

ATTITUDES TO INNOVATION

A deep dive into the technology
impacting supply chains

Organizations are being forced to become more proactive to the challenges thrown at the modern supply chain. Difficult economic and operational climates characterized by labor shortages, a lack of available capital, and supply disruptions require forward planning accessed by digitization and data-driven decision making.

Purpose built, intelligent applications and strategies are shaping the future of supply chains, signaling a departure from the manual approaches of the past.

Automation and robotics, artificial intelligence, simulation, the Internet of Things, predictive analysis, and many more innovative technology solutions offer tremendous benefit for supply chain networks. To make the most of today's technology, supply chain leaders face the challenge of justifying its cost and attaining the expertise to implement the solution at full capacity.

In our 'Attitudes to Innovation' report, TMX Transform asked over 250 supply chain and logistics key decision makers to determine industry awareness, attitudes, and uptake towards innovative supply chain solutions. The research, conducted in 2024, identified the most adopted technologies as well as the impact they have on business productivity and growth.

Business Owners, C-Suite Executives, Senior, and Middle Management from a variety of supply chains businesses were also asked about the benefits of technology innovations in solving problems for their organization, and the barriers to adoption.

The data from this survey demonstrates how innovative technology is helping organizations through challenging financial environments and shines a light on the reasons why innovation isn't being embraced as well as it could be.

Some supply chain leaders remain in the dark about modern technology

For many, innovation in the supply chain has superseded being a luxury add-on and is now an imperative part of their day-to-day strategy. However, there is still a lack of awareness of the existence and benefits of certain technology solutions amongst logistics leaders.

Almost a quarter of respondents (24%) are unsure what AI/machine learning is or does, while a third (33%) don't know the benefits of robotics and automation. The numbers suggest that despite automation and robotics becoming more popular on warehouse floors, many organizations are still reliant on manual processes.

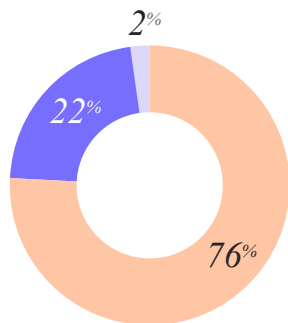
As the company size increases, so does the awareness of technology solutions, suggesting a knowledge gap for small to medium businesses who are often grappling with staff shortages.

Additionally, a staggering 60% of respondents were unsure or didn't know about simulation or digital twins and what role they play in the supply chain – giving opportunities to model hypothetical scenarios without having to physically change assets.

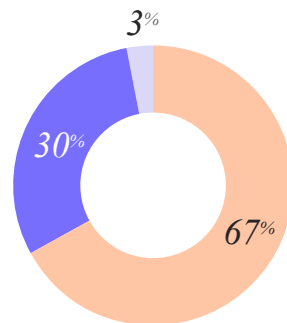
Simulations and digital twins are both computer representations of a process or system. Simulation is a preferred tool in predicting your future, allowing you to run multiple scenarios and understand outcomes before taking a step, while digital twins allow you to replicate a current operation in detail, recreating a physical operation in a virtual world.

Please identify your awareness of each of the following within supply chain/logistics

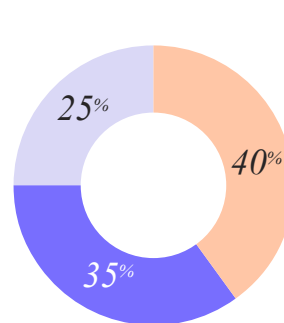
■ I know what this is or what it does
 ■ I have heard of it but I am not sure what this is or what it does
 ■ I have no idea what this is or what it does



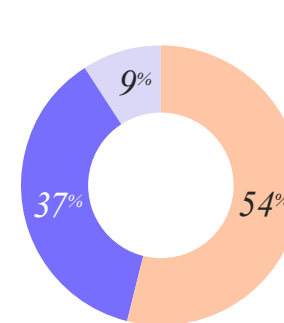
Artificial Intelligence (AI) & Machine Learning (ML)



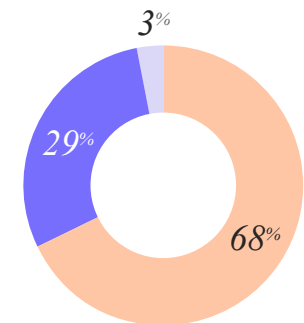
Robotics & Automation



Digital Twins & Simulation



Blockchain Technology



Augmented Reality (AR) & Virtual Reality (VR)

A photograph of three people wearing white VR headsets with the TMX logo on the front. They are standing in a warehouse or industrial setting with tall metal shelving units filled with cardboard boxes in the background. The person in the foreground is a man with a beard, wearing a dark blue jacket. To his right is a woman with long brown hair, also wearing a dark jacket. Behind them, another person is partially visible, also wearing a VR headset. The scene is lit with warm, industrial-style lighting.

