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2024 State of Edge Computing:

How industries are leveraging
AI anywhere to unlock modern
business cases

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Google Cloud

Summary

CATALYST

Edge computing is not new but has taken on a new level of importance with digitization of organizations and consumers, increasing demands to process data locally on-premises, and leveraging the latest AI and cloud-based innovation. IT decision makers and buyers are exploring new use cases, and their vendors are developing software and hardware to meet new requirements for edge located equipment.

Several industry verticals have been leveraging edge computing for years to transform their operations, with manufacturing using it for automation, while others, such as municipal governments, are just starting smart city project rollouts. It is evident that we are only at the beginning of exploring various use cases. As we complete the deployment of known applications, many additional use cases will undoubtedly emerge.

OMDIA VIEW

The increasing prominence of AI and Generative AI (GenAI) is anticipated to profoundly transform business and the nature of work. This expectation resonates across all leadership levels, from the C-suite overseeing digital transformation initiatives to practitioners actively testing, executing, and scaling cutting-edge innovations to deliver value.

GenAI will spawn a whole new approach to thinking about the nature of work and who and where it should be performed. GenAI is poised to unlock new skillsets and present novel challenges, transforming various aspects of the business landscape through elements such as creative problem solving, data interpretation and analysis, and technical proficiency in training and fine-tuning GenAI models. This will lead to the development of new devices and software technologies to improve business processes, relieve humans of repeatable tasks, and make life more fun.



At the same time, the speed and effectiveness of delivering value to customers and staff locally requires compute processing on-premises where the collection and real-time processing of data are becoming increasingly important. As a result, latency and bandwidth are becoming key performance determinants and are driving the need for better telecommunication networks and more computing power to be placed closer to end users and machines. Security and data volume are also factors that can influence end users to place more compute at the edge.

Enterprises, telecommunications network providers, and cloud service providers (CSP) have adopted edge computing strategies. For example, CSP approaches are based on the premise of deploying hardware to the edge that is connected to and compatible with the core cloud solution offered by the cloud provider.

Many enterprises have opted to own their own hardware at the edge instead of relying on CSP- or telco-operated data centers (DCs). In fact, enterprises were early adopters of edge computing. Many enterprises have a distributed business models where application support is required at multiple branches, offices, or stores. Additionally, many enterprises have been running latency-sensitive workloads such as healthcare and industrial applications; on-site data consolidation, data sharing, and analytics; and retail store management. With GenAI the development of the applications requires in some cases, large amounts of compute resources such as GPUs and TPUs. However, the execution of these applications is likely to be distributed to the edge for privacy and latency reasons.

On-premises computing is well-established, but the integration of cutting-edge cloud infrastructure and AI represents a transformative shift. Cloud technologies are empowering developers to create agile and responsive applications tailored to evolving customer needs, both internal and external. Additionally, the swift advancements in AI and Generative AI are unlocking new opportunities to address complex, costly, and resource-intensive challenges, such as predictive analytics and visual inspection. The convergence of on-premises computing, cloud technology, and AI heralds a new era for IT decision-makers: AI Anywhere.

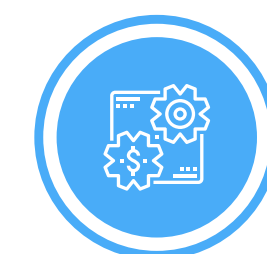
KEY MESSAGES



Adoption of edge is evolving driven by the need for low latency, security, and data volume requirements.



AI anywhere is a key driver supporting mission critical use cases requiring an inclusive edge, AI, and cloud strategy.



Spend and scale is increasing in coverage across industries.



Cloud and open ecosystems unlock developer agility to build, deploy, and scale applications at the edge.



Industry View: Industries are unlocking new use cases to improve business analytics, security, and operations.

Adoption of edge is evolving

100% OF RESPONDENTS PLAN TO USE EDGE COMPUTING IN THE NEXT 12 MONTHS

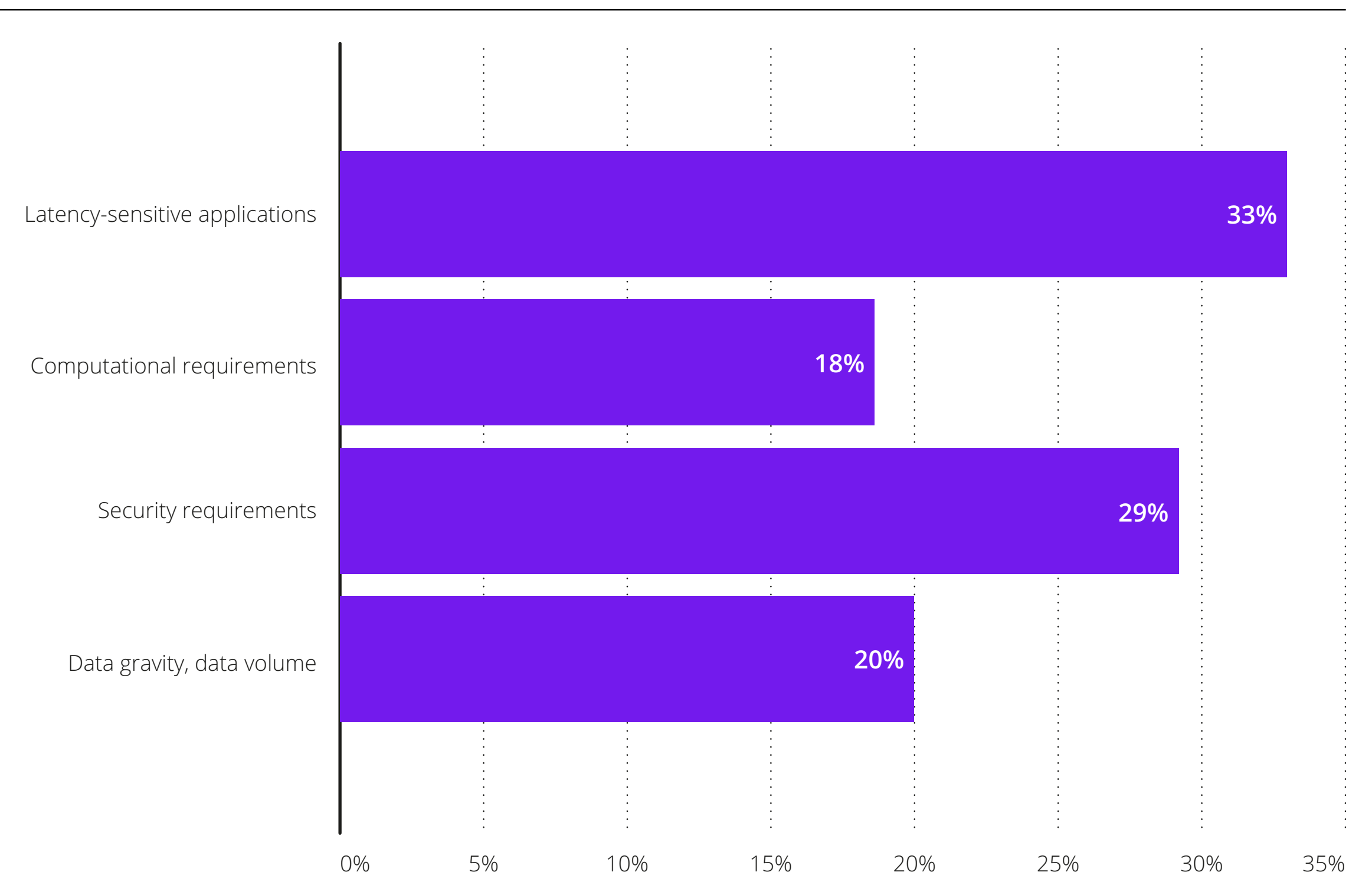
Figure 1 shows that not all use cases are suitable for the public cloud. Consider the following scenarios:

- **Computational Requirements:** When processing must continue uninterrupted, even if the connection is down.
- **Data Gravity and Volume:** When handling high-volume, noisy, or costly data that is time-consuming to transmit elsewhere.
- **Latency and Speed:** When quick decision-making is critical, windows of opportunity are narrow, or local interactions are required.
- **Regulated Data:** When regulatory measures and policies mandate that data must remain on-premises.

The survey results, as shown in Figure 2, clearly indicate that edge computing is a priority for all organizations. Edge computing is being integrated into various transformation initiatives, ranging from enterprise-wide digital transformations to more targeted network transformation projects. Notably, 14% of respondents reported not using the cloud, with the healthcare and life sciences sectors leading at 25%.

Figure 1: Top reasons for deploying edge

S7: WHICH WOULD YOU RATE AS THE TOP REASONS FOR EDGE COMPUTING DEPLOYMENT?



SOURCE: OMDIA

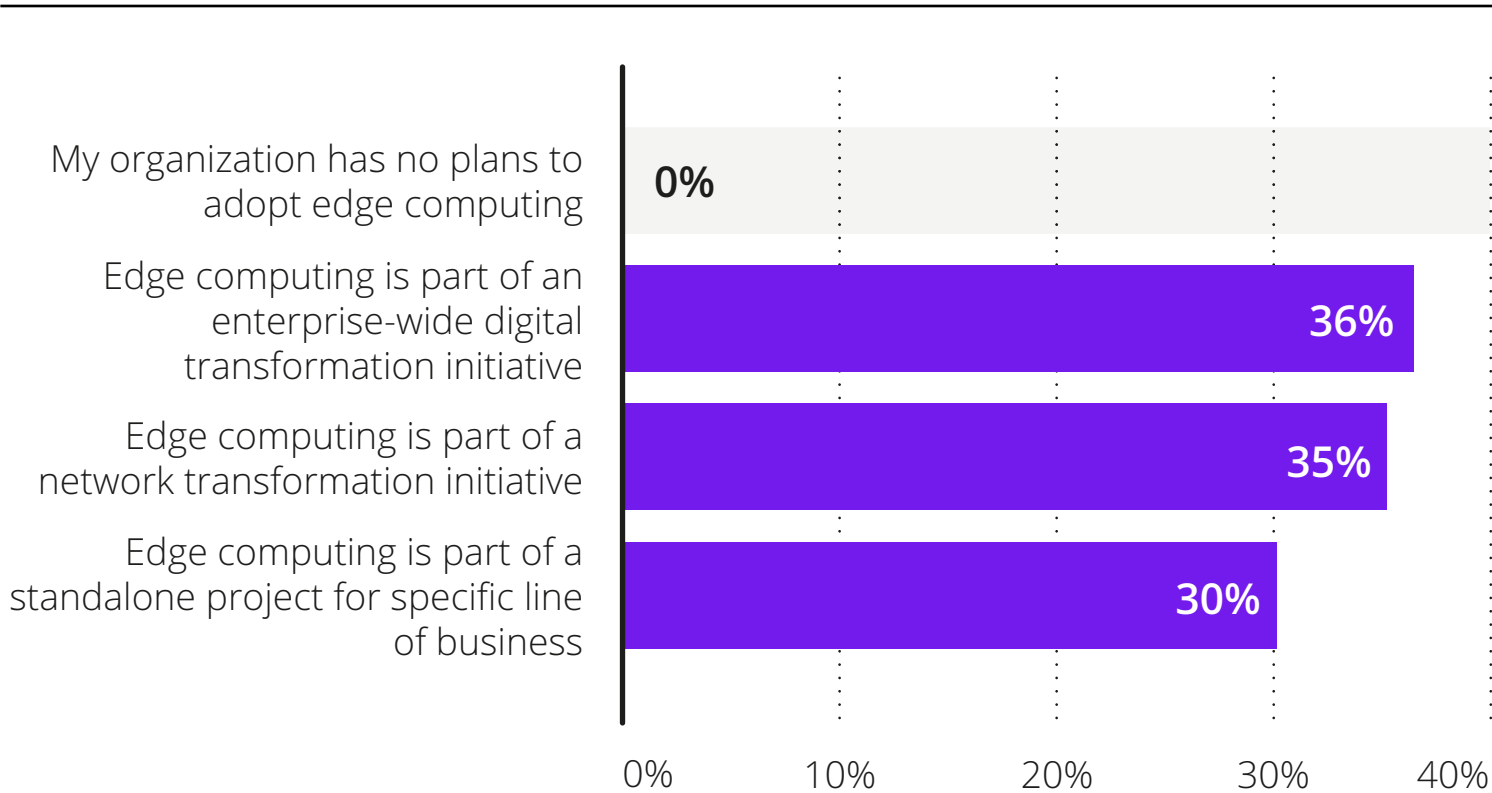
This underscores that not all use cases are suitable for the cloud. Figure 3 reveals plans to significantly increase the number of edge locations by 2026, with the most substantial growth in deployments numbering in the hundreds. Specifically, there is a 15-percentage point increase in these deployments from 2024 to 2026.

