



State of Warehouse Operations 2024



Introduction

Warehouses are a fundamental piece of modern supply chains – vital to ensuring goods can reach customers efficiently, effectively and on time. Yet, many are in need of innovation, with increased investment and resources required to ensure truly effective operations, and to become a key asset in supporting their organisations' future.

Manhattan Associates commissioned market research specialist Vanson Bourne to understand more about how organisations are approaching their warehouse operations (including the links with their yard and transportation processes) - their successes, and limitations - and their ongoing priorities. The results show organisations are transforming their warehouses, with many planning to adopt the latest warehouse and related technologies to simplify their operations and take advantage of new opportunities. Despite this, many companies are experiencing challenges when transforming their operations, with identifying and overcoming these challenges key to driving successful innovation.

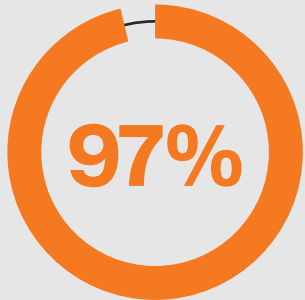
Methodology

Vanson Bourne interviewed 2,000 supply chain professionals in Spring 2024 across the following countries: Australia, Belgium, Brazil, France, Germany, Italy, the Netherlands, Norway, Mexico, Spain, Sweden, and the UK.

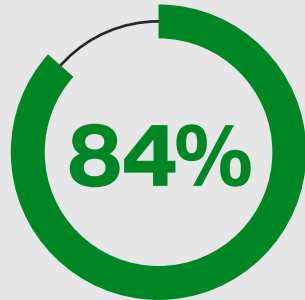
Respondents included both senior management and operational staff, and came from the manufacturing and production, logistics, pharmaceuticals, retail, automotive and CPG sectors.



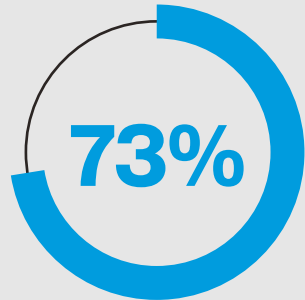
In Summary



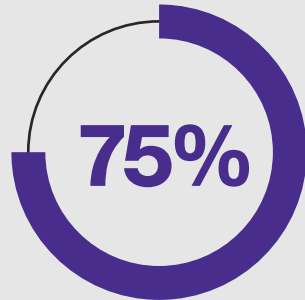
Almost all respondents believe their **warehouse operations IT infrastructure** requires **modernisation**, with improvements needed in **several different areas**.



of respondents' organisations are facing difficulties with **staff retention**, potentially affecting the **long-term sustainability** of their operations.



Warehouse demand has **surged**, with **73%** of respondents reporting that the **volume of goods** has **increased** at their organisation's warehouses over **the past 12 months**, exacerbating the challenges they were already facing.



Organisations are hopeful about the **future of warehousing**, with staff excited about the possibilities of **generative AI (75%)** and **robotics (72%)** to improve their role.

The management of supply chains is becoming increasingly complex, driven by a rapidly changing world, natural and geopolitical disruptions, and evolving customer demands. Alongside this, with hurdles like poor staff retention (84%), operational complexity (27%), and issues managing different channels (26%) being compounded by increasing demand, it calls for the need to future-proof warehouse operations.

Organisations are actively seeking to do so through warehouse digital transformation. Over 7 in 10 organisations are planning to replace or upgrade the solutions they already have, while two-fifths have plans to adopt the latest warehousing technologies. Ensuring continuous supply chain innovation will help organisations to tackle emerging risks and to take advantage of new opportunities.

How do warehouse operations look currently?

Organisations are dissatisfied with their current warehouse operations

Most organisations are struggling with their current warehouse operations, with 79% believing their warehouse operations IT infrastructure requires complete or a lot of modernisation and 55% seeing room for improvement in their warehouse operations. With warehousing forming such a vital part of supply chains, this could have implications for organisations; impacting on their ability to meet customer expectations and demands or to take advantage of new opportunities. Ultimately, this increases costs and reduces profitability, placing them at a competitive disadvantage vs. those who have already adopted the latest solutions.

The challenge is particularly acute in the UK, where two-thirds (67%) of respondents see room for improvement and in Australia and the Netherlands/Belgium where over 4 in 10 believe their warehouse operations IT infrastructure requires complete modernisation. The need for innovation is also strong in the manufacturing sector where nearly half (49%) also believe their warehouse operations IT infrastructure requires complete modernisation.

ROOM FOR IMPROVEMENT BY COUNTRY

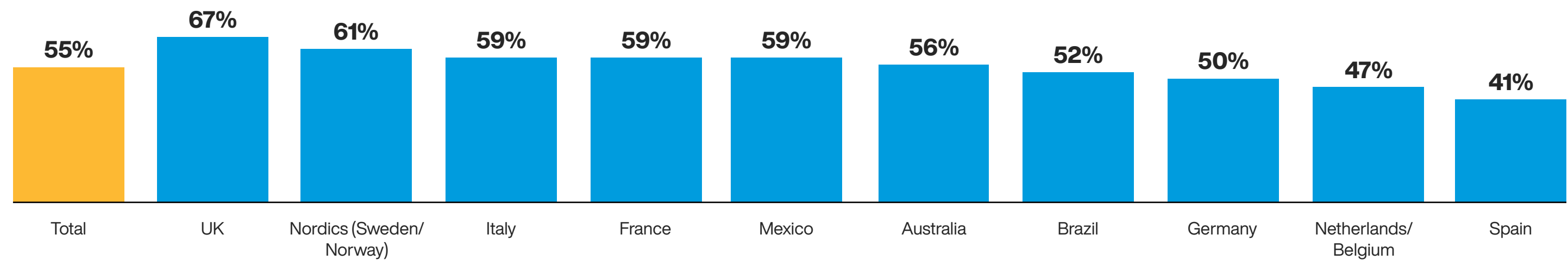


Figure 1: How does your organisation rate the current operations of their warehouse(s)/ How well does your organisation's current warehouse(s) operate? Showing % who say their warehouse requires some or a lot of improvement, split by country. [200 respondents per country/region, 2,000 in total]

SECTION ONE: HOW DO WAREHOUSE OPERATIONS LOOK CURRENTLY?

