2024 tech trends in transportation & logistics

Survey insights from
HERE Technologies & AWS

Introduction

As transportation and logistics professionals kick off 2024, the new “On the move” study from HERE Technologies, developed in part with AWS, highlights key trends, challenges and opportunities in logistics technology.

Transportation and logistics (T&L) companies around the world have been on a non-stop rollercoaster ride during the past four years. The industry has faced the impacts of the COVID-19 pandemic, sweeping technological advancements, macro and micro-economic conditions, geopolitics, climate change, regulatory changes, and the overall demand for digitizing operations, all of which continue to reverberate across the industry.

The survey contains insights on transport and logistics companies – directly from professionals working at T&L companies large and small – across these three key markets. The goal of the report is to help businesses navigate current opportunities and challenges faced when digitizing their supply chain, fleet and logistics management systems.

HERE Technologies enlisted YouGov plc in January 2024 to conduct a multi-country survey of T&L professionals in Germany, the United Kingdom and the United States. The T&L industry survey explores various trends and topics, including supply chain visibility, sustainability, data analytics, artificial intelligence (AI) and overall barriers toward technology adoption.

YouGov®

Want to talk? We do, too. Get in touch here.

Executive summary

Survey topics

Germany, the United Kingdom (UK) and the United States (US) represent critical cross sections of global trade and T&L operations. Germany is one of the world's leading exporters of goods, while the UK is one of the largest importers. The US is the world's largest national economy and a leader in global trade.

The survey focused on three key topics with questions aimed at capturing T&L professionals' sentiment on the progress being made towards more optimized, digitized and sustainable operations.

Key topics – Snapshot of questions asked and combined survey findings from all countries.

1
Progress on supply chain visibility

How do T&L professionals rate progress towards real-time supply chain visibility?

- **71%** believe **some progress is being made** toward real-time supply chain visibility
- **39%** cite **ocean freight** as **least visible** mode of transportation
- **45%** indicate **last-mile** as having **best visibility**
- **19%** utilize **location data, IoT** and **sensor technology** for better visibility

2
Barriers to technology adoption

To what extent are T&L companies using data analytics and artificial intelligence (Al) to improve supply chain management? What are the biggest barriers to technology implementation in supply chain management?

- **77%** cite **barriers** to **tech implementation**
- **Cost** cited as number one barrier. **Disruption to existing services** and **lack of internal expertise** come second and third.
- **50% do not use** basic **data analytics** in supply chain management
- **25% leverage AI** in supply chain management

3
Prioritizing sustainability metrics

To what extent do T&L companies define sustainability goals or metrics specific to transportation and logistics? Where does sustainability rank for T&L professionals in terms of importance to operations?

- **33%** without **sustainability goals** and have no plans to develop **metrics**
- **Customer satisfaction, driver safety** ranked as **top considerations**
- **11%** rank **increasing sustainability** as most **important** consideration
- **3x** the number of **18-34 years** old professionals **rank sustainability** highest priority **compared** to respondents age **55+**

Want to talk? We do, too. Get in touch here.

Global survey findings

Supply chain visibility

The HERE Technologies study reveals that nearly three out of four T&L professionals surveyed in Germany (72%), the UK (72%) and the US (68%) believe their company is making some progress toward achieving real-time supply chain visibility.

However, **less than one in four respondents across each country believes their operations have made 'significant' progress.** The reality shows how much more work is required.

