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# Technology in Small and Medium Sized Enterprises

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**AI BUSINESS**







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**Digital transformation continues to drive technology investment, as IoT technology builds the environment for AI to be leveraged to its maximum value, with a future eye on quantum computing to further boost the technology's potential.**

While multi-million-dollar rollouts make headlines, it's the small and medium business community that provides much of the volume and innovation for future applications.

Smaller businesses can be more agile in experimentation and investment, less tied down by bureaucracy or the requirement for internal solutions.

However, there are challenges. In this survey, the top challenge is a lack of qualified in-house expertise, even ahead of budgetary issues.

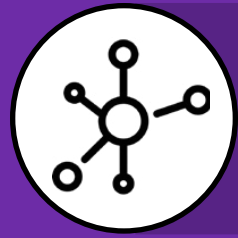
This comes during the age of a global race for AI talent, and one particularly highlighted by our North American audience.

Small and medium businesses are therefore relying on their partner network in their top three cited technologies for investment in the next 12 months: cybersecurity, cloud/edge computing and overall 'machine learning'. These point to a market still in infancy, with cross-application investment to build the foundations for future expansion.

In that same question, the leading cited application is 'chatbots and virtual assistants' – **a relatively mature and specific application, with more than over \$4.5 billion AI software spend globally in 2022, forecast to grow to \$9.8 billion spend in 2027, according to the Omdia AI Software Market Forecasts.**

Once these foundational technologies are implemented, the scale of adoption and ROI will only increase more quickly within small and medium businesses, which are more confident in seeing positive business impact from AI/IoT the further into the investment and deployment process, with 44% 'extremely confident' from those already running or scaling applications.

The challenge is in leveraging the partner network to get started, to unlock the huge potential to keep driving growth in AI and IoT.



## TALENT

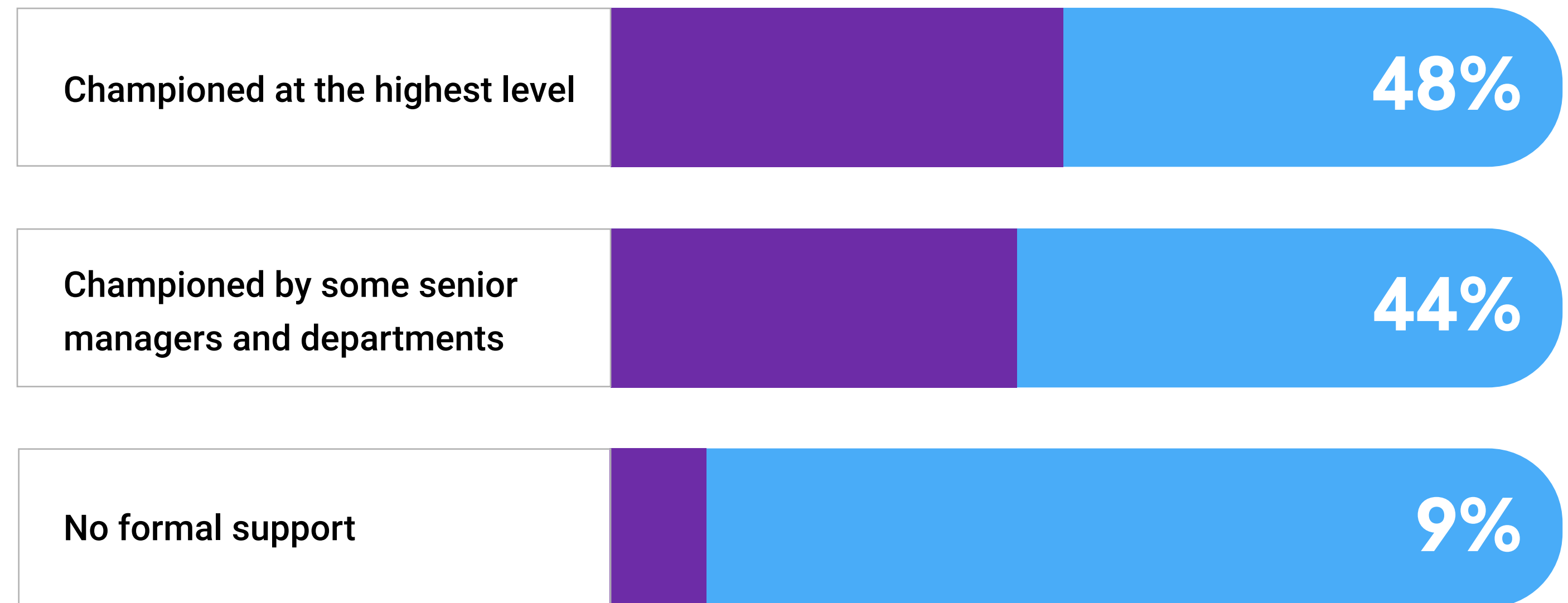
# Small-Medium Businesses Challenged by Lack of In-House Talent