However, the results suggest that senior management may be underestimating the scale of the improvements required. While 53% of decision makers believe they have full visibility into the issues at their warehouses, only a third of staff (33%) feel they really understand the challenges. Ensuring staff feel listened to is important to ensuring a positive workplace culture, productivity, and retention - all areas where organisations are currently struggling (section 3). More long term, if senior management can't understand the challenges, how can they ensure they are investing correctly to tackle the hurdles they face?

Adoption of the latest warehouse practices and technologies varies by country and sector

No more than around 4 in 10 organisations have taken advantage of the most innovative warehouse practices. If organisations have not optimised their picking processes, then staff productivity could be negatively affected, and they may struggle to manage surges in demand. A lack of data sharing with other departments/ function areas could also be impacting the visibility of warehouse operations as only 39% are automatically sharing warehouse data – increasing data sharing and visibility would help to drive the emphasis for future-ready warehouse transformation within organisations.

ADOPTION OF WAREHOUSE PRACTICES

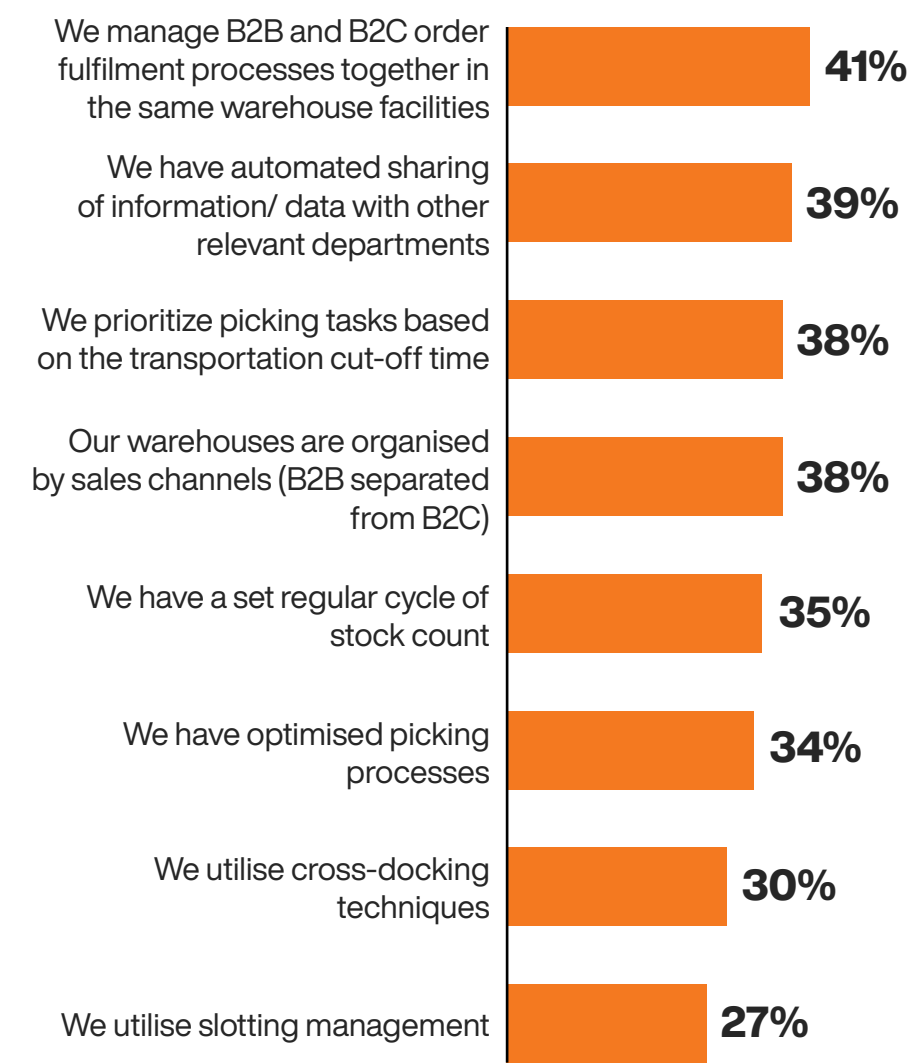


Figure 2: Which of the following, if any, does your organisation currently do within their warehouse(s)? [2,000 respondents] – not showing all answer options



SECTION ONE: HOW DO WAREHOUSE OPERATIONS LOOK CURRENTLY?

Like the latest practices, the adoption of modern warehouse management technologies is also low considering the benefits such solutions can bring for staff productivity and wellbeing (section 3), as well as channel and demand management, among others. The results suggest vast variation between organisations, with around two-fifths having adopted the more innovative solutions giving them a potential competitive advantage, while other organisations are at risk of getting left behind in the move towards future-

ready warehouse operations. If organisations are having to rely on spreadsheets, paper forms, other in-house solutions, legacy systems or manual methods for managing their warehouses, this reduces their agility and productivity, impacting their ability to respond quickly to surges in demand. Furthermore, how can less agile warehouses take advantage of new opportunities, or manage new external threats and risks to their supply chain?

ADOPTION OF WAREHOUSE MANAGEMENT SYSTEMS & RELATED TECHNOLOGIES

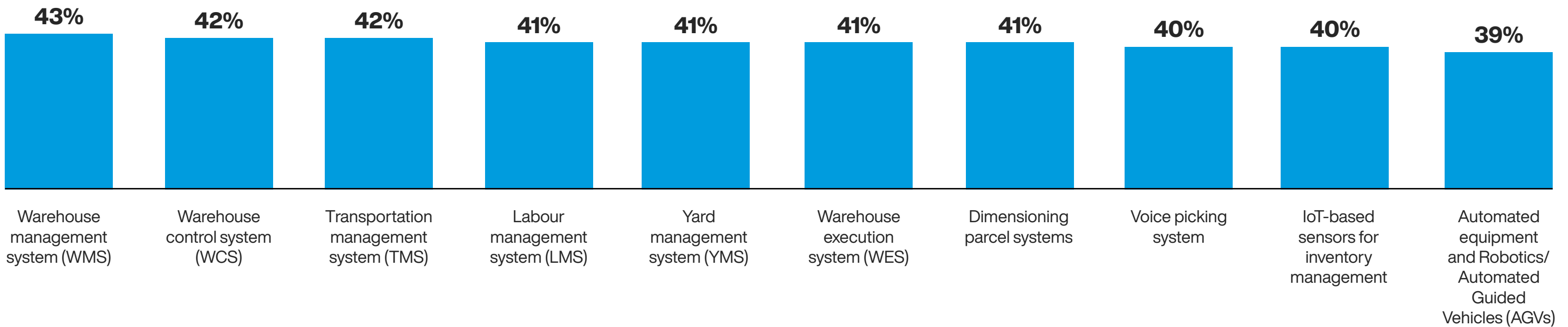


Figure 3: Thinking about different technologies, which of the following, if any, are currently in place or your organisation is planning to adopt at its warehouses? [2,000 respondents] – showing % currently using

SECTION ONE: HOW DO WAREHOUSE OPERATIONS LOOK CURRENTLY?

