Our Take

April 2023

pwc

Embracing the metaverse

PwC India's recent survey of top executives in India indicates that business leaders have begun taking steps to harness the potential of the metaverse. Almost 70% of respondents say that they plan to integrate it into their organisational activities, while 63% of companies that are actively engaged with it emphasise that they will fully embed the metaverse in their organisational activities within a year.

The COVID-19 pandemic, and the subsequent lockdowns in many parts of the world, introduced wide-ranging changes in business operations. Business leaders met, brainstormed, took decisions, hired, bought, sold and conducted many other aspects of their operations on digital platforms. This intense increase in virtual activities cast the spotlight on a relatively new player in the digital world – the metaverse – and its potential to take businesses to new heights.

Businesses are embracing the metaverse, both in India as well as across the globe. PwC India's survey conducted early this year covered around 150 business leaders from sectors such as technology, media and telecom (TMT), financial services (FS), pharma and healthcare, retail and consumer, industrial products, government, automotive and EdTech.

70% of respondents — company vice-presidents, managers, chief executives and other senior leaders — say that they plan to integrate metaverse into their organisational activities.

63% of companies that are already actively engaged with metaverse say that they will fully embed it in their organisational activities within a year.

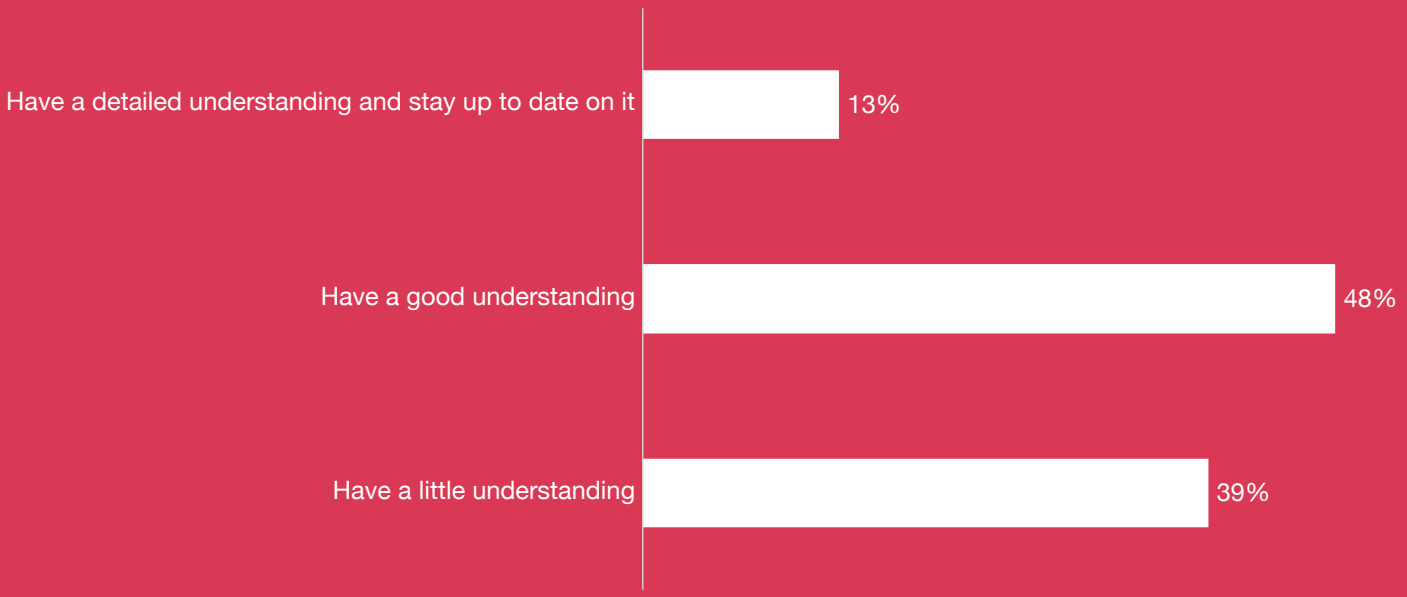
PwC India's Metaverse Survey and its implications

Understanding the metaverse

Though the term metaverse spans a wide spectrum of definitions, it mainly denotes a digital environment with a virtual world that mimics reality through the use of emerging technologies such as artificial intelligence (AI), low/no-code platforms, blockchain, cybernetics, 5G, edge computing, digital identity models, community and power platforms, augmented reality (AR), and virtual reality (VR).

More than 60% of the business leaders surveyed by PwC India affirmed that they have a detailed or good understanding of the metaverse – 48% have a good understanding of the metaverse, while 13% who have a detailed understanding have already begun harnessing its advantages.

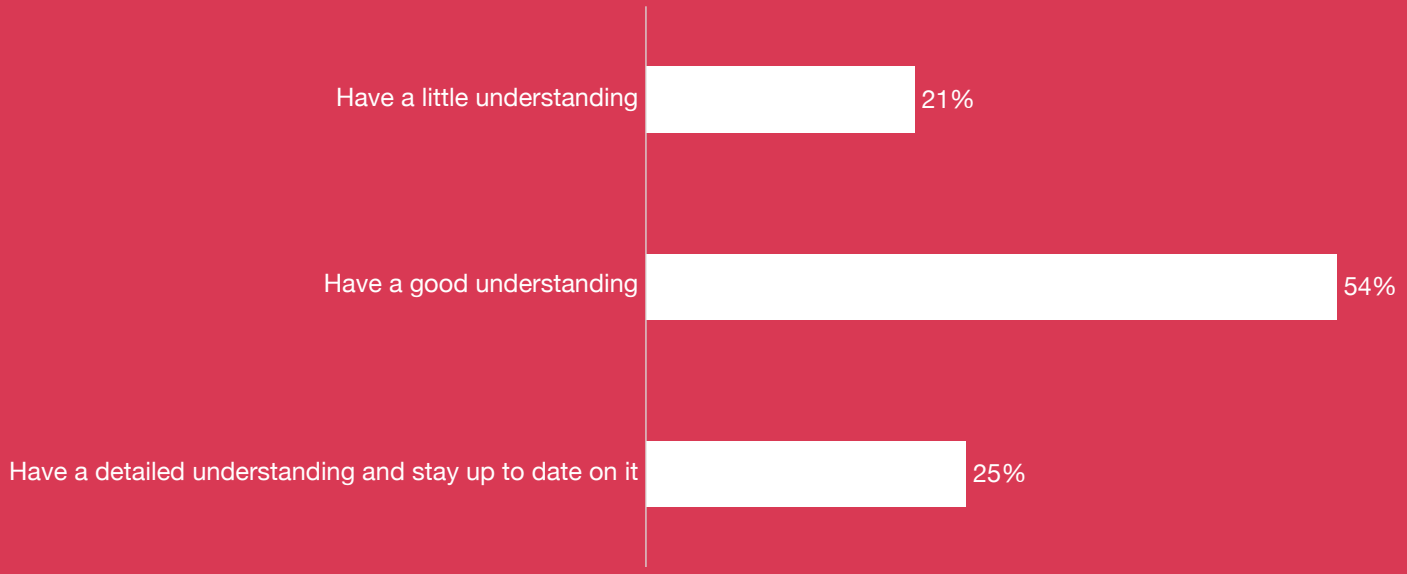
How would you best describe your understanding of the term ‘the metaverse’?



