



AI Agent Readiness and Adoption in Freight

Industry Sentiment on Commitment to AI Innovation



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Overview

The freight industry runs on relationships, phone calls, and institutional knowledge built over decades. It also runs on an extraordinary volume of repetitive manual work, such as data entry, check calls, email chains, and dispatching decisions made under pressure with incomplete information. For years, technology adoption in trucking and logistics has followed a familiar pattern: cautious evaluation, slow rollouts, and a persistent tension between operational necessity and cultural resistance to change.

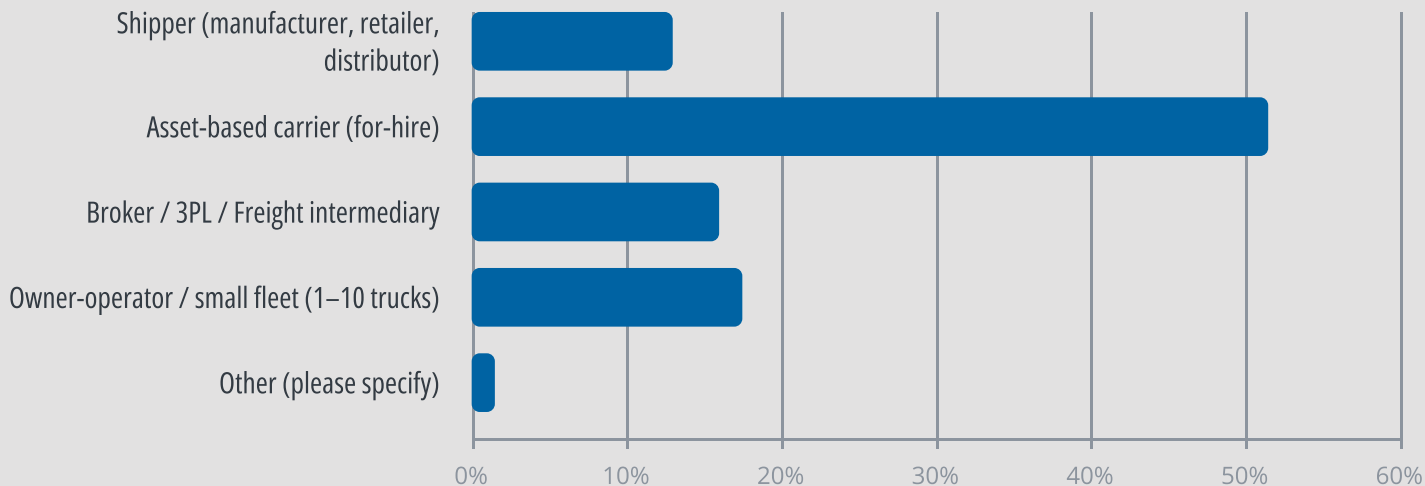
Artificial intelligence (AI), and specifically the emergence of AI agents capable of autonomously executing tasks rather than simply surfacing information, is testing that pattern. The question is no longer whether AI will reach freight operations. It's whether freight organizations are ready to let it in, and on what terms.

To understand where the industry stands, FreightWaves surveyed 68 freight professionals, such as operational managers, fleet managers, and business owners from or-

ganizations including carriers, brokers, shippers, and owner-operators in early 2026. The results reveal an industry that is broadly aware of AI's potential, cautiously experimenting with early tools, and deeply conflicted about what autonomous AI means for the human relationships that have always defined how freight moves. The industry is in transition. Stakeholders want AI to solve real operational problems without dismantling the trust-based dynamics that hold the supply chain together.

The survey's respondent base is heavily weighted toward the operational core of the freight industry. Asset-based carriers represent 51.47% of responses, with owner-operators and small fleets (1–10 trucks) adding another 17.65%. Brokers and 3PLs account for 16.18%, and shippers round out the mix at 13.24%.

