

2023 MHI ANNUAL INDUSTRY REPORT

THE RESPONSIBLE SUPPLY CHAIN

TRANSPARENCY, SUSTAINABILITY, AND THE
CASE FOR BUSINESS



MHI

Deloitte.



48% of respondents report increased influences to adopt a more sustainable supply chain.



37% of respondents are focusing the support/development of sustainability for their suppliers



13% of respondents are changing supply chain structure to better enable circular sustainable economies



Electrification is the top entry point to transitioning to a more sustainable supply chain.

TOP SUPPLY CHAIN CHALLENGES

The top 5 company challenges - rated extremely or very challenging



hiring/retaining qualified workers



talent shortage



supply chain disruptions/shortages



out-of-stock situations



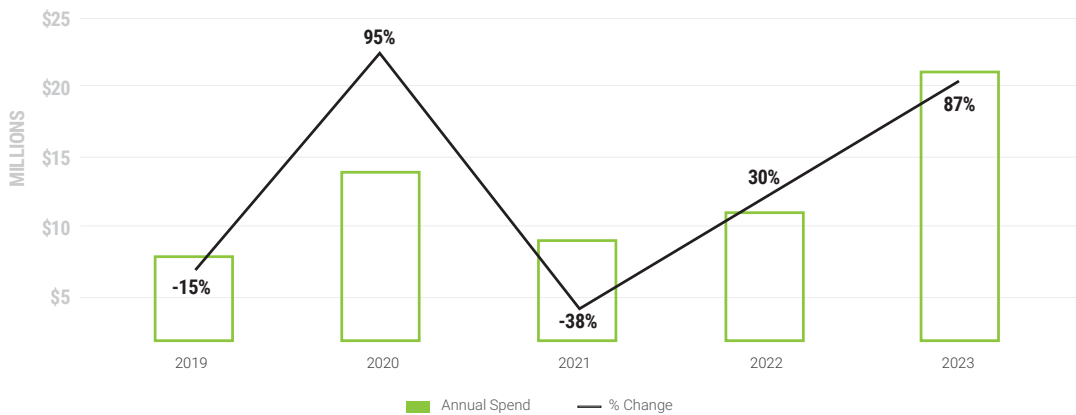
customer demands for customization



Making a business case was the #1 biggest barrier to adoption for every technology

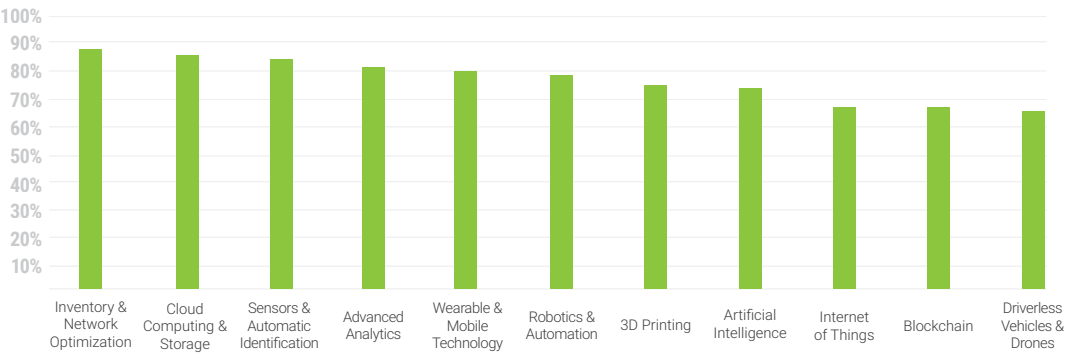
INVESTMENT IN INNOVATIONS

Year over year average amount willing to invest in innovations over next 2 years



ADOPTION TRENDS - PREDICTED USE

Predicted adoption of technologies within 5 years



PREPARATION FOR DISRUPTION

Actions taken to prepare supply chain for disruption in the next 10 years



partnering with vendors to better understand applications/benefits



recruiting for skillsets to align with future needs



reskilling/training workers for emerging technologies



began piloting new technologies

TABLE OF CONTENTS

Introduction	3
Sustainability & Responsibility	4
Climate Readiness Assessment	8
Technology Innovation	10
Supplier/Industry Collaboration	14
Talent	20
Actions for Supply Chain Leaders	24
Supply Chain 2033 - Future Outlook	28
Conclusion	30



INTRODUCTION

Mitigating disruption risk continues to be the top priority for today's supply chain organizations, and will likely remain so far into the future. At the same time, however, the need for improved responsibility and sustainability in all aspects of supply chain management continues to grow—particularly as major enterprise customers increasingly expect their suppliers (and their suppliers' suppliers) to operate in ways that are consistent with their own high standards for responsible supply chains.

Recent MHI Annual Industry reports have largely focused on disruption risk. Our 2021 report delved into the supply chain vulnerabilities exposed by the global COVID pandemic. Our 2022 report challenged business and supply chain leaders to learn and benefit from the pandemic by embracing ground-breaking innovations with the potential to revolutionize how supply chains operate, helping them thrive when tackling the future's uncertain but inevitable disruptions. In the time since we published those reports companies have made great strides to improve the resilience of their supply chains, and their ongoing efforts and investments in that area are significant.

This year's report is based on a survey of over 2,000 supply chain professionals and builds on past insights by highlighting the rising importance of creating supply chains that are both resilient and responsible, with increased focus on transparency and sustainability. Responsible supply chains strive to minimize their negative impact on the world and the environment—and can also have a positive impact through the circular economy and regeneration (e.g., reusing materials from other sources that would otherwise end up in the ocean or a landfill).

In the pages that follow we examine the rising importance of responsibility and sustainability in supply chain management, and how innovative digital technologies can help supply chains become more responsible, resilient, and efficient. We also examine the related issues of talent, leadership, and collaboration—all of which are critically important to achieving supply chain improvement that is truly impactful.



SUSTAINABILITY & RESPONSIBILITY

Supply chain companies are under increasing pressure to become more environmentally responsible and sustainable. In fact, nearly half of this year's survey respondents (48%) say they face increased influences to adopt a more sustainable supply chain (Figure 1). The pressure is coming from every angle, including consumers, regulators, industry groups, traditional and social media, and other stakeholders that increasingly expect brands and their supply chains to adhere to their own high standards.

THE BAR CONTINUES TO RISE

Now more than ever, your company's stance on sustainability has a widespread impact on your business—affecting whether people want to buy from you, work for you, invest in you, or collaborate with you. Targets for reducing the output of greenhouse gases

(GHG) are a key Sustainability challenge for supply chains. Regulators, especially in the US and EU, are becoming more active in setting climate risk standards to which companies must adhere. Emissions from supply chains can account for over 90% of a firms' GHG emissions. According to the International Energy Agency, transport accounts for 23% of global CO₂ emissions. Also, the International Transport Forum estimates that freight accounts for more than 40% of all transport CO₂—and the percentage is rising. As such, environmental sustainability and responsibility has become an imperative for supply chains, with companies now expected to factor all available levers into their path for achieving net zero emissions.

"Sustainability will become a key competitive advantage in the future. Investments in sustainability and transparency help reduce risk exposure and build loyalty with customers and employees alike."

- John Paxton, CEO of MHI

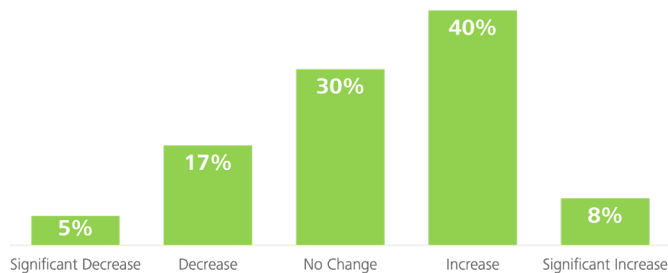


Figure 1: Has your company experienced influences to adopt a more sustainable supply chain

When establishing targets for Scope 1, 2, and 3 emissions from direct and indirect sources, companies should consider technology- and nature-based solutions to reduce emissions, increase transparency, and “regenerate” natural resources by reusing waste materials from other sources.

TECHNOLOGY IS A KEY ENABLER FOR RESPONSIBLE SUPPLY CHAINS

AI and predictive/prescriptive analytics are key enablers for achieving sustainability goals, according to this year’s survey. The growing

pressure in this area is prompting supply chain companies to increase their efforts to monitor, evaluate, and share their greenhouse gas data in order to show they are doing their part to enable the path to net zero.

Supply chain technologies such as AI, digital twins, and analytics can improve ecosystem transparency and help enable positive sustainability impacts. Critical environmental impact data—such as water use, CO₂ emissions, waste, and deforestation—is driving companies to coalesce around common metrics and collaborate with suppliers (and even competitors) to collectively improve their sustainability performance.

ELECTRIFICATION IS THE TOP FOCUS AREA

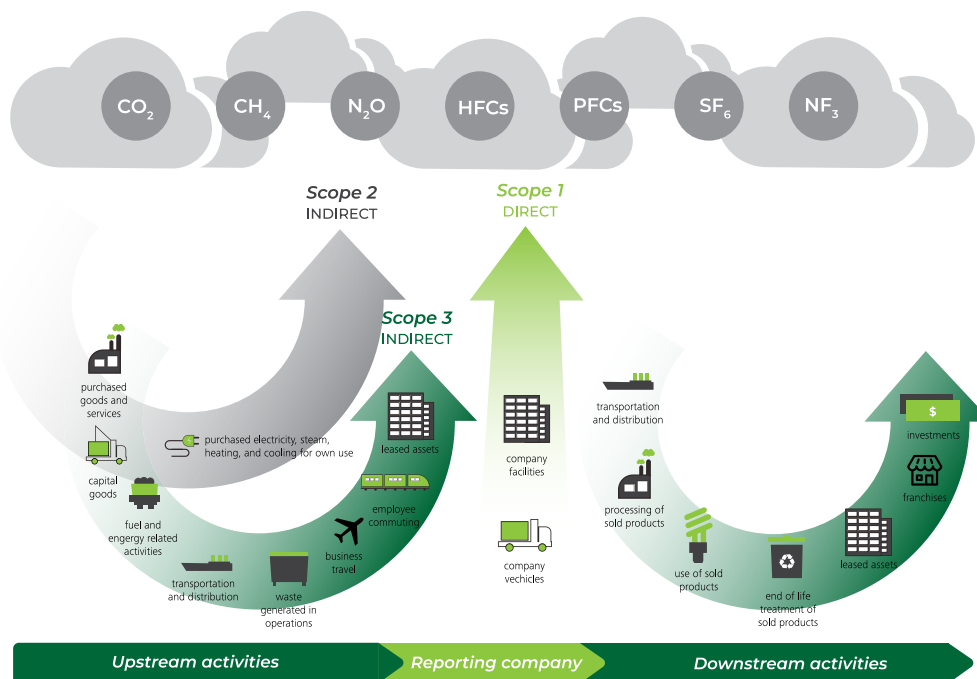
Top focus areas for sustainability are electrification (40%), natural resource management (29%), water usage (27%), and transition to renewables (27%) (Figure 2).