Some sectors, because of the nature of work, are more aware about the metaverse. The TMT sector is the leader in this regard, followed by the FS segment.

Of the 28 companies surveyed from the TMT sector, 79% indicate that they either have a detailed or a good understanding of the domain (refer to the graph below). Driving most of the metaverse growth in this sector is advancement in AR-VR and blockchain technologies. Furthermore, technology and media companies are taking a leadership position by building solutions for business functions such as training and onboarding with the goal of leveraging their knowledge on the subject for their customers.

In the TMT sector, how would you best describe your understanding of the term ‘the metaverse’?



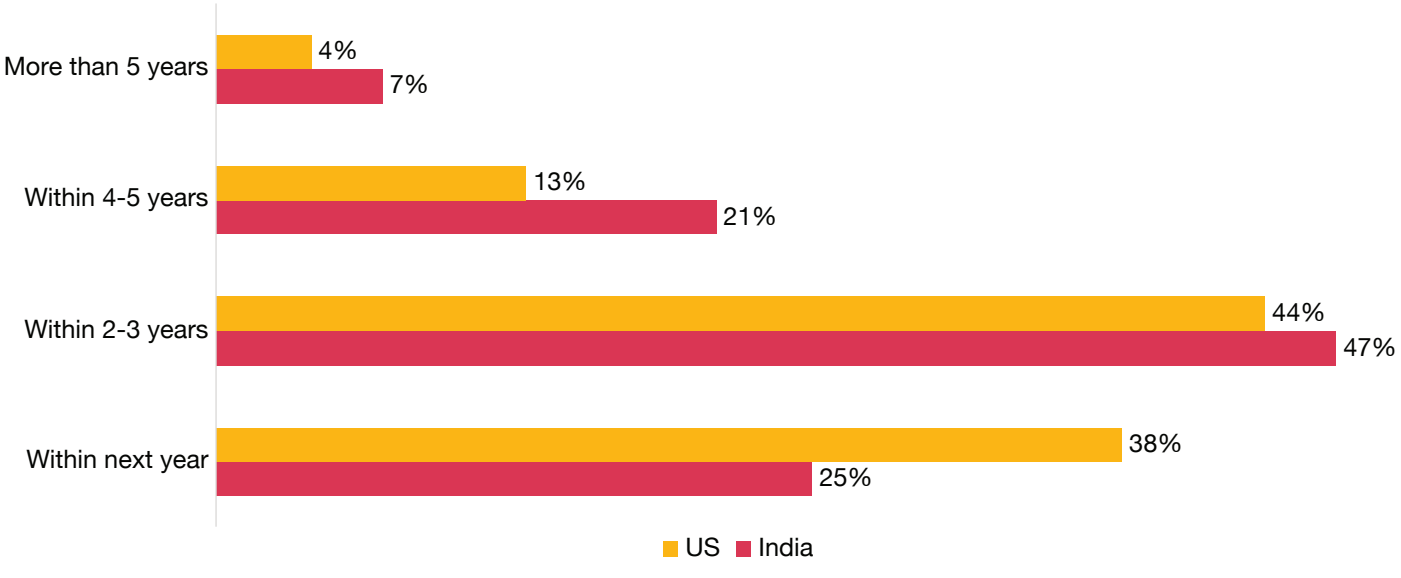
Fast-tracking the integration of metaverse

When it comes to timelines, 25% of India respondents say that their metaverse plans will be fully embedded in their activities within a year, while 47% say that this will take place in 2–3 years.

In the US, where a similar – but larger – survey was conducted in 2022[1], 38% respondents say that they will embed metaverse in their business activities within a year. This is mainly due to the large online gaming market combined with a more developed technological infrastructure and early adoption of the technology, which has helped build momentum and enthusiasm among businesses around the possibilities of the metaverse in the US.

Globally, businesses have started exploring partnerships with some of the leading technology players in the metaverse to explore the possibilities, business opportunities and pilot projects. However, the metaverse ecosystem in India is still at a nascent stage; businesses are warming up to its opportunities and technology companies are still in the process of building their solution stack. It is estimated that it will be another year or two before companies start rolling out large-scale projects in India and 4% of respondents from the US, and 7% of India respondents say that they will take more than five years to adopt the company's metaverse plans.

Thinking about your company's metaverse plans, when do you expect these to be embedded fully and be a part of your company's business activities?



1 https://www.pwc.com/us/en/tech-effect/emerging-tech/metaverse-survey.html

Creating new opportunities

As technology matures, businesses in India have been looking at the metaverse as another door of opportunity. Leaders across sectors have realised that they can carry out their business functions with ease on the metaverse. For instance, they can visit offices or factories, talk to employees remotely, and even test out new products and conduct trainings. With the growth in the online gaming industry, users are becoming more receptive to an avatar-driven virtual world and businesses have started leveraging this change to build innovative metaverse experiences for their customers.

Many leading fashion brands have launched limited edition virtual apparel for the users to explore. This is complemented by virtual try-on features provided by e-commerce websites where customers can visualise how an item of merchandise would look on them before making a purchase.