Adoption of more advanced capabilities varies by country and sector. The UK has lower adoption of robotics/AGV's, dimensioning parcel and voice picking systems than the other countries surveyed but higher adoption of transportation and warehouse management systems ; a need to prepare for Brexit-related regulations likely to have played a part here with organisations having to prioritise updating their more fundamental solutions to meet the new requirements. Pharmaceuticals were among the most advanced of the sectors surveyed, perhaps due to a need to transform their warehouse practices to meet increased demand during the COVID-19 pandemic.

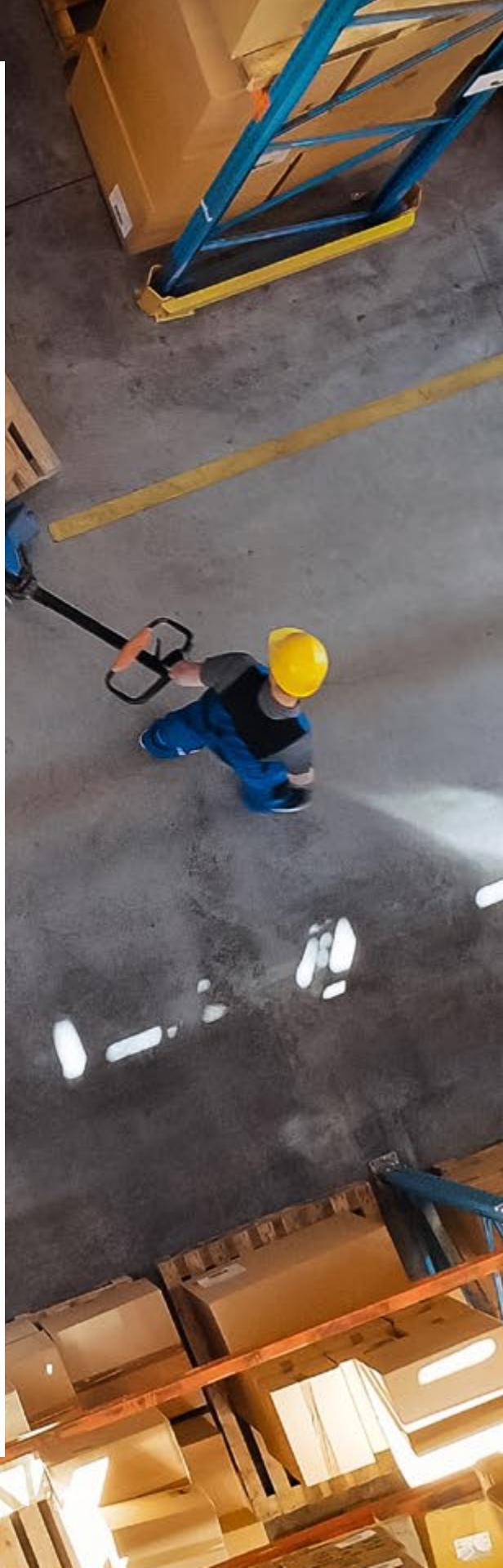
SPOTLIGHT: CURRENT ADOPTION OF WAREHOUSE MANAGEMENT SYSTEMS & RELATED TECHNOLOGIES

46% **Pharmaceuticals** is the **most likely sector** to have adopted **yard management systems** (and **automated equipment** and **robotics/AGV's** (46%)).

28% **Australia** has lower adoption of **RFID technology/ IoT based sensors** than the other countries surveyed.

The **UK (55%)** and **Spain (48%)** have higher adoption of **transportation management systems** than the international average **(42%)**, with the UK also using **warehouse management systems** more commonly **(52%)**.

Spain has the highest current adoption of **voice picking systems** with the Netherlands/ Belgium just behind **(58% and 53% respectfully)**. The Netherlands/ Belgium also has the greatest current adoption of **dimensioning parcel systems (49%)** than all other surveyed markets.



SECTION ONE: HOW DO WAREHOUSE OPERATIONS LOOK CURRENTLY?

Organisations recognise the limitations of their current approaches and are investing in warehouse operation modernisation

Organisations are planning to adopt multiple different solutions to improve their warehouse operations, with around 4 in 10 planning to adopt the different technologies; helping to simplify their operations and increase understanding of their warehouses through stronger analytical capabilities.

PLANNED ADOPTION OF WAREHOUSE MANAGEMENT SYSTEMS & RELATED TECHNOLOGIES

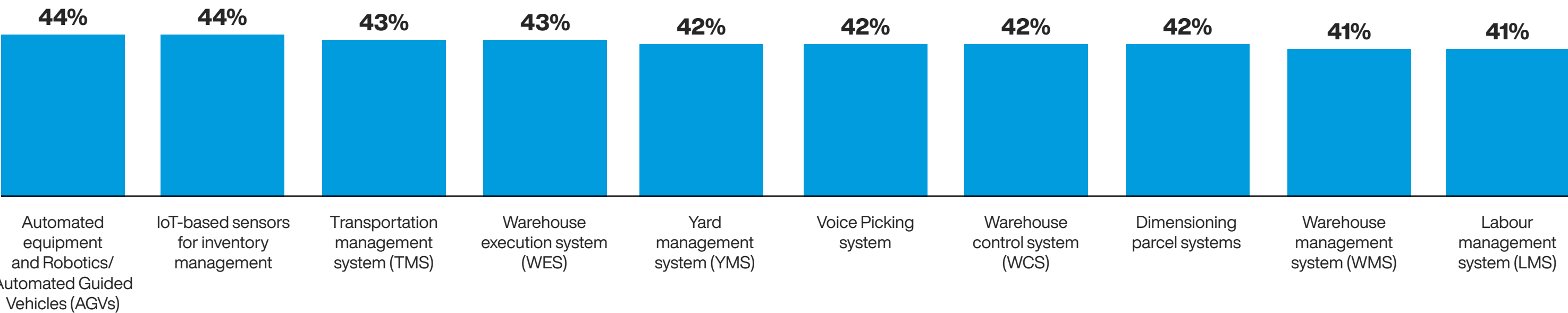


Figure 4: Thinking about different technologies, which of the following, if any, are currently in place or your organisation is planning to adopt at its warehouse(s)? [2,000 respondents] – showing % have plans to adopt

When it comes to replacing or upgrading their existing solutions over the next 12 months, organisations are focusing on the areas where they are experiencing the greatest challenges today: tackling issues in their yards through upgrading their YMS (81%), enhancing the staff experience and retention through improving their LMS (80%), and managing their warehouses better through replacing their WMS (80%).