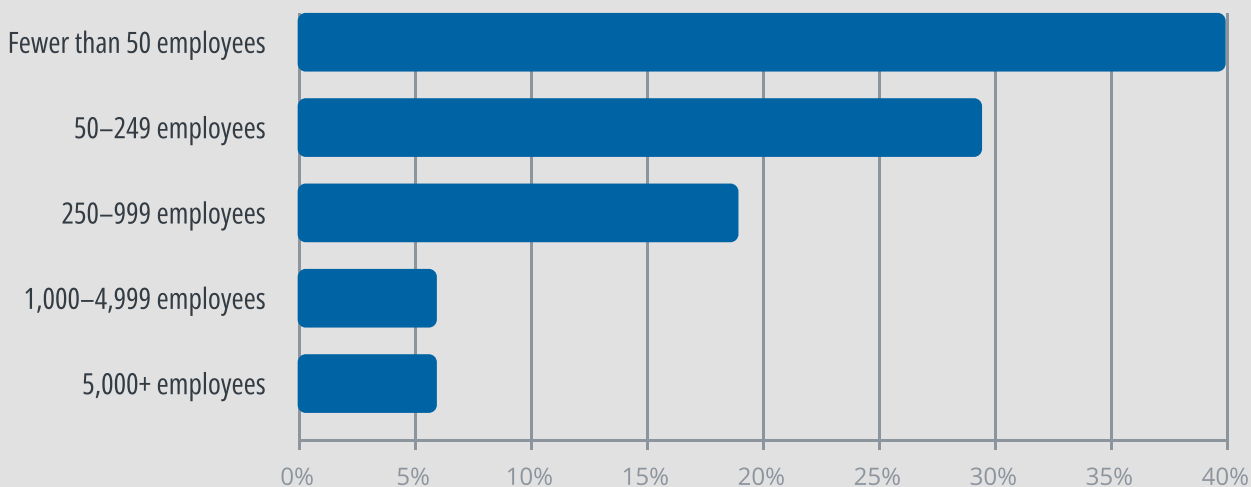
Which best describes your organization's primary role in the supply chain?



Nearly 70% of respondents operate with fewer than 250 employees, and almost 40% have fewer than 50. These are the companies that feel operational friction most acutely because they lack the IT departments, dedicated technology budgets, and implementation teams that larger enterprises deploy when evaluating new solutions.

For these organizations, every technology investment competes directly with trucks, fuel, drivers, and payroll. Barriers and motivations to AI adoption look very different at the small and mid-market scale than they do at the largest enterprises.

What is the approximate size of your organization?



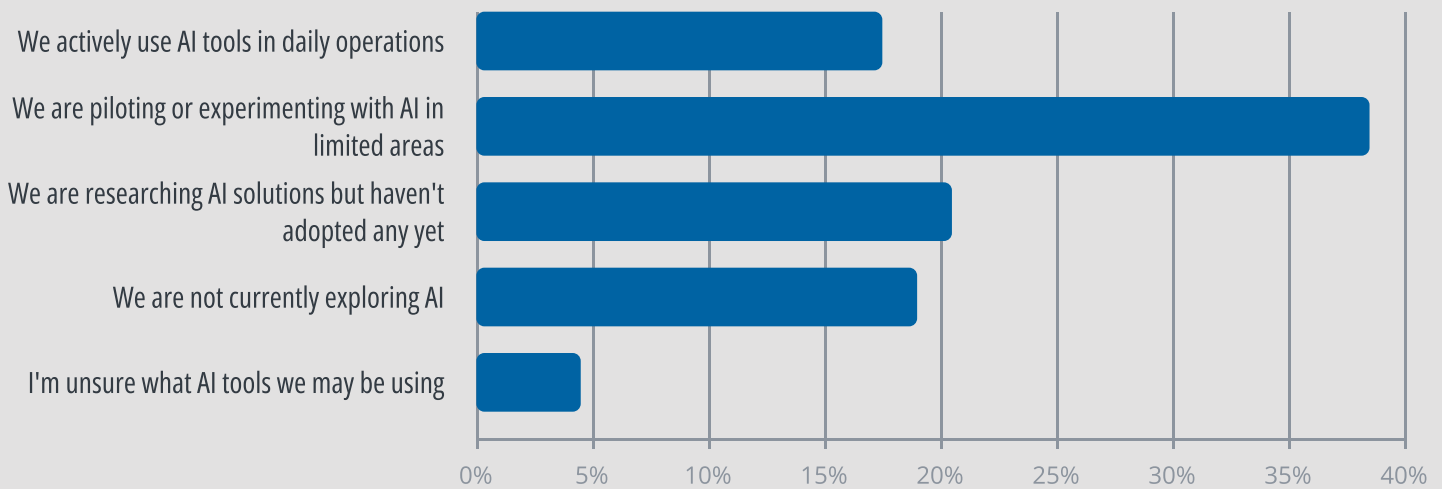


The Gap Between Awareness and Adoption

The survey reveals an industry in the experimentation phase. The largest group of respondents (38.24%) is piloting or experimenting with AI in limited areas, and another 20.59% are researching solutions but haven't adopted any. Only 17.65% actively use AI tools in daily operations. Meanwhile, 19.12% aren't exploring AI at all,

and 4.41% aren't sure whether their organization is using AI tools. There seems to be a slight incongruity between how vendors market AI capabilities and how end users experience them.