The metaverse also helps companies in the tourism space to offer immersive virtual travel experiences to their customers, enabling them to virtually visit popular or remote destinations from the comfort of their homes. Companies are also offering virtual tours of hotel rooms to prospective customers. FS companies are exploring new customer engagement channels through virtual bank branches and by creating digital lobbies.

Car manufacturers have embraced the metaverse by curating highly contextualised test-driving capabilities for their premium brands in a virtual world. They also provide virtual showrooms, entertainment zones as well as game areas in the metaverse.

These are just a few of the many possibilities the metaverse holds — in the same way that opportunities once opened up on social media sites.

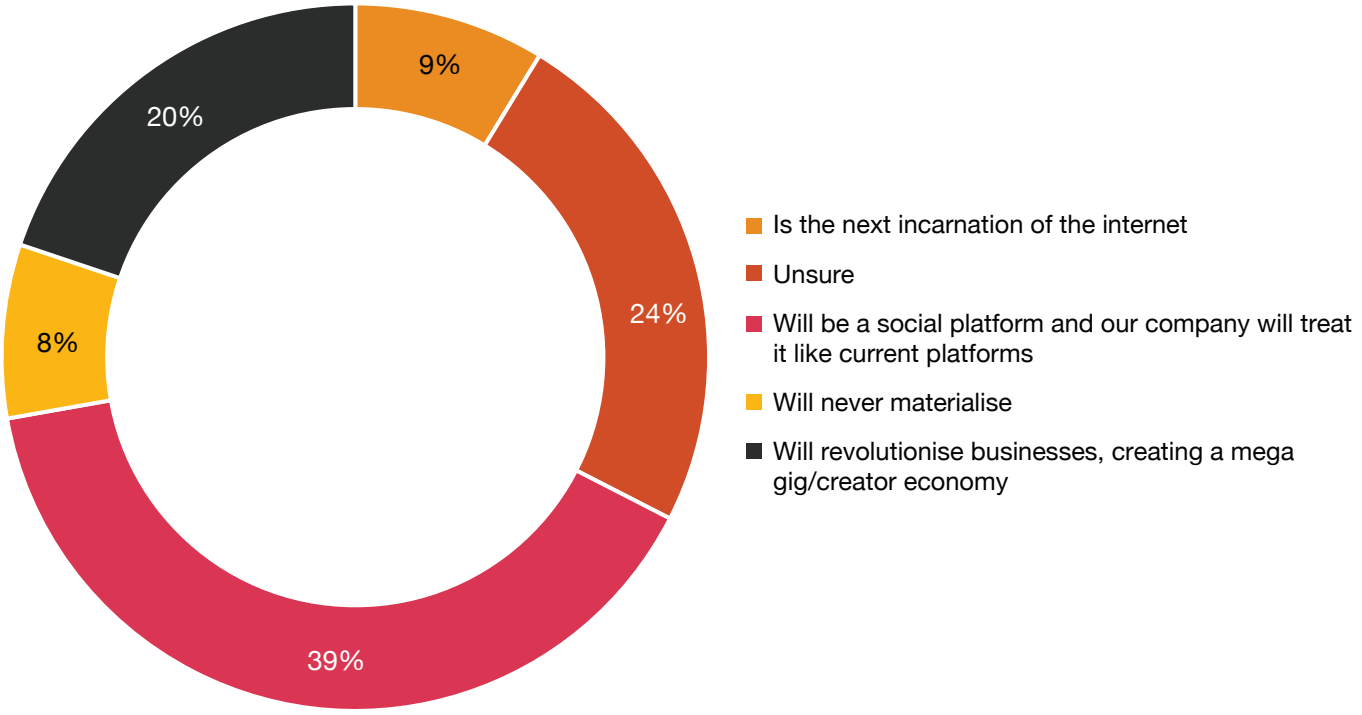
At least **39%** of India respondents in the survey say that the metaverse will be a social platform for their company.

Nearly **20%** feel that it will revolutionise businesses, creating a mega gig/creator economy.

Some, however, are still undecided — **24%** are unsure about how they feel about the ramifications of the metaverse.

9% believe that it is the next incarnation of the internet.

Which of the following statements about the metaverse do you believe is most likely?



Respondents in the US are more upbeat. 22% business leaders in the US say that the metaverse is the next internet, and 36% hold the opinion that it will radically change businesses.

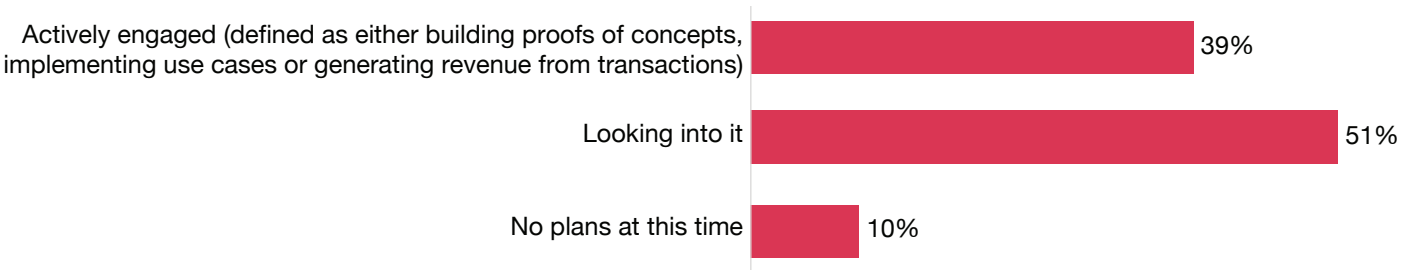
Engaging with the metaverse

Companies are already exploring the metaverse avenues that boost business.

- Almost 90% of India business leaders surveyed say that they have been examining ways of working in the metaverse.
- 39% say they are actively engaged and are building proofs of concept, implementing use cases or generating revenue from transactions.
- 51% indicate that they are looking at the possibilities it offers.

About 10% of the respondents to the India survey say that they have no plans of exploring the metaverse compared to the 13% in the US who are not planning to explore the metaverse yet.

Which of the following best describes your company's level of activity relating to the metaverse?