Further analysis shows that enterprise organizations (those with revenues greater than \$1Bn) will invest more in edge. The survey showed 40% of enterprises (\$1Bn plus) will invest more than \$500M compared to 9% of mid-market and SMB (less than \$1Bn organizations). This data correlates with the IT budget analysis Omdia performs annually. In Omdia’s IT budget and spending forecast the distribution of IT budget spending by subcategory shows a consistent trend across all organization sizes. However, for large organizations it shows that by 2027, the average IT spend per year on infrastructure and applications will be: applications \$310 million and infrastructure \$270 million.

Customer services and technology and process are the clear top two departments looking to use edge. The survey identified that when it comes to how and for what the edge will be used, latency sensitivity and security are the top two uses. Latency is particularly important as with the GenAI revolution, many of the use-cases for GenAI are likely to be placed so that the customer experience and privacy are paramount. This means that these inferencing use cases will be sensitive to latency and privacy, so are prime candidates for edge deployments. Beyond the initial customer focused use cases, organizations consider the ability to be predictive and obtain real-time risk analysis as the most transformative capabilities the edge and AI can deliver. Organization’s expectations from edge show it must deliver improved security and compliance.

Figure 2: Business plans for edge in 2024

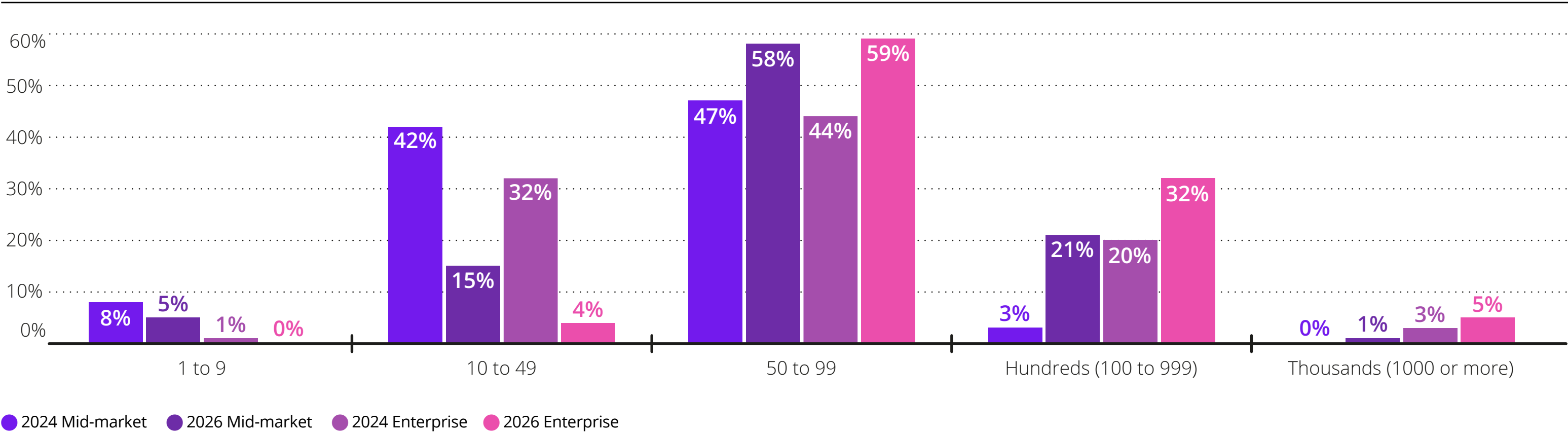
S11: WHICH STATEMENT BEST DESCRIBES HOW EDGE COMPUTING IS PLANNED IN YOUR ORGANIZATION?



SOURCE: OMDIA

Figure 3: Number of edge deployments 2024 to 2026

Q19: HOW MANY EDGE LOCATIONS DO YOU PLAN TO DEPLOY COMPUTING INFRASTRUCTURE TO NOW AND IN THE FUTURE?



SOURCE: OMDIA

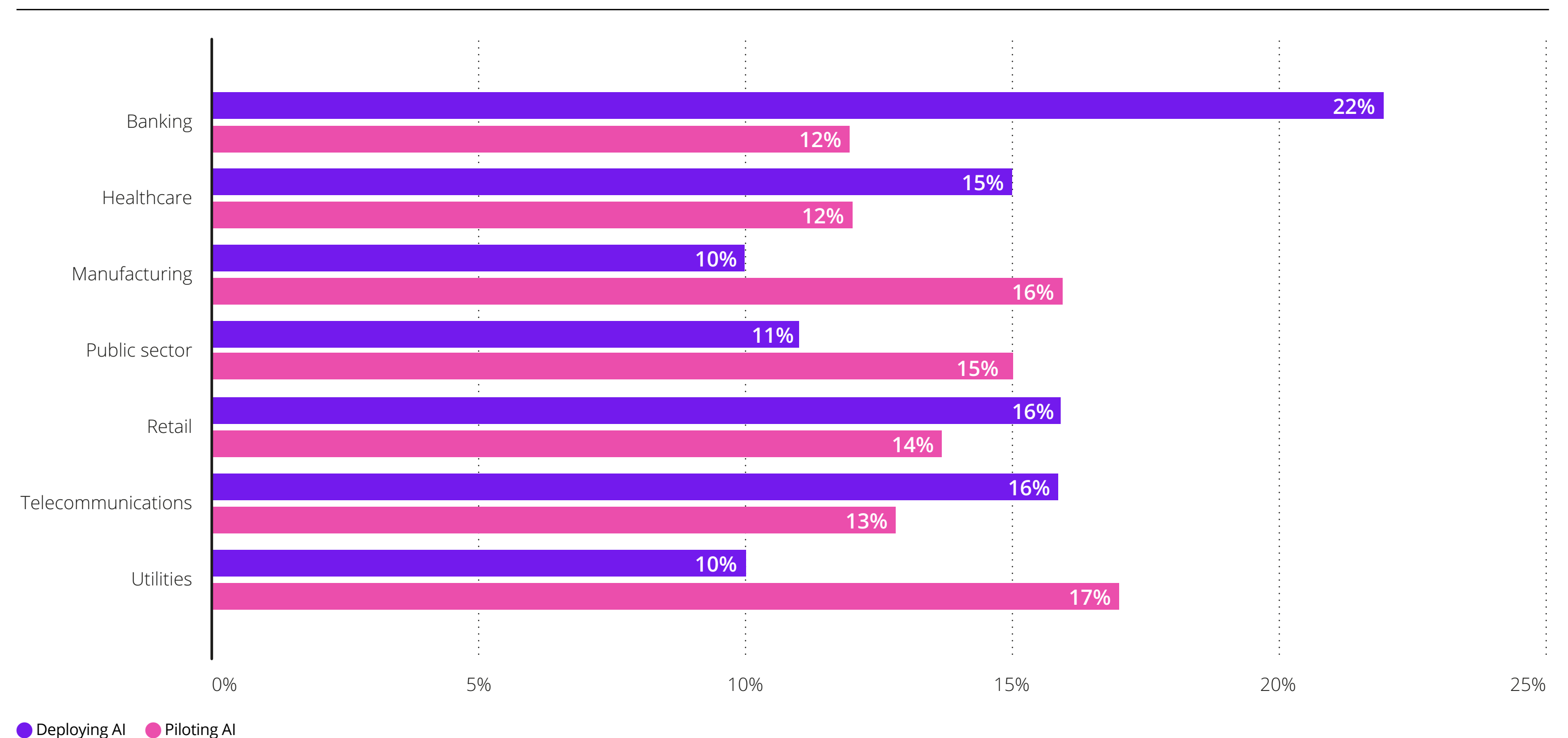
AI anywhere is a key driver supporting mission critical use cases requiring an inclusive edge, AI, and cloud strategy

Figure 4 illustrates the adoption of AI across various industries, highlighting both early adopters and more cautious entrants. The banking sector has been proactive, deploying AI extensively as a strategic measure to enhance security in an era where deep fakes are increasingly used for fraud. Conversely, the utilities sector is more reserved in its AI adoption due to its classification as a critical infrastructure industry, facing unique challenges. However, as a highly distributed and infrastructure-intensive industry, utilities will increasingly leverage edge computing and AI to drive business transformation.

This contrast is evident in the projected edge deployments over the next two years. By 2026, 38% of banking institutions plan to deploy AI to hundreds of edge locations, while the majority of utilities (71%) will limit deployments to fewer than a hundred locations.

Figure 4: The AI journey by industry

Q8: WHAT IS THE STATE OF AI DEPLOYMENT AND PILOT PROJECTS AT YOUR COMPANY TODAY?



SOURCE: OMDIA

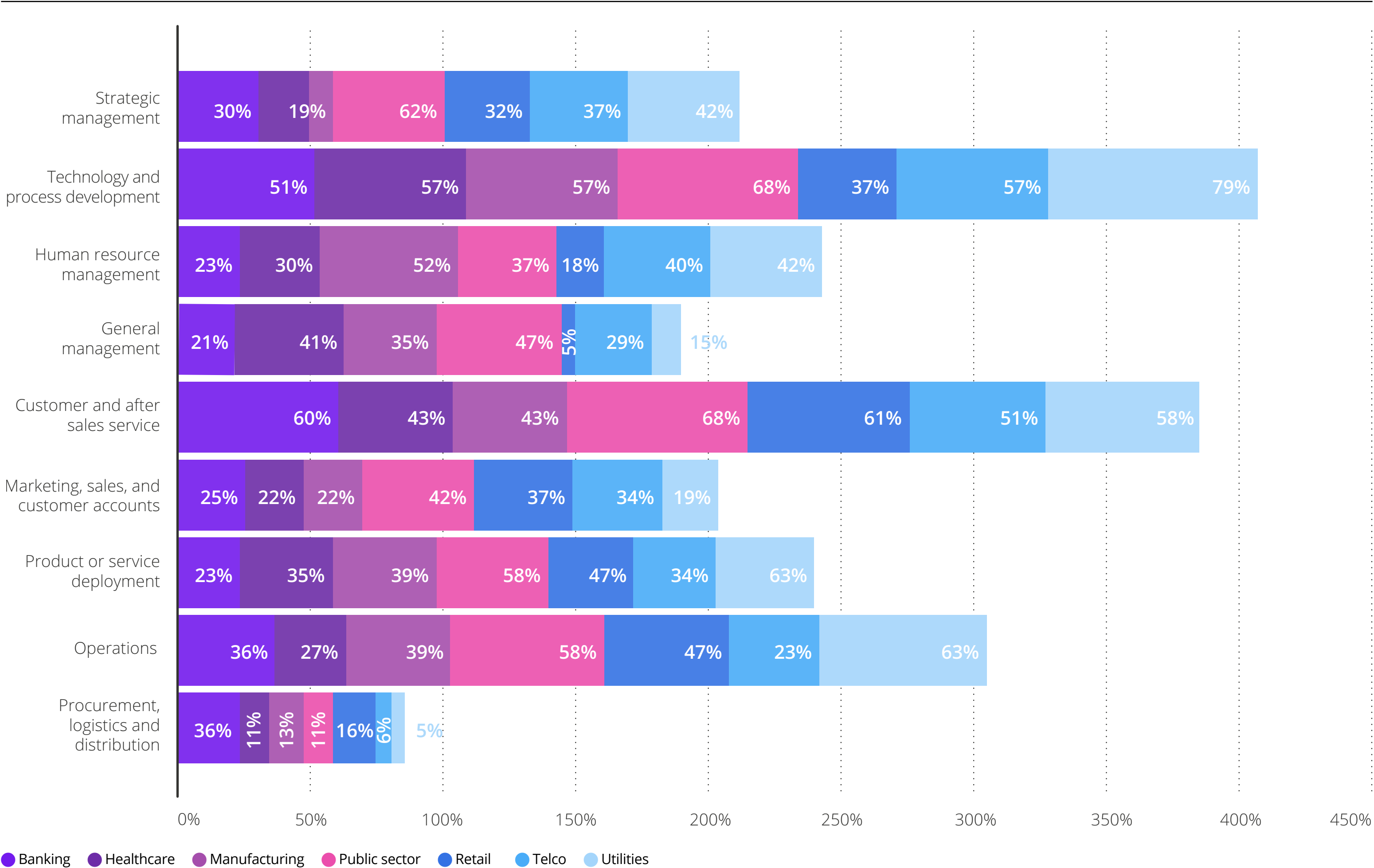
Deployment trends also vary by organizational size. Enterprise organizations (\$1Bn-\$5Bn annual revenue) are leading in strategic AI management deployment, with 43% incorporating AI strategically. In comparison, only 7% of small organizations (less than \$499M annual revenue), 20% of mid-sized organizations (\$500M-\$999M annual revenue), and 27% of large enterprises (greater than \$5Bn annual revenue) are doing the same.