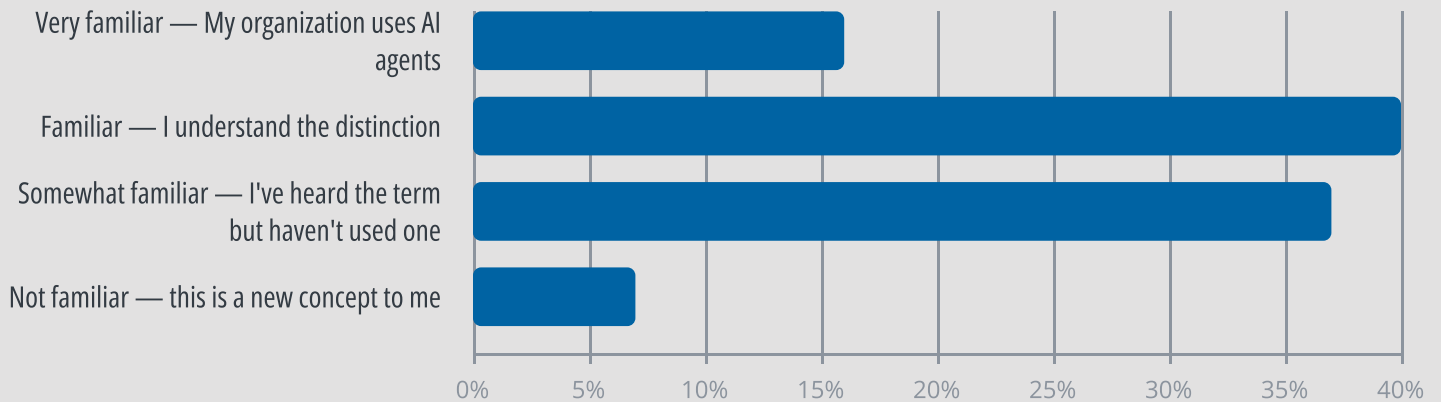
How would you describe your organization's current use of AI tools (chatbots, analytics, automation, etc.)?



The picture shifts when the conversation moves from general AI tools to AI agents specifically. AI agents are typically defined as systems that can independently execute tasks like handling a carrier check call, dispatching a maintenance request, or sourcing freight.

Familiarity is high: 55.89% say they're familiar or very familiar with the concept, and another 36.76% have at least heard the term. Only 7.35% say it's entirely new.

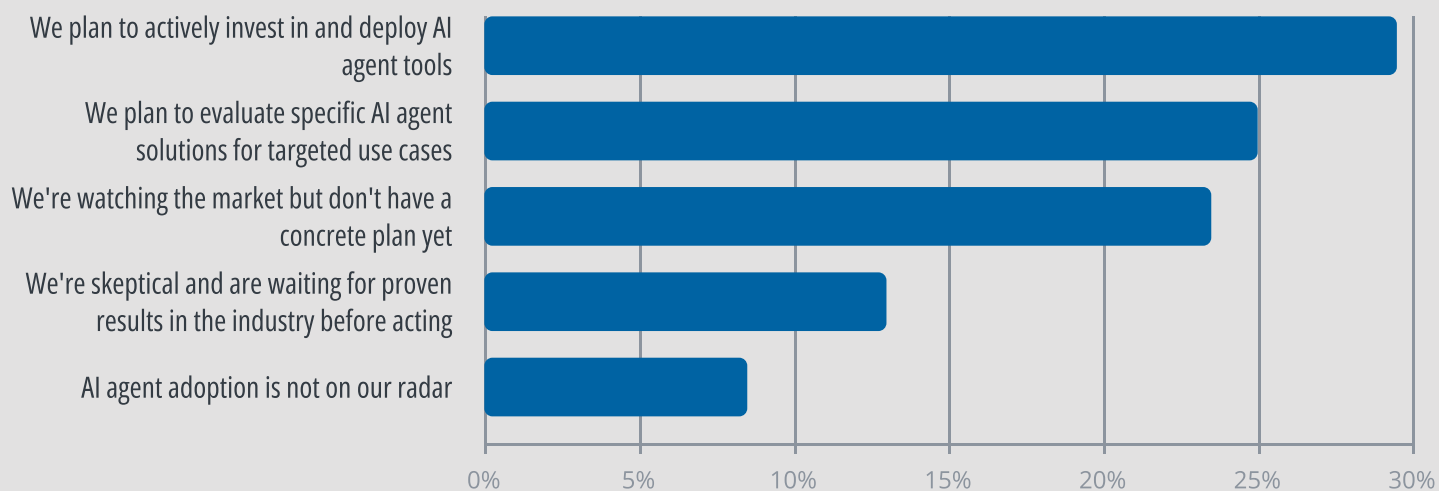
An "AI agent" is a specialized AI system that can independently execute specific tasks (such as automatically handling a carrier check call, dispatching a maintenance request, or sourcing freight) rather than just answering questions. How familiar are you with this concept?