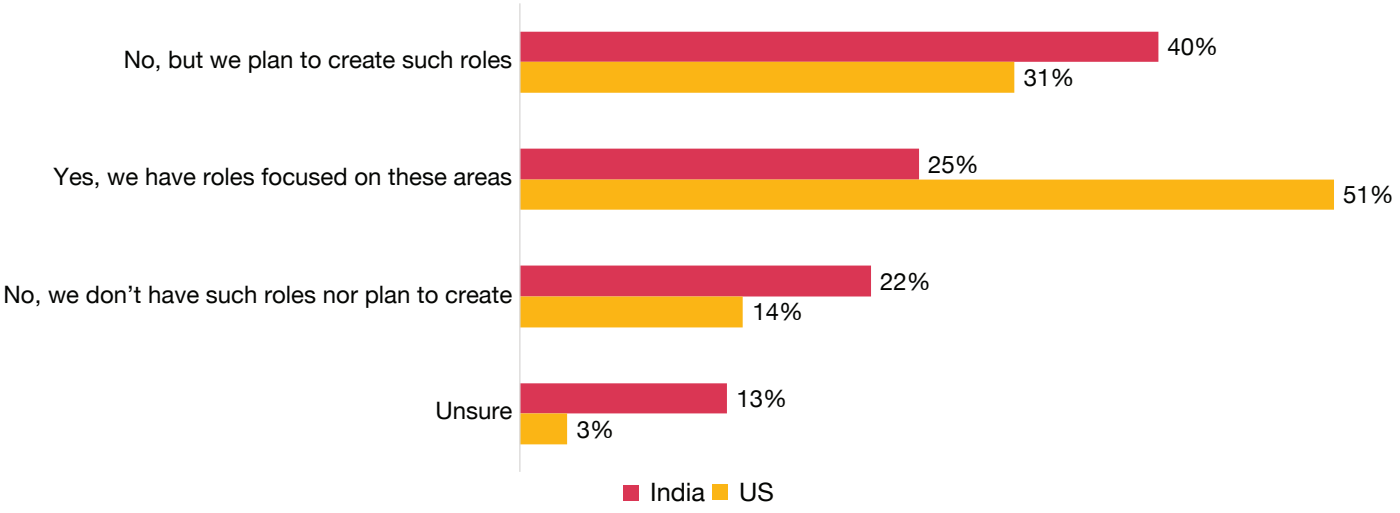
An overwhelming **90%** of the large and mid-cap companies surveyed indicate that they are either actively engaged in the metaverse or are looking into it.

Tech play in the metaverse

For companies, the metaverse promises enriched consumer experiences, the possibility of marketing physical and digital products and services, introduction of virtual products — and a lot more. Much of this entails the use of specific technology. Companies are looking at — or have already introduced — virtual environment tools, enterprise blockchain, augmented reality (AR) and virtual reality (VR).

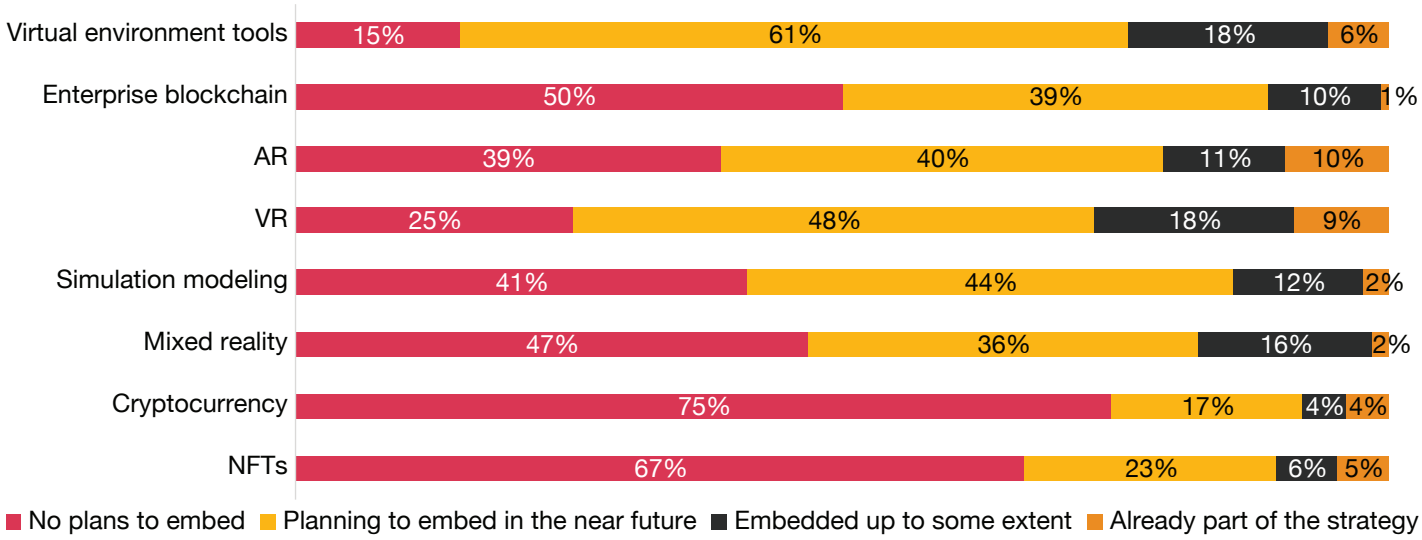
A sign of a company's interest in a field is often seen in the assigning of designated roles within the organisation. When asked whether the respondents have any designated roles for areas such as the use of the metaverse, cryptocurrency or non-fungible tokens (NFT) in their company, 25% say that they do, while 40% say that they plan to create such roles.

Does your company have any designated roles to focus on activities within the use of the metaverse, cryptocurrency or NFTs?



Virtual environment tools (61% respondents), VR (48%), simulation modelling (44%), AR (40%) and enterprise blockchain (39%) are some of the technologies that companies plan to embed in the near future.

To what extent are the following technologies embedded in your company's strategy?