The primary use cases for AI deployment are technology and process development, followed by customer service, as shown in Figure 5. Enterprise organizations (\$1Bn-\$5Bn annual revenue) are at the forefront of technology and process development (58%), with customer and after-sales services (52%) and operations (44%). These leading use cases are predominantly driven by data gravity and security concerns, with 61% of respondents deploying AI for these purposes, compared to 42% for computational needs and 54% for latency considerations.

While these early use cases set the foundation, each industry will continue to develop its unique agenda for integrating edge computing and AI.

Figure 5: Vertical deployment of AI

Q10: IN WHICH CORE BUSINESS DEPARTMENT ARE YOU DEPLOYING AI?



SOURCE: OMDIA

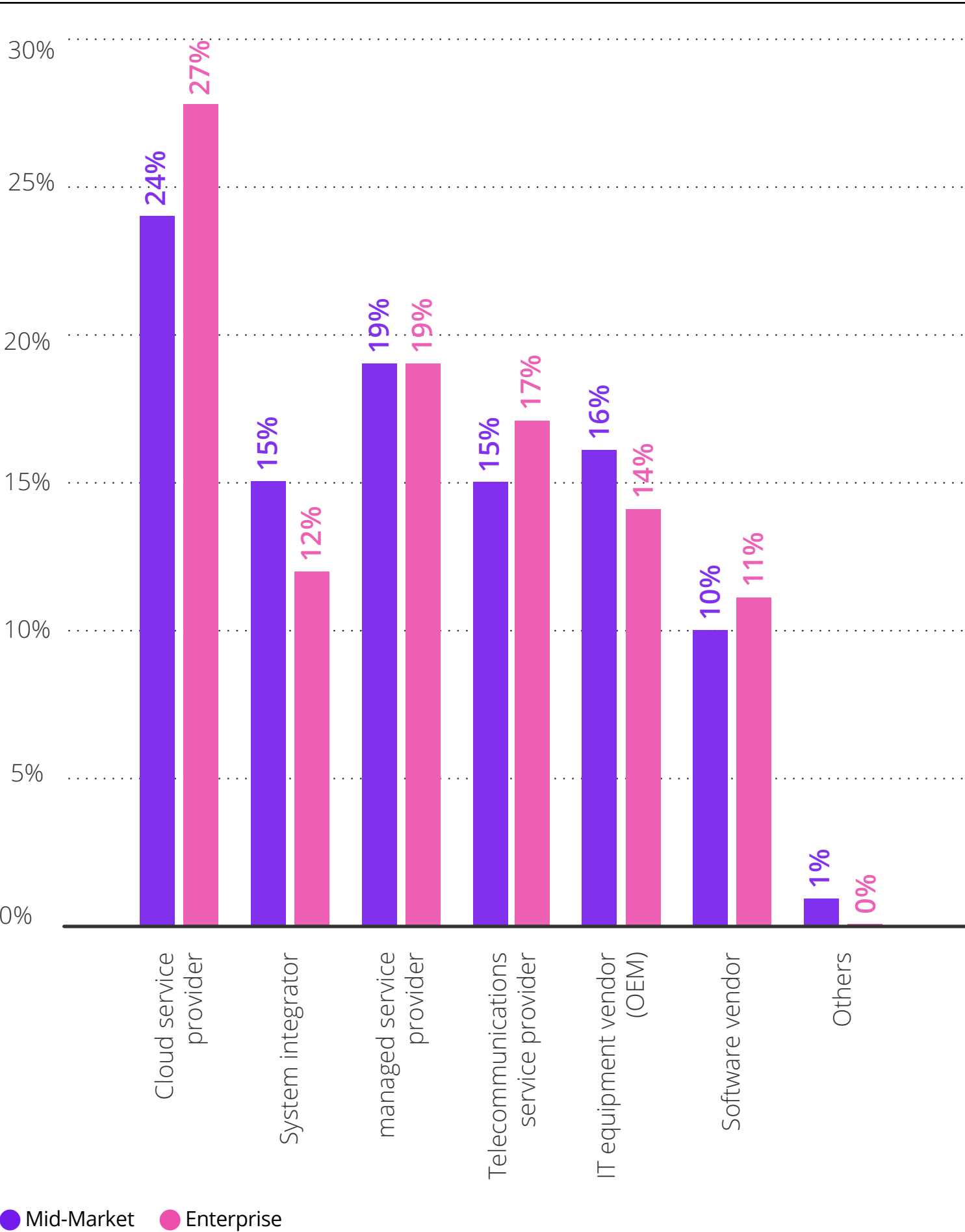
REALITY VS DREAM: PARTNERS ARE KEY TO EDGE AND AI.

Figure 6 illustrates that the majority of edge computing spending by both enterprise and mid-sized organizations is directed towards cloud partners. However, mid-sized organizations tend to engage more with OEMs, system integrators, and MSPs compared to their enterprise counterparts. This distribution is influenced by the existing relationships these organizations have with their partners. Mid-sized and SMB organizations often rely on local or regional partners due to their limited resources, which makes it difficult to fully leverage the self-service model commonly offered by cloud partners. In contrast, enterprise organizations, with their in-house expertise and knowledge of cloud technologies, are more inclined to utilize cloud partners for edge-related projects. For AI deployments enterprise organizations are evenly split between in-house software development on cloud-based AI infrastructure (35%) or partner-led on cloud (34%), while 20% are completely in house. Conversely, mid-sized organizations are more likely to use partner-led in cloud (42%). The difference with AI compared to edge is that AI is a new technology and

as such skills and knowledge on the topic are difficult to find, and many smaller regional partners are only now just building out their AI practices, while cloud partners have more mature practices in AI. Interestingly data gravity (61%) use cases are more likely to be partner-led than security (47%). This seems at odds with Omdia’s observations where the continued evolution of Secure Access Service Edge (SASE) continues to see growth in the partner network, where vendors continue to fuel their SASE initiatives with acquisitions, funding, and partnerships. When it comes to expectations of partners delivering AI and edge, the ability to guarantee service level performance is the least expected partner expertise. This is not unexpected as the market is at a very early stage of development and most partners lack the experience to be able to provide such guarantees. All industry verticals expect partners to have GenAI capabilities, with public sector (73%) the industry most expectant compared to healthcare and telco who are the least expectant (60%). Cloud and open ecosystems unlock developer agility to build, deploy, and scale applications at the edge.

Figure 6: Where is the spending being directed for edge?

Q15: WHICH PARTNERS ARE YOU WORKING WITH / ARE YOU MOST LIKELY TO WORK WITH FOR EDGE COMPUTING?



SOURCE: OMDIA

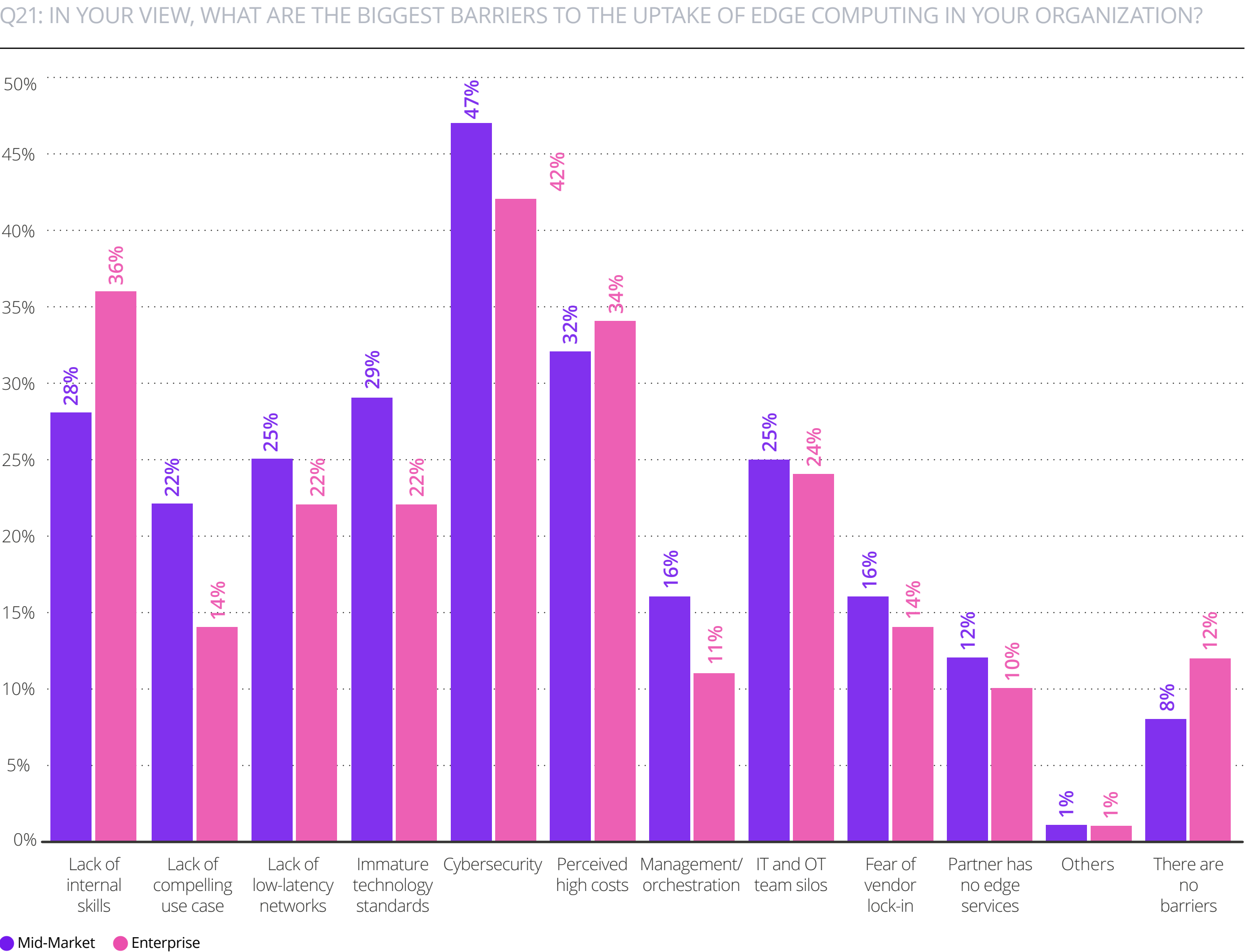
Figure 7 highlights cybersecurity and data protection risks as the top barriers to faster edge adoption across regions, with 41% in EMEA, 47% in North America, and 46% in APAC citing these concerns. While cybersecurity poses a slightly greater issue for mid-sized and SMB organizations, the lack of skills is a more significant barrier for enterprises. Interestingly, 12% of respondents in EMEA perceive no barriers to edge adoption.

Regarding partner expertise, North America shows the least concern about the absence of edge services among partners, likely due to the abundance of partners in the region. In contrast, other regions face challenges securing partners with edge capabilities due to their limited availability. This is gradually changing as partners expand their edge and AI service portfolios.

For example, 17% of retail organizations view the lack of key technology partners with edge services as a barrier, ranking it as the seventh most important barrier for retail, compared to the lowest rank (11th) for other industries, except utilities. This suggests a scarcity of partners with edge services in the retail sector or a higher demand for edge deployments in retail.

Currently, 47% of retail respondents have fewer than 49 edge deployments, but by 2026, only 8% will remain at this level, indicating that 92% of retail organizations will have 50 or more edge locations. This increased demand and the current lack of partner services is likely to drive the retail sector’s heightened sensitivity to partner capabilities in edge services.