Scope 1: Direct GHG Emissions

Direct emissions from fuel burned at owned or controlled sources

Scope 2: Indirect Purchase Energy GHG Emissions

Indirect emissions from the consumption of purchased energy



Scope 3: Other Indirect GHG Emissions

Indirect emissions throughout the value chain not covered in Scopes 1 and 2 as a result of activities not owned or controlled by indirectly impacted by the organization’s value chain

Source: GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard
Copyright © 2021 Deloitte Development LLC. All rights reserved.

Understanding of GHG Scopes - GHG emissions are categorized into three scopes across the value chain

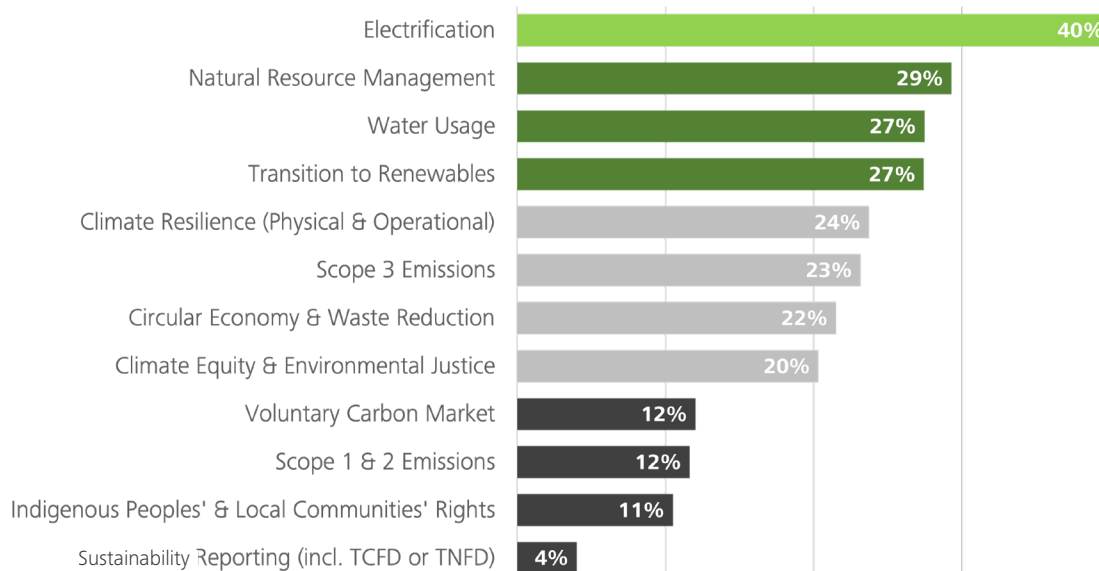


Figure 2: What sustainability related topics are you most focused on?

RESPONSIBLE, RESILIENT SUPPLY CHAINS ARE A C-SUITE ISSUE

Ownership for achieving and maintaining a responsible supply chain typically falls on internal functions such as Sourcing, Logistics, and/or IT (with varying levels of support from

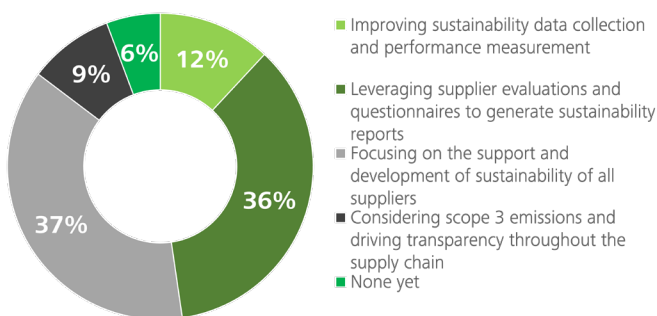


Figure 3: Survey results - What level of collaboration are you working on or pursuing with suppliers around sustainability in your supply chain?

company leadership and cross-functional talent). However, a number of factors are best driven from the top down, including flexibility and sense of purpose, how individuals' actions can create impact across the organization, and governance of internal and external relationships.

Nearly three-fourths of survey respondents are working with or pursuing collaboration

with suppliers on supply chain sustainability by leveraging their evaluations and questionnaires to generate Sustainability reports (36%) or by focusing on the support and sustainability of all suppliers (37%) (Figure 3). This collaboration fuels the need for innovative solutions and a base of talent that understands the linkages between internal Sustainability targets and work with suppliers.

Given the disruptions that supply chains have experienced over the past few years, resilience has emerged as a strategic imperative. Proactive identification and mitigation of supply chain risks are paramount for a company to ensure continuity of service while keeping its journey to net zero on track. As part of an organization's overall strategy, scenario-based predictive models can help achieve and maintain a supply chain that is responsible and resilient. To that same end, this year's survey respondents are increasing their plans to build longer-term business relationships with fewer suppliers, fostering shared responsibility and investment to protect their supply chains from global disruptions.



A CIRCULAR SUPPLY CHAIN KEEPING PLASTICS RECYCLED

SITUATION

Herman Miller is a global manufacturer of office furniture and equipment (as well as home furnishings), with production facilities around the world. The company wanted to extend its legacy of environmental stewardship by becoming more sustainable with its packaging processes. In particular, it wanted to eliminate damage to parts, maximize space in trucks, and optimize warehouse space. This desire to redesign its processes for the good of humanity led the company to NextWave Plastics, a consortium of multinational brands collaborating to keep plastic waste out of the ocean.

ACTIONS

As a long-time customer of ORBIS Corporation, an international reusable plastic packaging manufacturer, Herman Miller collaborated with ORBIS to use ocean-bound plastic in its existing fleet of returnable shipping crates. This plastic is largely recovered coastline waste at risk of entering the ocean. Working together, the two companies developed an optimal mix of materials that maximizes the use of ocean-bound plastic while maintaining durability and utility.

RESULT

Herman Miller is now using these returnable shipping crates in bulk, with an initial order that kept 3,875 pounds of plastic out of the ocean (equivalent to 30,000 milk jugs or 600,000 bottle caps). Having demonstrated the use case to other members of the NextWave consortium, Herman Miller intends to continue working with ORBIS and other suppliers to reduce single-use materials and further incorporate ocean-bound plastic into new and existing packaging applications throughout its supply chain. The “circular economy” concept of maintaining a continuous flow of product in a value circle—a concept that Herman Miller, ORBIS, and NextWave created—is keeping existing products in use through reuse while also regenerating natural resources by producing new products with waste materials that would otherwise end up in the ocean.



CLIMATE READINESS ASSESSMENT

With sustainability goals and directives now on the table for many companies, supply chain practitioners may be wondering what parts of their operations may already meet sustainability and climate standards and what work still needs to be done.

Deloitte has created a Climate Readiness Assessment to help companies evaluate their operations' maturity across 5 modules of climate with a brief diagnostic that can provide a snapshot of an organization's climate maturity. Upon completion, the user is classified into one of 6 climate profiles.

WHY IT MATTERS

Completing the assessment provides organizational

leadership with an evaluation of internal capacity to respond to climate challenges, identifying key gaps and opportunities.

It also gives leadership and staff a data-driven approach to operationalizing climate priorities and initiatives and facilitates alignment across organizational leadership, helping coordinate climate efforts and cultivate a whole-of-organization approach to climate.

"Supply chain companies embarking on their sustainability journey will need input from across their organization to support reporting. Embracing circularity, reducing environmental impacts, regenerating nature, and embedding equity should all be coded to their DNA and driven from the top down for them to be successful."

- Wanda Johnson, Specialist Leader, Deloitte Consulting

5 MODULES OF CLIMATE READINESS



Strategy & Leadership



Risk & Resilience



Emissions Reduction & Decarbonization



Innovation



Equity

6 CLIMATE PROFILES

OBSERVER

Observers have limited exposure to climate considerations or minimal experience implementing climate efforts. They see the signals to act on climate but face some barriers to integrating climate initiatives into their organization. Additional educational efforts will broaden awareness and help initiate planning to determine leadership's priorities and strategy around climate action.

CONTRIBUTOR

Contributors are action-oriented, driving thoughts, initiatives, and plans around how their teams can address climate issues, but do not do so consistently. To be more effective in driving change and realizing positive outcomes, you will benefit by spending time early on developing cohesive and cross-cutting climate priorities, goals, and targets, setting a clear direction for your organization.

STEWARD

Stewards view climate efforts as a compliance activity to ensure budget, operations, and programming align with existing requirements. Some of these activities may even align with important global climate efforts such as decarbonization, equity, and innovation. Stewards will benefit from taking on a longer and broader view, incorporating identification of medium- and long-term risks and opportunities into their assessments.

STRATEGIST

Strategists excel in setting direction for future climate action. But Strategists may find themselves more heavily focused on an overall vision than the tactical details of implementation. Build on your existing strategy by identifying and prioritizing key climate actions aligned to strategic goals and develop a tangible plan to regularly review the risks.

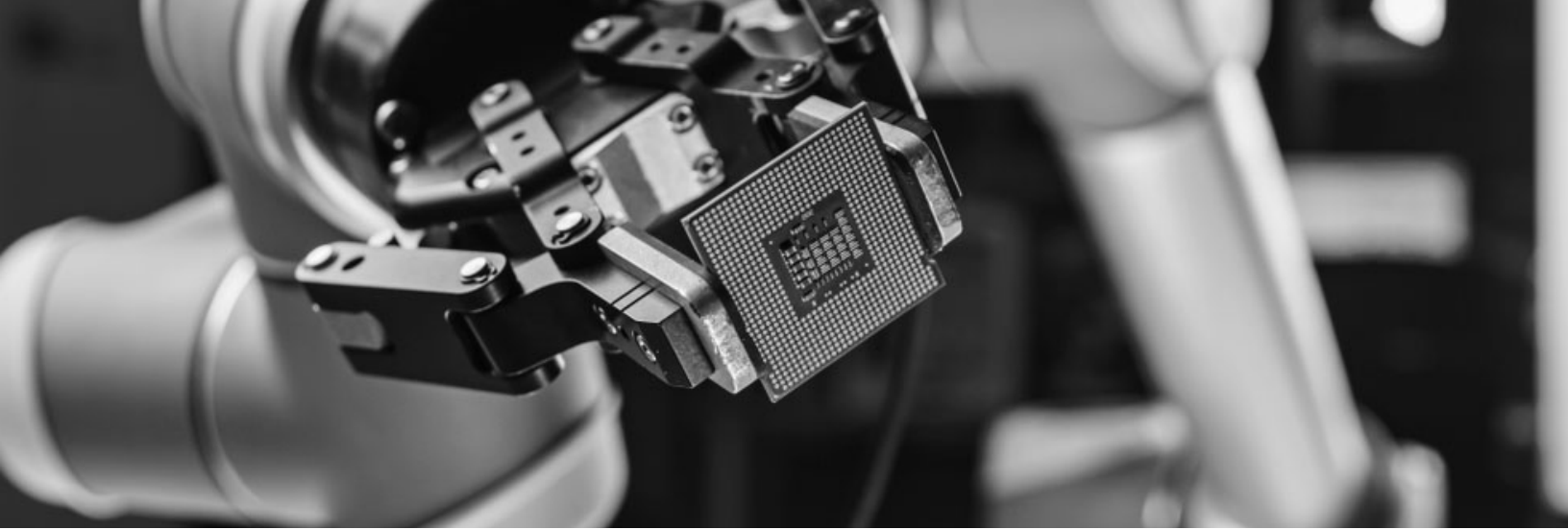
NAVIGATOR

Navigators view climate as an important factor in strategy and risk planning, going beyond minimum requirements outlined in federal regulations. They take a broad view of an issue or challenge and understand the position of their organization in a global context. However, there are still areas to build by further strengthening impact through expansion and adjustment of the scope of activities.