While Internet of Things (IoT) and artificial intelligence (AI) technology deployment is rising across industries, the need for a workforce with the proper skills is a challenge for some businesses.

The talent challenge is one of the findings in a survey of more than 200 small and medium businesses conducted by IoT World Today and AI Business.

Across industries, the lack of in-house expertise is the top challenge, followed by lack of budget. Smaller businesses were found to struggle with talent more than larger companies.

## At what level are new technologies supported by senior management?



More than four in 10 smaller businesses (those making less than \$50 million a year), see the lack of qualified in-house expertise as their top challenge. Fewer than a third (32%) of larger businesses (those making \$50 million to \$1 billion) rate in-house expertise as their major challenge.

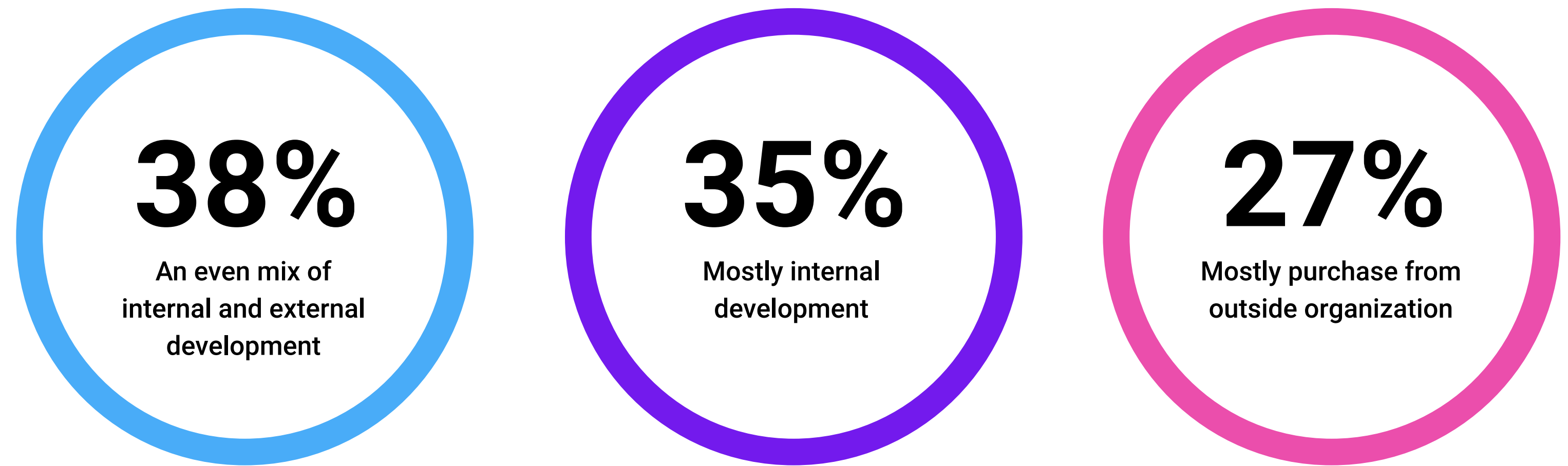
By region, the lack of qualified, in-house personnel was the number one issue for businesses in North America, with more than 40% of businesses identifying it as their top concern.