When survey respondents were asked about which metaverse-related areas their companies are likely to explore

17%
mentioned that they are most likely to create virtual content for customers to engage with

13%
said they would like to provide onboarding and training through the metaverse

11%
would like to use the metaverse to create communities

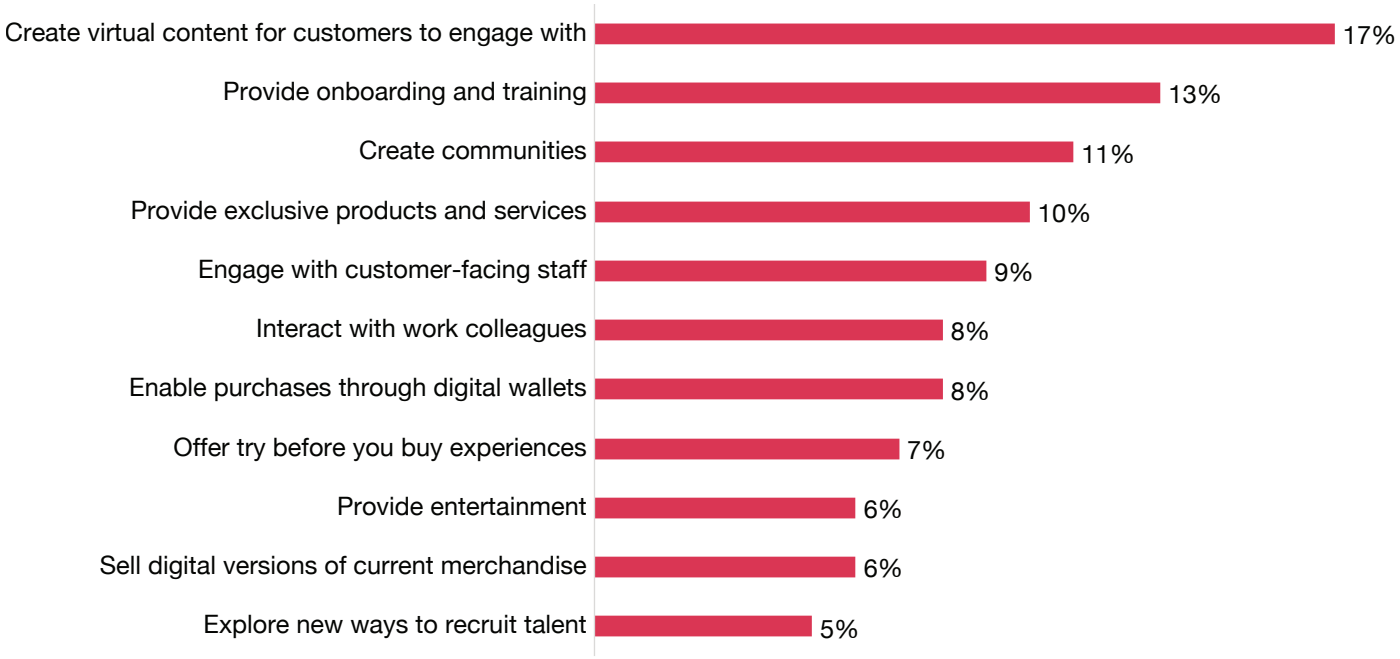
10%
wish to explore the metaverse to provide exclusive products and services

9%
said they intended to use the metaverse to engage with customer-facing staff.

Reimaging experiences with user-centric design principles will add value for companies exploring the metaverse, as it will help them to expand their brand identity in ways that may not be feasible in the physical world.

Despite the growing interest among consumers about metaverse, businesses could consider less risky internal activities such as training, collaboration and onboarding for quick success while not losing focus on the customer-centric use cases.

Thinking about how your company could interact in the metaverse, which, if any, of the following is your company most likely to explore?



When asked about how companies planned to introduce steps in the next 12 months to support their metaverse plans:

20% business leaders said that they will focus on investing in relevant technologies.

14% indicated that they will focus on upskilling staff in emerging technologies.

13% said they would consider hiring people with skills in metaverse-related areas.

12% underlined they would focus on getting help from external specialists.

Partnering with external players

The government and industrial products sectors are investing in technology related to the metaverse, while simultaneously either acquiring or partnering with external players. With the excitement around the metaverse predominantly driven by B2C segments, companies in the B2B segment are looking at the metaverse to gain maturity in the medium term. Such companies can look to leverage their resources for internal use cases such as training and onboarding, and product simulations and collaborations, which can help drive business outcomes.

The advent of any new technology or concept often requires the development of new strategies for businesses to deal with the novel concerns. When asked what businesses consider to be a challenge in working with the metaverse:

36%

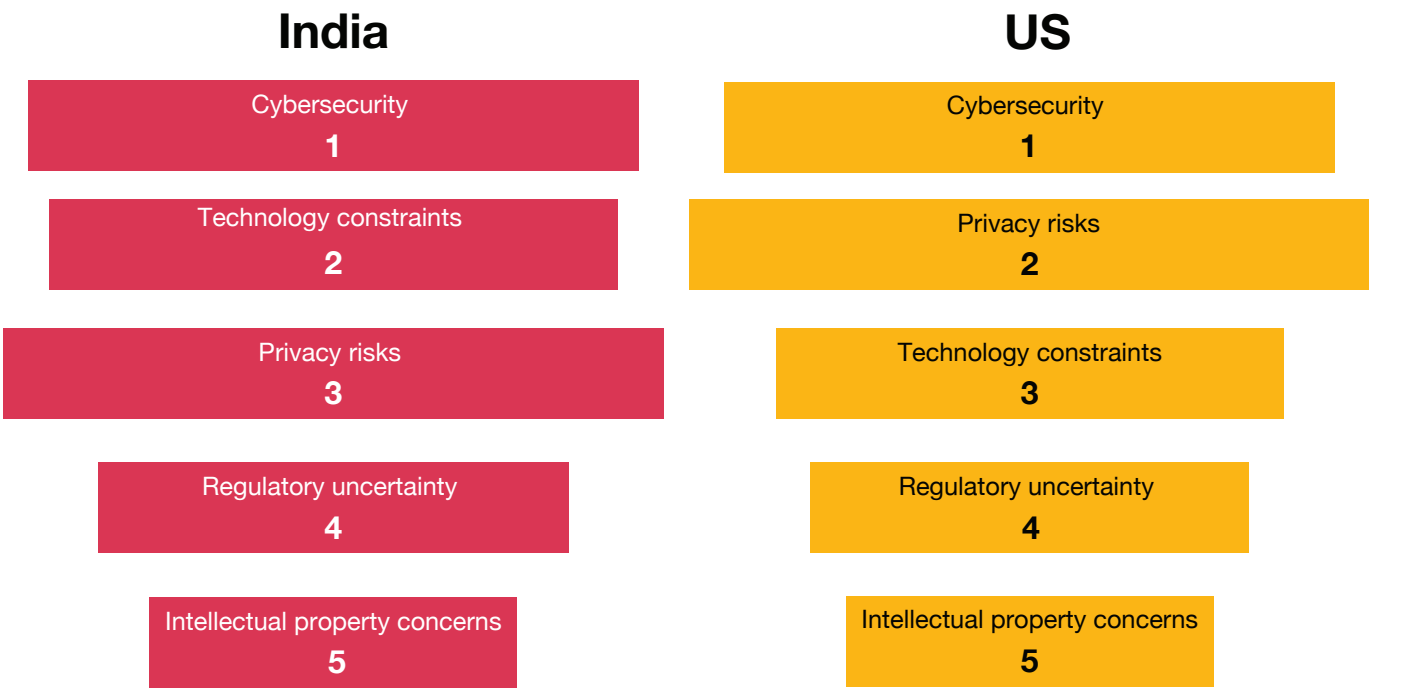
of those surveyed said cybersecurity poses the biggest risk for businesses in India.