A staggering 60% of respondents were unsure or didn't know about simulation or digital twins and what role they play in the supply chain.

“Simulation's strength lies in its ability to compare scenarios, serving as a valuable comparison tool rather than an ROI tool. To better understand the true capabilities of simulation, senior leaders need to grasp the root cause of their problems first, which is becoming increasingly difficult in a more connected, complex world. TMX is uniquely positioned to understand both the problem at hand and the capabilities of simulation. It's crucial that we challenge the status quo, provoking and stimulating new ideas.”

Glen Borg, TMX Transform Head of Simulation

Top technology this year

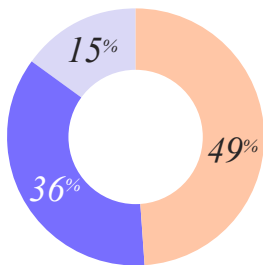
Most business leaders are on board with technology in the supply chain, with three quarters (75%) of respondents having implemented innovative technology within their organization.

Of these, the most commonly implemented technology solutions are predictive analytics, sustainable technology to reduce carbon footprints, Internet of Things, and AI or machine learning.

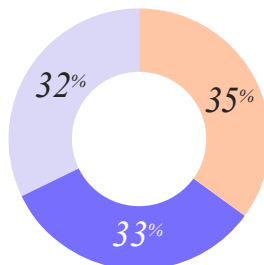
Supply chain leaders are conscious of solutions for the future as well as the present. Despite a lack of knowledge around what simulation can do amongst some industry leaders, many have the technology in their future plans. When asked which technology respondents hadn't implemented yet but plan to, simulation and digital twins were the most common response, with 44% of decision makers planning on embracing these technologies.

What emerging technologies, if any, have you implemented, or plan to implement, within your organization's supply chain?

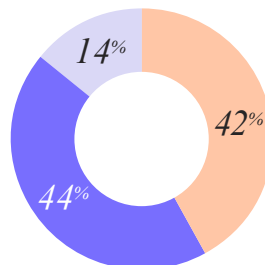
■ I have implemented this
 ■ I have not implemented this but I plan to
 ■ I have not implemented this and I do not plan to



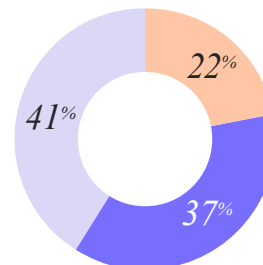
Artificial Intelligence (AI) & Machine Learning (ML)



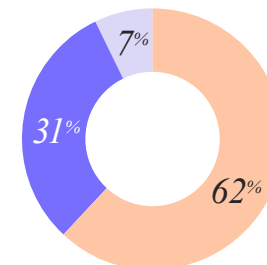
Robotics & Automation



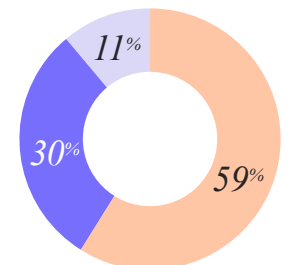
Digital Twins & Simulation



Autonomous Vehicles



Predictive Analytics



Sustainable Technologies to Reduce Carbon Footprint

What is the impact of these innovative technologies?

The majority of supply chain leaders (62%) believe technology innovations in the supply chain are a key driver for business growth.

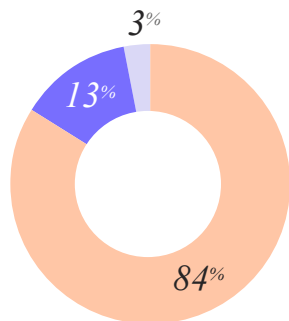
Predictive analysis had the biggest positive impact on businesses, allowing organizations to safeguard from seasonal demand changes and unforeseen disruptions.