Familiarity hasn't translated into deployment, however. Just 16.18% say their organization actually uses AI agents, a figure that mirrors the 17.65% who actively use any AI tools. The industry understands what AI agents are and can articulate what they would do. What it hasn't yet found, at scale, are solutions that fit within existing workflows, integrate with legacy systems, and deliver enough proven ROI to justify the investment, particularly for the small and mid-sized operators who make up the majority of this respondent base.

When asked about their organization's posture toward AI agent adoption over the next 12 to 18 months, a slim majority of 54.41% has concrete plans. That group splits between those planning to actively invest and deploy (29.41%) and those planning to evaluate specific solutions for targeted use cases (25%). The remaining respondents are watching the market without a concrete plan (23.53%), waiting for proven results before acting (13.24%), or have AI agents entirely off their radar (8.82%).

Which statement best describes your organization's posture toward AI agent adoption over the next 12-18 months?



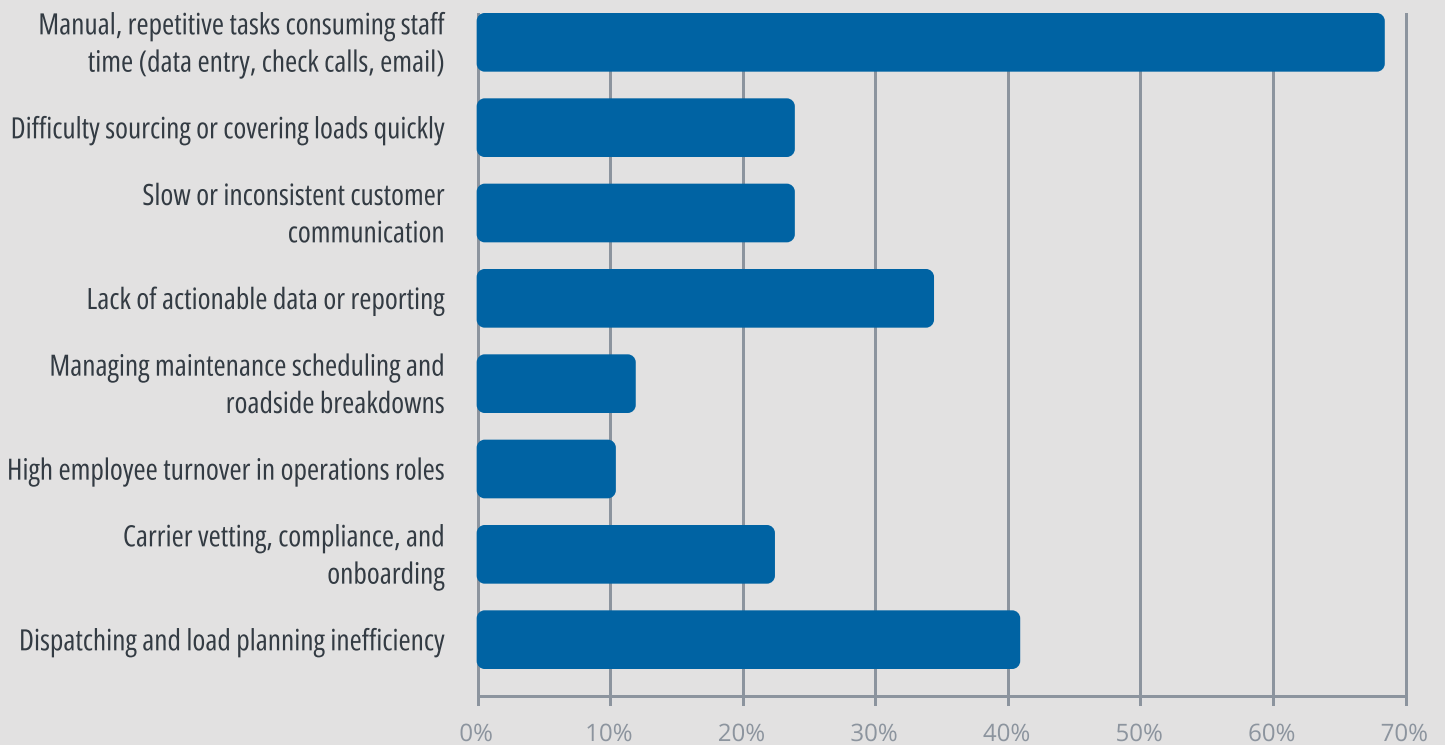


Where AI Agents Deliver the Most Value

When asked to identify their biggest operational pain points, respondents delivered a clear verdict. Manual, repetitive tasks consuming staff time (data entry, check calls, email) dominate at 68.18%, selected by more than

two-thirds of the respondent base. Dispatching and load planning inefficiency follows at 40.91%, and lack of actionable data or reporting comes in third at 34.85%.

Which of the following are your organization's biggest operational pain points today?



These aren't abstract technology complaints. They describe the daily operational reality of freight companies where the same staff members entering data and fielding check calls are also the people making dispatching decisions and managing customer relationships. The manual task burden crowds out the strategic and analytical work that could improve performance. When 35% of respondents also cite a lack of actionable data, the connection is hard to miss: organizations buried in manual processes don't generate the operational intelligence they need to make better decisions.

The remaining pain points include difficulty sourcing loads (24.24%), slow customer communication (24.24%), carrier vetting and compliance (22.73%), maintenance