28%

respondents felt the technological limitations could pose a challenge.

In the US, cybersecurity tops the list, followed by privacy risks, which is the third most important risk area for India respondents. Regulatory uncertainty and intellectual property concerns occupy the fourth and fifth positions respectively, both in India and in the US.

Please rank your top 5 concerns with respect to the metaverse in descending order of importance.



But these concerns can be addressed. Business leaders in India see solutions for such concerns in transparency around commerce and operations (27%), cyber protection and protocols (25%) and protection for business data and IP (18%). US business leaders cite cyber protection and protocols as their number one priority for establishing trust in the metaverse.

Our take

The varied and evolving technologies of the metaverse provide businesses with vast opportunities that range from the ability to engage customers with the help of immersive experiences to improving processes via a digital twin and bolstering employee skills through simulations. Another important reason for embracing the metaverse is to target the young and technology-savvy future generations of consumers.

As the PwC India survey underlines, business leaders are largely aware of the opportunities offered by the metaverse. Several companies that have already invested in and built solutions on the metaverse need to keep abreast of the wide range of possible and growing applications of the metaverse across sectors.

Benefits delivered by the metaverse

Immersive experience: Metaverse and its foundational technologies such as AR and VR help companies add different dimensions to their brand expression. Using these technologies, retail and consumer businesses can provide immersive and personalised experiences where customers can virtually browse through a store and their avatars can try on clothes and accessories; real estate agencies can guide people through virtual models of their buildings room by room; simulations can deliver the experience of driving a car through multiple terrains; tourism-related businesses can give their clients a virtual tour of their favourite destination – the possibilities are endless. A leading fashion retailer, for example, partnered with a South Korean social network and avatar simulation app to create a virtual fashion collection, giving users the opportunity to dress their avatars in exclusive products.

This immersive engagement can help brands gain deeper real-time insights into their customers' preferences and use these insights to personalise and contextualise their services and build customer loyalty.

Collaboration and community building: Collaboration is central to the opportunities presented by the metaverse. Businesses must look at the community and develop partnerships and ecosystems to explore the full potential of the metaverse.

Today the metaverse exists as isolated experiences where assets and experiences may have limited interoperability; but as technologies evolve, they need not be restricted to platforms where owners control the governance, data or transactions. Businesses and customers will be able to move their identities, experiences and assets seamlessly; enabled by blockchain these are interoperable and interchangeable.[2] Decentralisation and interoperability will then form the key drivers of the full metaverse vision.

2 https://www.pwc.com/us/en/tech-effect/emerging-tech/demystifying-the-metaverse.html

Building trust: The application of blockchain-based NFTs can be seen in fashion, art, gaming, tickets for exclusive events, sports and other areas. NFTs can help in gaining trust of the customers as the products, present as NFTs, when connected with blockchain will have a transaction log. This transaction log will help in providing the digital signature of an NFT, giving authenticity to its purchase and making it easier to verify ownership and transfer tokens.

As the metaverse expands, applications of the NFTs are also expected to grow, with the metaverse giving an edge to the virtual experience of how products are showcased to the audience.

Opportunities for businesses

New product launches: Companies could share innovative ideas with potential users and draw on their experiences and responses to create advanced concepts and prototypes on the metaverse with the help of avatars, virtual whiteboards and interactive boardrooms. Virtual testing of such prototypes can hasten product development and indicate at an early stage whether an innovation has the potential for success. This will also reduce the use of raw materials and efforts of assembling prototypes in a physical environment for testing.