SECTION ONE: HOW DO WAREHOUSE OPERATIONS LOOK CURRENTLY?

While organisations may be more focused on these areas, the desire for upgrades is widespread across the different technologies, with at least 7 in 10 (72%) organisations planning to replace or upgrade each of their existing technologies in the near future. With the potential for future supply chain disruptions and challenges high, organisations will need to ensure continuous technological innovation to stay ahead of newly emerging risks and threats, maintain competitive advantages and benefit from future opportunities.

PLANNING TO REPLACE OR UPGRADE WITHIN THE NEXT 12 MONTHS

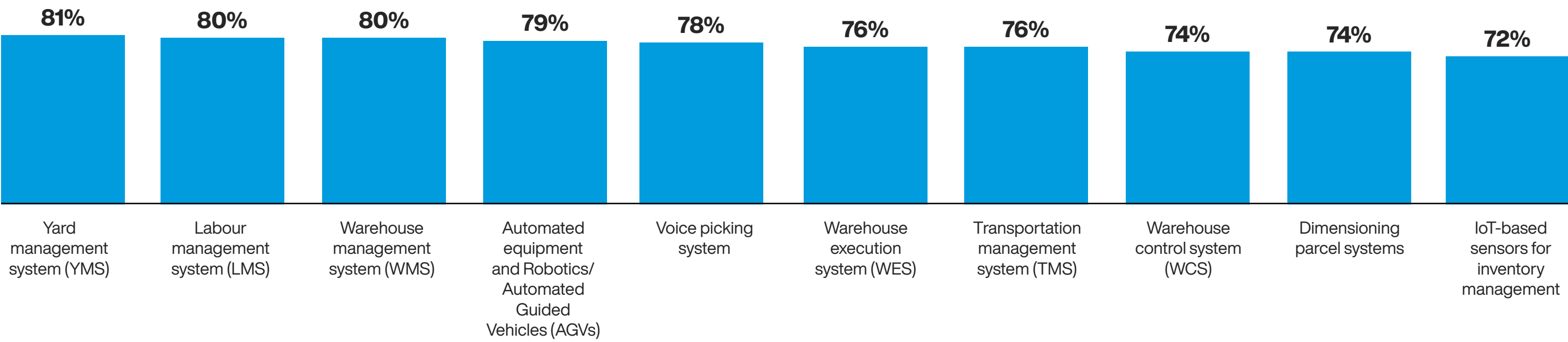


Figure 5: Does your organisation have any plans to replace or upgrade the following at its warehouse(s)? [2,000 respondents, base sizes vary by technology] – asked to decision makers who are currently using the technology, showing % who plan to replace or upgrade within the next 12 months

Individual sectors are, however, prioritising different technologies for replacements or upgrades. The retail sector is focusing more on yard management solutions, maybe due to the need to manage both in-store and ecommerce-related deliveries in their yards. In contrast, the logistics sector emphasises improving their staff management through upgrading their Labour Management System, while the manufacturing and automotive sectors concentrate on enhancing their warehouse management solutions.

SECTION ONE: HOW DO WAREHOUSE OPERATIONS LOOK CURRENTLY?

TOP 3 MOST CITED SOLUTIONS FOR REPLACING OR UPGRADING OVER NEXT 12 MONTHS

Retail/Wholesale	Manufacturing and production	Automotive	Logistics	CPG	Pharmaceuticals
88% Yard management system (YMS)	81% Warehouse execution system (WES)	83% Warehouse control system (WCS)	93% Labour management system (LMS)	85% Yard management system (YMS)	72% Yard management system (YMS)
86% Warehouse management system (WMS)	80% Warehouse management system (WMS)	79% Automated equipment and Robotics/AGV's	90% Dimensioning parcel systems	82% Warehouse control system (WCS)	67% Warehouse management system (WMS)
85% Voice picking system	79% Yard management system (YMS)	79% Labour management system (LMS)	90% Voice picking system	80% Transportation management system (TMS)	65% Transportation management system (TMS)/RFID technology/ IoT-based sensors/ Automated equipment and robotics/AGV's

Asked to decision makers within each sector who are currently using the individual technologies – base sizes vary by sector/technology

Challenges in Warehouse Operations

Warehouse challenges are considerable, with improvements required in several key areas

Almost all organisations (99%) report they are experiencing some challenges in their warehouse operations, including out-of-date IT hardware/software (28%), operational complexity (27%) and difficulties managing different channels (e.g. in-store/ecommerce) (26%), influenced by low adoption rates of the more innovative warehouse management solutions (section 1). As well as difficulties around productivity (23%), these challenges are leading to lower satisfaction levels within warehouse operations (section 1), and high staff turnover rates (section 3). All of these limit the ability of warehouses to operate effectively. Tackling these challenges will be vital to ensure warehouse operations remain sustainable and organisations can retain or develop a competitive advantage.