Figure 7: Barriers to faster edge deployment



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)

Spend and scale is increasing in coverage across industries

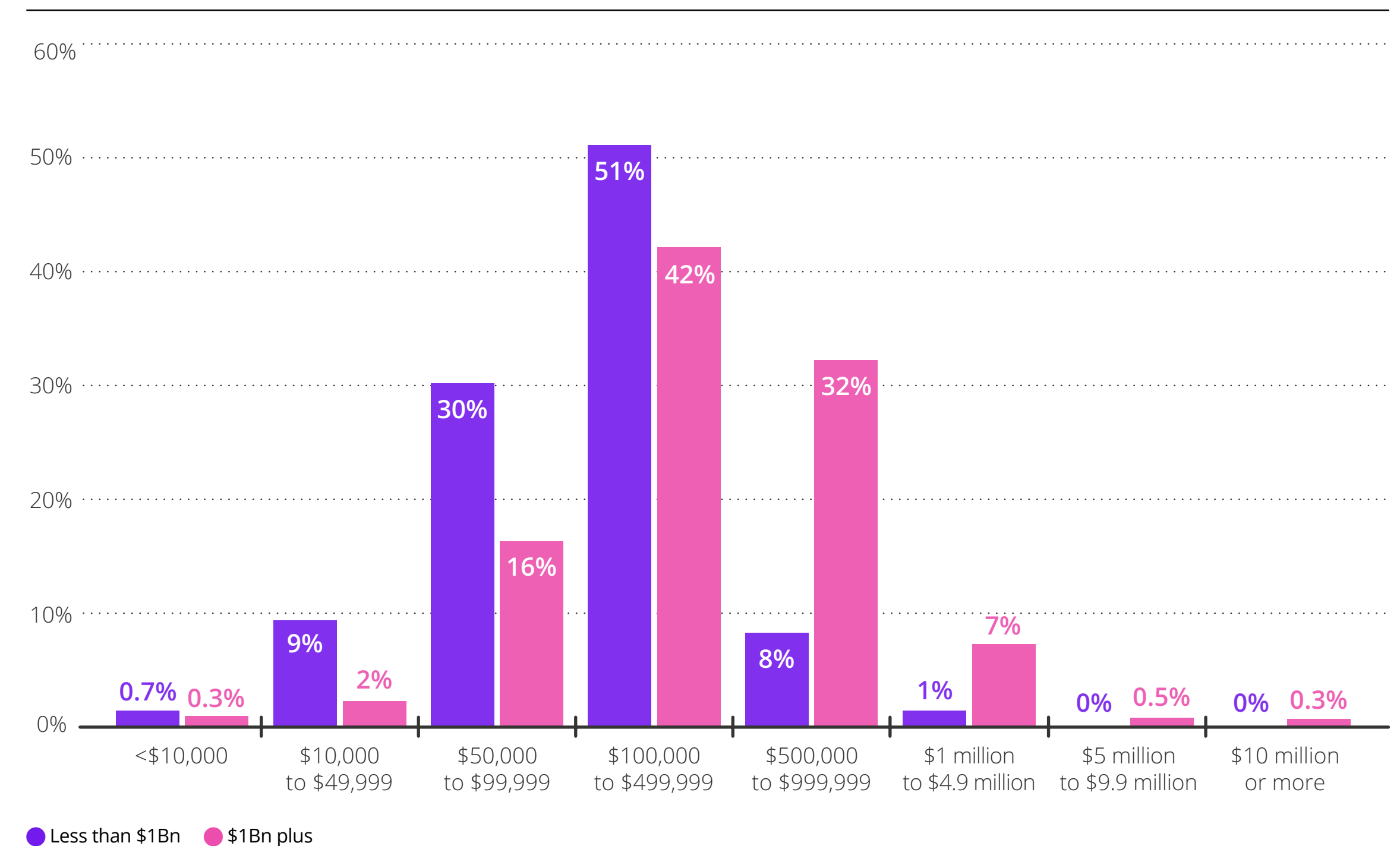
ENTERPRISES ARE SPENDING ON AVERAGE \$740K ON EDGE COMPUTING THROUGH 2026

Of the 365 enterprises generating more than \$1B in revenue that we surveyed, edge spending is an extension or part of the existing cloud budget in most organizations, with 32% of enterprise organizations classifying it this way, a sizeable minority, 25%, of enterprise organizations classifying edge spending as part of digital transformation budget. In mid-market and below the difference is less pronounced, with 28% of edge spending funded from the cloud budget, and 25% from the digital transformation budget.

Figure 8 shows enterprise organizations (\$1Bn plus) will be spending more than twice that of SMB and mid-size organizations by 2026 on edge. Enterprise spend on average will be \$990K compared to \$410K for mid-market and below. Value generation from edge is mostly expected to be derived from cost savings with 67% of all organizations expecting greater than 11% in cost savings from edge deployments compared to 60% that expect less than 10% revenue generation from edge. Omdia considers that this perspective is driven mostly by the currently identified use cases, see Figure 9 for a per industry perspective. These early use cases are nearly all related to either improving existing processes or providing better insights into existing data assets. Beyond this first wave of edge and AI deployments, the second phase will be more diverse and focused on new business opportunities such as those being pursued by the telcos.

Figure 8: Investment in edge

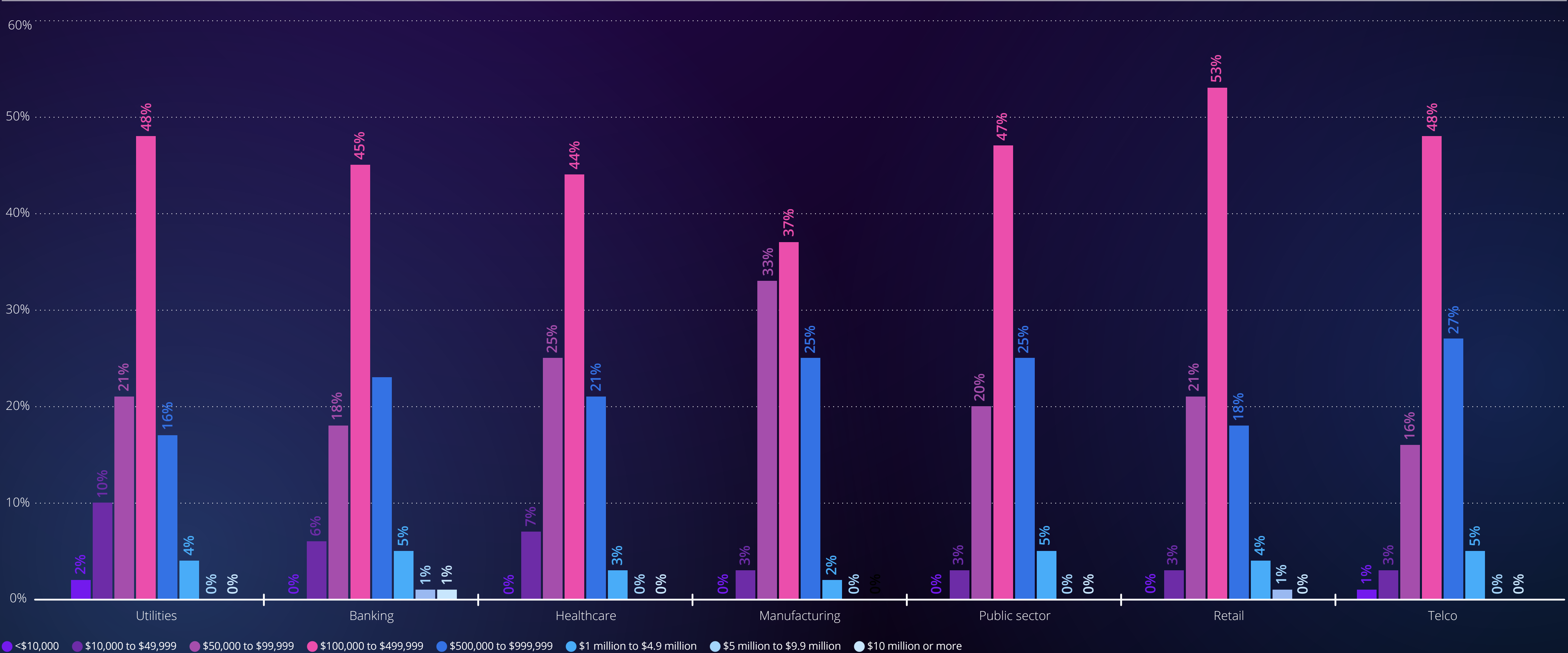
Q18: HOW MUCH DO YOU EXPECT TO INVEST/HAVE INVESTED IN EDGE COMPUTING HARDWARE, SOFTWARE, MANAGED AND PROFESSIONAL SERVICES DURING THE INITIAL 24 MONTHS OF DEPLOYMENT?



SOURCE: OMDIA

Figure 9: Investment in edge by industry

Q18: HOW MUCH DO YOU EXPECT TO INVEST/HAVE INVESTED IN EDGE COMPUTING HARDWARE, SOFTWARE, MANAGED AND PROFESSIONAL SERVICES DURING THE INITIAL 24 MONTHS OF DEPLOYMENT?



SOURCE: OMDIA

Figure 9 shows the expected spend by industry on edge over the next 24 months for organizations of all sizes. Omdia has estimated that banking and finance will spend the most with an average of \$670K, compared to utilities who expect to spend the least with an average of \$342K.

Other key spending indicators for edge are:



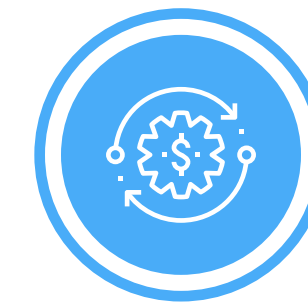
56% of large (\$5Bn plus) enterprises will spend between \$0.5-\$5M on edge.



7.5% of banking organizations expect to invest more than \$1M in edge compared to 2.1% in manufacturing.



42% of enterprises with more than \$1B plan to spend \$100,000 to \$500,000 on edge



33% of retail organizations expect to spend more than \$500,000 in edge in the next 24 months.



7.2% of organizations in APAC expect to invest more than \$1M in edge compared to 4.7% in North America and 3.1% in EMEA.

Expectation vs Reality: industries are unlocking new use cases to improve business analytics, security, and operations.

RETAIL: MORE THAN 44% PRIORITIZE FRAUD LOSS PREVENTION AND PERSONALIZATION.

Figure 10 shows the response of retail organizations to the survey in terms of the use cases being considered and deployed. Physical security was the top use case, which for retail is all about loss prevention and fraud detection. Improving customer experience with personalization and in-store promotions was the second use case, particularly for on-line retailers, which agreed with Omdia's IT Enterprise Insights (ITEI) survey 2023 (n=4800) where it was also second to increasing operational efficiency. While this may appear to contradict Figure 10, loss prevention in retail is a major part of operational efficiency. Interestingly, sustainability is not a driver for retail, Omdia's ITEI 2023 survey agrees as sustainability was the second lowest ranked use case. Retail in terms of operational

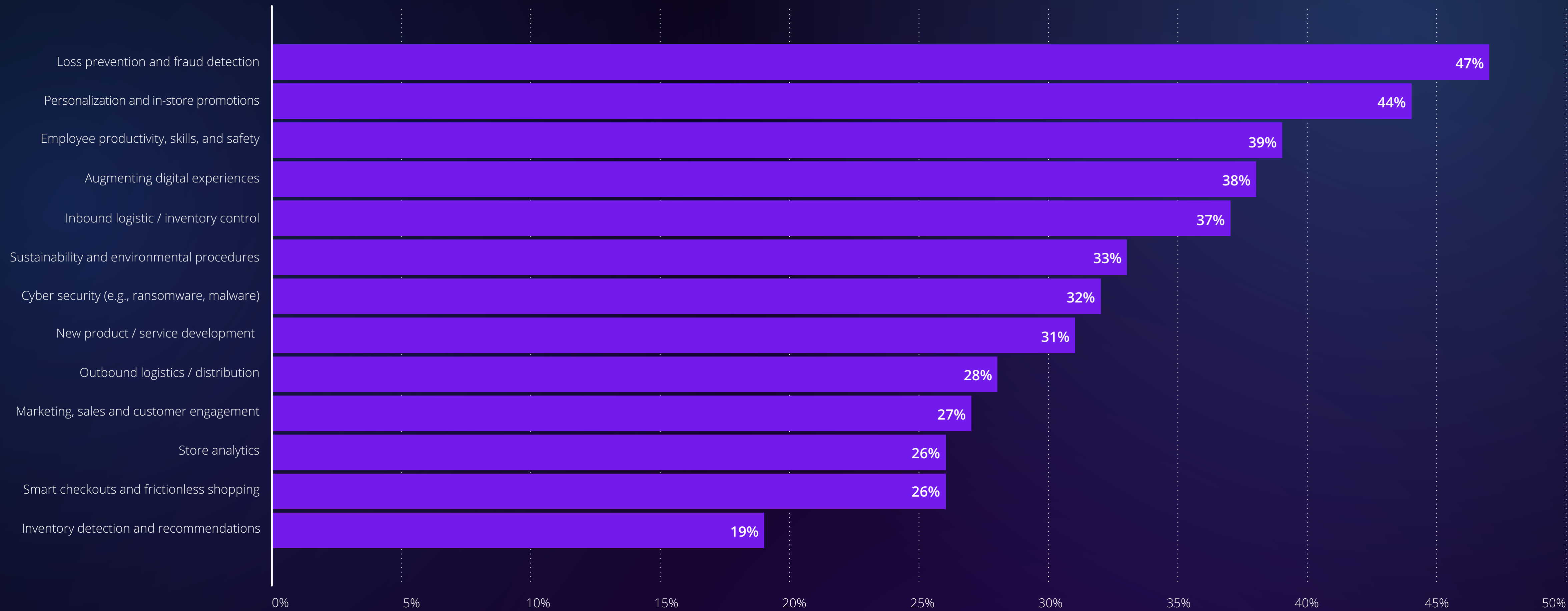
efficiency is also focused on employee productivity and the introduction of technology in store, at the edge, is seen as a big driver of cost savings. In fact, 49% of retail decision makers expect to get 11-20% in cost savings from deploying edge, while 47% expect to get 5-10% return in terms of increased revenue from edge. This shows that initially at least, retail see edge as a solution to deal with operational efficiency objectives in store as business analytics at the edge is the most popular workload being deployed, 84%. Retail is also more likely to use a cloud partner for deployment of the edge, 61%, which is an indication of where the core data needed at the edge is processed.