“Our clients are experiencing increasing pressure from upper management to identify methods of reducing operational expenditure to offset inflation. Digitization is now a prerequisite for achieving growth in these conditions, so more senior leaders need to keep pace with its acceleration.”

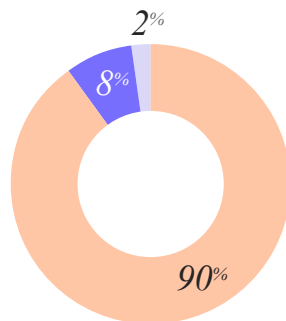
Nick De Klerk, TMX Transform Senior Director – Supply Chain

You said that you have implemented the following types of technology in your organization, what impact, if any, has it had on the business?

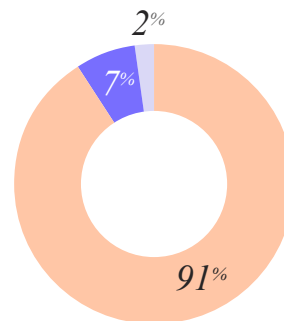
Positive Neutral Negative



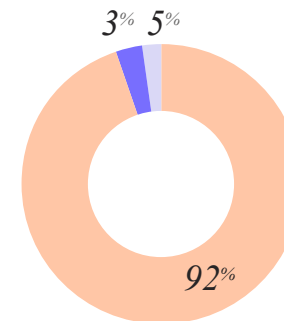
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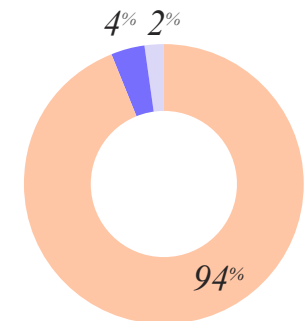
Robotics & Automation



Digital Twins & Simulation



Autonomous Vehicles



Predictive Analytics

The top five benefits organizations have attributed to investments in technology:



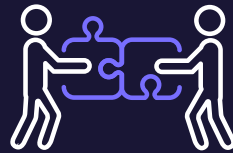
1

Cost savings and improved efficiency



2

Reduction in human error and manual processes



3

Ability to react quickly to changing consumer expectations and demand



4

Improved visibility across your end-to-end supply chain



5

Increased digitization and innovation

“Automation and technology are crucial in addressing the pressing issue of labor shortages in supply chains. However, experiencing the biggest benefits of technology hinges more on people than the technology itself. As organizations face challenges like high staff turnover and a lack of experienced leaders, nurturing and retaining skilled personnel becomes essential to successfully implementing technology solutions and driving innovation. **”**

Tom Fitz-Walter, TMX Transform Executive Director - Supply Chain

Executives predict growth this year: What technology will support this?

Three quarters of all respondents expect their organization to grow this year.

Only 16% are confident of significant growth, while 58% expect to moderately improve in 2024. A quarter expect a stabilizing year, while only 2% expect any sort of decline.

Where is this confidence coming from? A closer look at the data shows the correlation between each technology solution with expected growth.



*Only **16%** are confident of significant growth, while 58% expect to moderately improve in 2024.*