CHALLENGES IN WAREHOUSE OPERATIONS

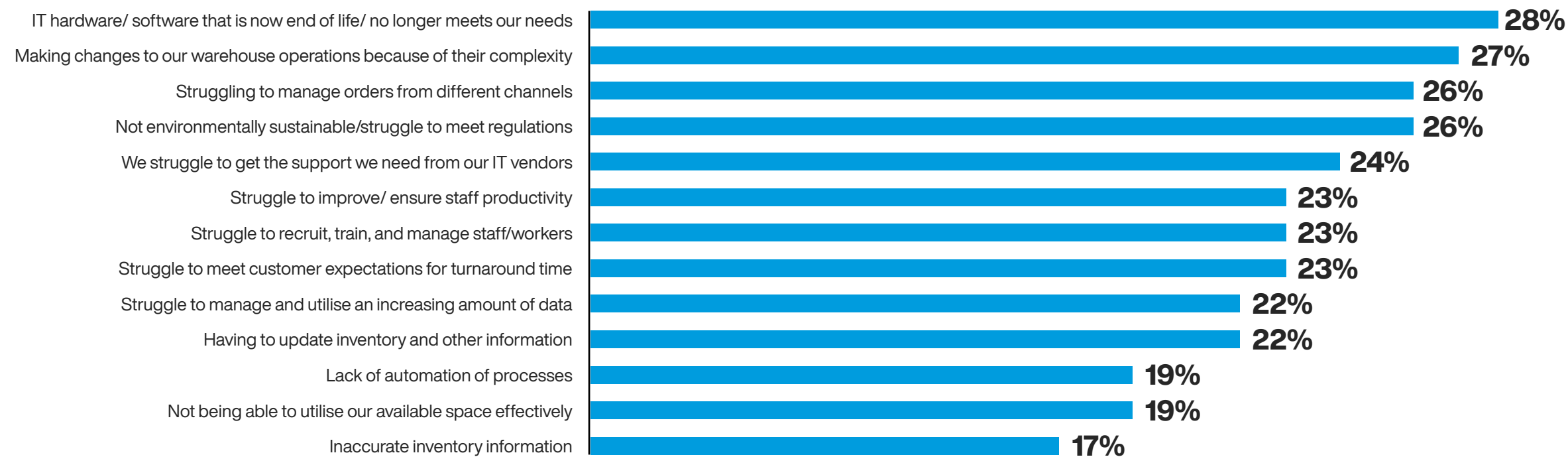


Figure 6: What challenges, if any, is your organisation currently facing in their warehouse operations? [2,000 respondents] – Not all answer options shown, answer options shortened



SECTION TWO: CHALLENGES IN WAREHOUSE OPERATIONS

SPOTLIGHT: YARD CONGESTION

Organisations are facing additional challenges in their warehouse yards, with around 4 in 10 (38%) experiencing significant congestion and around a fifth (22%) say it's difficult locating equipment or inventory/goods, and to schedule their transportation partners. As a result, organisations are planning to replace or upgrade their yard management (81%) and transportation management systems (76%) over the next 12 months, to help alleviate these challenges. Ensuring their warehouse, yard and transportation management systems are fully integrated will be vital if organisations are to avoid information silos and reap the greatest benefits, with the latest solutions able to unify these capabilities into a single platform.



Around half of organisations in the Netherlands/Belgium (50%) and Australia (46%) are suffering significant issues with congestion



Just over half of organisations in the manufacturing and production sector are also experiencing significant difficulties

Demand for warehouse space is increasing, exacerbating the challenges organisations face

An increase in demand is only adding to the challenges organisations are facing, with 7 in 10 organisations (73%) having experienced an increase in volume of goods over the past 12 months. The Southern Europe region, Spain, and Italy (84% and 86% respectively), and the manufacturing sector (80%) have been particularly affected, impacting over four-fifths of organisations. With demand for warehousing likely to grow further as the economic environment improves, this makes the need for future-proofing operations increasingly urgent.

VOLUME OF GOODS INCREASED OVER THE PAST 12 MONTHS BY COUNTRY

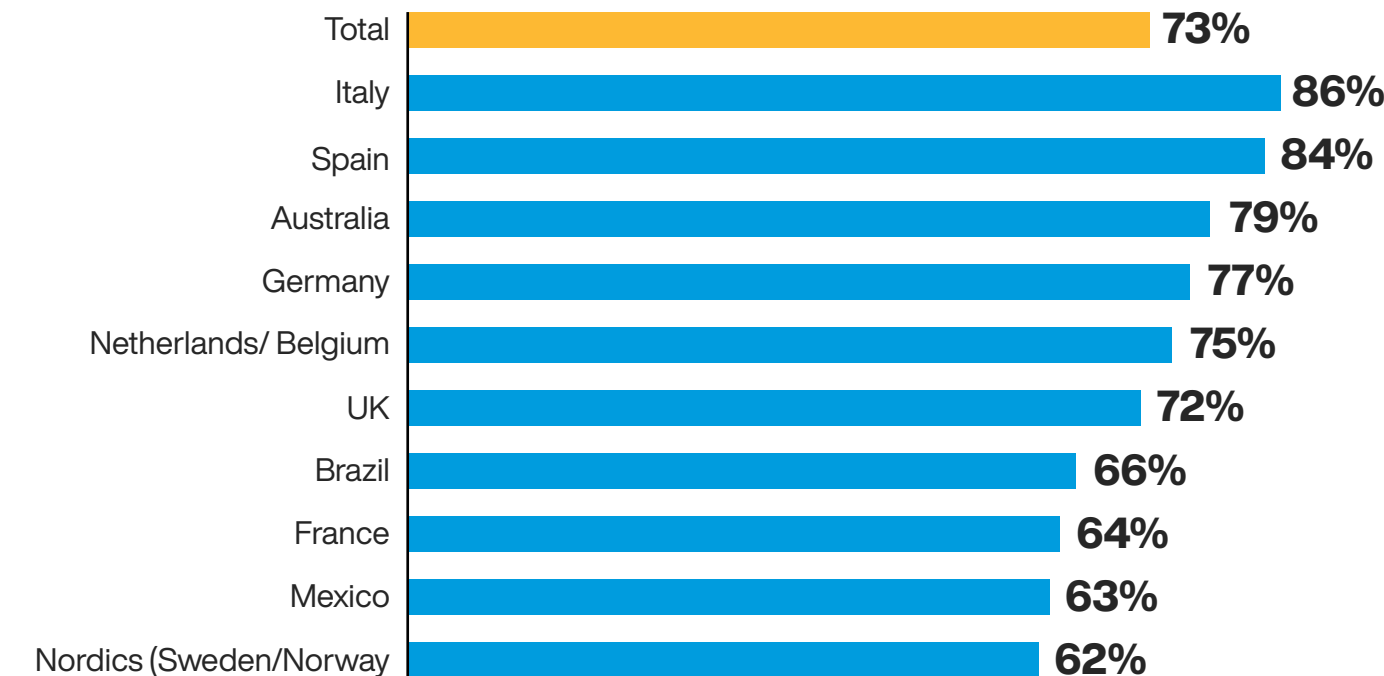


Figure 7: How has the volume of goods/number/variety of references changed, if at all, for your organisation's warehouse(s) over the past 12 months? [200 respondents per country/region, 2,000 in total] – showing % say increased or increased significantly, split by country

SECTION TWO: CHALLENGES IN WAREHOUSE OPERATIONS

Warehouse operations are also becoming more challenging for organisations; a sizeable proportion say that staff-related challenges including recruiting/ training short-term workers (41%) and ensuring productivity (40%) have grown significantly over the last 12 months. As challenges grow, finding solutions that can resolve people and process warehouse difficulties will be important for the sustainability of their operations.