In terms of expected outcomes from edge initiatives, retail decision makers put improved security or compliance as the top expectation, with improved compute performance a close second, 48% and 44% respectively. Retail decision makers do not expect

to use open-source AI as this was the lowest ranked expected outcome, 17%. Retail organizations report that 26% are scaling AI deployments across multiple business functions, with only 6% having no plans for AI. In fact, 55% of retail organizations are investigating or piloting AI use cases, which indicates that in retail the use of AI is seen as 'must' have technology.

Figure 10: Top Retail use cases

Q1: WHAT ARE YOUR ORGANIZATION’S GREATEST CHALLENGES/AREAS OF IMPROVEMENT (RETAIL, ECOMMERCE, AND CONSUMER PRODUCT GOODS)?



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)

MANUFACTURING: 41%+ RANK PREDICTIVE MAINTENANCE AND INVENTORY MANAGEMENT

Figure 11 shows factory floor analytics are the top use cases for manufacturing organizations for edge computing and AI. We have seen similar results from manufacturing companies according to Omdia's ITEI 2023 survey, that found the drive for efficiency and reduced down-time is a key priority. The ultimate purpose of this is to support the business priority in manufacturing, which according to Omdia's ITEI 2023 survey is to increase revenue and grow the business. Many manufacturing organizations operate a 'lean' model where inventory is delivered just in time for the production need. The survey confirmed this, as asset inventory and tracking is the top workload for edge (61%) for manufacturing organizations. Predictive maintenance is another obvious use case for manufacturing where early detection of potential problems can be accommodated in the production schedule and therefore improve the line efficiency. In Omdia's ITEI 2023 survey, intelligent automation and AI in manufacturing was one of the top technology trends for investment in 2024, with over 16% of respondents ranking it as the most important, making it fourth overall. In manufacturing, process optimization is not considered as a priority use case because most

manufacturing organizations have developed mature, well-defined processes. However, where edge and AI are considered important is in terms of product quality, where manufacturing line monitoring can be used to detect product quality issues and ensure these are remediated quickly, therefore reducing waste. Manufacturing sees edge and AI in equal terms when it comes to financial benefits. The survey found that 42% of manufacturing organizations expect to get more than 11% return in revenue from edge. Meanwhile, 58% expect to receive more than 11% in cost savings from edge. Manufacturing represented 15% of the non-cloud users, and this can be seen as only 51% of manufacturing organizations leverage a cloud partner to deploy at the edge.

Manufacturing organizations report that currently they have identified at least one-use case and are developing a pilot, 35%. Manufacturing is less advanced than other industry sectors as only 10% of manufacturing organizations are scaling AI deployments across multiple business units. However, manufacturing organizations are not 'Luddites' as only 6% report no plans for AI currently. Omdia considers that while cautious, manufacturing has recognized the value of AI and edge, 48% of manufacturing organizations state risk analysis and mitigation in real-time as the most significant capabilities that will transform its business.

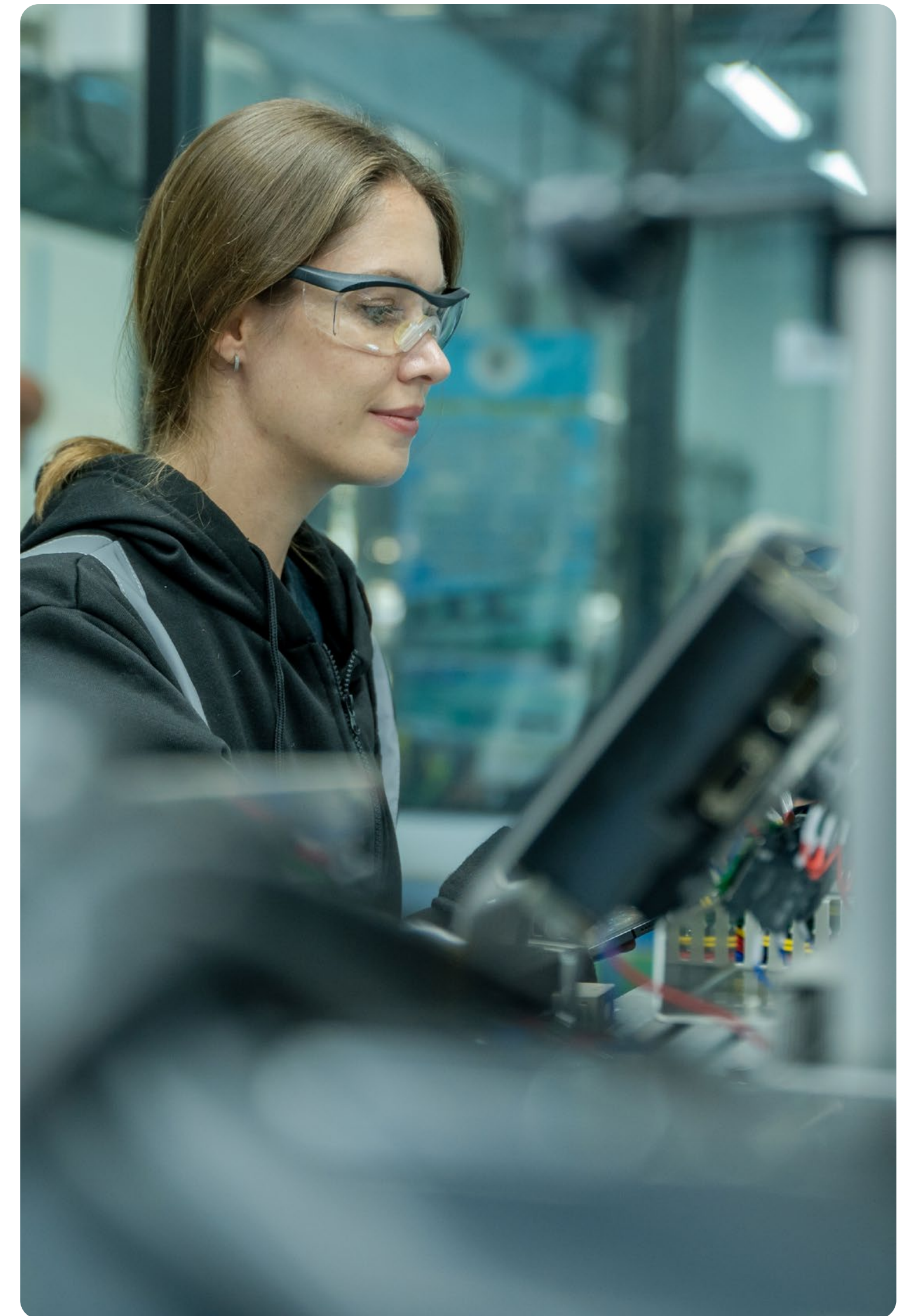
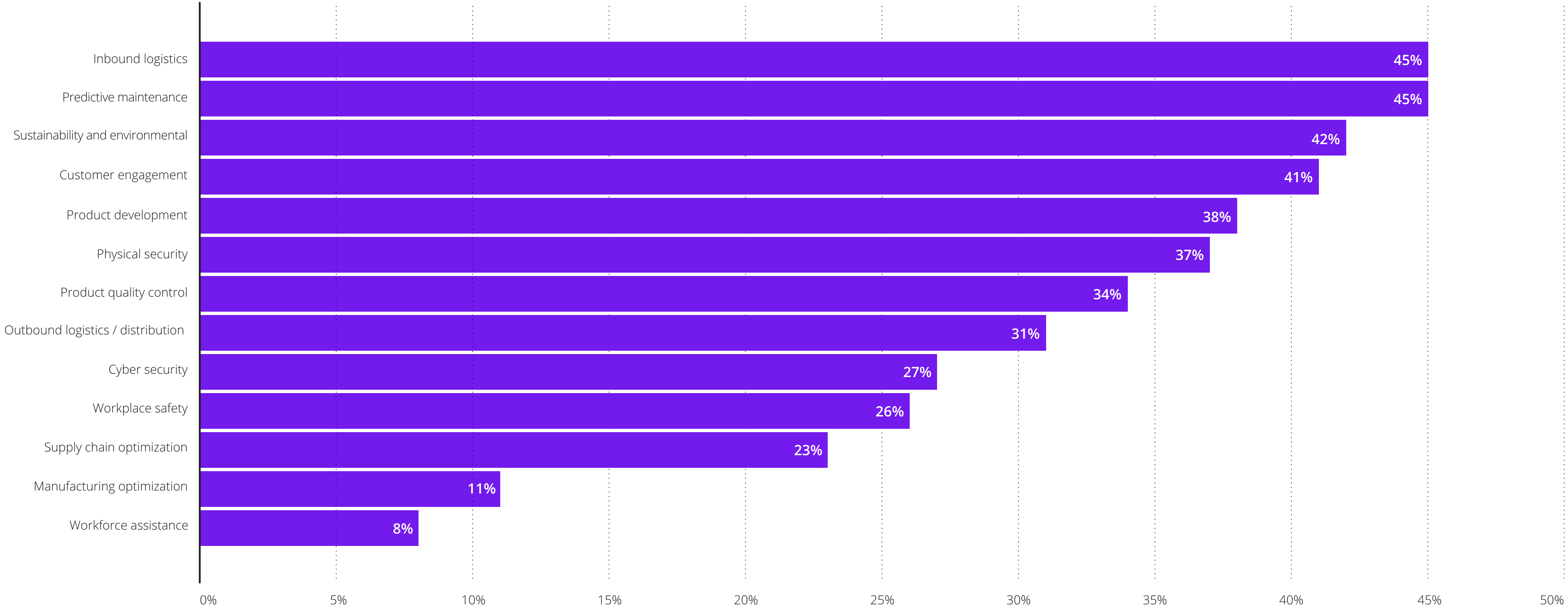


Figure 11: Top Manufacturing use cases

Q2: WHAT ARE YOUR ORGANIZATION’S GREATEST CHALLENGES/AREAS OF IMPROVEMENT (MANUFACTURING)?