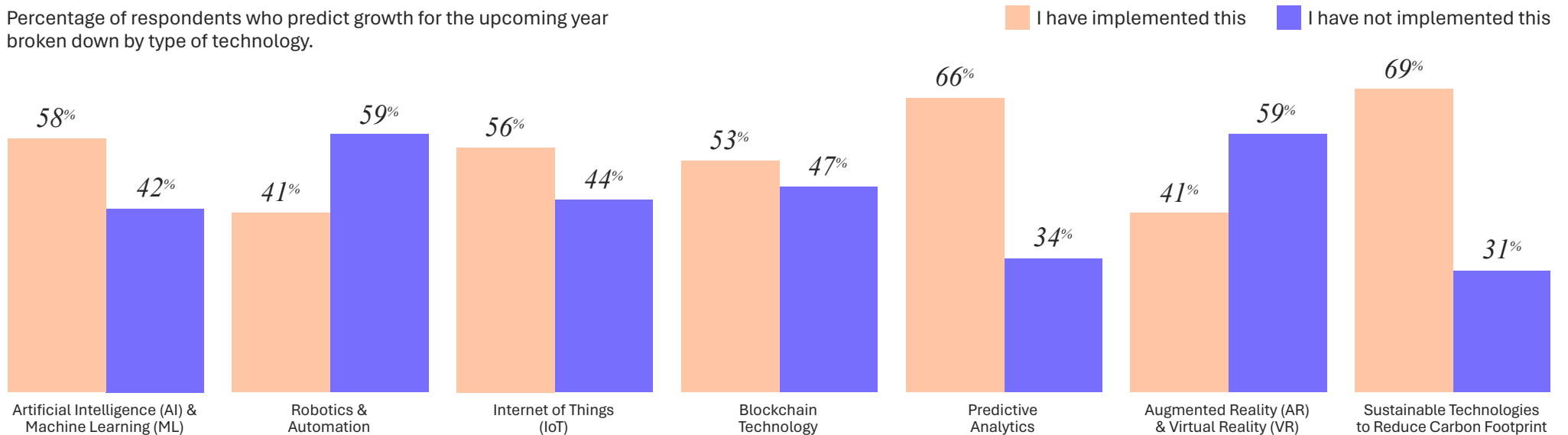


“ The confidence in growth is largely driven by the transformative power of emerging technologies. AI, automation, and Big Data are streamlining operations, improving efficiency, and opening new revenue streams. These technologies are enabling organizations to adapt to changing market conditions and seize new opportunities. **”**

Nick de Klerk, TMX Transform Senior Director – Supply Chain

What are your **growth** projections for the upcoming year?

Percentage of respondents who predict growth for the upcoming year broken down by type of technology.



4 in 5 (80%) respondents who have implemented technology say they predict growth for the upcoming year.

VS

Just under 3 in 5 (59%) respondents who have not implemented technology say they predict growth for the upcoming year.

Raising the bar: Technology shifting productivity and efficiency

Respondents were almost three times as likely to rate their organization's productivity as excellent if they have implemented automation and robotics.

Of those respondents who have implemented digital twins or simulation, 51% say their productivity is excellent, compared to just 21% who plan to invest in new technology.

Blockchain technology is having the biggest impact on growth projections, with a staggering 91% of those organizations predicting net growth, compared with less than half from those who don't use blockchain technology.

AI and machine learning are having a significant impact on efficiency, with 40% of participants who are using AI reporting excellent streamlined processes within their organization.