CHALLENGES INCREASED SIGNIFICANTLY OVER THE PAST 12 MONTHS

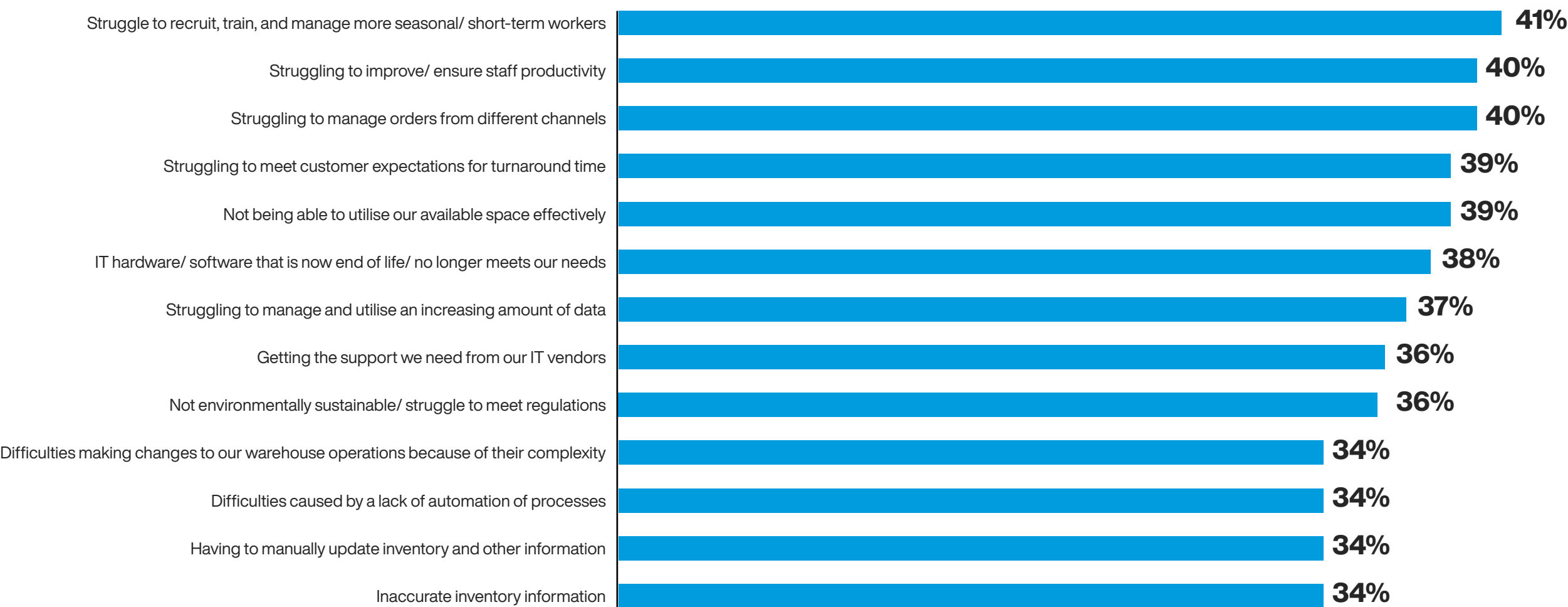


Figure 8: To what extent have these challenges increased or decreased in the last 12 months? [2,000 respondents, base sizes differ by challenge] – asked to respondents who experienced challenges, showing % say increased significantly

The Human Element

Staff retention and scheduling is a universal challenge for organisation

Over four-fifths (84%) of organisations report issues with staff retention, with these difficulties being significant for around 4 in 10 organisations (37%). While this is not surprising given the challenges organisations are facing, it does raise the question: how long can warehouse operations continue like this? Particularly as around a quarter (23%) are also struggling with recruiting and training staff. If organisations cannot recruit staff and they can't retain the staff they already have, how future ready are their warehouse operations?

SPOTLIGHT: STAFF RETENTION

Staff retention is more problematic in the **Netherlands/Belgium**, and **Australia** with over four in ten organisations reporting significant difficulties (**47% and 42% respectively**).

49% Nearly half of **manufacturing** organisations are also reporting **significant issues** with **staff retention**.



SECTION THREE: THE HUMAN ELEMENT

SPOTLIGHT: STAFF SCHEDULING CHALLENGES

Once staff have been recruited and trained, ensuring they are appropriately scheduled is another challenge for organisations (58%). This will impact productivity for organisations - if they don't have the appropriate staff to fulfil their needs on a particular shift, or if staff are attempting to do something they are not trained for and are therefore less efficient at. It may also cause health and safety risks if employees are completing a task they are not qualified to do in a safe manner. Adopting labour management systems can help with this, with those who have adopted more likely to report they find scheduling staff unchallenging (48%) than those who have yet to do so (38%).

While less than half of **manufacturing and production (42%)** and **logistics (49%)** organisations report challenges with **scheduling staff**. This rises to around 7 in 10 organisations across the **retail/wholesale (72%), CPG (73%)** and **automotive sectors (69%)**.

The **pharmaceutical** sector is struggling the most with **80%** reporting challenges with **ensuring staff are scheduled appropriately**.

Of the countries surveyed, **France (72%)** and **Italy (69%)** are experiencing the greatest difficulties with **scheduling staff**.



SECTION THREE: THE HUMAN ELEMENT

Adopting warehouse management solutions can improve the staff experience

Both senior management and operational staff agree that warehouse and labour management solutions can benefit the staff experience, including through enabling gamification, by helping staff to prioritise their work, and by allowing them to see real time feedback and insights about their performance. Staff also see benefits in being able to submit feedback to management, an element that should help to increase visibility into their warehouse operations for organisations.