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)

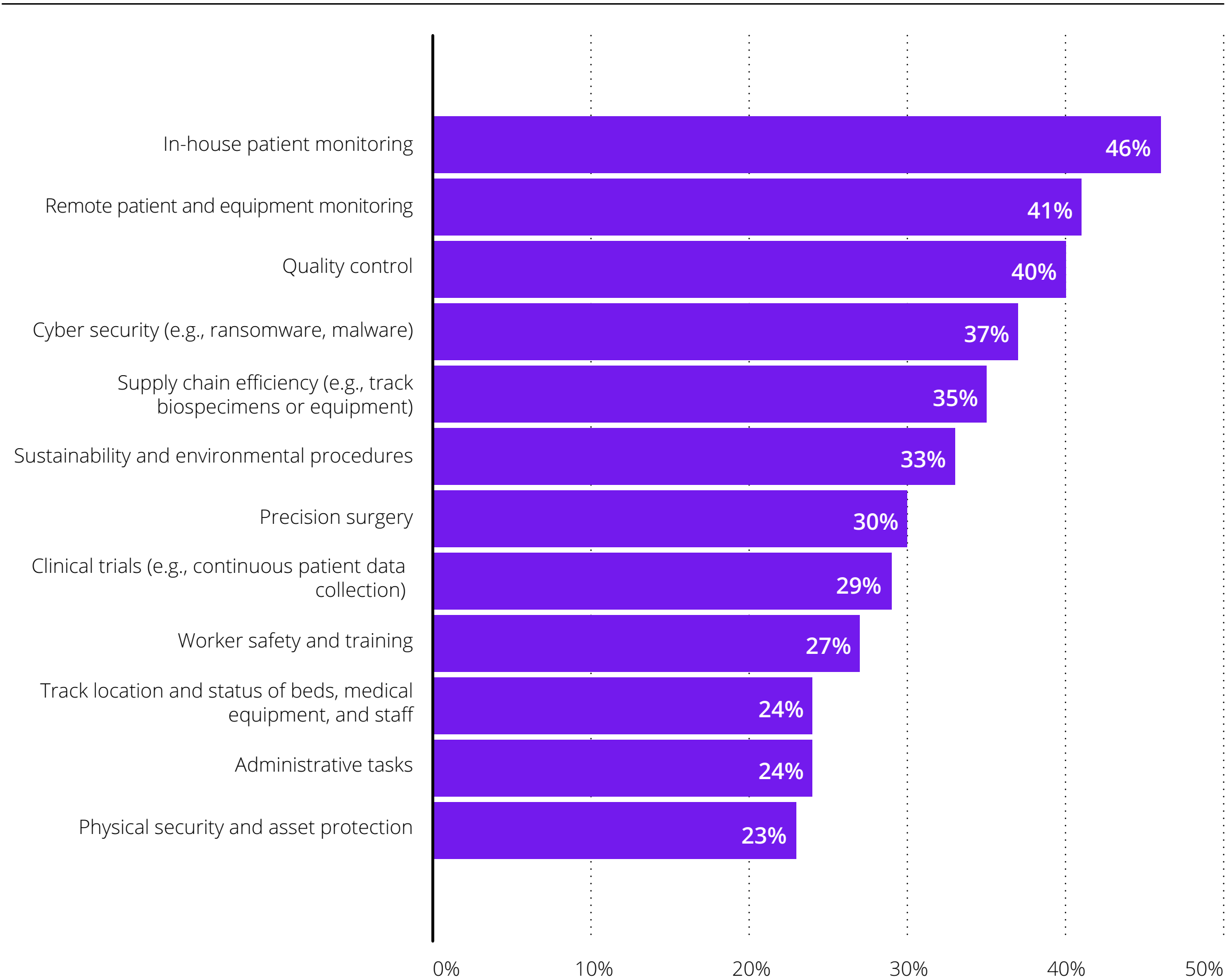
HEALTHCARE IS ALL ABOUT THE PATIENT EXPERIENCE

Figure 12 shows that in healthcare it is all about the patient and how patients can be remotely monitored. The clear top use case was in-house patient monitoring, which aligns with Omdia's ITEI 2023 survey data showing healthcare's top business challenges are improving efficiency and improving patient experience. The top workload being deployed by healthcare at the edge is data collection, which is consistent with the use case. Another key area for healthcare is concerns over cyber security, not physical security, which Omdia translates to mean the access to the healthcare facility is open, but the IT data and equipment are where the concerns exist. Healthcare is less sure in terms of the cost savings from edge and AI, with 32% expecting a 5-10% cost saving and 32% expecting a 11-20% cost saving. However, they are more consistent in terms of the expected revenue, 54% expect less than 10% in terms of new value from edge. This uncertainty in terms of the cost savings from edge is not being seen in the intentions, as healthcare plan a three-fold increase in the number of edge deployments in the hundreds by 2026 compared to today.

Healthcare shows a leading approach to AI and edge, with 21% of respondents reporting a live AI deployment in at least one business function, with 20% of respondents scaling AI across multiple business functions. However, Healthcare does have a slightly higher percentage of those with no plans than other industries, 8%. Healthcare organizations are very clear when it comes to their expectations of what is required for a successful AI and edge implementation. 91% put the ability to deploy, manage, and scale standardized software from cloud to edge. This clear expectation signals that Healthcare believes standards are needed in the AI and edge market if the technology is going to deliver its expected value.

Figure 12: Healthcare use cases for edge

Q3: WHAT ARE YOUR ORGANIZATION'S GREATEST CHALLENGES/AREAS OF IMPROVEMENT (HEALTHCARE AND LIFE SCIENCES)?



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)

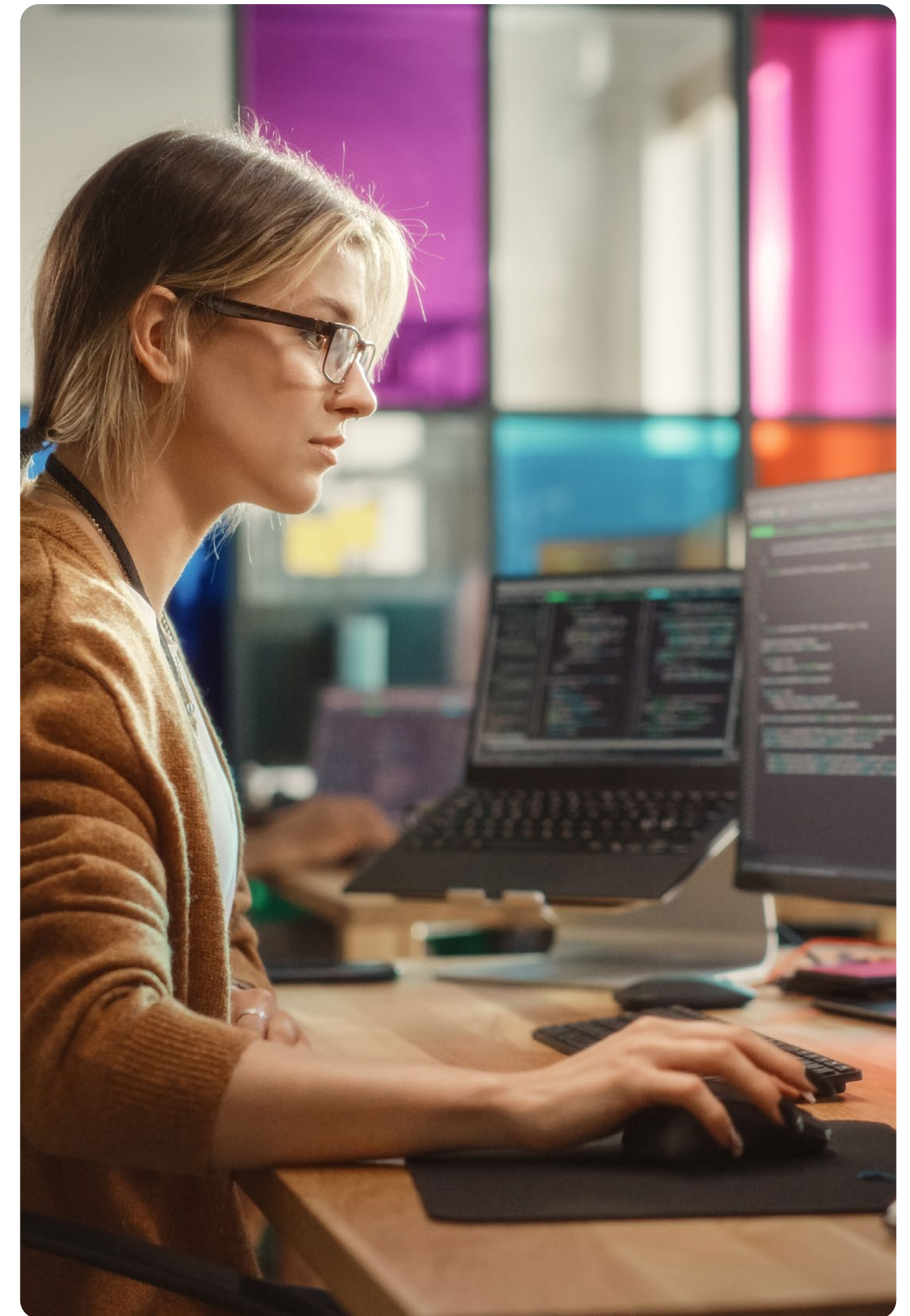
Regulated industries have different requirements from edge

The regulated industries (this includes banking, telecom, utilities and public sector) in this survey were all given the same use case questions to answer, and the results are less industry specific than the industries previously detailed.

BANKING - 75% PRIORITIZE PRODUCT/SERVICE INNOVATION

Banking decision makers are prioritizing innovations to improve customer and staff experiences to differentiate themselves in the market. Figure 13 shows that product and service innovation is ranked higher than fraud detection as a use case. Omdia considers that this use case covers emerging aspects in the banking industry. For example, fraudsters are manipulating computer-generated images to animate them with motion, resulting in deepfakes used to defraud victims. These tools utilizing AI are currently evading the mechanisms that are being deployed to defend against attacks, which means organizations are struggling to adapt to emerging threats, and remote identity verification techniques are fast

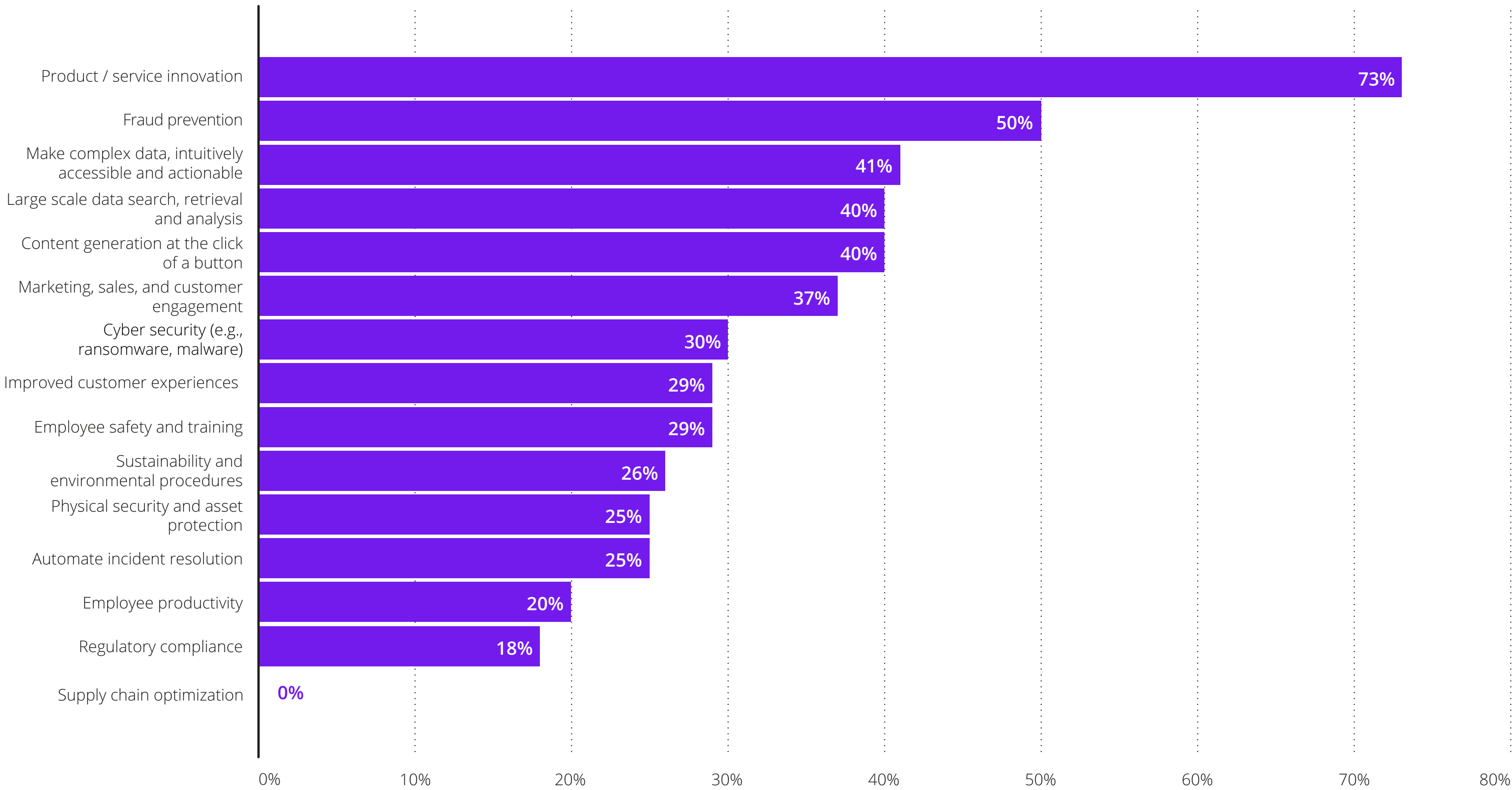
becoming outdated. Unsurprisingly, the digital identity market is attracting the attention of regulators and market participants alike, and although in its infancy, it has the potential to become a major growth area for edge and AI in the banking and finance sector. In fact, 45% of banking respondents expect to invest \$100K-\$500K in edge over the next 2 years with 51% expecting the number of edge locations to be in the 50-99 number range by 2026. Banking considers edge as a cost saving technology as 44% of banking respondents expect a 11-20% cost saving from edge compared to the majority, 53%, that are less optimistic about value generation (less than 10%).