CHAMPION

Champions demonstrate high levels of climate maturity. They have a clear organizational vision and priorities on climate and take proactive steps to regularly integrate climate readiness into their mission and operations. Champions can play an important role in supporting others through their insight and guidance on climate issues.

To take the assessment, visit bit.ly/3Zq1czp or contact usgpsclimateaction@deloitte.com.



TECHNOLOGY INNOVATION

This year's survey, which received over 2,000 responses from supply chain leaders around the world, continued to highlight 11 key technology innovations that are reshaping the global supply chain industry:

- Artificial Intelligence
- Blockchain
- Cloud Computing & Storage
- Driverless Vehicles & Drones
- Internet of Things
- Inventory & Network Optimization
- Predictive Analytics
- Robotics & Automation
- Sensors & Automatic Identification
- Wearable & Mobile Technology
- 3D Printing

74%

of respondents are increasing their investment in supply chain technology and innovation

INNOVATION INVESTMENT IS BACK ON TRACK AND ACCELERATING

A key takeaway from this year's results is that a growing number of companies have bounced back from the COVID pandemic and are increasing their spending on supply chain innovations.

Our 2019 report showed a sharp increase in respondents' planned investments in innovative supply chain technologies. However, the global pandemic and resulting

"Investments in automation and other digital solutions like IoT, advanced analytics and AI arm your operations with speed, accuracy and improved visibility. These solutions enable the real-time decision-making and transparency necessary for reporting and improving performance up and down the responsible supply chain."

- John Paxton, CEO of MHI

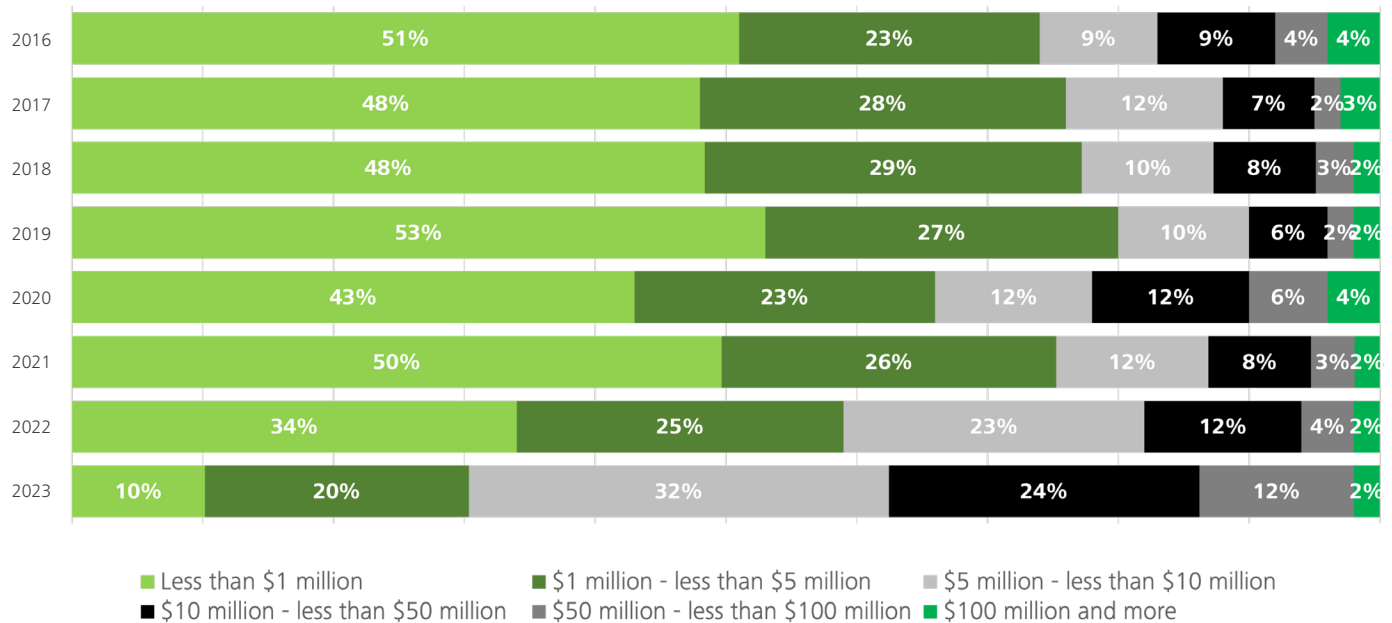


Figure 4: Planned investment in supply chain innovations by year

supply disruptions in 2020 pushed those plans to the back burner as companies shifted their attention to inventory management, controls, and visibility.

Last year's report highlighted the importance of using supply chain disruptions as a springboard to achieving broader digital transformation, and this year's survey results reflect that critical trend. Using the weighted average of two-year investment projections from this year's survey as a gauge for industry spending patterns, two key observations emerge.

First, as expected, we have observed a significant deviation from the status quo in this past year for more respondents that expect spending to be between \$1 Million to \$50 Million than we have seen in the previous 7 years. (Figure 4). Specifically, 90% are planning to invest more than \$1 million, up 24% from last year. Additionally, 38% plan to spend more than \$10 million, up 19% from last year.

Second, investment budgets for 2023-2025 have not only returned to pre-pandemic levels, but have actually surpassed them and are

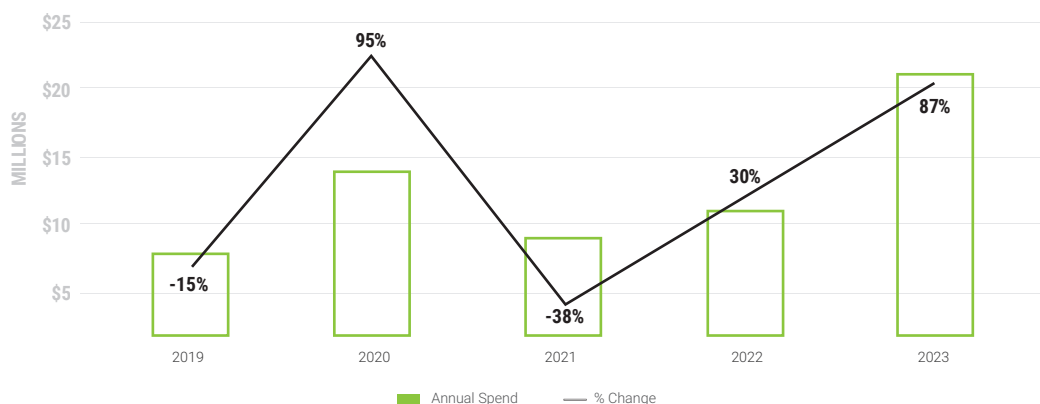


Figure 5: Year over year average investment in innovations over next 2 years

now realigned with the aggressive investment trends we were seeing prior to 2020. (Figure 5).

These observations give reason for great optimism about the future of the supply chain industry, and could foreshadow major transformations over the next few years.

AI RISES TO THE TOP

Along with the highly positive investment outlook, we continue to see high expectations for digital innovations to disrupt the supply

chain industry and create lasting competitive advantage. However, the relative expected impact for some of the technologies has changed since our previous surveys were conducted. For example, Robotics/Automation dropped five positions after hovering near the top of the list for years (although expected investment in that area remains high, suggesting that Robotics/Automation has become table stakes for operations to remain competitive). In contrast, Artificial Intelligence jumped four positions and is now viewed as

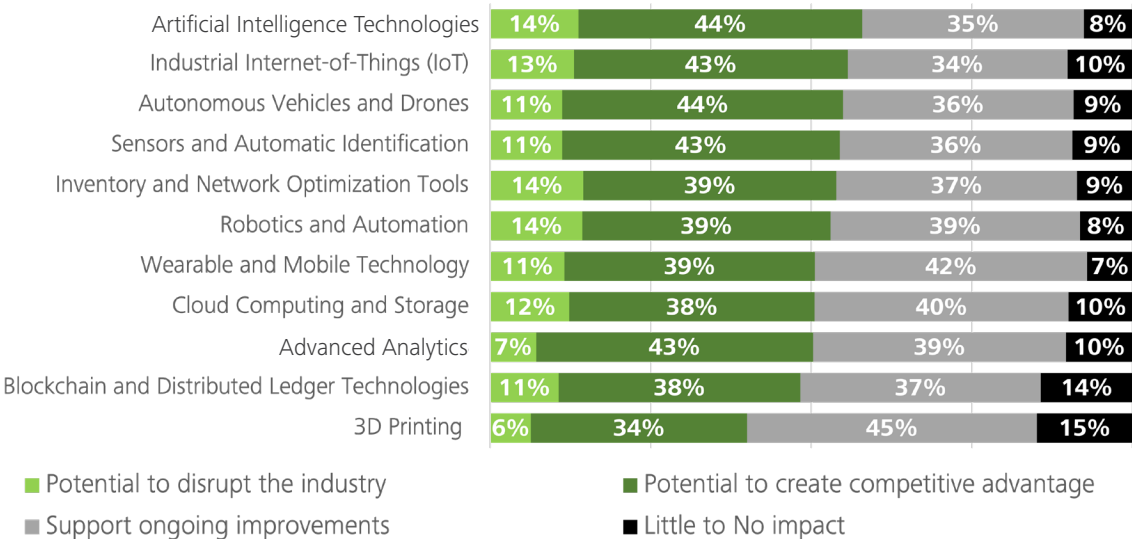


Figure 6: Impact of technologies on industry’s supply chain

ADOPTION TRENDS - PREDICTED USE

Predicted adoption of technologies within 5 years

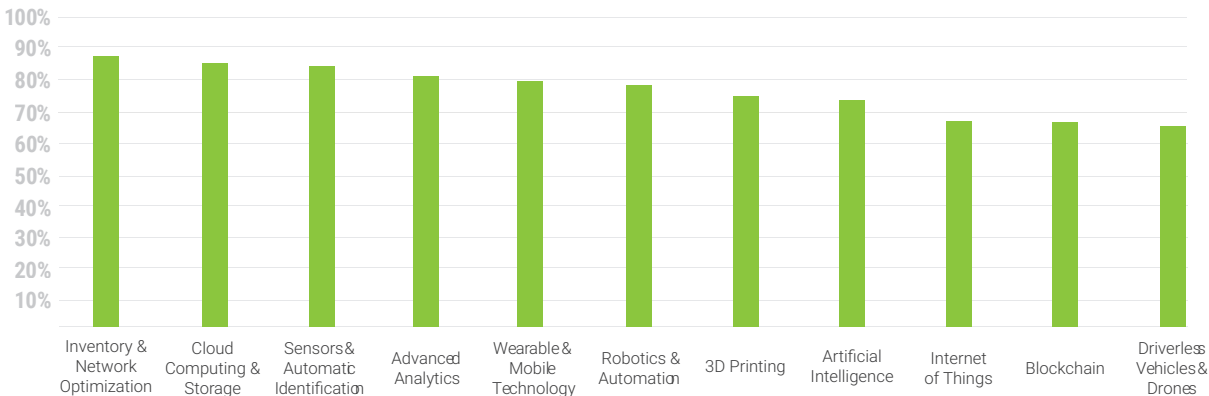


Figure 7: Predicted adoption of key supply chain technologies

the most impactful innovation, suggesting it is poised to make real and transformational differences in the industry (Figure 6).