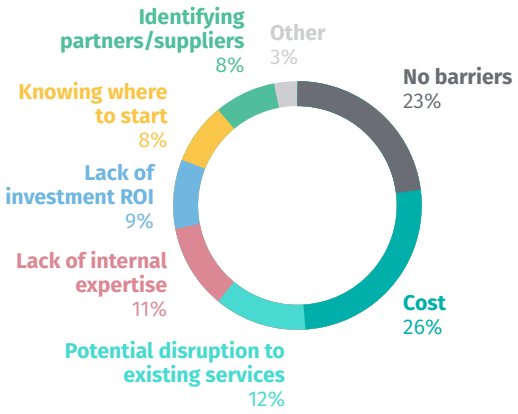
Full, end-to-end supply chain visibility is hard to achieve. Consistent across all countries surveyed, T&L professionals indicate ocean freight is the mode of transportation providing the least amount of real-time visibility. Conversely, respondents in each country cited truck operations as having the highest amount of real-time visibility in their supply chain. Respondents in each country placed real-time tracking and route optimization as their number one and two most valued capabilities to improve their supply chain visibility.

These findings align to ocean and air freight as having the least number of variables impacting visibility compared to middle and especially last-mile delivery. The on-the-road nature of middle and last-mile operations face far more variables impacting estimated time of arrival (ETA). Far more real-time visibility is required with natural variances in carrier pick-up and drop-off times, traffic and weather conditions, route planning and route optimization considerations.

Technology adoption

The survey revealed how little the T&L industry utilizes artificial intelligence (AI), and, surprisingly, basic data analytics, to improve supply chain management. On average, only one out of two T&L professionals across the three countries state their organizations use basic data analytics in their operations. Approximately, 41 percent of respondents in Germany, alongside 50 percent in the UK and 63 percent in the US, say they use basic data analytics. The survey found that only 25 percent of all respondents across the three countries stated their organization leverages AI capabilities.

Biggest barrier to technology implementation
All respondents



The survey finds that logistics companies in Germany, the UK and the US are inclined to buy off-the-shelf technology solutions from external providers rather than build their own. The survey finds T&L organizations in the UK being the least likely to develop in-house, with those in Germany the most likely to build applications.

T&L professionals want reliable solutions that are easy to use, can be seamlessly integrated into their existing processes and systems, and do not require extensive technical expertise or costly technology overhauls. Thirty percent of all respondents rank improving fleet utilization, route planning and tracking as top considerations when improving operations.

Sustainability metrics

Across all three countries,
a majority of respondents state their organizations do not currently have sustainability goals.

27% – claiming they are “under development”

33% – stated their organization is without sustainability goals and has no plans to develop goals or metrics

Environmental and operational resilience remain core topics within the global logistics industry in 2024. Technology implementation for more efficient operations will be crucial as the industry continues to face market and cost pressures.

Sustainability metrics can be a byproduct of technology implementation that improves customer satisfaction, driver safety and fuel consumption.

How to start? Focus on fuel and route optimization. Trucking is the most common mode of freight transportation and fuel is the number one expense for trucking fleets. By focusing on fuel and route optimization, companies can not only reduce their expenses, but reduce their emissions output as well.

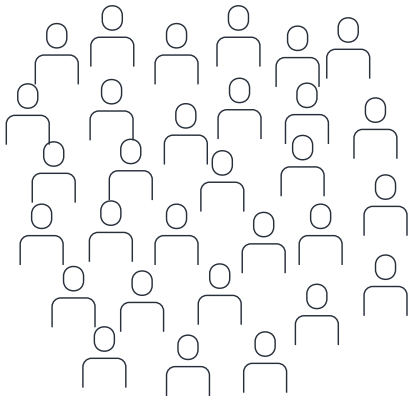
Globally, only 16 percent of respondents use automated fleet tour planning in the back office and 40 percent use driver routing applications. Automated fleet tour planning and driver routing leverage a vast amount of data, such as vehicle restrictions and real-time traffic data, to increase efficiency and reduce fuel consumption. Companies that already use these technologies can go one step further and aim at reducing truck idling and dwell time. Less idle time means less fuel waste and emissions, in addition to happier drivers and customers.

The market offers an increasing number of fuel optimization tools and advanced driver assistance systems (ADAS) to create more efficient and sustainable route planning while optimizing fuel use and delivering road safety benefits. Commercial vehicles today can reduce fuel consumption by three to five percent by taking advantage of “eHorizon” fuel and powertrain optimization technology.