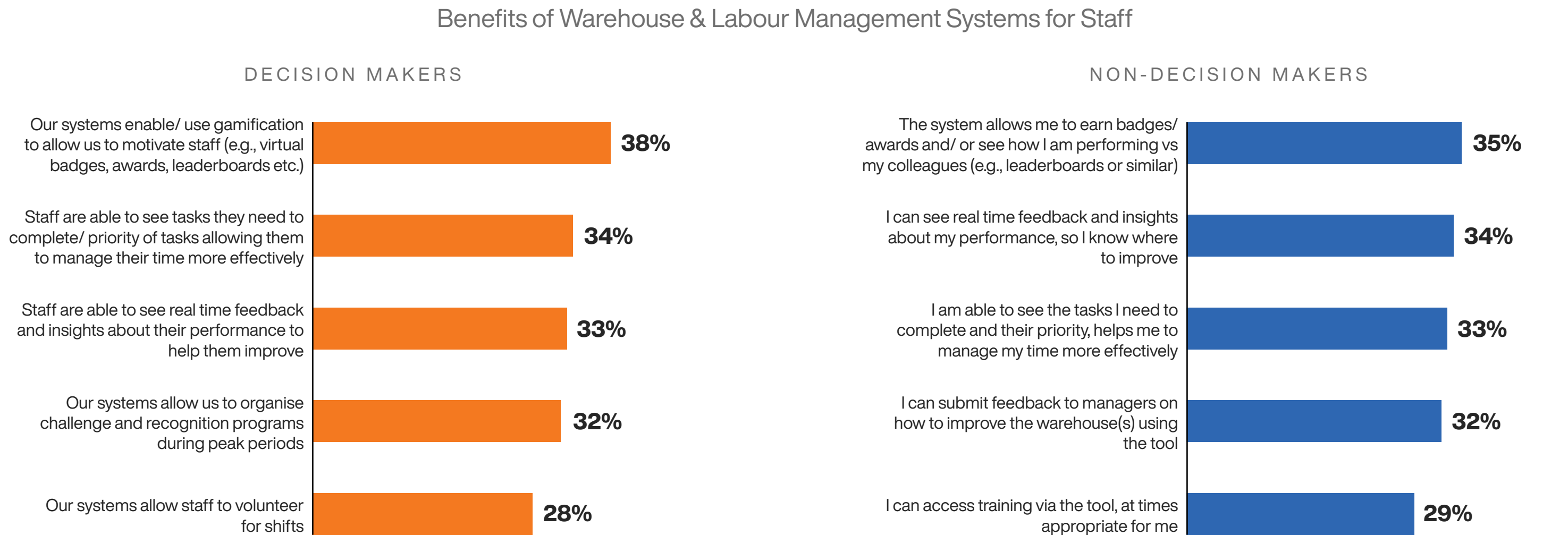


Figure 9: How does your organisation utilise its warehouse management system/labour management system to motivate and retain staff in their facility(ies)? – asked to those who have a WMS, split by decision makers [308] vs non-decision makers [557], showing top 5 most cited

SECTION THREE: THE HUMAN ELEMENT

The need: to enhance the training provided

Recognising the benefits, organisations are investing in training their staff in warehouse management solutions including through pairing them with experienced staff members (50%), providing an online team/forum to ask questions (42%) and through offering step-by-step e-learning (39%). However, given retention difficulties, organisations may struggle to find experienced staff to train new joiners in the future, posing the need to revisit training methods.

This is emphasised by the fact that, despite training, some employees are still struggling to use the solutions, with this being particularly the case in the Latin American countries (25% of Mexican respondents find the solutions difficult to use, increasing to 30% in Brazil). Ensuring staff are being provided with effective training, and that the provided solutions are simple and easy to use, is essential if organisations are to tackle their staff productivity and retention challenges.



Looking to the future

Organisations' focus areas for transforming their warehouse operations are influenced by their current challenges, including meeting demands from customers (36%), taking advantage of new revenue or sales opportunities (35%) and warehouse staff retention (31%). Staff are also excited about the possibilities of generative AI (75%) and robotics (72%) to improve their job roles, with GenAI and similar low-code applications facilitating the creation of more sophisticated capabilities and efficient applications. Meeting these priorities will require innovation to ensure the warehouse is fully ready for the future - to simplify operations, meet increased demand and enhance the staff experience.