This is significantly higher than in other regions, with businesses in Europe ranking lack of talent as their sixth largest concern, behind lack of data, lack of budget and lack of strategy.

New technology at larger companies is championed at the highest levels of senior management (59%) compared to the high-level support provided at smaller companies (49%).

For technology deployment, there was a relatively even split, with more than a third (38%) of businesses having an even mix of internal and external development, more than third (35%) using internal development and more than a quarter (27%) mostly purchasing technology from outside organizations.

## What is/will be your organization's deployment strategy for emerging technology?



By company size, almost the same number of smaller and larger companies purchase technology from outside organizations.

**The primary desired outcome of businesses' use of new technologies is to increase revenue (24%), improve customer experience (22%) and improve employee efficiency (19%). The last desired outcome was to prove a return on investment (9%).**

As might be expected for having metrics in place to measure the success of technology initiatives, more than half (52%) of larger companies have metrics in place for all uses cases compared to fewer than a third (30%) of smaller companies.





## CYBERSECURITY

# Small-Medium Businesses Plan Cybersecurity Investments

No matter where they stand in the development of artificial intelligence or Internet of Things technology projects, cybersecurity is at the top of the investment list for many businesses.

**43%**

Of all businesses surveyed said they would be channeling the majority of their money into cybersecurity

**A global survey conducted by IoT World Today and AI Business of more than 200 small and medium businesses found cybersecurity to be the primary planned investment area over the next 12 months.**

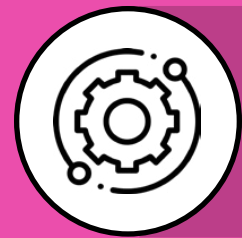
Of all businesses surveyed, 43% said they would be channeling the majority of their money into cybersecurity. This figure remained relatively steady for both small and medium businesses. For small businesses (less than \$50 million a year), 42% said they would be investing in cybersecurity, while nearly half (47%) of medium enterprises (\$50 million to \$1 billion) will invest in it.

This figure remained relatively consistent regardless of the stage of development. Businesses developing, piloting or running a project all reported similar figures, with more than a third planning to invest in cybersecurity.

For businesses planning to scale their IoT or AI projects, this rose dramatically, with 75% saying they would be investing in cybersecurity over the next year.

**Cybersecurity was the leading area for investment in North America by a significant margin, with more than half (56%) saying it was a key investment area.**

This figure is nearly double that of businesses in Europe, with 29% of enterprises there planning to invest in cybersecurity.



## TECHNOLOGY

# Small-Medium Businesses Face Barriers to Technology Adoption

Depending on company size, technology adoption barriers range from the lack of qualified staff to a lack of strategy. Those are among the findings in a survey of more than 200 small and medium businesses conducted by IoT World Today and AI Business.

**37%**

The primary barrier to technology adoption for larger firms was lack of strategy

**The survey found a lack of qualified in-house personnel, a lack of budget and the complexity of integrating these technologies to be the three primary barriers to adoption for small and medium sized businesses.**

For smaller companies (those making less than \$50 million a year), lack of talent and budget were the two main obstacles, with two fifths (40%) of businesspeople identifying each as their leading concern. Complexity of integration was the third largest barrier, with 38% identifying it as a leading concern.

Larger companies (those making \$50 million to \$1 billion) identified different barriers. The primary barrier to technology adoption for larger firms was lack of strategy (37%), followed by complexity of integration and lack of talent (32%), and then compliance and regulatory concerns (30%).

For companies developing and deploying these technologies internally, lack of budget was the leading adoption barrier for almost half (48%). For those relying primarily on external sources for this technology deployment, lack of talent and complexity of integration were the main obstacles (49%).