Banking’s expectation of what is required to deliver a successful AI and edge deployment show three key capabilities, the ability to deploy, manage, and scale standard software, security systems and tools upgrade, and location level network speed upgrade, 79%, 77%, and 75% put as essential respectively. The leading expectation can be linked to the banking organizations stated business objectives for 2024 of delivering increasing operational efficiency. This was the top challenge identified in Omdia’s IT Enterprise Insights 2023 survey (n=627) with 24% of respondents ranking it number one.

Figure 13: Banking use cases for edge

Q4: WHAT ARE YOUR ORGANIZATION’S GREATEST CHALLENGES/AREAS OF IMPROVEMENT (BANKING AND FINANCIAL SERVICES)?



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)

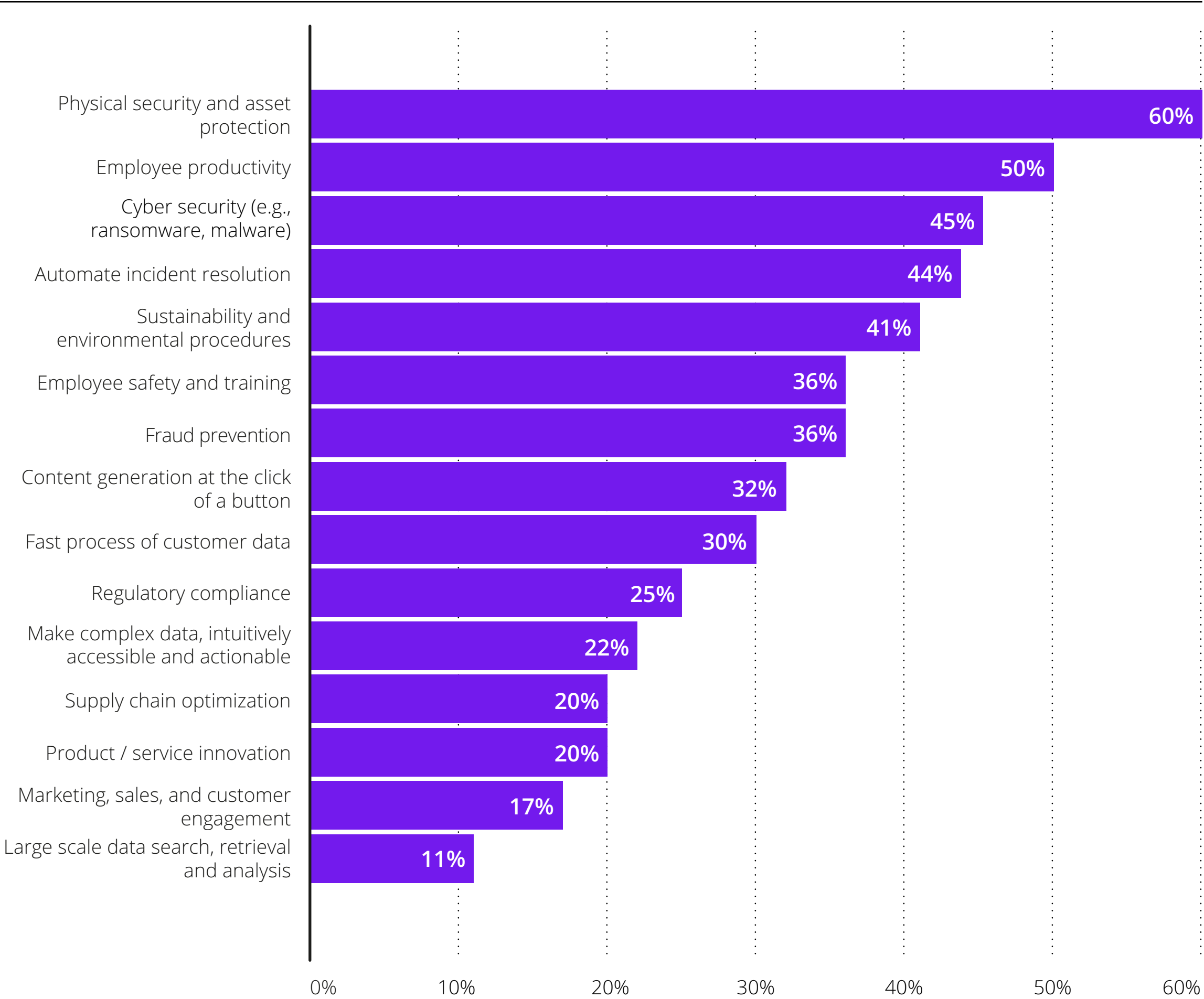
PUBLIC SECTOR – 60% ARE FOCUSED ON PHYSICAL SECURITY AND ASSET PROTECTION

Figure 14 shows that for the public sector, physical security and asset protection is the top use case. Considering the diverse nature of public sector organizations, this shows a remarkable level of agreement. Omdia’s IT Enterprise Insights Survey 2023 confirms that government agencies expect modest increases in IT spending to continue, with over 50% of agencies anticipating a 1–6% increase in most functional areas. This investment is in business continuity (asset protection), which has been driven by both political and technical concerns about the macro-societal environment, including post-COVID-19 health considerations, cyberattacks, natural disasters, and wars in several regions. The public sector considers edge as more of a cost saving technology with 71% of public sector respondents expect a greater than 11% cost savings from edge. Value generation from edge is not seen as the primary driver for public sector as 62% expect less than 10% value from edge in terms of revenue. The number of edge locations in the public sector in the 50-99 range will increase 50% by 2026, with 70% of public sector customers expecting to invest less than \$500K.

In terms of maturity public sector show a cautious approach, but not one that has dismissed AI and edge. Only 4% of respondents stated they have no plans, but only 6% have live AI deployments currently. However, 47% of respondents are piloting AI use cases, which indicates that the public sector could have a majority of organizations with live AI uses cases within a couple of years. Public sector organizations report in Omdia’s Enterprise Insights survey 2023 that building a modern workplace was the top digital transformation initiative, with 13% stating this is well advanced, which is why public sector put improving employee productivity as its number two priority where AI and edge can deliver results.

Figure 14: Public sector use cases for edge

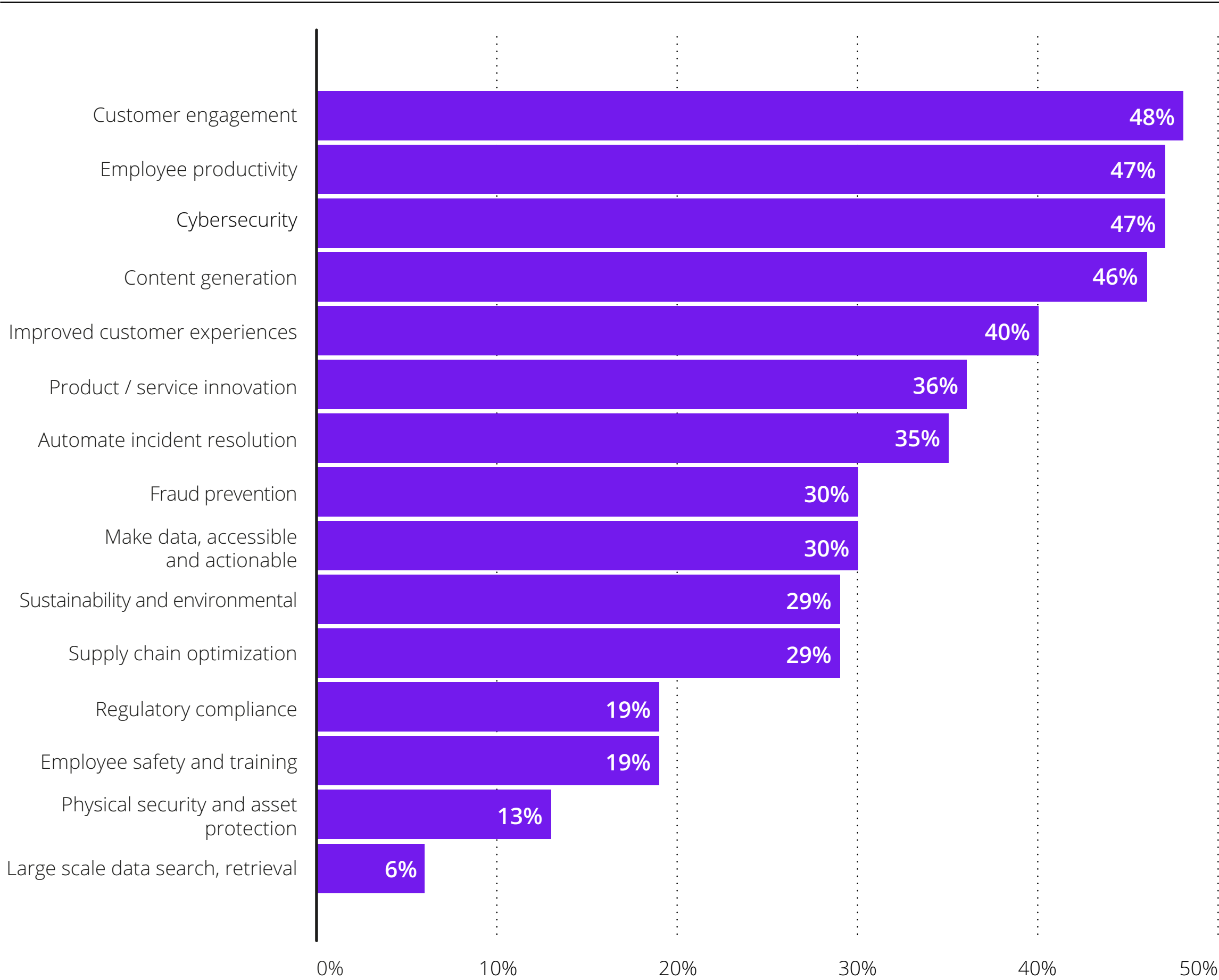
Q4: WHAT ARE YOUR ORGANIZATION’S GREATEST CHALLENGES/AREAS OF IMPROVEMENT (PUBLIC SECTOR)?



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)

Figure 15: Telecommunications use cases for edge

Q4: WHAT ARE YOUR ORGANIZATION’S GREATEST CHALLENGES/AREAS OF IMPROVEMENT (TELECOMMUNICATIONS)?



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)

TELECOMMUNICATIONS – NEARLY 50% ARE FOCUSED ON CUSTOMER AND EMPLOYEE EXPERIENCE

Figure 15 shows that for telecommunications organizations Improving customer experience and cyber security are the top use cases for edge. This view was collaborated by the industry at its big global event Mobile World Congress (MWC) Barcelona 2024. The take-away from MWC was that the relentless focus on AI has reignited interest in the evolution of telco edge nodes and how these nodes can be monetized for third-party workloads. MWC was full of AI initiatives, most of which were still somewhat nascent and preparatory for the widespread usage of the technology in the future. However, what was clear is that AI is intended for telco networks as an enabler of better networks and third-party services. The evidence of the optimism in edge and AI from the telecommunications sector is evident as 25% expect to get more than 20% in terms of cost savings from edge. Meanwhile the uncertainty of the commercial model was also evident, 60% expect less than 10% in terms of new value revenue from edge. This uncertainty is not restraining telco investment, as 32% will spend more than \$500K on edge by 2026 and across telco an expected 50% increase in the number of edge deployments in the hundreds is expected by 2026.