51%
*of technology adopters
rate their organization's
productivity as excellent*

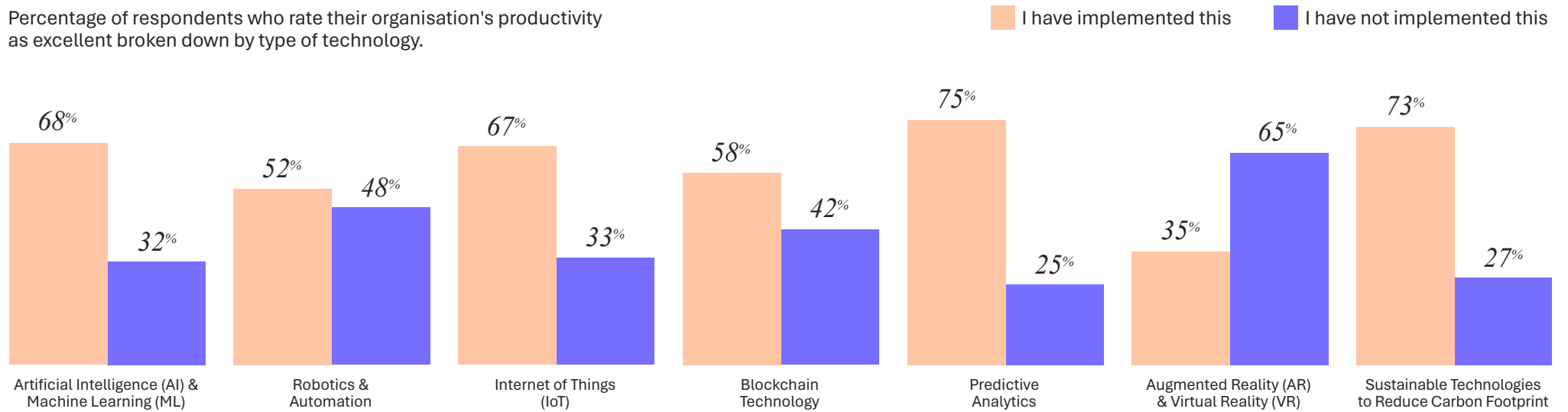


“ In today's complex world, we need to question whether an optimized solution is truly what organizations are trying to achieve. Optimization relies on precisely defining parameters, but will the same solution remain optimal regardless of what we throw at it? Technology adopted to boost productivity and efficiency needs to be underscored with a prioritization on resilience – solutions that can be tested under multiple scenarios. It's about being a jack of all trades rather than a master of one – creating flexible, scalable, and modular solutions. We need to consider what's truly important: building resilience into our supply chains. **”**

Glen Borg, TMX Transform Head of Simulation

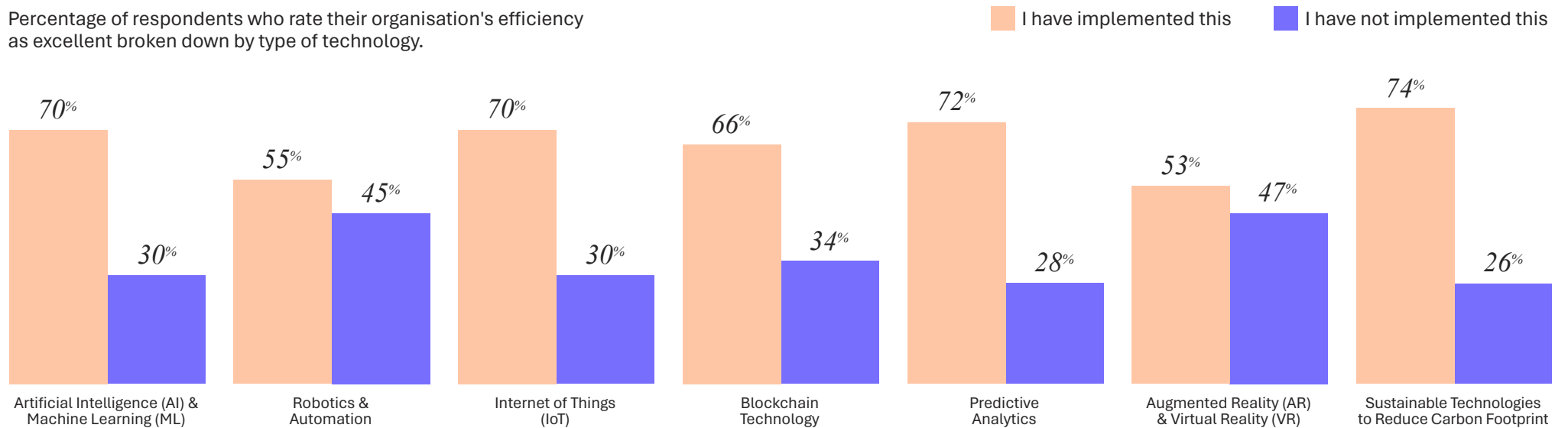
Productivity

Percentage of respondents who rate their organisation's productivity as excellent broken down by type of technology.



Efficiency

Percentage of respondents who rate their organisation's efficiency as excellent broken down by type of technology.



Barriers to adoption

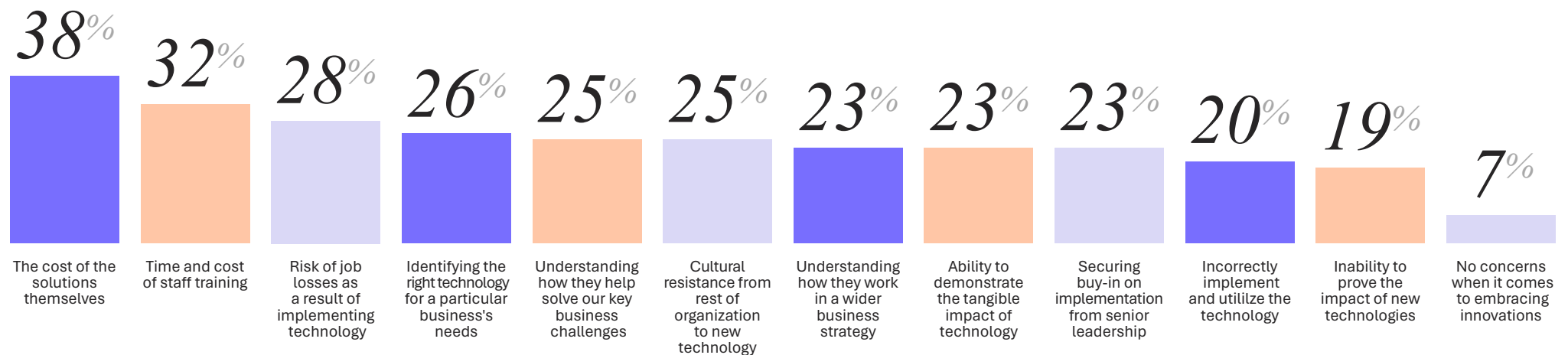
Technological innovation is entering boardrooms as a strategic imperative, but its adoption is not without challenges.