ADOPTION TRENDS HOLD STEADY

Adoption trends are generally consistent with the past. Cloud computing (17%) and Robotics/Automation (14%) continue to lead the pack for technologies that are in use today, while Internet of Things (82%) and Predictive Analytics (81%) top the list of innovations expected to be the most widely adopted over the next five years (Figure 7).

WORKFORCE AND TALENT REMAIN TOP SUPPLY CHAIN CHALLENGES

For the past five years, actual implementation levels for the technologies highlighted in the survey have been consistently lower than planned. This year's respondents cite "lack of adequate talent to effectively implement

and utilize the technology" as a major reason, ranking it as the #1 or #2 barrier for each of the 11 technologies, with 57% naming hiring and retaining workers and 56% citing the talent shortage as their top challenges (Figure 8)

Ironically, talent is both a barrier and beneficiary when it comes to implementing innovative technologies. Although deploying technology to automate routine tasks requires talent and manpower, once the technology is up and running it can free up workers to focus on higher value tasks that require human involvement.

Supply chain disruptions and out-of-stock situations are major concerns at 53% and 52% respectively. Customer demands follows closely at 52%

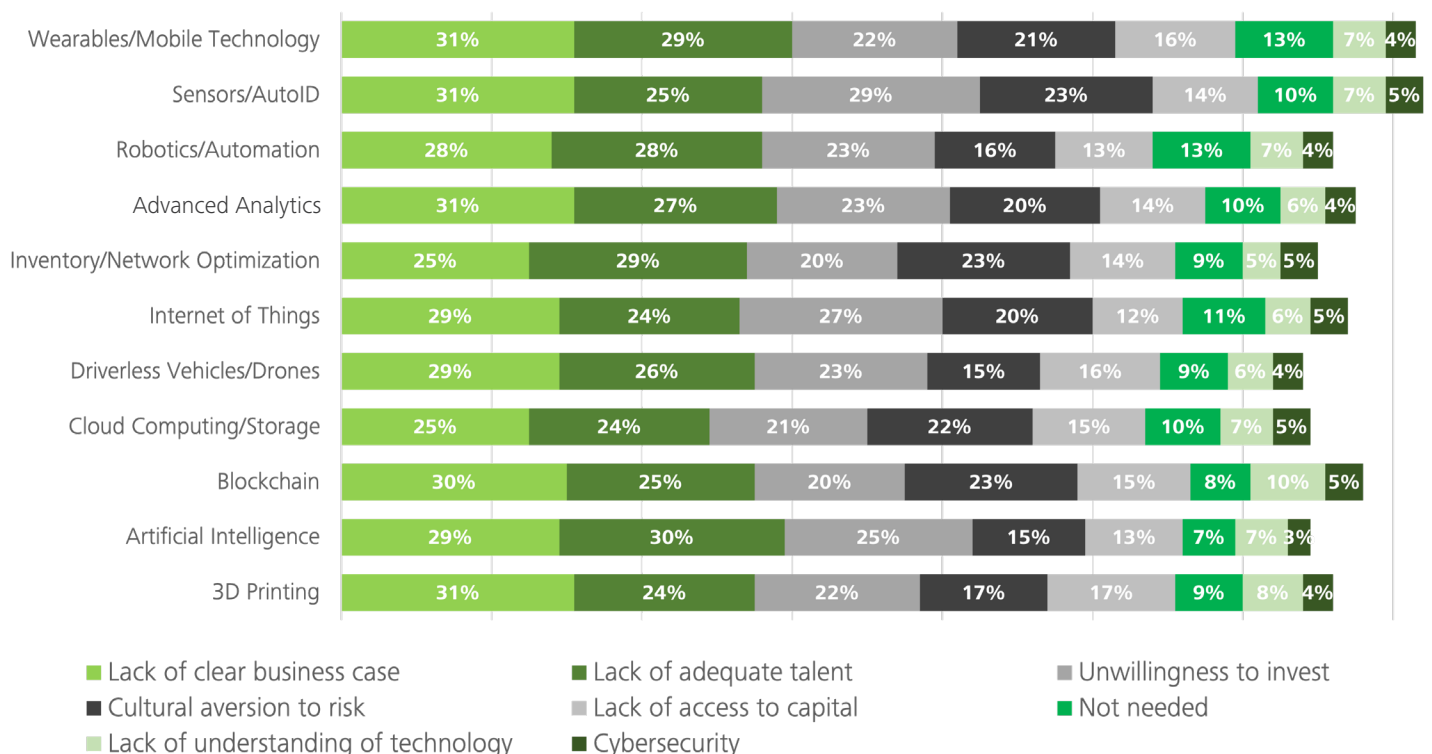


Figure 8: Primary barriers to adoption (select all that apply)



SUPPLIER/ INDUSTRY COLLABORATION

All companies, regardless of industry, are part of a complex ecosystem of customers, suppliers, collaborators, and competitors that make up a supply chain. In the past, companies could succeed by primarily collaborating with a small set of suppliers and distributors. However, the supply shocks of the past few years vividly illustrated that a broader approach is needed to achieve true resiliency, sustainability and adaptability.

Some supply chain challenges can only be solved through industry-wide collaboration. The good news is that broad collaboration can not only strengthen the effectiveness of a company and its own ecosystem, but when involving competitors (under appropriate circumstances) it can lead to overall improvements in

transparency, responsibility, and efficiency for the entire industry—and for society as a whole. “Criteria for choosing partners is that you have to be aligned in terms of why you are doing it, you have to create trust across that partnership, and you’ve got to create end-to-end impact targets to go after together,” says Amanda Davies, Chief Procurement and Sustainability Officer with Mars Wrigley.

COLLABORATING TO MITIGATE RISKS AND IMPROVE SUSTAINABLE OUTCOMES

According to Deloitte’s 2022 CXO Sustainability Survey, achieving a resilient and responsible supply chain will require collaboration in goals and initiatives across suppliers, business partners, clients, peers, governments,

“As leaders, we must drive transparency and coordinate change across the end-to-end supply chain as we work collaboratively to improve resiliency, reduce Scope 3 emissions and move toward the circular economy.”

- John Paxton, CEO of MHI

regulators, and industry associations. Over the past few years the consequences of inadequate collaboration have been impossible to ignore, with supply shortages touching almost every industry, from automotive to transportation to groceries. And while the exact reasons for the shortages varied (e.g., shipping disruptions, panic buying, labor shortages), improved collaboration in the future can improve risk mitigation and environmental sustainability in even the most challenging and unprecedented circumstances.

Many organizations have already begun this collaboration journey, with almost half of survey respondents (49%) currently partnering with suppliers and vendors to better understand applications and business benefits related to preparing their supply chains for future disruptions and sustainability.

COLLABORATION AND IOT

One technology area that can both enable and benefit from collaboration is the Internet of Things (IoT). According to the survey, 39% of companies expect Industrial IoT to be used for customer and/or supplier collaboration over

the next 1-2 years (Figure 9).

Collaborating both upstream with key suppliers and downstream with major customers allows an organization to develop a much deeper understanding of its total logistics ecosystem—and to identify opportunities for building additional resilience into every part of the supply chain.

Looking more broadly at IoT, 87% of respondents say they are already using IoT devices and RFID tracking within their supply chain (or plan to use those technologies within the next 3-5 years). IoT proliferation is generating massive amounts of new data related to production, procurement, warehousing, and transportation of goods. As IoT adoption continues to rise, vast new data lakes will be created that provide increasingly granular information on the movement of goods within an organization's supply ecosystem—offering new opportunities for advanced analytics to boost efficiency and improve performance.

DATA SHARING IS KEY

With so much valuable new data being generated, the ability to share data securely



Figure 9: How are you using or planning to use Internet of Things?

and transparently has become a strategic priority. Scope footprinting, target setting, abatement and disclosure for sustainability simply isn't possible without collaboration up and down the supply chain and the availability of accurate and reportable data. Additionally, achieving true end-to-end transparency requires the same. The combination of advanced analytics and blockchain, which 82% and 81% of respondents plan to implement over the next 3-5 years, offers tremendous promise in this area.

They work to strengthen the end-to-end integrations and connect key activities in the supply chain. They also enable security and a high level of transparency by allowing the secure sharing of granular data on sales, movement of goods, and other critical aspects of operations. Many organizations spent the past few years constantly playing catch-up to sudden and unexpected shifts in demand, supply, and transport schedules—largely due to (1) lack of transparency about suppliers' ability to provide goods, and (2) lack of adequate data for building accurate demand forecasts. Advanced analytics can help prevent this bullwhip effect by providing all stakeholders in a supply ecosystem with more

current, accurate, and transparent information about demand/supply cycles and the lead times for various goods.

Top uses for blockchain technology include: invoice management (35%); contract performance management (33%); inventory management (27%); and collaborative planning and forecasting (25%). Top uses of advanced analytics include: demand forecasting (35%), maintenance and asset management and customer insights (both at 35%), and supply planning (32%) and pricing (31%).