**By region, businesses in North America said lack of talent was the leading barrier (40%).**

**In Europe, lack of budget was the leading obstacle to technology adoption for businesses, though lack of data and data quality issues was also a leading issue for smaller businesses.**

# OMDIA Perspective:



**Josh Builta**

Senior Director for the Applied  
Intelligence Research team at Omdia

## Global Economic Challenges will not deter the Digital Transformation

**The pace and scale of digital transformation is increasing exponentially. Fueled by continued evolution and convergence of technologies to include IoT, AI, Edge Computing and 5G, the movement will only accelerate in the years to come. This transformation is bringing about significant and lasting change, and fundamentally changing how businesses and industries in all regions of the world will operate in the future.**

While the drive toward digital transformation did not start with COVID, it is clear the pandemic accelerated the process in most organizations.

The unique challenges that the pandemic presented such as labor shortages, supply chain and worker safety concerns forced enterprises to turn to technology to maintain business continuity. While live in most parts of the world returning to normal, economic headwinds are now posing new challenges and leading to question on how this environment will impact adoption of transformative technologies in 2023.

Josh Builta discusses this topic and other issues his team of analysts are looking at in 2023.

### How are the current economic conditions expected to impact technology adoption among enterprises in 2023?

Obviously this will vary from company to company and from industry to industry. However, at a broad level, these difficult economic factors are actually likely to act as a catalyst for digital transformation across businesses. Quite simply, this environment means companies need to do more with less, such as reduced revenues or fewer employees.

As we saw with COVID, enterprises are embracing the fact that adopting technology across their operations, in areas like supply chain management or customer engagement, can allow them to survive, and in some cases thrive, despite external challenges. We are seeing evidence of this in much of our research.



Market adoption of AI is accelerating rapidly, moving from the early adopter stage into the critical early majority phase. In our AI Maturity Survey, in which over 400 enterprises participated, **43% of companies now have live AI projects. We see a similar trend for IoT. In our Omdia IoT Enterprise survey we found that about 75% of enterprise IoT projects had moved beyond planning stages and that a remarkable 91% of these projects had met or exceeded expectations.** The bottom-line is we see no to little evidence that adoption of these technologies waning in 2023. In fact, it's just the opposite.

### **What are some of the key things occurring in IoT at the moment?**

As I noted, the digital transformation means a growing number of enterprises viewing IoT solutions as a critical building block to their future success. We also see that IoT is playing a key role in environmental sustainability efforts, which we expect to be an increasingly important topic in 2023 and beyond. In the Omdia IoT Enterprise survey, about 84% of respondents said they were harnessing IoT to meet their sustainability goals.

On the technology side advancements including 5G networks and edge computing are set to open new IoT use cases including mission critical applications that require real time processing of data and ability to take actions within milli-seconds. At the other end of the spectrum, low power wireless technologies are making it possible to connect a growing range of simple devices in a costly manner.

Collectively, this means the potential use cases where IoT can be used is growing, while the barriers typically associated with IoT implementation are shrinking.

### **Generative AI (GAI) and ChatGPT are getting a great deal of attention now. What would you tell companies looking at those technologies?**

These are undoubtedly exciting times for Generative AI. However, it is critical to remember the market is still at a very early stage. While there will be a lot of innovation in this area in 2023, there will also confusion. Omdia does believe that enterprises should begin investigating the implications GAI might have on their organizations. The rapid development in GAI means new applications and use cases will quickly emerge. If your organization is not monitoring this space, it may lose out on a potential competitive advantage.

At the same time, organizations must proceed with caution. Core risks we associate with AI adoption—bias, privacy, security, responsibility, consistency, and explainability—apply just as much or more so to GAI. Companies should implement a usage policy for GAI that is in line with corporate data privacy, security requirements, and perhaps most importantly, ethical guidelines.

### **Additional reading:**

[2023 IoT trends](#) | [2022 AI review](#) | [Quantum computing market tracker Q1 2023](#)