Despite the growing awareness of new technology, barriers to entry such as high initial costs, a lack of in-house expertise, integration difficulties with legacy systems, and resistance to change stand in the way of its practical implementation.

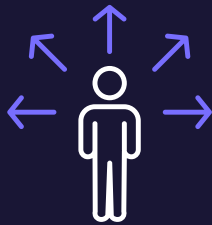
Whilst 42% of respondents understand the benefits of innovative technology, they don't know where to start when it comes to introducing them into their supply chain strategy. By the same token, 45% believe that innovation provides an opportunity to enhance supply chain, but don't know how best to use it.

What concerns, if any, do you have when it comes to embracing technology innovations for your organizations supply chain?

Respondents allowed to tick up to three challenges.



TMX Transform's three key ingredients for organizations to drive innovation:



Leadership & Vision

‘Walk the talk’ and communicate where an organization wants to go and how you are going to get there. The best leaders don't just lead the way but travel the road, seeing obstacles firsthand. Investment in innovation, while driven by profit, should always be connected to customer values.



Culture

Provide a safe environment that balances Standardization, Continuous Improvement, and Innovation. These three principles are competing forces which need to be balanced to drive a sustainable competitive advantage. The right culture drives a set of values that resolves conflict arising across departments with competing interests.



Driving Action

Create a framework or process in the organization that carves out time and resources to explore innovation. The same process facilitates decisions in the face of uncertainty by allowing experimentation and learning-by-doing. Don't be paralyzed by the fear of failure. Many great ideas die early because there is nowhere for them to incubate and grow.

“*Innovation is delicate, sensitive and needs to be nurtured when the time is right, otherwise the opportunity passes quickly. If organizations don't have the three key ingredients in place, they won't drive innovation into reality.*”

Glen Borg, TMX Transform Head of Simulation

In the past few years, global conflicts, environmental crises, major trade disruptions, and a pandemic have revealed how vital a resilient supply chain is for business continuity.

The companies who have been able to plan ahead, think progressively, and be open to change have thrived, while those holding on to old processes have been left behind.

Today's consumers expect instant access to global products. The results of this research demonstrate that technology and innovation is paramount in adapting to this new reality, where the supply chain becomes a strategic enabler for business growth and customer satisfaction.

By educating staff, strategically deploying resources, and fostering a shared vision, companies can confidently navigate and trust innovative technologies, paving the way for successful adoption.



Travis Erridge
Chief Executive Officer
TMX Transform



TMX Transform is an end-to-end supply chain consultancy, partnering with clients worldwide to optimize supply chains and transform businesses.

Taking the time to understand the businesses it works with, TMX implements cutting-edge, tailored solutions to transform the journey from source to end customer. Its specialist team brings years of industry experience to optimize the entire supply chain, working with world-leading brands across retail, manufacturing, CPG, food & beverage, and more.

Powered by its integrated property, project management, and supply chain services, TMX implements practical and efficient solutions that deliver tangible improvement.

www.tmxtransform.com

UNIQUE INSIGHTS

TMX's 'Attitudes to Innovation' was conducted by Censuswide with 257 Supply Chain / Logistics Decision Makers in the UK (Aged 18+) between 23.04.2024 - 29.04.2024. Censuswide abide by and employ members of the Market Research Society which is based on the ESOMAR principles and are members of The British Polling Council.