Comparing progress on technology adoption and sustainability metrics

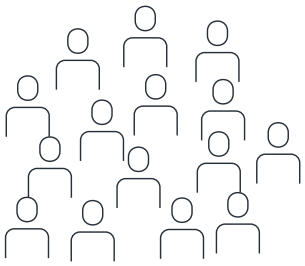
The survey asked each respondent to rank their company's progress towards real-time supply chain visibility on a scale of one to five, with five being the most progress and one being the least. To better understand each end of the spectrum, the following analysis compares respondents who reported significant progress in achieving real-time supply chain visibility against those who indicated the least progress in their companies.

High progress segment



319 respondents

Low progress segment



157 respondents

Before looking at the differences, the two segments share several commonalities. When asked about visibility based on the mode of transportation, both groups ranked truck and last-mile delivery as the most visible modes and ocean as the least visible. Both groups listed increasing customer satisfaction as the most important priority to their organization's end-to-end supply chain operations and cost as the largest barrier to technology adoption.

However, a major split occurs in terms of technology adoption and sustainability metrics.

When asked about features and functionalities that are most valuable for supply chain visibility, a greater percentage of the high progress group saw value in technology like real-time tracking (63% vs 50%), demand planning (40% vs 27%), route optimization (48% vs 43%), electronic communication with trading partners (40% vs 28%) and predictive analytics (21% vs 11%).

In terms of technology usage, **the high progress group has an overall greater use of mapping technology, location data, and IoT and sensors technology.** For almost all use cases in this survey, the results showed an average difference of nearly 20 percent.

Notable highlights include

Location data for driver routing
High progress group: 50%
Low progress group: 33%
17% difference

Location data to improve on-time delivery
High progress group: 45%
Low progress group:17%
28% difference

Location data for real-time tracking
High progress group: 44%
Low progress group: 21%
23% difference

As mentioned above, cost is the largest barrier to technology adoption for each group across all three countries. Beyond cost, 17 percent of the respondents from the low progress segment identified a lack of internal expertise as the largest barrier, compared to nine percent from the high progress segment. The lack of internal expertise could help explain why 11 percent of the low progress group said knowing where to start is their biggest barrier.

For the high progress segment, the challenges beyond cost (21%) are potential disruption to existing processes (16%) and identifying the right partners or suppliers (12%). Making changes to an active supply chain will always be a concern for T&L leaders but adapting to new technologies is one of the most important and strategic challenges companies will face over the next five years.

To find the right path forward, technology leaders and logistics providers need to understand executional goals and develop a well-defined digital supply chain vision, strategy and implementation plan that aligns, prioritizes and links cross-functional objectives through incremental investments. The aim is to identify a series of projects that come together to deliver extended cost savings by leveraging customer data, in a consistent format, across a common platform.

Data analytics and AI adoption

Respondents were asked to select the statements that best describe how their organization is using data analytics and/or AI to improve supply chain management.

	High progress group	Low progress group
We do not currently use basic data analytics	18%	**48%**
We use basic data analytics tools to track and analyze performance	**31%**	14%
We use basic data analytics to identify inefficiencies and streamline processes	**28%**	13%
We leverage both basic data analytics and AI for real-time tracking and predictive maintenance	**13%**	4%
We use AI for demand forecasting to optimize inventory management	**13%**	3%
We use AI to automate decision-making and enhance overall efficiency	**13%**	4%

The divide between these two segments is even wider around the topic of sustainability. Sixty-two percent of respondents with strong progress have sustainability goals and an additional 21 percent are developing sustainability goals and metrics. Whereas only 16 percent of respondents in the low progress segment have sustainability goals and 54 percent of this segment do not have plans to create sustainability goals or metrics.