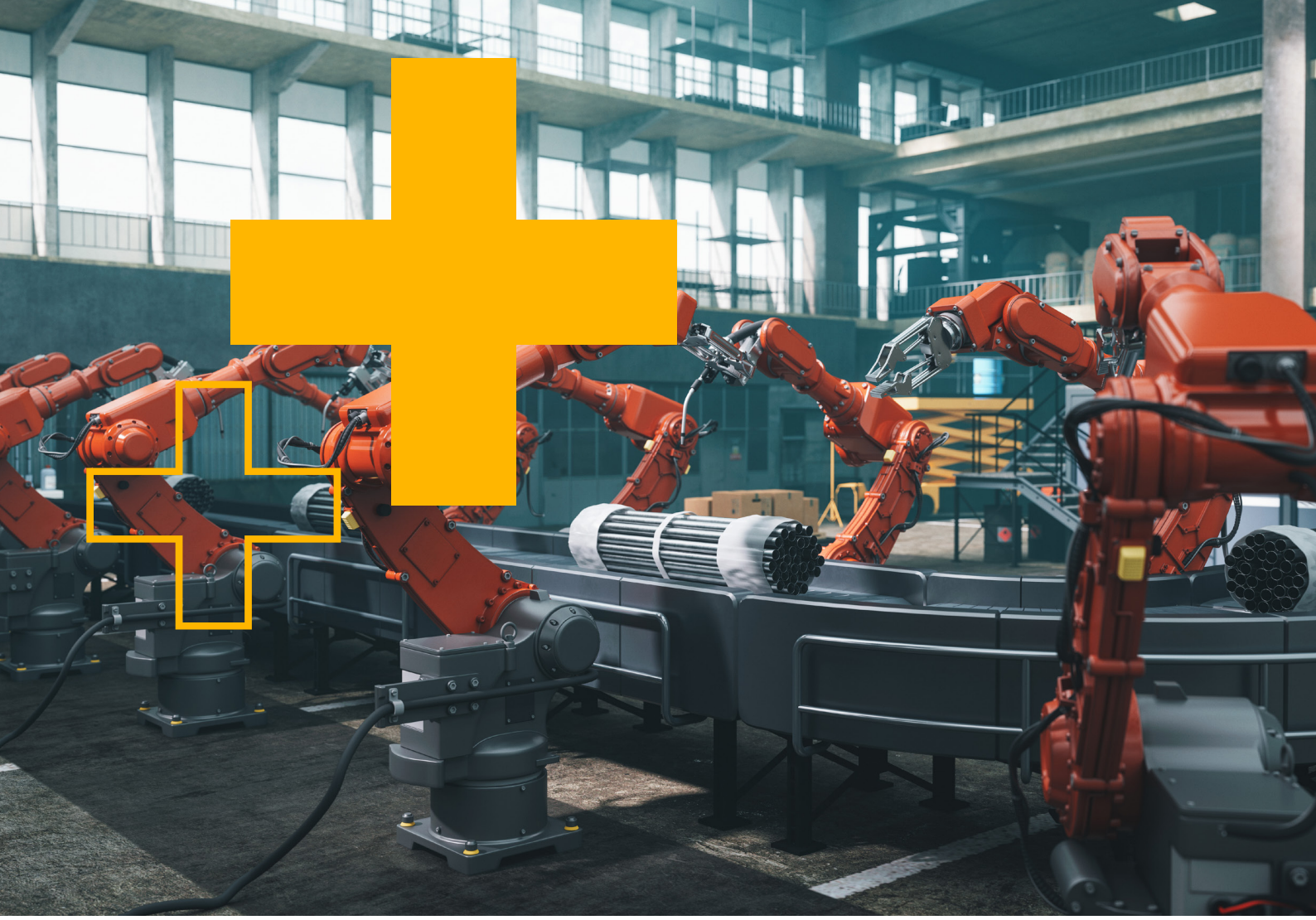
Process simulations: Product and process simulations reduce costs, increase efficiency and drive business outcomes. This is particularly relevant for B2B companies that may not reap many benefits with customer-centric use cases. The metaverse, with the help of blockchain technology, can help streamline processes and supply chains. Businesses can virtually monitor processes, augmenting the human workforce.

Digital twin: Digital twins of processes and factory floors can help identify how production sequences can be optimised by testing new workflows through digital workers and simulations. For example, a leading heavy industry player can plan a strategy to set up a factory of the future where immersive 3D engineering designs will be integrated with robots and connected to engineers around the world equipped with mixed reality headsets. The digital twin of the equipment will be linked to the production system to run simulations which are expected to improve safety and quality, and accelerate the development process. A digital twin can also be effectively used to improve supply chain and in-store management.

Gamification: Gamified marketing involving entertainment and rewards has the potential to keep a customer engaged with the brand and build customer loyalty. A leading fashion brand has launched its metaverse experience on a gaming platform, where players can swap locations and take part in shopping tasks such as stocking inventory and assisting customers. Such immersive experiences offer enhanced customer engagement. Gamified activities can also attract Gen Z customers by encouraging them to try out products and create product awareness.

Workforce training, engagement, recruitment: Businesses can look at internal activities such as training, collaboration and onboarding for quick successes in the metaverse. The gamification of training modules can help organisations to develop highly skilled workers. A multinational retail company has introduced a virtual training module for new employees who put on a VR headset to enter various real-world scenarios where they have to make simple choices based on what they see. This helps to train them for eventualities that are inconvenient to recreate – such as spills at a manufacturing plant or a sudden increase in the number of customers at a retail store. As technologies develop, the metaverse can also improve work-at-home models with its potential to create deeply interactive working experiences.

The metaverse can change the way companies recruit as it makes distances and geographical boundaries redundant. As the metaverse evolves, its technologies will be used for more effective skill testing of potential candidates by incorporating mixed reality in the tests and tasks assigned to them.



Embedded financial opportunities: Loans, buy-now-pay-later schemes, payment wallets, insurance and other personalised financial solutions can be offered to users at any point in their journey in the metaverse. Financial players can collaborate with other platforms to offer these services. However, given the dynamics of the regulated financial space, blockchain-based payment mechanisms are yet to gain the acceptance of central banks.

The metaverse opens up avenues in the e-commerce space and increases the value of various technology companies that develop virtual platforms and accessories. Brands can merge financial solutions with metaverse experiences to provide an enhanced experience to potential customers. They can also organise a programme for their loyal customers by giving them access to exclusive services like play-to-earn games in the metaverse. Brands, however, need to err on the side of caution while exploring financial transactions in the metaverse.

Preparing for the future

Developments in various foundational technologies such as edge computing, digital twin, 5G and AR/VR are fuelling the current customer-centric metaverse experiences, but the full spectrum of the metaverse, as envisaged by tech visionaries, is clearly years away. Advancement and subsequent adoption of the digital twin technology and generative AI will help create immersive 3D spaces which are able to capture and mimic real-world devices. This metaverse is produced through shared and persistent simulations used by millions of users in synchronised real time. Computing power, headsets, software protocols and networking capacity also have a long way to go before they can support such an immersive, shared metaverse. The large-scale deployment of 5G and advancement in edge computing technologies will help users run large experiences on mobile devices, which could enhance the adoption of the metaverse.

As in the early days of the adoption of the internet, there will be pockets of speculation, overvaluation and unwise investment as the metaverse develops and is adopted by businesses. Therefore, businesses must prepare themselves and devise strategies to navigate these issues.

Risk and mitigation measures

Given that the metaverse is still an avenue for exploration for many businesses, it is imperative to tread cautiously and factor in some of the following measures.

Invest flexibly in technologies: While defining business strategies around the metaverse, companies need to evaluate their own journeys and invest judiciously, keeping business, experience and technology at the centre. As with other emerging and disruptive technologies, the rate of advancements across various foundational blocks of the metaverse is diverse. Only some of the technologies have matured enough to provide business benefits today while positioning themselves for the future. Nonetheless, investments today should be agile to seamlessly adapt to the decentralised and interoperable metaverse of the future.