FOCUS AREAS FOR TRANSFORMATION OF WAREHOUSE OPERATIONS

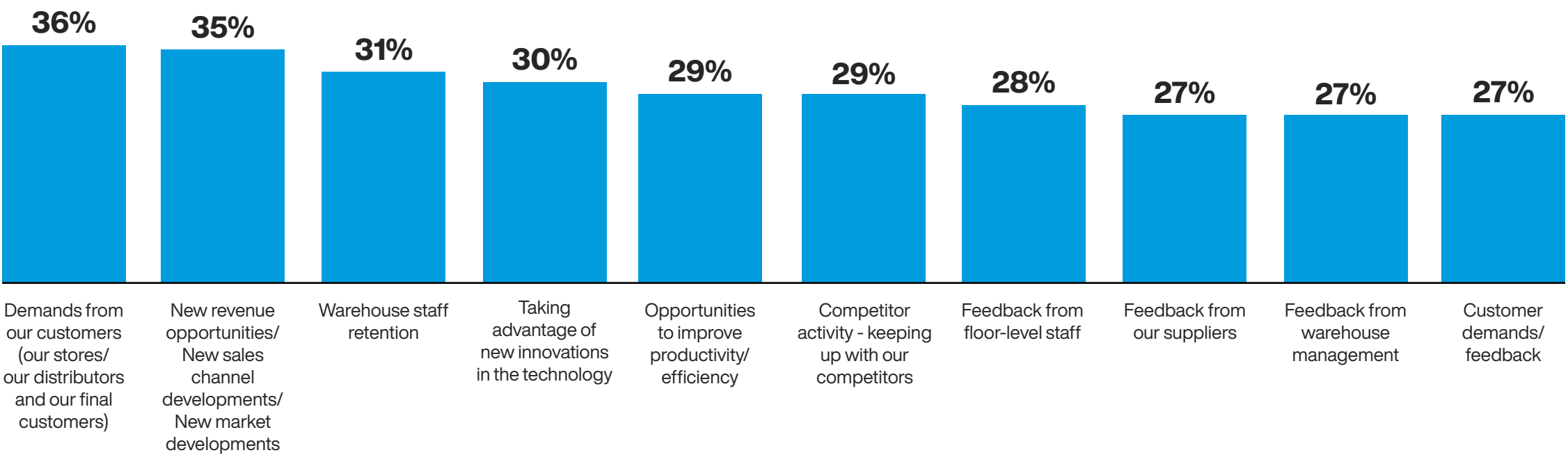
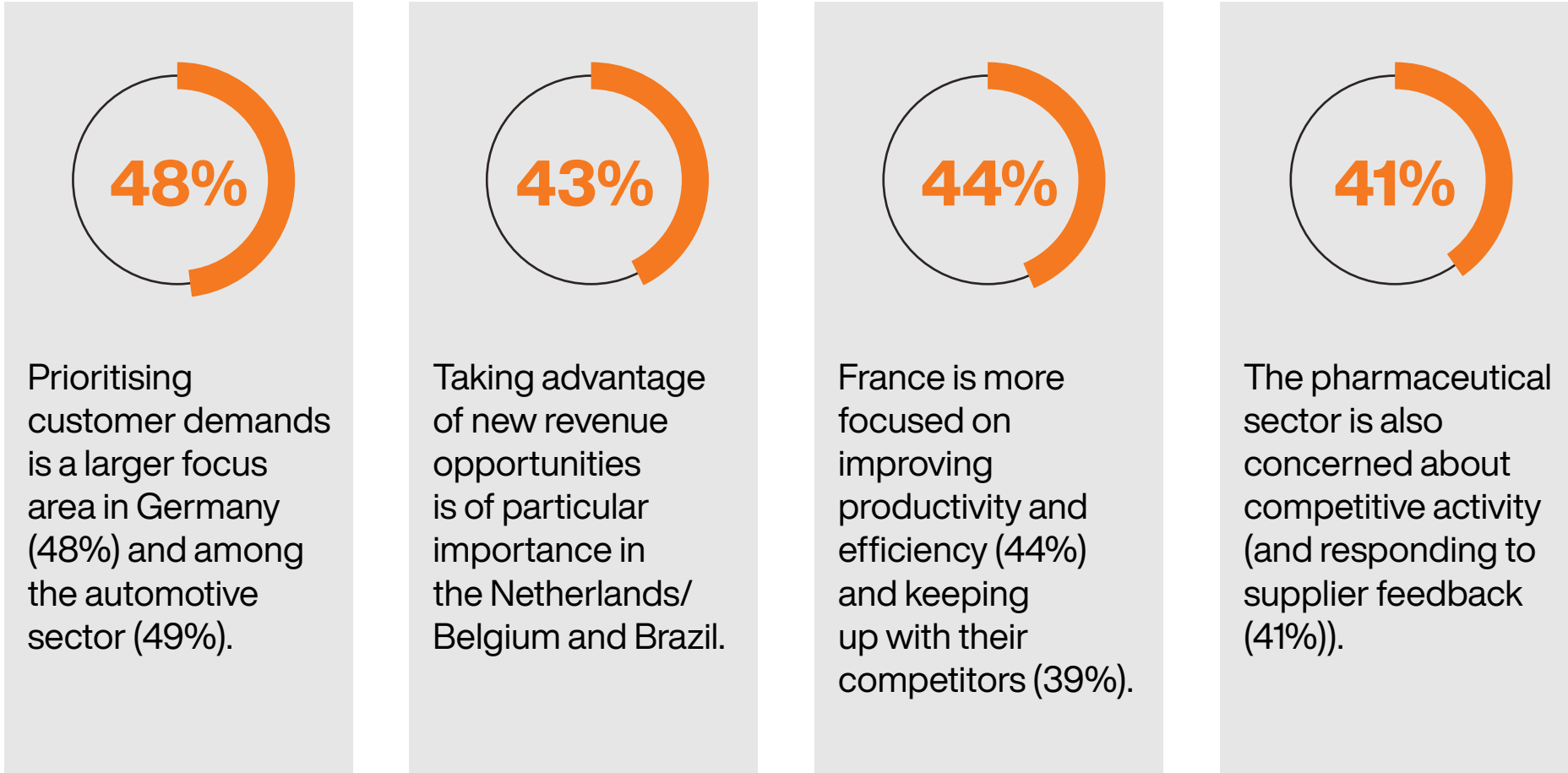


Figure 10: When deciding what should be the priorities/focus areas for your organisation's warehouse transformation, what is most important to your organisation? [750] – asked to decision makers, combination of responses ranked 1st, 2nd, and 3rd, not all answer options shown



SECTION FOUR: LOOKING TO THE FUTURE

SPOTLIGHT: WAREHOUSE TRANSFORMATION AREAS



Organisations are prioritising investments in improving their ability to recruit, train and manage more seasonal workers (32%), manage orders from different channels (e.g. ecommerce, in-store) (29%) and ensure staff productivity and retention (28%) over the next 12 months. Given the difficulties organisations are experiencing with staff retention (section 4) and the potential impact on the sustainability of their warehouse operations, a focus on the staff experience is welcomed. But senior management will need to be able to prove they are listening to and acting upon staff feedback and are willing to improve their warehouse operations to truly impact staff turnover rates going forwards.



Conclusion

The challenges facing warehouse operations, and their immediate touchpoints with yard and transportation are widespread across countries and industry sectors: from an absence of the latest technology, increasing demand, and poor staff retention to low visibility in their warehouse operations. Inefficient operations and processes are holding organisations back from reaching their true potential, with their warehouses yet to become future-proofed to support the ever-changing supply chain. The people can't be ignored either, with poor staff retention and recruitment a common issue across the sector, calling the sustainability of warehouse operations into question.

However, the results also show a strong willingness to improve among both senior management and operational staff, with many organisations either planning to adopt the latest warehouse, yard, transportation, and other associated solutions or upgrade/replace their existing ones. This is positive, helping organisations to simplify their operations and better meet rising demand and customer expectations. On top of this, it will also enhance the staff experience, helping their warehouse operations to become a competitive advantage for their organisations and their supply chains overall.





VansonBourne

About Vanson Bourne:

Vanson Bourne is an independent specialist in market research for the technology sector. Their reputation for robust and credible research-based analysis is founded upon rigorous research principles and their ability to seek the opinions of senior decision makers across technical and business functions, in all business sectors and all major markets.

For more information, visit www.vansonbourne.com



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