This could create long-term problems for the low progress group as sustainability is now taken into consideration by customers, partners, regulators, employees and financial institutions alike. For smaller T&L companies, company valuations and outside investments may not be a priority, however, there is a growing number of policy objectives on the national and international level to measure and reduce emissions. Regardless of an organization's size or visibility progress, the improvement in fuel cost through routing efficiency has the positive by-product of reducing emissions for the business.

Sustainability metrics and goals

Respondents were asked if their organization has sustainability goals or metrics tailored to their transportation and logistics operations.

	High progress segment	Low progress segment
Yes, it does	**62%**	16%
Not now, but they are currently under development	21%	**30%**
No, it does not and there are no plans to make any	17%	**54%**

Want to talk? We do, too. Get in touch here.

Survey findings: Germany

T&L respondents
300

Germany is the largest economy in Europe, with a strong focus on industrial manufacturing. The automotive industry is particularly strong in Germany and has its own requirements to just-in-time and just-in-sequence supply chains. Germany has an elaborate road and highway network, which is heavily utilized by trucks.

The pandemic, supply chain disruptions, container shortages, and the lack of freight tracking technology have caused several shockwaves in the German transportation industry. German T&L companies have started adopting location technology. However, they are still in the early stages of what is becoming a larger evolutionary process.

Supply chain visibility

The HERE "On the move" survey reveals a majority of German T&L professionals feel their organizations are making incremental progress towards real-time supply chain visibility. Asked to rate their progress towards real-time visibility, only eight percent of respondents feel that they are making the most progress. Most respondents (50%) feel their company is moving at an average pace.

The most popular mode of transportation in Germany is truck operations. Accordingly, professionals in the German T&L industry are most confident about real-time visibility for trucks. Forty-eight percent say that they currently have the highest visibility for truck freight, whereas only five percent mention ocean freight as the mode of transport with the most visibility. With its short coastal line on the one hand and a large road network on the other, it is expectable that road transportation outranks all other modes of transportation, most of all ocean visibility. For last-mile transportation, 54 percent of respondents say that their company has good or very good real-time visibility over deliveries.

When it comes to the improvement of supply chain visibility, German T&L professionals are measured in their response. They value real-time tracking the most (59% of all respondents), followed by route optimization (44%). Technologies for these features have been in place for some time already. More recent technologies, such as predictive analytics or blockchain, are not a priority now. Only 10 percent of all participants deem blockchain as valuable to their supply chain visibility.

Technology adoption

The use of data analytics and AI are still in their infancy in Germany. Thirty-five percent of respondents state their organization does not have solutions for basic data analytics in place. In general, the results show AI techniques are not widely used in supply chain operations. Only 17 percent of organizations use basic data analytics tools to track and analyze supply chain performance, with 15 percent using analytics to identify inefficiencies and streamline processes. A mere nine percent of respondents use data analytics and AI for real-time tracking and predictive maintenance in their supply chain. Given that Germany ranks second place in the World Bank's Logistics Performance Index (LPI) 2023, this is a remarkable figure.

The single biggest obstacle to technology implementation in German T&L organizations is cost (31%), followed by the lack of internal expertise and resources, with 13 percent each.

The survey does indicate technology adoption and digitization is making incremental progress. Thirty-eight percent of German logistics professionals leverage location tech for driver routing in their companies, with 31 percent using it for ETA predictions and to improve customer service. Location data is not fully maximized either. Only 31 percent of respondents state their organization uses location data to optimize route planning and transport logistics and only 29 percent are tapping into real-time tracking of shipment inventory.

Sustainability metrics

A surprisingly high number (66%) say they do not have sustainability goals in place currently for their T&L operations, and 34 percent do. Additionally, 34 percent say they have no current plans to adopt sustainability goals in their logistics operations. This will evolve as regulations, customer expectations and soaring transportation costs demand more sustainable operations.