AI'S BIG PROMISE

AI is another technology with tremendous potential to streamline operations and accelerate the overall pace of a supply ecosystem. According to this year's survey, more than 75% of companies plan to implement new AI use cases within their supply chains. Data analytics and AI also play an important role in making supply chain operations more sustainable. These solutions can help in waste reduction and more accurate forecasting as well as aid in optimizing vehicle routes to reduce fuel consumption. 34% of companies are using

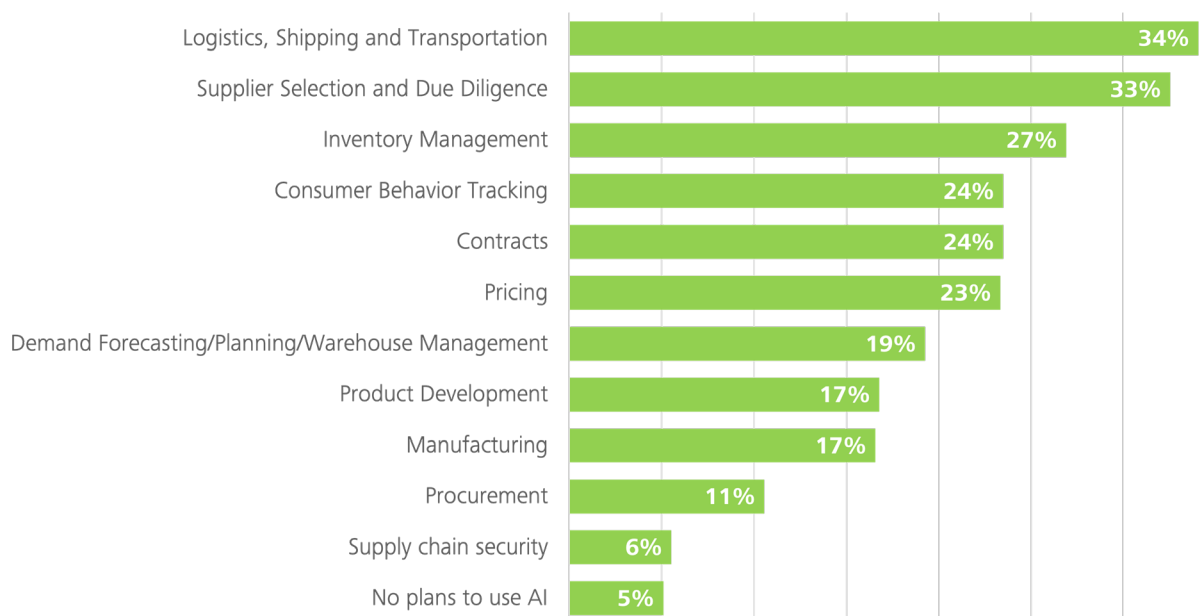


Figure 10: How are you using or planning on using Artificial Intelligence?



AI TO IMPROVE VISIBILITY & TRANSPARENCY

SITUATION

Kenco Group manages integrated logistics solutions across 116 distribution facilities. One of these operations providing services in the Healthcare-Consumer industry was facing challenges to plan warehouse labor and daily operations due to huge spikes in volume, causing the day-to-day forecast accuracy to dip below 68%. There was an immediate need for better forecasting to reduce over/understaffing and control costs for their client. This forecast inaccuracy resulted in volume variations and made it difficult to efficiently plan and manage labor deployment. Kenco leveraged their data science team to bring artificial intelligence (AI) tools into the operation to address these challenges.

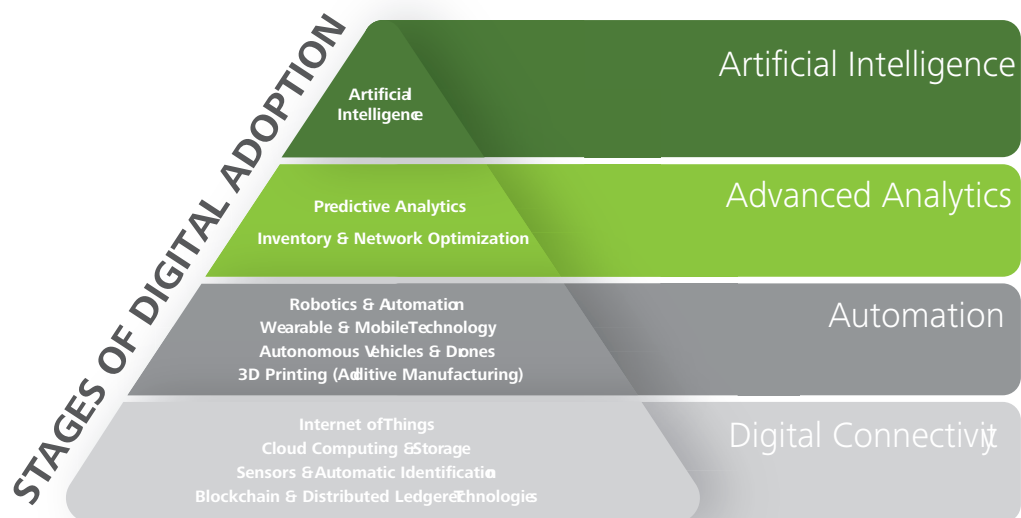
ACTIONS

To improve the overall transparency and visibility of operations, Kenco developed DaVinci AI, a cutting-edge analytics tool that provides capabilities across the entire supply chain and is designed to deliver customized solutions for warehouse operations. DaVinci utilizes AI to offer advanced insights into an operation's key metrics and performance so decisions can be made in near real-time. For this customer, Kenco built a custom proprietary volume prediction algorithm using AI. DaVinci AI interfaces with their client's existing WMS and other supply chain technology solutions to gather data such as seasonal disruptions, equipment utilization combined with other data sources including

weather patterns, geographical data, and prior demand data. By continuously pulling or scraping this data, DaVinci AI algorithms generate a range of useful analytics, including order forecasts, labor management plans, and task optimizations as it draws insights from trends and patterns and predicts the future of the operation.

RESULT

By applying DaVinci AI, Kenco was able to achieve order forecasting accuracy of 89% , an increase of 21 points and realized significant improvements in labor staffing effectiveness to reduce overall labor costs, while simultaneously increasing both the productivity and safety of individual workers through the application of their solution into task-level instructions. Operations managers now possess timely and accurate recommendations presented in an easy-to-follow format that is updated every hour to allow a more effective labor plan that leverages multiple data sources and intelligence to create a better experience for the workforce and increased service and value for their client.



(or planning to use) it to help coordinate and collaborate within the logistics, shipping, and transportation section of their business, and 33% already using (or planning to use) AI specifically to help with supplier selection and due diligence (Figure 10). “Artificial intelligence and advanced analytics can be most beneficial when predicting key impacts such as labor needs, capacity constraints, potential delivery failures and proactively addressing challenges,” says Kristi Montgomery, Vice President, Innovation, R&D with Kenco Logistics.

AI can not only help enable collaboration through smarter supplier selection, it can also greatly benefit from collaboration since accurate AI analysis can only be achieved through radical transparency and data sharing at every stage of the supply chain. Any big data processing and decision-making area, such as inventory management, behavior tracking, and demand forecasting can benefit from using AI to evaluate and collaborate.

RESPONSIBLE SUPPLY CHAINS NEED ACCURATE, SHARABLE, AND ACTIONABLE DATA

Effective use of data and governance, while always important, has now become an essential competitive differentiator for supply

chain organizations. The addition of so many new technologies into the supply chain landscape is making vast amounts of data available, even for organizations just getting started with digital adoption.

Previous MHI Annual Industry Reports outlined the four escalating stages of digital adoption: digital connectivity, automation, advanced analytics, and artificial intelligence.

Data is generated and collected at each of the four stages, and nearly all data can be valuable if utilized and acted on effectively. Some digital technologies are especially rich sources of data for improving resilience and responsibility of a supply chain, including: internet of things, cloud computing and storage, blockchain and distributed ledger technologies, and artificial intelligence. Of course, adopting these technologies is only half the battle. Unless the associated data is properly stored, cleansed, analyzed, and shared, the risk of supply chain disruption and other problems remains high.

The most resilient, efficient, and responsible supply chains mitigate risk by having ready access to complete, accurate and secure data that enables fully informed, data-driven decisions. Improved data management is especially crucial for sustainability and Scope reporting.

CONDUCTING AUDITS WITH ROBOTICS



SITUATION

Bonded airline cargo warehouses are intensely regulated since materials are constantly being loaded and unloaded from planes. International laws require consistent, complete warehouse audits (i.e., bond checks similar to inventory counts in standard warehouse operations), which often require extensive amounts of manual labor, even for the smallest warehouses. Also, there is high cargo turnover, with materials typically being loaded onto a plane within 48 hours of arrival, resulting in constant warehouse location updates. Menzies Aviation, an international company operating at more than 250 airports globally, was investing 12+ hours of focused, tedious manual labor per audit for its 7,000+ square meter facility at Heathrow Airport, with audits required 2-4 times per week.

ACTIONS

To streamline and improve its audit process, Menzies engaged Dexory to implement an autonomous robot and computer vision solution. Mimi, a robot with built-in cameras and lights, was implemented to conduct full nightly audits of the warehouse facility. In contrast to the old process, which involved individual workers manually moving, checking, and replacing each pallet, Mimi circulates around the warehouse taking millions of pictures and deconstructing them on-the-fly to locate, recognize, and read barcodes on the materials in every storage location, from floor pallets to top rack positions. As the

warehouse circulation occurs, data from the pictures is compared in real time to data in the Warehouse Management System to flag missing or misplaced items. Also, the solution measures rack occupancy levels, which can be reviewed by a warehouse manager using an easy-to-read digital twin graphical user interface (GUI).

RESULT

Instead of having employees 12 or more hours manually conducting a labor-intensive, error-prone audit process (on a periodic schedule with days between audits), Dexory's Mimi robot conducts the full warehouse audit every night in just 17 minutes. In addition to the significant time and labor savings, the solution also eliminates manual data entry errors and provides insights far beyond a standard audit—including logging of rack occupancy over time, as well as photographic evidence of issues for easier problem tracking and resolution. The digital twin GUI also allows rack data to be viewed easily outside of the warehouse, enabling full control tower management. These capabilities and others are being used to: improve transparency for inbound and outbound loads; plan around cyclical lulls to improve warehouse occupancy; and improve profits as compliance increases and previously misplaced items are found. Using Dexory's technology to augment the workforce enables workers to focus on higher value tasks and helps Menzies continue to improve and grow its operations.



TALENT

The top challenges companies face today continue to revolve around talent. The majority of this year's survey respondents still see the talent shortage as a very big challenge —particularly when it comes to hiring and retaining qualified workers (56%) (Figure 11).

To stay ahead of the competition and develop a workforce that is positioned to thrive in the face of changes and disruptions, companies need to invest in their most important asset: their people.

A recent Deloitte global survey found that only a quarter of respondents are highly confident they have the right workforce composition and skills for the future. A key conclusion was if companies aren't looking at technology right now and don't have sufficient tech talent within their operations, they are going to lose ground to their competitors.

Technology can support human workers in countless ways: fostering new capabilities and behaviors; improving operational performance; increasing safety; and supporting a more optimal work-life balance. In particular, new workplace technologies are emerging that don't just augment human workers and perform

mundane work. Rather, when used strategically, they have the ability to help individuals and teams upskill and reskill their capabilities.

THE DIFFERENCE BETWEEN UPSKILLING AND RESKILLING

The past few years have seen a 15% increase in the number of organizations investing in upskilling and reskilling programs with 41% focusing on working to prepare their workers for new tech-forward supply chain jobs..

Upskilling is providing education and training to help people do their existing jobs more efficiently and effectively. For example, an Operations Manager who currently uses Microsoft Excel could be trained on a more sophisticated process to integrate supply chain information using new software for shipping and logistics management.