management (12.12%), and employee turnover (10.61%). These all trail the top three by a significant margin. If AI is going to earn its place in freight operations, it needs to start by attacking the manual work that consumes the most human capacity.

Asked to rank where AI agents would create the most value, respondents prioritize the operational functions that align directly with their biggest pain points. Dispatch and load planning earns the strongest concentration of top rankings, with 26.56% placing it first and 28.13% placing it second. Customer service and shipment status updates follows closely, with 25% ranking it first. Freight sourcing and load matching rounds out the top tier with broad interest across the ranking spectrum.

In which of the following areas would an AI agent deliver the most value to your organization?

#1

Dispatch and load planning

Weighted avg rank: 3.0

#2

Customer service and shipment status updates

Weighted avg rank: 3.1

#3

Freight sourcing and load matching

Weighted avg rank: 3.4

#4

Back-office tasks (invoicing, document processing, data entry)

Weighted avg rank: 4.1

#5

Carrier check calls and in-transit communication

Weighted avg rank: 4.5

#6

Maintenance coordination and roadside breakdown response

Weighted avg rank: 5.8

#7

Market intelligence and rate benchmarking

Weighted avg rank: 5.8

#8

Carrier vetting and compliance monitoring

Weighted avg rank: 6.1

The alignment between pain points and perceived AI value is tight. The same respondents who identified dispatching inefficiency and manual task burden as their top operational problems see AI agents as most valuable in exactly those areas. Some respondents show strong interest in back-office tasks like invoicing and document processing, but a sizable group ranking those items lower, which may simply be due to differing levels of back-office complexity across organization sizes.

The bottom of the rankings is equally instructive. Carrier vetting and compliance monitoring clusters heavily at

seventh place (42.19% ranked it there), and market intelligence and rate benchmarking concentrates at eighth (45.31%). These are areas where the consequences of autonomous AI error feel higher, where nuanced judgment matters, and where respondents may not yet trust AI to operate without close human oversight.

The industry wants AI agents handling high-frequency, time-sensitive operational execution, but not the judgment-intensive decisions where getting it wrong carries regulatory or financial consequences.