Survey findings: United Kingdom

T&L respondents
300

The United Kingdom (UK) is among the biggest importers of goods in the world, with imports valued at £898.3 billion annually at the end of November 2023, according to the Office of National Statistics (ONS). The past two years have seen a rapid evolution of the transport and logistics market in the UK with changes in the way goods are bought and shipped, triggered by the rise of online shopping and accelerated by both the COVID-19 pandemic and Brexit.

The ONS also reports that the number of business premises devoted to transport and storage rose 21 percent between 2019 and 2021, outpacing any other broad industry group and reflecting a shift towards UK warehousing. Sustainability has become an increasingly urgent issue for the sector as a result, with a report by trade association Logistics UK finding that heavy goods vehicles and vans still account for 32 percent of all UK transport greenhouse gas emissions.

Want to talk? We do, too. Get in touch here.

Supply chain visibility

The HERE "On the move" survey found that UK respondents hope to improve real-time visibility of their operations using technology but remain lukewarm on advanced technologies such as predictive analytics. Among technologies which could potentially improve supply chain visibility, **UK respondents valued real-time tracking the most, followed by route optimization (48%), with just 18 percent of organizations ranking predictive analytics as a priority.**

Technology adoption

This reflects a broader reluctance to adopt advanced technologies in the UK T&L industry. The survey found one out of two UK logistics companies (50%) are using data analytics or artificial intelligence in supply chain management, and 19 percent have deployed AI in areas such as automating decision making, real-time tracking and predictive maintenance. Across the whole UK transport and logistics industry, there is an enormous opportunity for efficiency gains by adopting AI to streamline everything from inventory management to real-time tracking. As other industries adopt technologies such as AI at a rapid pace, the UK T&L industry needs to ensure it does not get left behind.

Location technology is becoming more widely adopted by UK organizations, but companies are failing to take the 'next step' to use this to optimize logistics. At this point, 41 percent of UK logistics firms use location technology for driver routing, and 30 percent are using it to improve on-time deliveries, but just 28 percent are using location data to optimize route planning and transport logistics.

Sustainability metrics

Organizations in the UK have opportunities for huge technology-driven gains when it comes to sustainability. However, **60 percent of UK organizations currently have no sustainability initiatives, with 33 percent of that group having no plans to define such goals either.** While 24 percent of organizations consider sustainability their lowest priority among seven logistics considerations, it's noteworthy that 11 percent actually rank sustainability as their top priority. This offers potential for rapid progress on such goals. Technology holds out the promise to help make operations more efficient and cut emissions as a result, and organizations in the UK T&L sector just need a mindset shift to engage with this issue.

Want to talk? We do, too. Get in touch here.