Assess risk mitigation needs: As with any emerging technology, the cybersecurity risk and compliance challenges are an evolving field. It is important for companies that are active in the metaverse, or plan to be so in the near future, to ensure that they embed privacy in their systems and assess their company's unique metaverse risk-mitigation needs.

Determine tax implications: Tax treatment and jurisdictions of financial transactions or digital assets acquired in the metaverse are also evolving. They are also a matter of concern as there is potential for new types of financial crimes due to the dynamic nature of the emerging technologies.

Develop cybersecurity protocols: There is a need for industry consortia to develop guidance around various cyber protocols and community guidelines which can build the customer's trust in the metaverse. For better protection, it is advisable to focus on controls, content moderation, crypto wallet hygiene and constant sharing of experiences and knowledge to keep up-to-date with current developments and risks.

Metaverse strategy for large and medium enterprises

Mid-cap and large-cap companies need to take a long-term view of opportunities that lie in the metaverse. They should build capabilities organically by investing in metaverse-relevant technologies and drive awareness among internal stakeholders and decision-makers.

These enterprises need to stay aligned with technology advancements relating to the metaverse and be able to leverage them as and when available. Considering the rate of maturity of various foundational technologies comprising the metaverse, companies should invest flexibly in technologies so that the investments materialise outside of the metaverse as well — for instance, in augmented reality or blockchain. They should also look at defining metaverse-focused roles at all levels of the organisation headed by a leader who is able to strategise a viable roadmap to tap into the full potential of the metaverse.

PwC has embedded the Technology Tinkering Lab methodology in teams and projects across territories to deliver quantifiable benefits and help organisations to develop new ways of solving problems, create unique experiences for customers, and boost business performances. This methodology can help clients identify the right strategies while embracing the metaverse by factoring in the investment versus outcome matrix.

Looking ahead

The metaverse provides businesses with immense opportunities to engage more deeply and creatively with their customers and to unleash potential revenue streams.

The global metaverse market is projected to grow at an average compound annual growth rate (CAGR) of 40% from 2022 to 2030, based on various industry forecasts and PwC analyses[3], and become a USD 800 billion market at the end of the period. Nearly 35–40% of the revenue would be driven by hardware aspects such as VR headsets, sensors and computing systems, with another 40–45% of the revenue being contributed by software like asset-creation tools and programming engines. Services consisting of advisory, support, creative design would contribute to the remaining 15–20%.

Businesses evidently cannot afford to ignore the potential of the metaverse — neither in the short term, nor in the long run. While it may be judicious to start planning its leverage, embracing the metaverse unquestioningly would depend largely on an organisation's ability to mitigate the inherent risks.

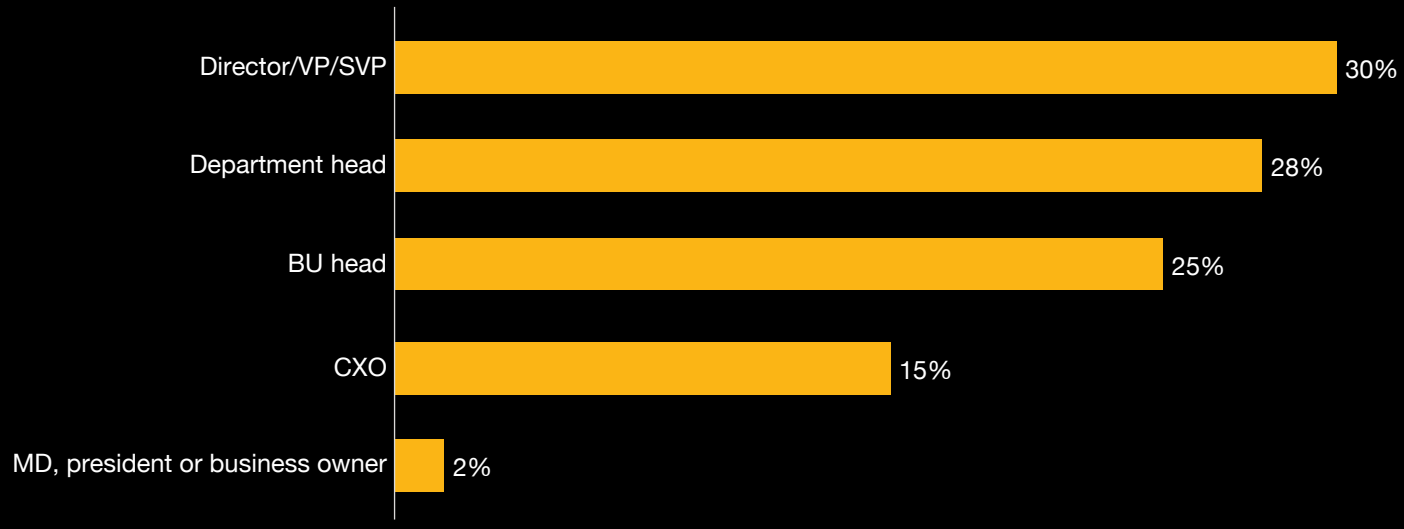
Note

About the survey

The survey conducted early this year asked respondents – nearly 150 in number – across different regions of India for their title/role, age group, their gender, the sector their company represented, and their company turnover.

22% represent TMT, 19% FS, 16% pharma and healthcare, 15% retail and consumer, 12% industrial products, 9% government and 7% automotive and edtech. 44% of the respondents say that they believe their company turnover is over INR 3,000 crore, while 30% say that it is INR 500–3,000 crore and 26% say it is below INR 500 crore.

What title/role do you represent within your organisation?



3 PwC Global analysis based on market intelligence from Bloomberg, Credit Suisse, Goldman Sachs

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Contact us

Sudipta Ghosh
Partner, Data & Analytics and Industrial Products Leader
sudipta.ghosh@pwc.com

Ashootosh Chand
Partner, Digital and Emerging Technologies
ashootosh.chand@pwc.com

Core team

Sudipta Ghosh, Ashootosh Chand, Vishnupriya Sengupta and Yasha Pandit

Also contributing to the report were **Sounak Sarkar** and **Sourav Manna.**

Design

Kirtika Saxena

pwc.in

Data Classification: DC0 (Public)

KS/April 2023-M&C 27142