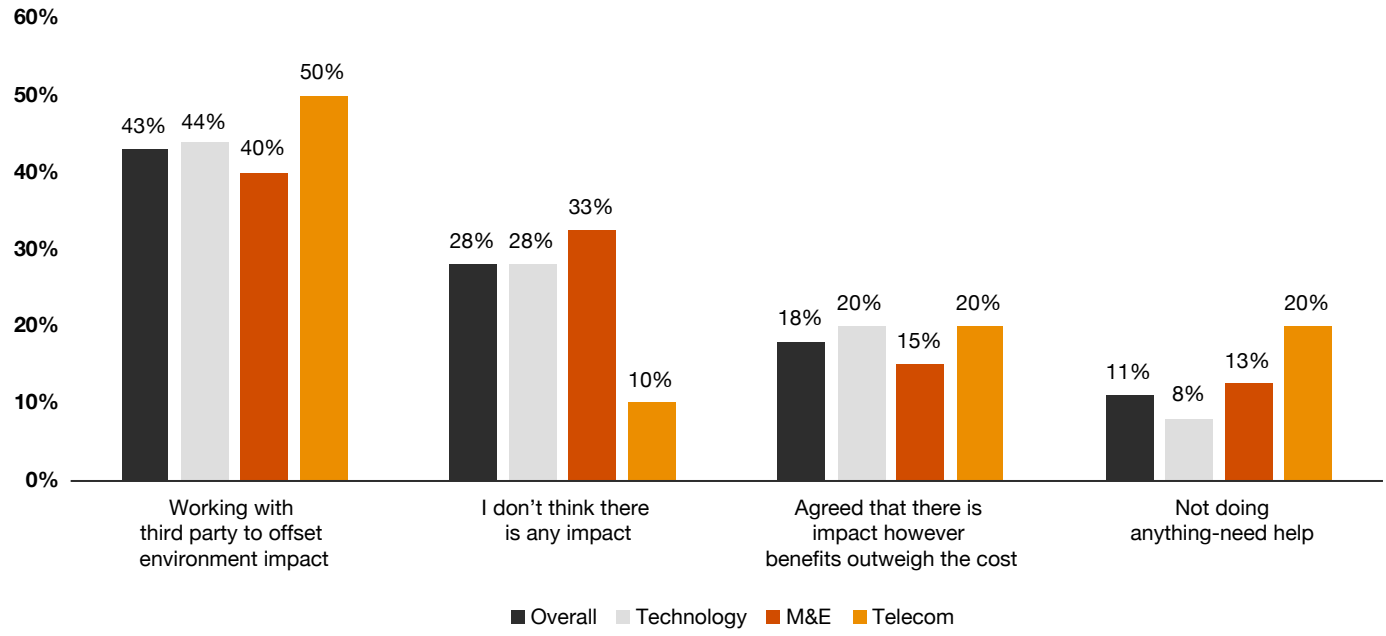
6 https://www.indiatoday.in/technology/news/story/data-of-750-million-telecom-users-in-india-being-sold-on-dark-web-cyber-experts-claim-2495752-2024-01-31

Sustainable adoption of GenAI technology in the TMT sector

Although the use of GenAI may come across as a low carbon footprint technology involving a computer at the user's end, it can have significant environmental impact due to the energy and computing resources it uses. For example, training a single AI model generates 6,26,000 pounds of carbon dioxide. To put this figure in perspective, it is helpful to consider that the average mid-sized car has been estimated to generate about 40,000 pounds of carbon dioxide across its entire lifetime.[7] This means that training a single GenAI model can produce almost five times the carbon emissions of a mid-sized car in its lifetime. This is because AI use is responsible for carbon emissions from non-renewable electricity, and the data centres that house these computations contribute to greenhouse gas emissions. Storing GenAI output also has environmental costs.

TMT leaders recognise GenAI's environmental footprint, with 43% collaborating with third parties to mitigate its impact

Question: Are you aware of the environmental impact of GenAI from a sustainability perspective?



This response was consistent across the sector, with 44% in the technology sector, 40% in M&E and 50% in the telecom sector taking actions to reduce environmental impact through third parties.