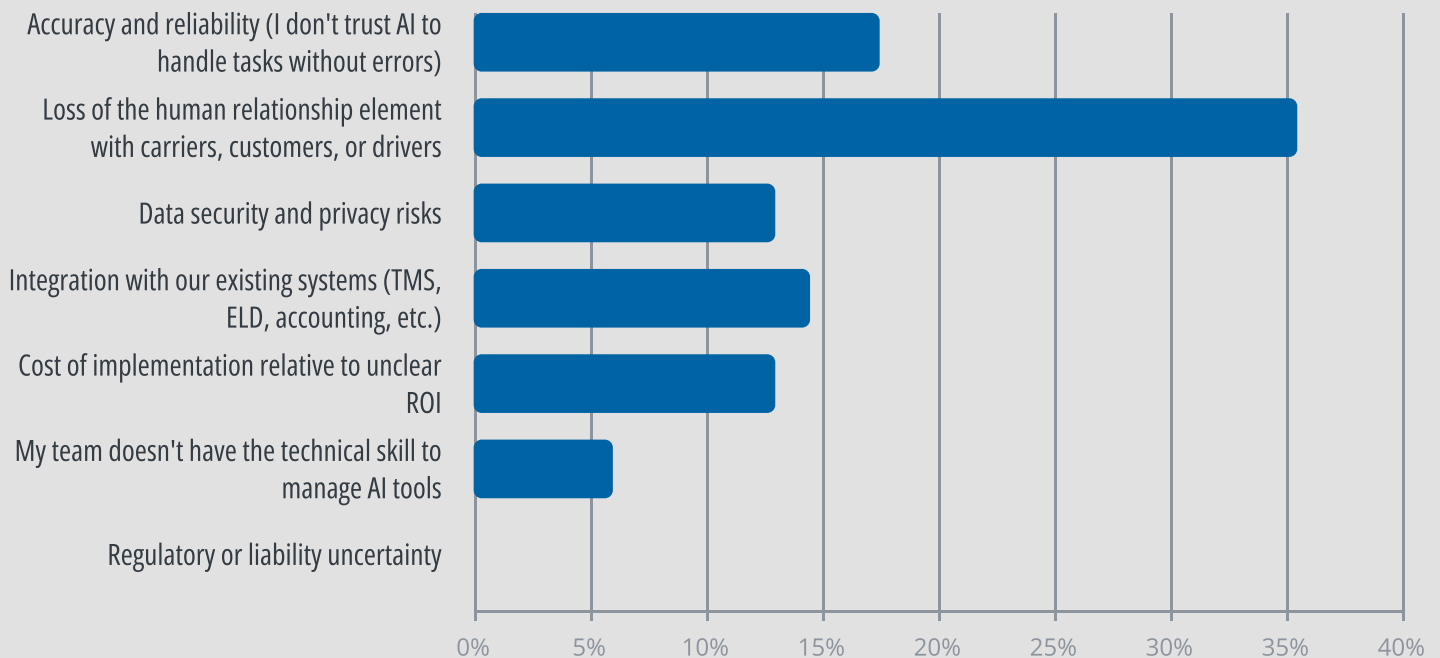


AI's Impact on Industry Relationships

The single most revealing data point in the survey may be the response to what concerns respondents most about AI agent adoption. Loss of the human relationship element with carriers, customers, or drivers leads at 35.29%, more than double the next-closest concern. Accuracy and

reliability (17.65%), systems integration (14.71%), data security (13.24%), and cost relative to unclear ROI (13.24%) all trail significantly. Regulatory uncertainty received zero responses.

What is your biggest concern about adopting AI agents in your operations?



This objection is a cultural one reflective of how the freight industry operates. Dispatchers know their drivers. Brokers know their carriers. Account managers know their shippers' preferences, quirks, and non-negotiables. These relationships are built through repeated human interaction, and they function as an informal quality-control mechanism. The dispatcher who knows a driver is having a rough week handles the conversation differently than an automated system would.

The concern isn't irrational, and dismissing it as resistance to change misreads the data. Respondents don't want AI that replaces the human connections they believe make their operations work. Any successful AI agent strategy in freight will need to address this directly by demonstrating that AI can strengthen relationships through freeing people from tedious manual work.