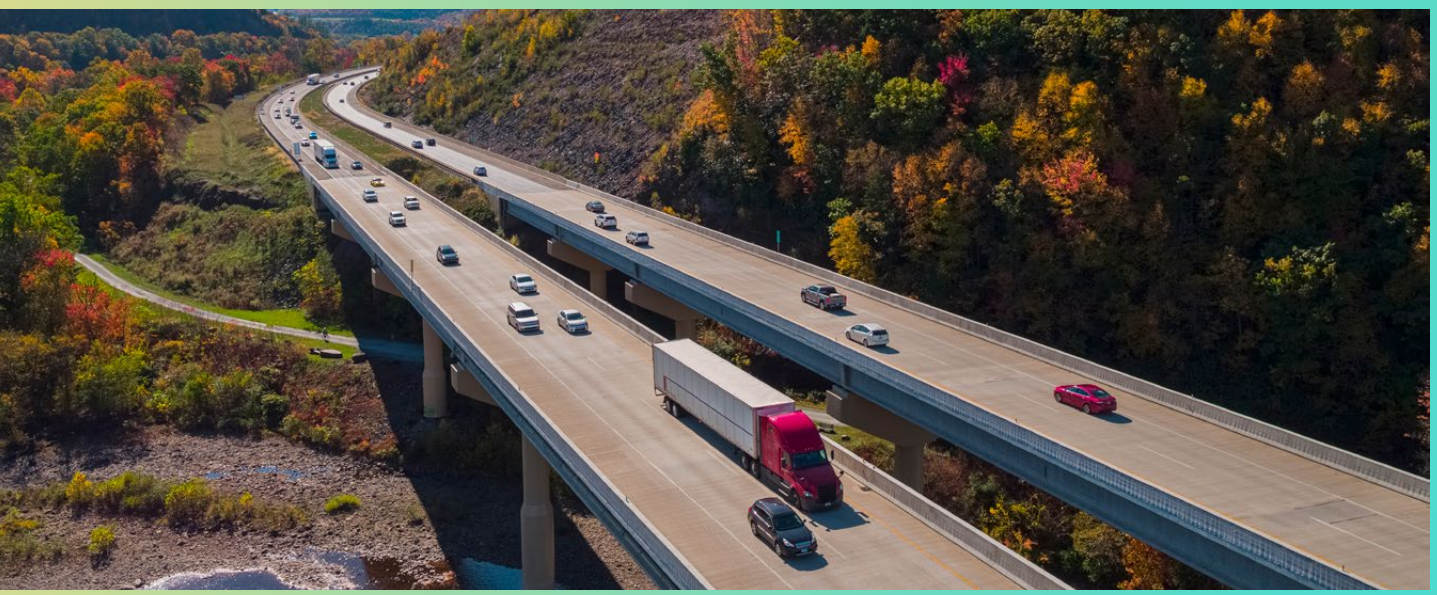
Survey findings: United States

T&L respondents
300

The United States (US) is the world's second largest trading nation with over $7 trillion in exports and imports of goods and services in 2022, according to The Office of the United States Trade Representative. The past few years tested the limits of every mode of transportation, both domestically and internationally, as well as inbound and outbound supply chains of the United States.

The US has transitioned from a time of feast during the pandemic, when consumers were buying goods, to the present-day famine where it has swung back to service purchasing. Now, the T&L market is severely strained with not enough freight to move.

The last few years have been a time of many shifts - shifts between modes, locations and technologies. Throughout all these shifts, visibility has remained at the core and is as important as ever and will continue to prove vital as the industry and market evolve further.



Supply chain visibility

The HERE "On the move" survey found that most US T&L companies (86%) report that their company is making progress toward supply chain visibility, rating their progress three or higher on the scale of one to five. While only a small portion of respondents (18%) rated their progress as significant, these findings portray the steady implementation of technologies and processes to enable supply chain visibility. Visibility becomes exponentially valuable as decision makers harness data and information to create competitive advantages, especially as supply chain disruptions continue in the forms of labor disputes, severe weather events and geopolitical conflicts.

The study also found which modes are most visible to US T&L professionals, with truck operations (50%) leading, followed by air freight (18%) and last-mile (17%). The mode reported to have the least visibility is ocean operations (45%).

As the US market pushes toward more visibility, it is important to understand where companies are investing their resources. According to the study, US T&L companies are improving visibility through investment in real-time tracking (58%), route optimization (38%), inventory management (34%), demand planning (32%) and communication with trade partners (32%).

Technology adoption

Technology implementation and adoption is vital to the progress of supply chain visibility. However, the study suggests there's whitespace for rudimentary solutions, such as the use of basic data analytics, and advanced solutions, such as AI.

The study shows that 63% US T&L companies are utilizing basic data analytics for their operations.

Additionally, 34 percent of respondents cited using AI capabilities within their supply chain operations - a finding that highlights the underutilization of processes and solutions that will modernize supply chain operations, create efficiencies and drive data-based decision-making.

What is leading to this vast underutilization? The study uncovered the largest barrier to implementation is cost (23%), followed by the fear of disrupting existing processes (12%) and trouble identifying the right partners (11%).