Around 28% respondents in the TMT sector remain oblivious to GenAI's carbon footprint while 18% say that the benefits outweigh the cost. Though 46% of the TMT leaders are still convinced that no operational maneuvering is needed to mitigate the environmental impact of GenAI there is an urgent need for call to action. Progress is being made to make GenAI more eco-friendly in some innovative initiatives that draw on renewable energy to power the data centres that power modern AI operations.

Promising developments in ultra-energy-efficient hardware which helps design a futuristic and energy efficient GenAI is also enabling organisation in making AI applications much greener.

7 https://www.forbes.com/sites/forbestechcouncil/2024/03/28/genais-carbon-footprint-a-new-challenge-for-corporations/#:~:text=A%202019%20study,in%20corporate%20business

Key considerations for GenAI's implementation

04 Preparing your workforce to embrace GenAI and benefit from it

03 Choosing the deployment model and platform type

02 Choosing the implementation approach

01 Identifying opportunities and the area of impact while assessing the RoI

01 Identifying opportunities and areas of impact while assessing the RoI

The first task for a company which is adopting GenAI-based solutions is to identify the areas where GenAI can provide opportunities for sales, marketing, customer service, product development, operations optimisation, data analysis and decision-making processes. For instance, in the technology (97%) and M&E sectors (80%), executives are using GenAI for product/service amplification to expand their reach to a broader audience while the telecom sector (~100%) is leveraging GenAI mainly for cost optimisation.

GenAI enables versatile applications, including developing new and innovative products and services, summarising reports for actionable insights and assisting in stakeholder reporting. Before implementation, organisations need to choose a solution tailored to their needs. In the TMT sector (83%), GenAI is primarily being used for innovation and research.

To make informed decisions regarding budgeting and resource allocation, understanding the RoI of GenAI's implementation is crucial. Organisations across the TMT sector (40%) are witnessing tangible impacts of GenAI's adoption and consider it to be a profitable investment.

02 Choosing the right implementation approach

Once the impact areas and opportunities have been identified, the next step involves determining the right implementation strategy for GenAI within the organisation. Organisations have various options to choose from, including in-house development, engaging external consultants, forming strategic alliances with hyper-scalers or pursuing mergers and acquisitions (M&A) with companies possessing GenAI capabilities. Each pathway is carefully considered based on the organisation's specific requirements and objectives. Technology and M&E companies lean towards external consultants (48% and 58% respectively) for GenAI implementation, while Telecom companies prefer in-house development (50%).

03 Choosing the right deployment model and platform

Companies can select the deployment models and platform type based on their specific needs, timelines and budget. For robust data security, options such as on-premise or private cloud, which offer high-level security, are advised. Conversely, if scalability is a priority, opting for a public cloud is recommended. Furthermore, organisations can choose between different platform types, including open-source, proprietary or custom solutions. In the technology sector, nearly 50% of respondents selected private cloud, with over half of those preferring a custom deployment model. In the M&E sector, about 33% favoured private cloud, with 46% choosing a custom model. In the telecom sector, 40% opted for an on-premises platform, with most of them selecting a pre-trained, open-source model.

04 Preparing the workforce to embrace GenAI

The success of GenAI implementation is greatly dependent on how well the workforce embraces the technology, leading to heightened productivity. Organisations (68%) across the TMT sector are conducting workshops and providing various learning modules to disseminate awareness of the benefits and usage efficiency of GenAI.

Conclusion

From being a theoretical concept, GenAI has now become a reality which is already being adopted by businesses across sectors. However, the future of GenAI depends on whether it can yield tangible benefits and convince the leaders about its long-term potential as an enabler for their organisations. The survey asked strategic questions to the participants to gain critical insights into the TMT sector about the adoption of GenAI, its probable areas of implementation and their roadmap for the technology's adoption. The adoption of GenAI in India's TMT sector is set to drive unprecedented changes with both benefits as well as challenges. Responsible AI's adoption will ensure longevity and continuity of operations while compliance with evolving regulations and ESG goals will be critical for the sustainable growth of the technology. Implementing robust data governance frameworks and investment in up-skilling will be vital to build trust of stakeholders and maximise benefits of this transformative technology.