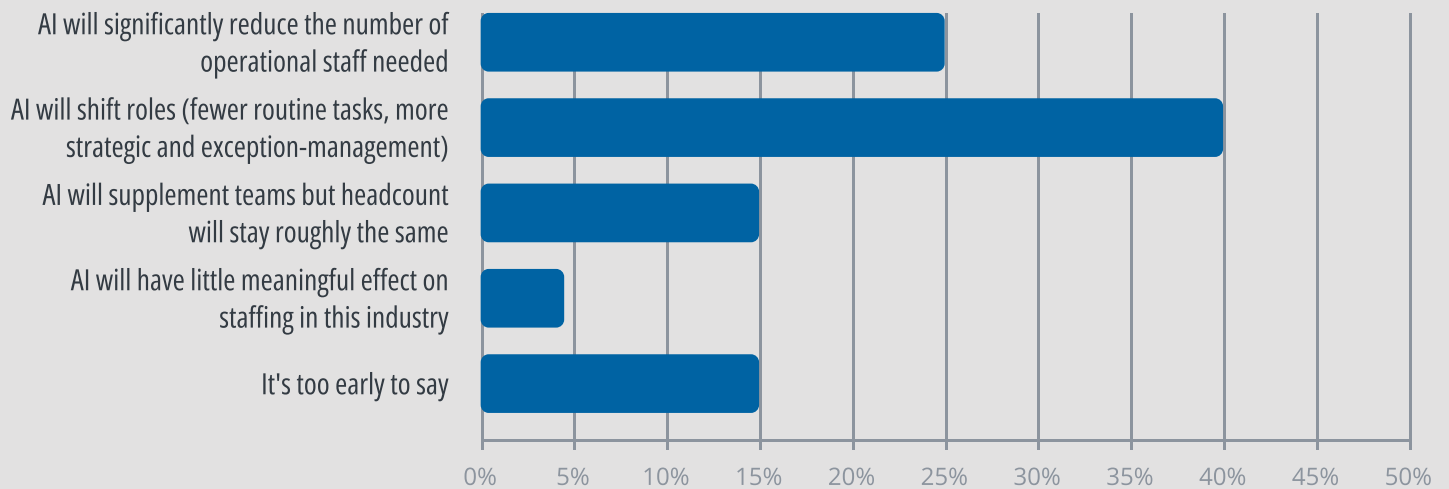


How AI Agents Shift Workforce Roles

The freight industry's view of AI's impact on staffing over the next three to five years is more nuanced than headlines about automation-driven job losses would suggest. The plurality (40.30%) expects AI to shift roles (meaning fewer routine tasks, more strategic and

exception-management work) rather than eliminate positions. Another 25.37% do expect significant headcount reductions. The remaining responses split between "headcount stays the same" (14.93%), "too early to say" (14.93%), and "little meaningful effect" (4.48%).

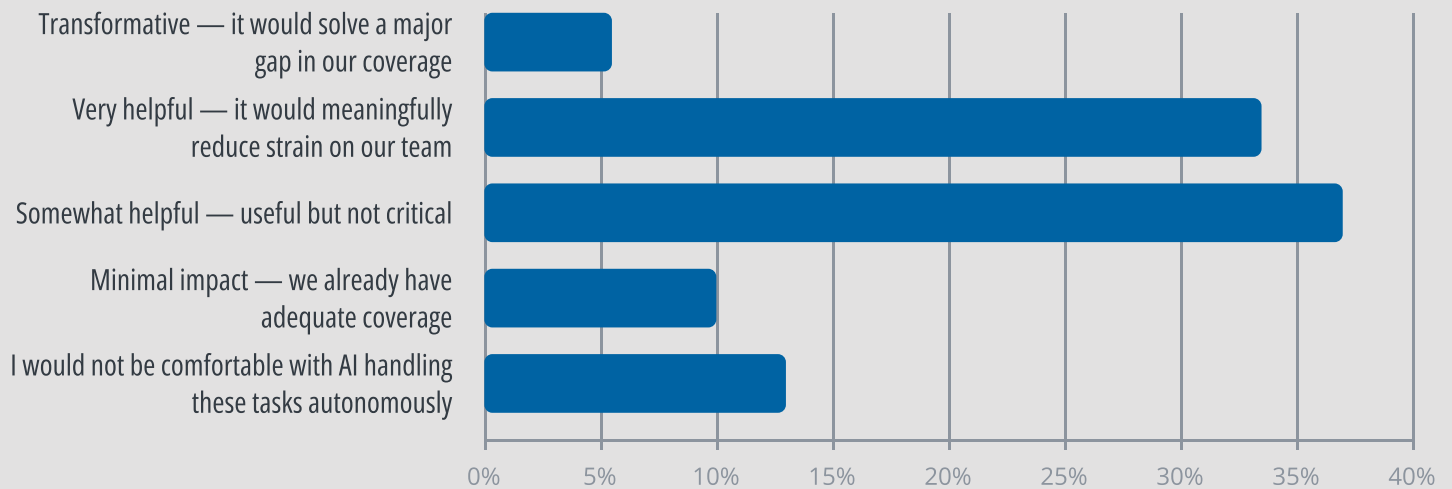
How do you expect AI agents and automation to change staffing and roles in freight operations over the next 3-5 years?