While the US still has room to grow in analytics and AI implementation, the country fares better than its European counterparts who have reported significantly higher underutilization in Germany (71%) and the United Kingdom (60%).

Location data and IoT are being utilized the most (38%) when it comes to real-time tracking of shipments and inventory, which is leading against demographics like Germany (31%) and the UK (26%). While the US is leading in the space, the data represents a missed opportunity by the American logistics market to leverage blockchain and predictive analytics to develop models to forecast and actualize cost-saving operations.

Additionally, nearly half (44%) of American logistics firms leverage mapping and location data for driver routing purposes. Meaning location and mapping data is not being fully utilized in the US, however, the US is also leading in this segment ahead of the UK (41%) and Germany (38%).

Another aspect of implementation is the question of building or buying technology. The US market has a relatively even split on how to approach this question as respondents answered if they would fully develop in-house (34%), buy off-the-shelf solutions from external providers (29%) or use a hybrid approach of purchasing systems from an external provider and then integrating their own data (37%).

Sustainability metrics

The study also explored how respondents are addressing rising sustainability pressures, and shows more than half of American logistics companies (55%) do not currently have sustainability goals tailored for their T&L operations - this is especially interesting as Scope 3 emissions reporting is growing increasingly relevant to American legislators with California's regulations taking effect in 2026, and the SEC's ruling on the subject expected to come down in April 2024.

Additionally, the US is leading in this space compared to some European counterparts, as German firms (66%) and UK-based firms (60%) reported lacking sustainability goals tailored for the T&L operations.

This is especially interesting as the EU Corporate Social Sustainability Reporting Directive (CSRD) went into effect in early January 2024 (to be rolled out through 2028) and will have implications for businesses of all sizes.

The US is leading in sustainability goal setting and planning, but how are American T&L companies prioritizing sustainability today? Sustainability was ranked as the lowest priority for American respondents (33%). Comparably, smaller portions of German (28%) and UK-based companies (24%) ranked sustainability as their lowest priority.

Why HERE and AWS?

HERE and AWS are working to solve location-related challenges for the supply chain and logistics industry across the globe. Together, we bring the power of location services with the leading cloud and IT services to accelerate speed to market and time to value.

HERE delivers the enterprise-grade map data, routing APIs and control you need to build better fleet management and supply chain software. With more detail, accuracy and flexibility, HERE offers APIs and content bundles tailored to the unique needs of the trucking and logistics industry, so T&L companies can overcome the most challenging supply chain problems.

AWS knows a thing or two about transportation and logistics. They provide world-class infrastructure that shifts the entire business to the data-driven cloud at a global level. The security and stability of AWS' servers gives logistics companies the reliability they need to grow.

By leveraging AWS' best-in-class compute and cloud services, HERE enhances the visibility of shipments and assets to help organizations optimize deliveries from the first to the last mile and build next-generation supply chain solutions.

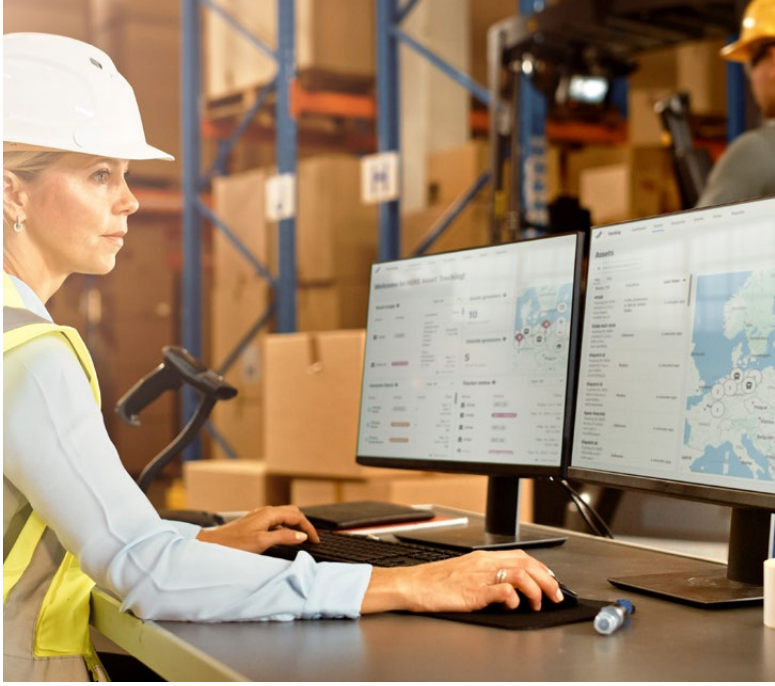
Leaders in logistics and e-commerce, the largest rideshare companies, name brands worldwide utilize HERE map content and location-based services in their transportation applications.