Reskilling can also provide education and training to help people move into different jobs or pursue new career paths. For example, a Market Research

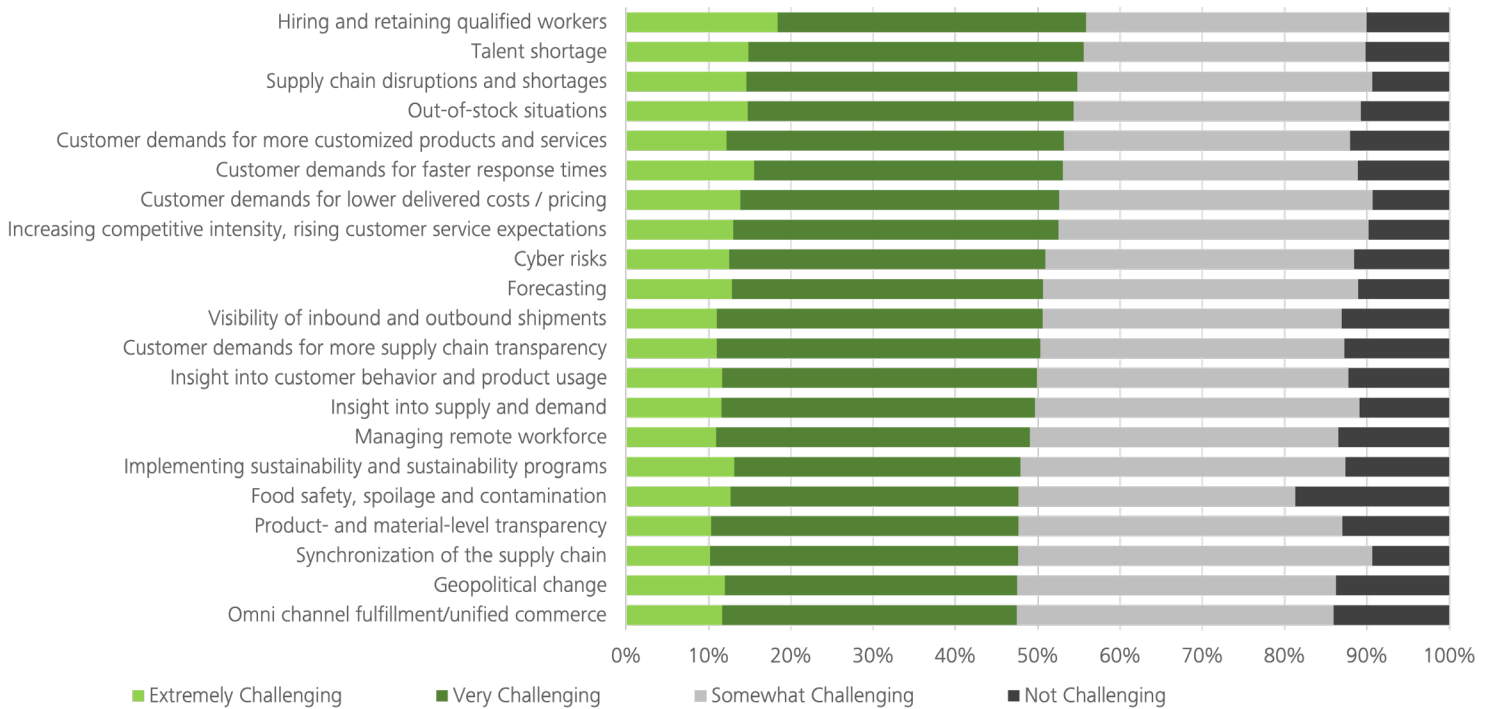


Figure 11: Company challenges

Analyst who wants to transition to a career in data science might have the necessary basic research skills but require training in other more technical areas.

WHY UPSKILLING AND RESKILLING ARE IMPORTANT

A 2021 World Economic Forum report warned that over half of all employees worldwide will need to reskill or upskill by 2025. To tackle this challenge, companies need to harness technologies that can help their people and teams become the best possible versions of themselves. Also, they need to measure the success of their technology investments in terms of human outcomes, not just cost and ROI.

Companies that invest in their employees

have a much better chance of attracting and retaining the talent they need. According to a Gallup report, almost 90% of Millennials—currently the largest worker segment in the United States—greatly value opportunities for professional development and career growth. When companies invest in employee development and growth their people have less reason to seek new opportunities—helping to prevent future workforce disruptions and insulating the business from unexpected crises, such as the global pandemic. Also, making skill development an integral part of the corporate strategy helps companies create a flexible workforce capable of quickly adapting to future needs and continuously improving.

The Readiness Gap for Harnessing Technology

Using technology to improve work outcomes and team performance is very important or important to my organization's success



My organization is very ready to use technology to improve work outcomes and team performance



Source: Deloitte 2023 Global Human Capital Trends survey

LESSONS FROM THE LEADING EDGE

In addition to upskilling, 34% of respondents are recruiting for skillsets that align to future needs and 27% are changing their organizational structure to incentivize a culture of innovation. Forward-thinking companies are using technology to analyze data and worker feedback so they can identify opportunities to improve worker happiness, innovation, performance, and retention. Also, they are designing effective workforce models that embrace job-centric upskilling and reskilling, enabling workers to take the initiative on solving problems and proactively preparing for change.

By identifying current and desired skills companies can organize skills into clusters and then create specific learning journeys for in-demand jobs, improving the effectiveness of upskilling and reskilling programs and creating long-term career paths.

Investment in continuous learning—and making learning an everyday habit—can reduce the impact of chronic talent shortages and an aging population; improve worker equality; promote inter-generational learning; and help create a more resilient workforce.

Technology can help today's companies redesign jobs and augment workers' capabilities—making work better for humans and humans better for work. According to Deloitte's 2023 Global Human Capital Trends survey, nearly all companies (93%) recognize the importance of using technology to improve work outcomes and team performance, but only 22% believe their organizations are very ready to do so.

You'll know your organization is making progress if workplace technology is improving teamwork and helping teams stay connected, and if workers are improving their personal capabilities and have more time to focus on high-value cognitive tasks such as creativity, ideation, and innovation.



DIRECTING THE WAREHOUSE WITH WEARABLE SMART GLASSES

SITUATION

A global warehouse distribution company was seeking to increase their operational throughput, improve workload accuracy, and retain frontline employees with innovative technology. Their existing warehouse operations were primarily reliant on tribal knowledge to efficiently navigate the warehouse and accurately build pallets. Operating with a primarily temporary workforce and combating high rates of attrition it became very challenging to train new employees, which consequently decreased efficiency and became prohibitively expensive. To remain competitive, the distribution company recognized the necessity of implementing automation. After assessing various automation solutions, the company discovered that automated mobile robots would not deliver the desired outcomes within the required timeframe.

ACTIONS

Seeking an innovative solution that could increase efficiency and empower their frontline, the company chose to deploy the Ox operator experience platform. Ox provided an artificial intelligence engine that streamlined task allocation, along with a wearable execution system powered by Vuzix Smart Glasses. Visual workflows displayed on the glasses which enabled operators to onboard more easily, while voice prompts allowed for hands-free work. The Ox platform was also able to optimize for pallet quality and

case accuracy, resulting in enhanced work precision. The light integration of Ox's frontline operations software and Vuzix's wearable smart glasses has maximized the operator experience and unlocked the full potential of the workforce.

RESULT

The implementation of Vuzix Smart Glasses, powered by Ox software, has transformed the way the company's frontline operators engage with their work. The hands-free, voice-activated picking solution, operators are empowered with directed work, resulting in optimal efficiency every time. The first three months of utilizing the Ox platform saw the company improve cases per hour by over 20% compared to their baseline. The human-centered automation is designed with the operator in mind, enhancing individual productivity while removing points of friction. The legacy processes were replaced, reducing the number of scans required and overall workload travel time. The software's intuitive design has also greatly enhanced the onboarding process for new employees, enabling them to quickly reach the productivity levels of tenured staff. As a result, the implementation of these solutions has not only yielded significant cost savings for the company, but also increased customer satisfaction.



ACTIONS FOR SUPPLY CHAIN LEADERS

It can be difficult for companies to keep pace in an ever-changing landscape where new technologies are constantly emerging and evolving. However, in today's world understanding and investing in new technologies is essential to ensure your organization remains relevant, competitive and responsible. All 11 technologies highlighted in this report have valuable applications and use cases that can help create a resilient and responsible supply chain. As a leader, it's your job to ensure that useful technologies are identified—and that clear business cases exist for adding value. Only then can you provide the necessary

top down support to help your team successfully drive innovation and technology implementation. Your role as a leader is also particularly important when it comes to driving environmental sustainability, which often gets pushed to the back burner as people struggle to tackle their day-to-day operational challenges.

FOCUS ON DATA TRANSPARENCY, ENVIRONMENTAL IMPACT AND COLLABORATION UP AND DOWN THE CHAIN

According to a report by the University of Tennessee's Global Supply Chain Institute, the emissions impact of the end-to-end supply chain is more than five times greater than that of a company's direct operations—making Scope 3 emissions the biggest challenge—and

"Responsible supply chains must react in real-time to changing conditions, this requires actionable data, automation and automated decision-making."

- John Paxton, CEO of MHI

opportunity—for advancing global sustainability goals. This insight highlights the critical need to focus on the accurate data sharing, security and collaboration for your entire supply ecosystem, particularly tiers 3, 4, and higher in your upstream supply chain.

The World Economic Forum agrees, noting that the lower-tier suppliers responsible for Scope 3 emissions not only output the most significant amount of emissions but also tend to lack the resources to invest in data analytics and other solutions. This underscores the need for your organization to truly collaborate with lower-tier suppliers to help them take the necessary steps to get their data houses in order. This will not only help you meet sustainability goals, but also goes a long way to make overall operations more secure, more transparent and more shock proof.

According to this year's survey, only 23% of respondents have made Scope 3 emissions a top focus of their sustainability efforts.

What's more, only 9% say that considering Scope 3 emissions and driving transparency throughout the supply chain is a current focus area for their supplier collaboration efforts.

A clear takeaway for leaders is that they not only need to drive top-down change within their own companies, but also need to challenge their supply chain organizations to improve data sharing and collaboration with the lower-tier suppliers that generate Scope 3 emissions.

Deloitte Sustainability Report - Organizational Recommendations

**The following is a snippet from Deloitte's annual Sustainability Report on how executives are viewing the overall sustainability landscape*

1. **Embed Climate Goals into the business overall strategy & purpose.** Clearly develop your organization's stance on climate action and weave it into your business strategy.
2. **Build trust by taking credible climate action.** Fight against climate action distrust by providing truthful and reliable reporting.
3. **Empower the board.** Ensure long-term views on sustainability and responsibility are captured in management decision-making.
4. **Encourage stakeholder action.** Influence stakeholder action not just internally but externally as well—working closely with local and national governments, suppliers, and business partners.
5. **Take the long-term view.** Responsible supply chain investments will generate long-term benefits, especially as demand for sustainable products and services grows.
6. **Invest in current and future technologies.** Constantly scan and assess existing and emerging climate-related technology globally, connecting to innovators and investing in solutions that add value.
7. **Collaborate to drive systems-level change.** The necessary pace of transformation requires coordinated, end-to-end collaboration across the entire supply chain—and even across industries.