The dominant “shift roles” perspective is the most operationally sophisticated view in the data. It acknowledges that AI will change the composition of freight work without accepting the binary framing of “AI replaces workers” versus “AI doesn’t matter.” The near-absence of the “little meaningful effect” option (under 5%) is the quiet consensus: almost no one in this respondent base believes freight operations will be untouched by AI in the coming years.

The debate seems to be primarily about degree and form. The survey tested a specific use case: AI agents autonomously handling after-hours or overflow tasks like breakdown calls, roadside service coordination, or carrier check-ins. The response is cautiously positive. A combined 39.7% say it would be “very helpful” (33.82%) or “transformative” (5.88%). The plurality at 36.76% lands on “somewhat helpful — useful but not critical.” And 13.24% say they wouldn’t be comfortable with AI handling these tasks autonomously at all.

If an AI agent could autonomously handle after-hours or overflow tasks (such as fielding breakdown calls, coordinating roadside service, or responding to carrier check-ins) how would that affect your operation?



The modest “transformative” response (under 6%) is notable. After-hours coverage is a genuine operational gap for many carriers, particularly smaller ones without 24/7 staffing. Yet most respondents see AI-powered after-hours

capability as an incremental improvement rather than a game-changer. This may reflect the relationship concern surfacing again: the situations that arise after hours are often the highest-stress moments.



What Operationalized AI Looks Like

The freight industry knows what AI agents are, understands where they could add value, and is broadly willing to move forward on terms that preserve human relationships, fit within existing operational realities, and deliver measurable results before requiring wholesale commitment. The gap is simply a question of operationalization.

Closing that gap requires solutions designed for the freight industry's demographics, which are still dominated by small and mid-sized operators running on tight margins with limited technical resources and deeply reliant on human relationships. There are AI solutions for a broad range of manual workloads, but those tools have to be deployed intentionally and strategically.

The organizations best positioned to adopt AI solutions aren't the ones with the biggest IT budgets. They're the ones whose technology partners can deliver AI that

integrates into existing TMS, ELD, and maintenance platforms without requiring a forklift upgrade; a tech partner that understands logistics pain points (dispatch, order intake, back-office automation, etc.) and builds to bridge gaps, rather than trying to replace entire workflows; and that keeps humans in the loop for the relationship-driven and judgment-intensive work the industry values most.

Trimble's approach to industrial and agentic AI in transportation reflects this reality. Rather than positioning AI as a wholesale replacement for human decision-making, Trimble has built autonomous AI workflows that streamline and clear the manual bottlenecks this survey identifies as the industry's top pain points. For example, Order Entry AI for Trimble's TMS solutions processes orders from emails, PDFs, and EDI and enters them directly into the system for human review, addressing the data-entry burden that 68% of respondents flagged.

“At Trimble, we’re creating a platform where humans and AI agents collaborate to maximize supply chain efficiency and business growth. By embedding generative AI at the core, we aim to transform logistics into intelligent systems.”

– Jonah McIntire, Transportation Chief Platform and Technology Officer, Trimble

The Road Call AI feature for Trimble TMT Fleet Maintenance interprets a driver’s natural language to create breakdown tickets automatically, directly serving the after-hours and maintenance coordination use cases respondents identified. And with Invoice Scanning AI, carriers can automate fleet maintenance invoicing, another high-volume, repetitive task that consumes staff capacity better spent on preventive maintenance planning and exception management.

These are purpose-built AI-powered workflows designed to integrate into the connected transportation management ecosystem that carriers and brokers already operate within, and they reflect the human-in-the-loop philosophy

that this survey’s respondents are clearly demanding. Trimble’s AI strategy (including machine-learning-powered ETAs through Freight Visibility, autonomous procurement tools, and the AI-embedded Trimble TMS) extends this approach across the transportation management lifecycle, from planning and dispatch through execution, settlement, and maintenance.

The freight industry’s adoption of AI is still in its early stages. The next chapter will require targeted solutions for real operational pain, seamless integration with existing systems, and technology that makes human expertise more effective. The adopters and technology providers that meet those demands will likely define the competitive landscape for years to come.

Join Trimble to bridge the gap between AI potential and operational reality.



 **Trimble.**  **FREIGHTWAVES**