Research methodology

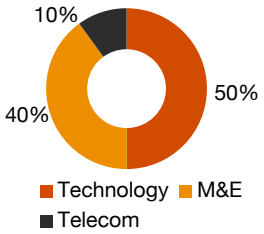
In March 2024, PwC conducted an online survey with 100 C-suite executives and senior leaders to gather comprehensive insights into how GenAI is shaping the TMT landscape and how organisations are responding to its implications. The survey aimed to understand the potential disruption GenAI may bring, its strategic importance within organisations, investment levels, adoption status, implementation strategies, and anticipated the impact of the technology on various business functions. Additionally, it explored challenges associated with implementation, workforce preparation and incentivisation, policy frameworks addressing risks, and awareness of environmental sustainability concerns.

The sample was representative of diverse sectors, with 50% of respondents from the technology industry, 40% from M&E, and 10% from the Telecom sector. Among those from the technology sector, over 55% operated in software products, while most respondents from the M&E sector operated in traditional media. The majority of respondents belonged to organisations with revenue ranging from INR 100 to 10,000 crore, while the employee size ranged from 100 to 10,000.

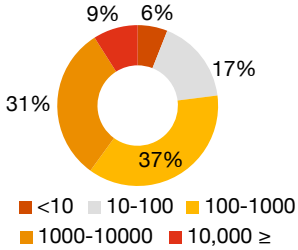
Who answered our survey questions?

N = 100	Respondents level in the organisation		
C-suite executives and senior management surveyed from 2 to 20 March 2024	**45%** Direct reports to C-suite (CEO-2)	**36%** C-suite (CEO-1)	**19%** CEO

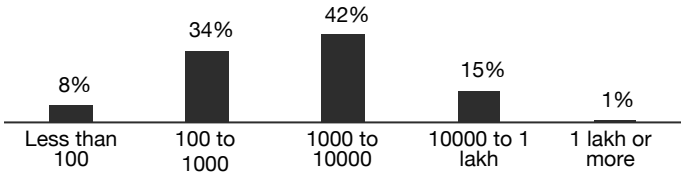
Respondent by industry

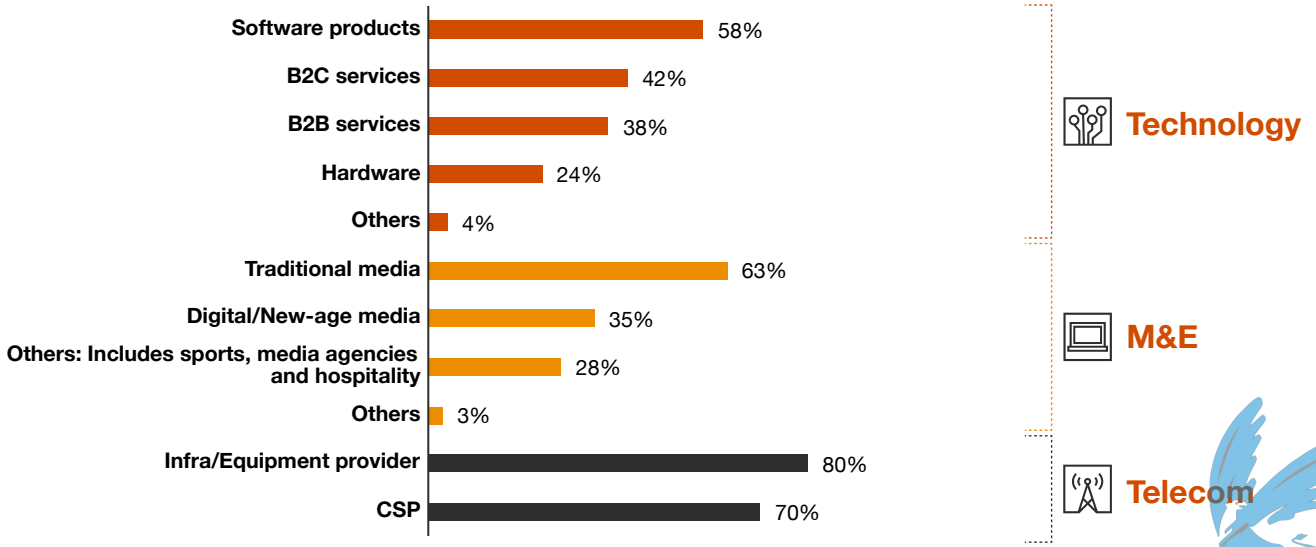


Organisation's revenue (INR crore)



Organisations by employee size





About PwC

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