INVEST AND TEST NEW TECHNOLOGIES

One way to gain transparency into your end-to-end supply chain and Scope 3 emissions is by implementing various innovative technologies that enable deep visibility and traceability across the entire supply chain, from raw materials to finished goods.

Data analytics, IoT, blockchain and AI are all technologies that can improve and speed the actionable data that can be shared up and down your supply chain.

In fact, all the technologies covered in this report from cloud computing, to robotics and automation and inventory optimization - all work together in an ecosystem that when implemented properly, can take your organization to the next level of resiliency, agility and responsibility. "Only when you are fanatical about adoption do you get the consistent data quality from these new tools. When you achieve the right level of adoption, then you can really create change," adds Amanda Davies, Chief Procurement and Sustainability Officer for Mars Wrigley.

KEEP YOUR PEOPLE YOUR TOP PRIORITY

The trends and technologies covered in this report provide the business case for more transparent, sustainable and responsible supply chains. But you can't get there

without the people necessary to successfully implement this innovation. The key to success is not only a commitment to innovation, but a commitment to your workforce. That starts with strong leadership at the top and throughout the organization.

Meaningful and lasting innovation requires clear commitment from the highest levels of the organization—particularly the C-Suite. Far too many organizations make promises about environmental innovation and sustainability but fall flat on execution. Clear commitment from the top helps drive follow-through in the rest of the organization by showing that the organization's leaders are fully bought in.

Start by establishing clear, bold, and inspiring organizational goals. Such goals send a strong message to your employees, suppliers, customers and all stakeholders that your innovation, sustainability and especially your people are your top priority. Once that is clear, develop a collaborative plan for innovation that moves you toward a supply chain that is responsible to all stakeholders and the environment.

SHARING SUPPLY DATA THROUGH BLOCKCHAIN

SITUATION

BMW Group, a world-leading automobile manufacturer producing approximately 10,000 vehicles a day in 31 plants across 15 countries, was facing supply chain challenges through manual processes, spreadsheet-based data, and email correspondence with suppliers. These challenges created operational issues such as data management, parts shortages, mismatched supply and demand signals, and coordination with their global network of suppliers, which ultimately led the organization to face challenges related to production and quality.

ACTIONS

To address these challenges, the BMW Groups IT division put together a proof of concept called PartChain, that would allow BMW and its suppliers to share supply chain data more efficiently through Blockchain. After initial rounds of testing with a small subset of suppliers allowing the organization to obtain meaningful visibility into their supply chain, they decided to scale the technology to a larger pool of suppliers. BMW then became part of the Catena-X, Automotive Network e.V. that creates a secure, data-based economy for OEMs, small and medium businesses, and recycling companies.

RESULT

Ultimately the implementation of Blockchain turned out to be a great success for BMW. The application of Blockchain allowed BMW to gain near seamless real-time visibility and transparency among all supply chain members, preventing overstocking and shortages, and allowed them to gain a better understanding and traceability into the origins of their component parts. The technology also enabled BMW and its suppliers to identify and realize potential improvement opportunities through a collaborative data ecosystem.

SUPPLY CHAIN 2033

FUTURE OUTLOOK

According to this year's survey, 86% of the manufacturing and supply chain professionals surveyed said that digital supply chains that are autonomous, connected, intelligent, and agile will be the norm by 2027 — 5% say they are the norm today. The survey results also predict a strong uptick in the adoption of these technologies with 90% planning to invest more than \$1 million and 38% planning to invest over \$10 million over the next two years up from 66% and 19% respectively over just last year.

Given this accelerated investment in technology, it is expected that by 2033, digital supply chains will be the norm. The vision for digital transformation is one of a seamless end-to-end supply chain, with transparency into planning and execution at all levels.

This means a future where companies that have invested in this tech will see increased speed, connectivity, transparency, they will be certain to benefit from data that is accurate, shareable, secure, and actionable.

In the future, having your data in order and strong collaboration with all stakeholders up and down the chain are equally important to innovation investment — and will mean the difference between success or failure in the future.



WORKERS REMAIN KEY SUPPLY CHAIN ASSET

The number one challenge for supply chains is related to workforce and talent. Our survey data projects this challenge to continue to accelerate in the future. Supply chains are only as good as the people who run them. Investing in your current and future workforce and by putting programs in place to recruit, develop and to build a culture that retains workers will be key to long term success.

THE FUTURE OF SUPPLY CHAINS IS DIGITAL

Automation and digital technology adoption are now table stakes and will continue to be key critical components of successful supply chains in the future. These solutions help build necessary resiliency, transparency and enable accurate reporting up and down the chain. They also will take pressure off your workforce and offset ongoing labor challenges. New opportunities for technology investment in “as a service” models will allow organizations to implement new technology and automation more quickly. These solutions offer scalability and flexibility that allow users to test and access the latest technologies before making large capital investments.

STRONG SUPPLIER AND CUSTOMER COLLABORATION IS KEY

Strong relationships with suppliers and stakeholders up and down the chain will be essential to mitigate cyber risks, and supply chain disruptions while creating the data transparency that will be necessary for supply chain visibility and for sustainability reporting and compliance. Future supply chains will be customer centric by including the voice of the customer at the front end and by incorporating customer feedback and leveraging that actionable intelligence into the business operations.

CIRCULAR BUSINESS MODELS AND NET ZERO WILL BECOME THE NORM

As pressure ramps up on companies to cut their carbon footprints, more businesses will look to the circular economy business model. This is a sustainability approach that focuses on decoupling economic growth from resource consumption by extending the useful life and reusing materials throughout the value chain as long as possible. This approach will help firms meet their future net-zero emissions goals and to manage resource scarcity. Additionally, corporations will be re-evaluating their manufacturing footprint – considering nearshoring and friendshoring to not only reduce their carbon footprint, but to mitigate risk and get operations closer to the end-consumer.

THE RISE OF BUSINESS INTELLIGENCE AND AI

If data is the new oil, secure, accurate, sharable data will be the gold standard for the future. Advanced analytics, AI and blockchain will enable next generation business intelligence in the future to arm you with actionable insights to address and mitigate potential supply chain disruptions. They will also provide the end-to-end supply chain transparency and secure data sharing to run responsible supply chains.



CONCLUSION

The need for improved responsibility at all levels of the supply chain continues to grow. Customers, regulators, industry partners, prospective employees, and other key stakeholders want to see meaningful action—not just promises—hard data, operational performance and responsibility.

Building strong accountability structures throughout your supply chain helps assure stakeholders that your organization is ‘walking the walk’ when it comes to meeting its targets for innovation, transparency and sustainability. Only then can your supply chain become more resilient, thus reducing the potential impact from future disruptions.

Building strong collaboration to enhance data sharing and reporting with all supply chain partners will go a long way to mitigate your risk, either from unexpected disruptions or new customer and stakeholder expectations.

It’s time to take significant action to build transparency and sustainability into the core of your supply chain. By embracing new technology and rethinking the traditional boundaries of supplier and industry collaboration, you can improve the efficiency and resiliency of your supply chain operations.

“Competitive advantage will depend on your people, your ability to implement technologies and foster supplier collaborations that will result in more transparent, sustainable and responsible supply chains.”

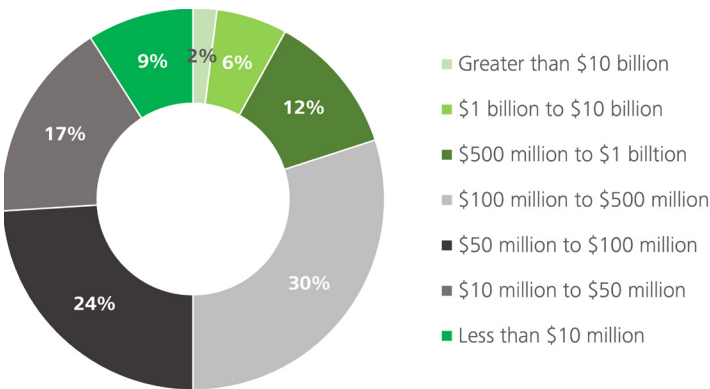
- John Paxton, CEO of MHI

ABOUT THE REPORT

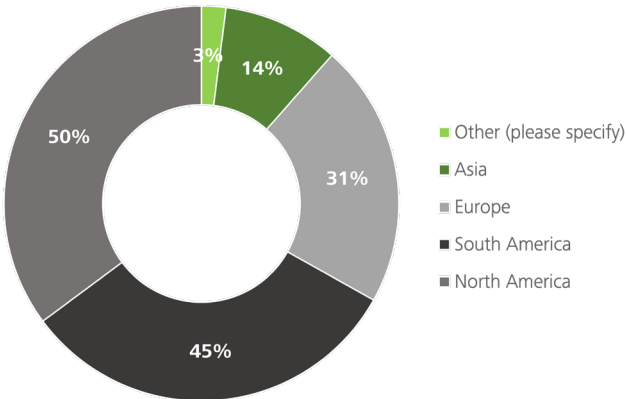
The 2023 MHI Annual Industry Report is our tenth annual study of emerging disruptive technologies and innovations that are transforming supply chains around the world. The findings are primarily based on an in-depth global survey conducted in late 2022, which involved 2,085 supply chain professionals from a wide range of company types and industries.

Half of the participants are executives with the role of CEO, Vice President, General Manager, or Department Head. Participating companies range in size from small to large, with 50% reporting annual sales in excess of \$100 million, and 2% reporting annual sales of \$10 billion or more.