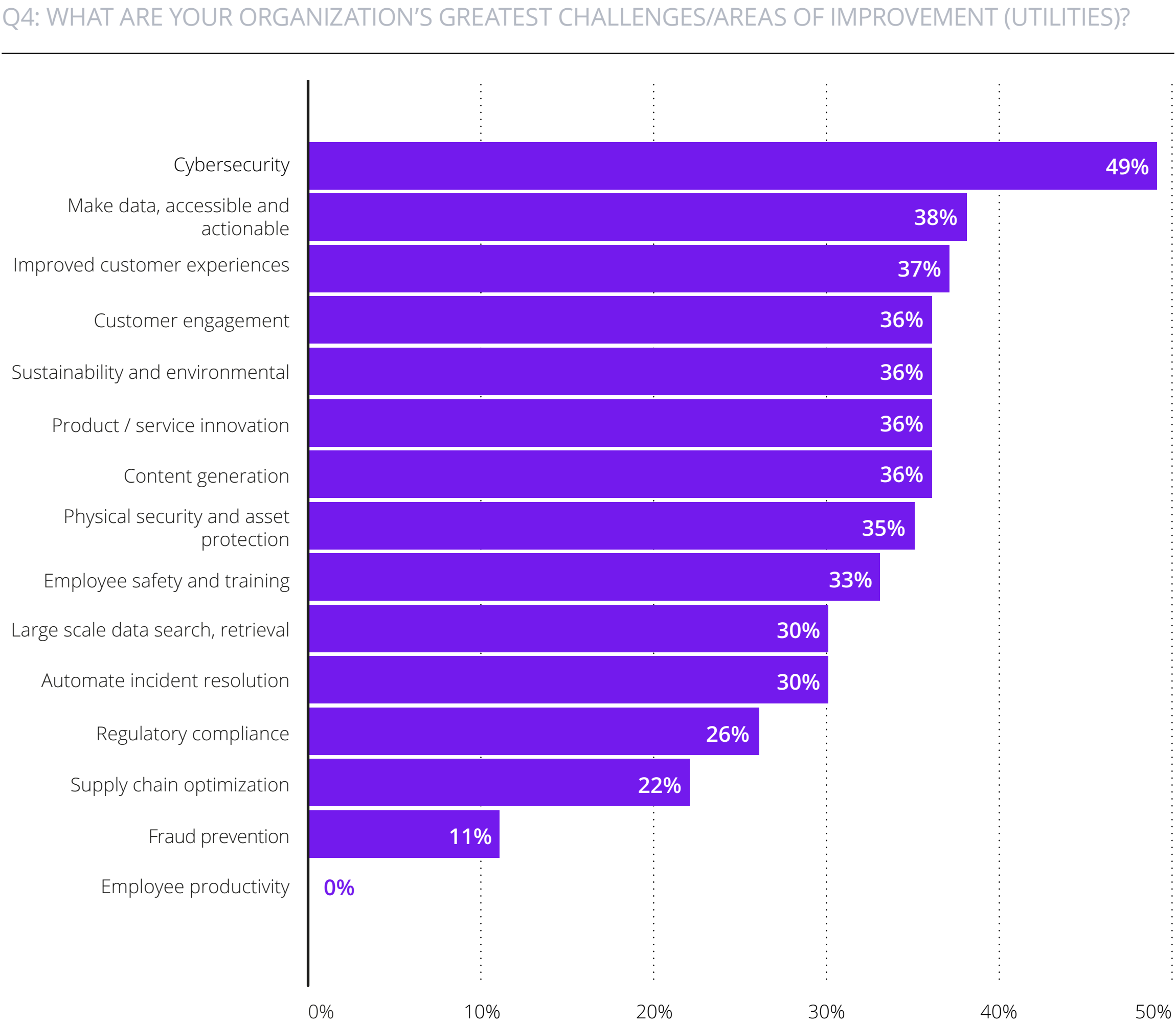
Telcos reported that they are very active in the use of AI and edge, with 20% of respondents reporting at least one live AI deployment in one business function and 15% scaling AI across more than business function. However, the majority of Telco respondents stated they are investigating use cases, 26%. The biggest restraining force for telcos is cybersecurity and risk, 37% of respondents put that as the top barrier to faster AI and edge adoption. This agrees with Omdia’s Enterprise Insights 2023 survey where improving operational resiliency was the top business challenge in 2024.

UTILITIES – NEARLY 50% ARE CONCERNED ABOUT CYBERSECURITY

Figure 16 shows that cyber security is the top use case for edge in the utilities sector. Omdia’s ITEI 2024 survey found that work force mobility was the top use of AI in the sector. Which combined with its (utilities sector) extensive monitoring and remote metering capabilities makes security an obvious concern and use case for its edge estate. However, this sector is not investing as much as other sectors in edge, with 33% expected to invest less than \$100K by 2026, although the number of edge deployments in the hundreds will more than double by 2026 to 24% of the estate. The utilities sector sees cost savings instead of new revue as the most likely source of financial benefit, with 69% expecting greater than 20% savings from edge. Meanwhile, 73% expect less than 10% in terms of revenue value from edge.

Utilities organizations are more cautious about the adoption of AI and edge, with only 11% of respondents stating they currently have a live deployment in at least one business function. The majority, 43%, are piloting at least one-use case, with 29% still investigating possible use cases. On deeper analysis, utilities reported that risk analysis and mitigation in real time is the most transformative capability to its business, 62% ranked it most important. This agrees with Omdia’s Enterprise Insights 2023 survey where the top business challenge was increasing operational efficiency for utility companies. Utilities report that a lack of skills and security concerns are the two biggest barriers to faster adoption of AI and edge. These challenges demonstrate why utility companies report that more managed services options for AI and edge would be relevant to them. Managed services would help resolve the skills challenge and security issues by providing a trusted partner.

Figure 16: Utilities use cases for edge



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)

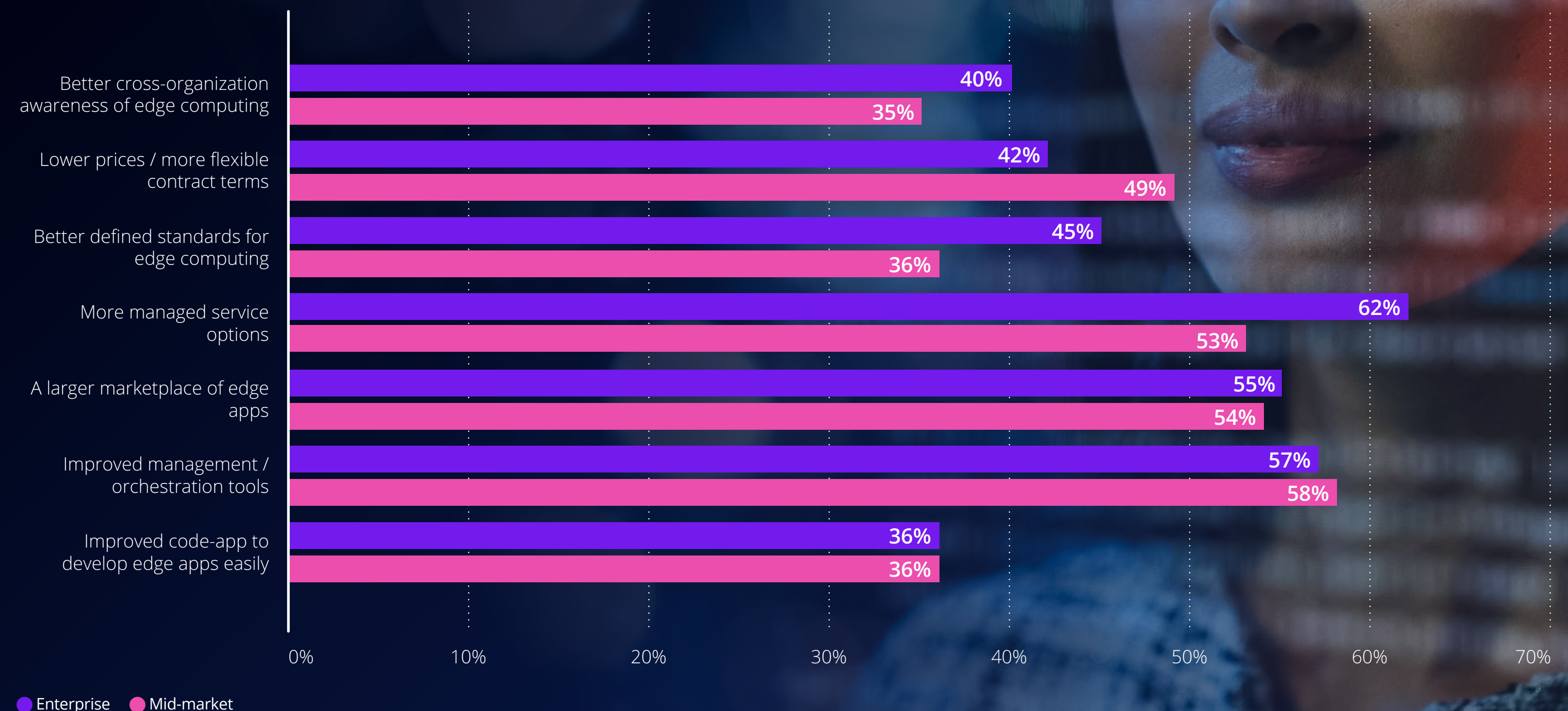
Conclusion

The survey clearly shows that edge is a topic of interest and a topic that all organizations have plans for in the next 12 months, because 100% of respondents stated they have an edge plan for the next 12 months. Cybersecurity and lack of skills are the top two barriers to faster adoption of edge and enterprise customers want more MSP offerings for edge to make deployment easier (see Figure 17). All organizations agree that the ability to scale and manage standard software from cloud to edge, 84%, is the top essential requirement from any edge solution provider.

Overall use cases are very industry specific but are focused on process improvements or customer experience. This is why most organizations expect more in cost savings than increased revenue from edge. However, edge deployments in the hundreds are the fastest growing segment, which shows that edge is beginning to scale. This is reflected in the average investment in the edge, which is expected to be \$740K by 2026, with enterprises spending nearly \$1 million on average on edge.

Figure 17: What is needed to make edge easier to deploy?

Q22: WHAT WOULD MAKE EDGE COMPUTING MORE RELEVANT TO YOUR ORGANIZATION?



SOURCE: OMDIA (RESPONDENTS COULD SELECT MORE THAN ONE OPTION)




Appendix

About

Google Cloud

Google Cloud is the new way to the cloud, providing AI, infrastructure, developer, data, security, and collaboration tools built for today and tomorrow. Google Cloud offers a powerful, optimized AI stack with its own planet-scale infrastructure, custom-built chips, generative AI models and development platform, as well as AI-powered applications, to help organizations transform. Customers in more than 200 countries and territories turn to Google Cloud as their trusted technology partner.

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About

Omdia

Omdia is a global technology research powerhouse, established following the merger of the research division of Informa Tech (Ovum, Heavy Reading, and Tractica) and the acquired IHS Markit technology research portfolio*.

We combine the expertise of more than 400 analysts across the entire technology spectrum, covering 150 markets. We publish over 3,000 research reports annually, reaching more than 14,000 subscribers, and cover thousands of technology, media, and telecommunications companies.

Our exhaustive intelligence and deep technology expertise enable us to uncover actionable insights that help our customers connect the dots in today's constantly evolving technology environment and empower them to improve their businesses – today and tomorrow.

*The majority of IHS Markit technology research products and solutions were acquired by Informa in August 2019 and are now part of Omdia.

Author

Roy Illsley

Chief Analyst, Cloud and Data Center Research Practice

askananalyst@omdia.com

Survey

Methodology

Omdia developed and conducted an independent research survey of 640 organizations via a structure set of questions around the topic of edge computing and AI. The responses of these questions were analyzed by a team of analysts in the cloud and data center practice at Omdia, and cross checked with other Omdia data on the topic from both a horizontal as well as an industry vertical perspective. The team of analysts generated a detailed presentation which was used to write this report.

Demographics

The 640 global organizations were 40% in North America and EMEA, and 20% from APAC. These organizations covered seven industry verticals: Banking and finance, Healthcare and life sciences, Manufacturing, Retail, Public sector, Telecommunications, and Utilities. 57% of the respondents were classed as enterprise organizations with revenues greater than \$1Bn. The survey was targeted at managers and directors in the technology division of these organizations, with 41% being manager level, 30% director level, 26% VP or C-level, and only 3% individual team members. 100% of respondents were familiar with edge computing and 86% were currently using public cloud computing.

References

Enterprise Insights 2023 n=4800 (November 2023).



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