Together, HERE and AWS combine the power of location technology and leading cloud and IT services to deliver impactful solutions, accelerating speed to market and time to value.

To explore customer stories powered by HERE and AWS or learn more about our joint solutions, visit **here.com/AWS.**

Want to talk? We do, too. Get in touch here.

Survey commentary



“On one hand, this study shows the progress being made by companies towards increasing their supply chain visibility. On the other hand, it’s clear the industry currently lacks the contextual data, AI capabilities and tools needed to optimize fleet deployments, routing, and appropriate mode switching. As a result, we’re seeing increased demand for location data and services that enable logistics companies to overcome disruptions in real-time while reducing emissions and improving employee safety in the process”.

Remco Timmer
Vice President of Product Management at HERE Technologies

“The fact that nearly 40% of respondents visited ocean freight as the least visible mode of transportation is a very compelling statistic. The maritime industry’s inherent lack of real-time visibility not only hinders operational efficiency but also highlights the critical need for innovative solutions to navigate and better manage the uncertainty of global logistics. Nearly 20% of users utilizing location data, IoT, and sensor technology for better visibility is encouraging but clearly, a lot more needs to be done in terms of broad implementation”.

Adhish Luitel
Senior Analyst at ABI Research

Methodology

The survey data was collected and analyzed by YouGov plc. All figures, unless otherwise stated, are from YouGov plc. Total sample size was 900 adults, with 300 adult respondents in each country (Germany, the United Kingdom and the United States) who identified as professionals working in transportation and logistics.

Fieldwork was undertaken between January 2–10, 2024. The survey was carried out online. The figures have been weighted and are representative of all adults in the T&L industry working for small to large size companies in Germany, the United Kingdom and the United States (aged 18+).

YouGov plc makes every effort to provide representative information. All results are based on a sample and are therefore subject to statistical errors normally associated with sample-based information.

About HERE Technologies

HERE has been a pioneer in mapping and location technology for almost 40 years. Today, HERE's location platform is recognized as the most complete in the industry, powering location-based products, services and custom maps for organizations and enterprises across the globe. From autonomous driving and seamless logistics to new mobility experiences, HERE allows its partners and customers to innovate while retaining control over their data and safeguarding privacy.

About AWS

Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud, offering over 200 fully featured services from data centers globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

References

1. https://www.gov.uk/government/statistics/uk-trade-in-numbers/uk-trade-in-numbers-web-version
2. https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/articles/theriseoftheukwarehouseandthe-goldenlogisticstriangle/2022-04-11
3. https://logistics.org.uk/CMSPages/GetFile.aspx?guid=00bc1e0b-531d-4eba-98bb-8199ff100573&lang=en-GB
4. https://ustr.gov/countries regions#:~:text=The%20United%20States%20is%20the,goods%20and%20services%20in%202022
5. https://thomsonreuters.com/en-us/posts/esg/california-climate-reporting-law/
6. https://tax.thomsonreuters.com/news/sec-once-again-delays-action-on-final-climate-disclosure-rule/
7. https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en

Want to talk? We do, too. Get in touch here.