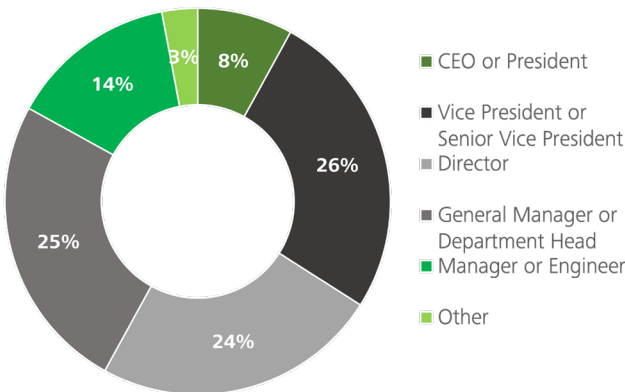
COMPANY SIZE BY REVENUE (USD)



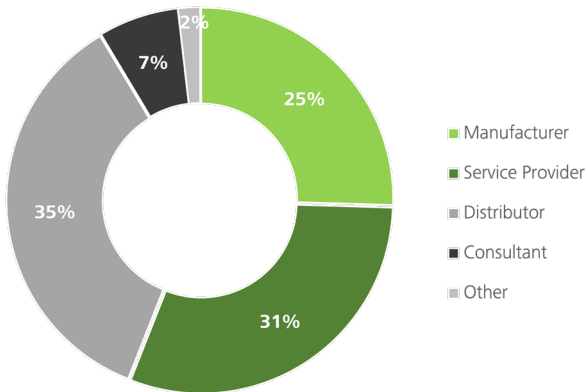
RESPONDER PROFILE BY GEOGRAPHY



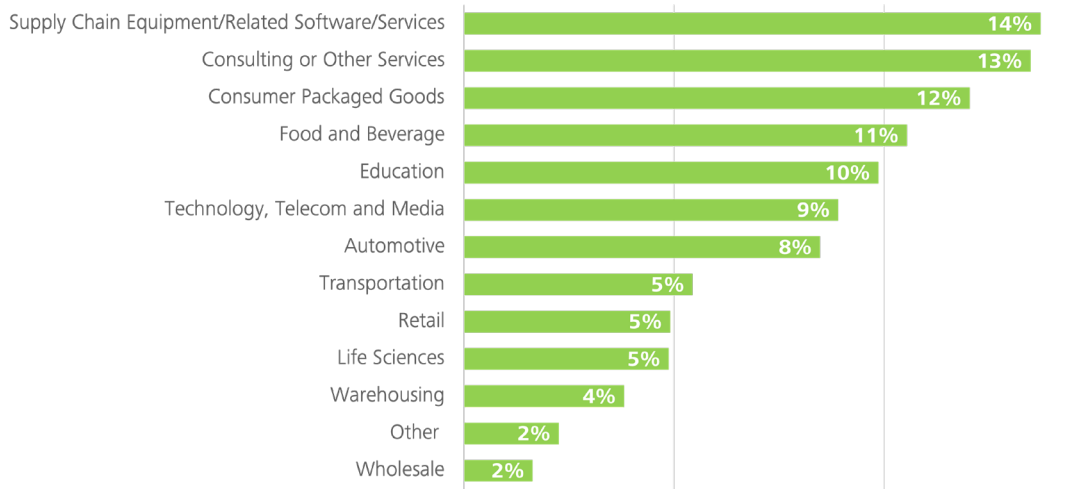
RESPONDER'S ROLE



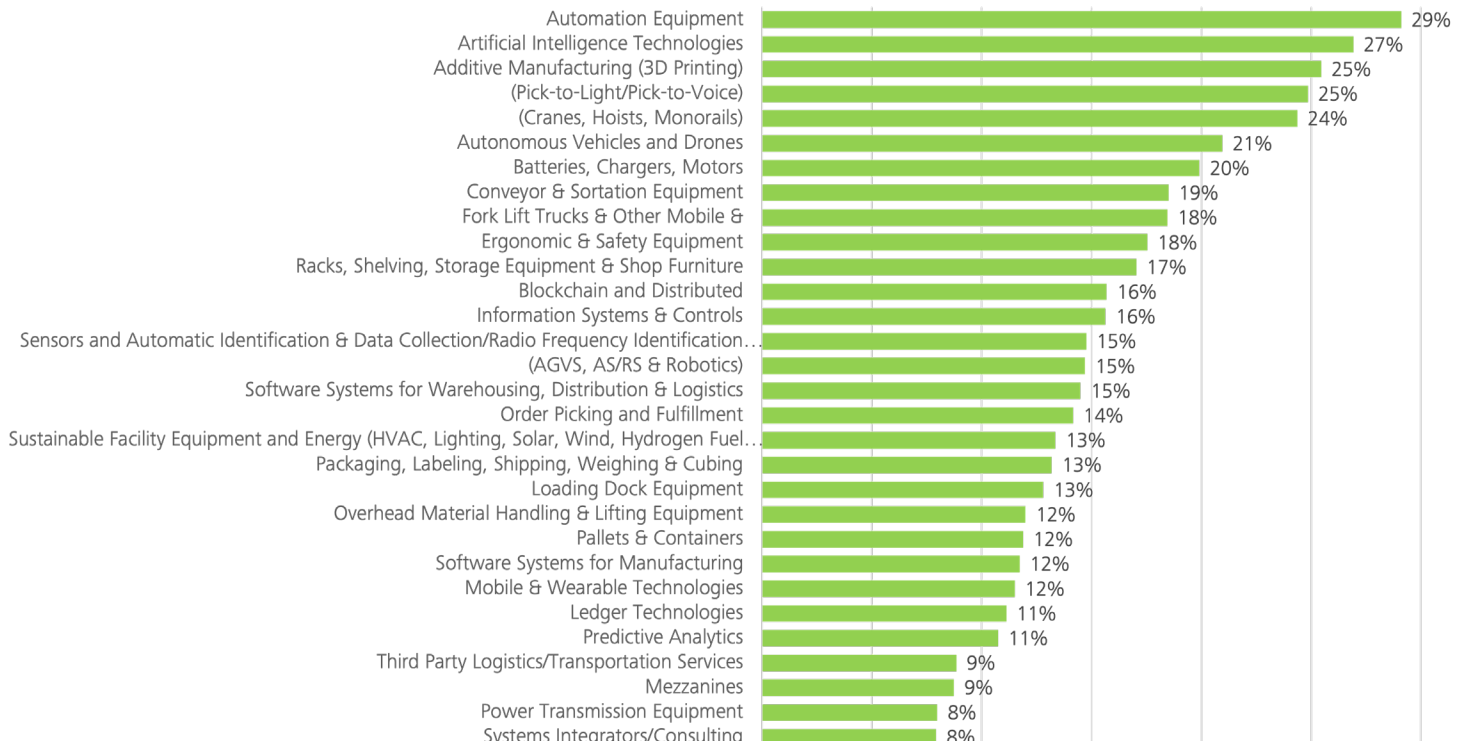
RESPONDER'S COMPANY TYPE



RESPONDER'S INDUSTRY



INVESTMENT IN PRODUCTS AND SERVICES OVER NEXT THREE YEARS



ACKNOWLEDGMENTS

We would like to acknowledge the hundreds of organizations that participated in our survey. We would also like to thank the MHI Board for their contributions to the survey and conclusions.

MHI Officers

- Chair of MHI, Kevin O'Neill, CEO and President, Steele Solutions, Inc.
- President of MHI, Bryan Jensen, Chair and Executive Vice President, St. Onge Company
- Vice President of MHI, Brian Reh, CEO, Gorbels, Inc.

MHI Board of Governors

- Chris Becker, President, G.W. Becker, Inc.
- Annette Danek-Akey, Chief Supply Chain Officer, Penguin Random House
- Steve Diebold, President, WireCrafters, LLC
- Rick Fox, President, FOX IV Technologies, Inc.
- Jason Minghini, Group Vice President, Kenco Logistics Services, LLC
- Eddie Murphy, Owner/President, SpaceGuard Products, Inc.
- Brian C. Neuwirth, President, UNEX Manufacturing, Inc.
- Karen Norheim, President and CEO, American Crane and Equipment Corporation
- John Paxton, CEO, MHI
- Arthur H. Stroyd, Jr., General Counsel, Del Sole Cavanaugh Stroyd, LLC
- Brett Wood, President and CEO, Toyota Material Handling, North America

MHI Roundtable

- Doug Bouquard, former Vice President and General Manager, East Penn Manufacturing
- James Cabot, President and CEO, Southworth International Group
- Bryan Carey, President, Starrco Co., Inc.
- Brian Cohen, CEO, Hanel Storage Systems
- Brian Devine, President & CEO, Ignite Industrial Professionals
- Matt Dysard, Executive Vice President, Tiffin Metal Products Company
- Sal Fateen, CEO, Seizmic, Inc.
- John Fluker, President & CEO, Grenzebach Corporation
- Gregg Goodner, Member, Board of Directors, Hytrol
- John Hill, Emeritus, Director, St. Onge Company

- Dr. Michael Kay, CICMHE Liaison, North Carolina State University
- John Krummell, President & CEO, Advance Storage Products
- Dave Lippert, former President, Hamilton Caster and Mfg. Co.
- Jason Looman, President, Scanreco, Inc.
- Brad Moore, Vice President of Business Development, Viastore Systems, Inc.
- Randy Neilson, President, CubiScan
- Crystal Parrott, Chief Operating Officer, Plus One Robotics
- Brian Pfannes, President, Steel King Industries
- Daniel Quinn, Emeritus, Consultant, PSI Engineering
- Kevin Reader, Vice President Marketing, KNAPP
- Bill Schneider, Jr., President, SISCO Material Handling Equipment
- Will Sparks, WERC Liaison, Director, Inventory/Planning Systems, Tractor Supply Company
- Larry Strayhorn, CEO, KPI
- Scott Summerville, President & CEO, Mitsubishi Electric Automation, Inc.
- Sebastian Titze, YPN Liaison, Director, IT & Digital Transformation, BEUMER Corporation
- Melonee Wise, formerly with Zebra Technologies

Editing Team

- Carol Miller, MHI
- Alex Batty, MHI
- Brock Oswald, Deloitte Consulting LLP
- Joanne Strong, Deloitte Consulting LLP
- Ryan Butler, Deloitte Consulting LLP
- Spencer Hogikyan, Deloitte Consulting LLP
- Nick Ciriaco, Deloitte Consulting LLP
- Katie Heininger, Deloitte Consulting LLP

We would like to acknowledge *DC Velocity* for their assistance with the 2023 survey distribution.



About MHI

MHI is an international trade association that has represented the material handling, logistics and supply chain industry since 1945. MHI members include manufacturers of material handling equipment including warehousing and logistics, systems integrators, third-party logistics providers, consultants and publishers. MHI offers education, networking and solution sourcing for their members, their customers and the industry through programming and events. The association sponsors the ProMat and MODEX exhibitions to showcase the products and services of its member companies and to educate manufacturing and supply chain professionals.

The Warehousing Education and Research Council (WERC) is a division of MHI and is a professional organization focused on logistics management and its role in the supply chain. Through membership in WERC, seasoned practitioners and those new to the industry master best practices and establish valuable professional relationships. Since being founded in 1977, WERC has maintained a strategic vision to continuously offer resources that help distribution practitioners and suppliers stay on top in our dynamic, variable field. These include national, regional, local and online educational events; performance metrics for benchmarking; practical research; expert insights; and multiple opportunities for peer-to-peer knowledge exchange.

MHI
8720 Red Oak Blvd.
Suite 201
Charlotte, NC 28217-3992
704-676-1190
mhi.org

Deloitte.

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee (“DTTL”), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as “Deloitte Global”) does not provide services to clients. In the United States, Deloitte refers to one or more of the US member firms of DTTL, their related entities that operate using the “Deloitte” name in the United States and their respective affiliates. Certain services may not be available to attest clients under the rules and regulations of public accounting. Please see www.deloitte.com/about to learn more about our global network of member firms.

This publication contains general information only and MHI and Deloitte are not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. MHI and Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.

Copyright © 2023 MHI. All rights reserved.