THE IMPACT OF AI ON FREIGHT PROCUREMENT

BANYAN TECHNOLOGY

PART 2

A 2025 REPORT FROM
BANYAN TECHNOLOGY

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About Banyan Technology:

Banyan Technology is the leading provider of over-the-road (OTR) shipping software, delivering end-to-end, intelligent freight management solutions. Our LIVE Connect® platform's comprehensive suite of AI and BI tools drive efficiency and cost savings through intelligent logistics solutions for Truckload, LTL, Final Mile and Parcel shipping. LIVE Connect serves as our clients' primary transportation management system (TMS) or as an API-driven data connectivity integration for existing operating systems.

THE NEXT PHASE OF ARTIFICIAL INTELLIGENCE

Artificial intelligence is not the future of freight; it is already reshaping how the industry thinks, plans, and performs. In Part One of this series, we explored how AI is transforming freight procurement and execution by optimizing pricing, automating decisions, and giving Shippers and 3PLs a new level of operational intelligence. That was only the beginning. The next phase of AI adoption reaches deeper into the network, into how risks are prevented, operations are optimized, and decisions are made before problems ever surface.

At Banyan Technology, we believe the true power of AI lies in its ability to anticipate rather than react. It is about creating intelligent systems that learn continuously from every shipment, lane, and interaction, identifying anomalies, predicting potential disruptions, and turning insights into action in real time. This is not a distant concept. It is happening today across freight operations where data-driven intelligence helps companies prevent risks at the source and redefine what efficiency means.

AI's role in freight has evolved beyond automation and into augmentation. The technology does not replace people; it strengthens them. It removes repetitive and error-prone work, allowing teams to focus on strategy, relationships, and proactive problem-solving. The companies that are thriving in this new landscape are those that see AI as an integrated part of their business, shaping smarter decisions and stronger outcomes every day.

Part One of this report examined how AI is transforming procurement and execution across Shippers and 3PLs. Part Two continues that journey — focusing on prevention, performance, and the power of early adoption.

Brian Smith
CEO, Banyan Technology

Part One of Banyan Technology's Impact of AI on Freight Procurement report examined how artificial intelligence is transforming the fundamentals of freight management through smarter procurement, optimized execution, and data-driven decision-making. In Part Two, we move beyond process efficiency to explore how AI is actively shaping the next phase of intelligent freight — one defined by prevention, protection, and performance.

As technology becomes more deeply embedded across supply chains, AI is emerging as both a shield and a strategist. It strengthens cybersecurity, identifies risks before they surface, and manages routine operations with precision through intelligent automation. The result is an industry better equipped to anticipate disruption, scale efficiently, and safeguard performance in real time.

This report highlights four critical areas where AI is driving measurable impact today: strengthening freight cybersecurity, preventing risks at the source, redefining efficiency with AI agents, and understanding why early adoption creates lasting advantage. Each section demonstrates how Shippers and 3PLs can build more resilient, connected, and intelligent freight ecosystems — not in the future, but right now.

The insights that follow provide a roadmap for how to put AI into action across your network, helping you build stronger systems, smarter workflows, and a more secure foundation for the future of freight.

Preventing Risks at the Source
AI provides predictive visibility into top freight risks such as theft, fraud, and spoilage. By shifting from reactive to preventive strategies, Shippers and 3PLs can safeguard shipments before problems occur.

Redefining Efficiency with AI Agents
AI agents now manage tasks across the shipment lifecycle without requiring users to switch systems. This boosts speed, reduces costs, and allows teams to scale without adding headcount.

Why Early Adoption Matters
Companies that integrate AI now gain a lasting competitive edge through faster pricing, proactive exception handling, expanded carrier networks and reduced administrative burden. Success depends on clean, unified data and a human/AI approach, where technology augments rather than replaces expertise.

AI ON THE OFFENSE

Preventing the Top 5 Freight Risks at the Source

Shippers and 3PLs are grappling with rising threats — from cargo theft and freight fraud driven by bad actors to ongoing operational risks like load damage and product spoilage — all of which take a toll on the bottom line.

As supply chains scale and diversify, traditional detection methods can't keep pace. Enter artificial intelligence (AI). Not as a buzzword but as a frontline ally in a growing arms race against freight risk.

"As the logistics landscape grows more complex, we're seeing AI not just as a tool but as a strategic shield against emerging threats," said Jonathan Ryan, Chief Product & Technology Officer at Overhaul.

Proactive is the New Protective

AI isn't just about automation. It is about intelligence. When paired with human expertise, AI allows Shippers and 3PLs to shift left and move from reactive to predictive security. In a landscape where the freight container might be more valuable than its trailer, ignoring AI is the real risk.

"The future of freight security lies in visibility and prediction. AI gives us both, and we're just getting started," said Ryan.

HOW AI ADDRESSES THE TOP 5 RISKS LURKING IN FREIGHT

Risk #1: Freight Fraud & Double Brokering

THE PROBLEM:
TBad actors are increasingly exploiting gaps in visibility, double brokering shipments or impersonating Carriers with polished, AI-generated email scams. Nearly 1 in 5 shipments are now double brokered, exposing critical loads to theft and disruption.

THE AI SOLUTION:
AI-powered systems now combine historical freight crime data, geolocation intelligence and behavioral red flags to identify suspicious Carriers before a load ever leaves the dock. Machine learning models identify anomalies in driver information, pickup deviations and historical fraud patterns.

> Double brokering has become one of the most persistent threats in freight. Our platform flags these risks in real time, giving Shippers the upper hand.Our clients tell us that the ability to reroute based on live theft intelligence has changed how they view risk management.

Risk #2: Cargo Theft in High-Risk Areas

THE PROBLEM:
Organized theft rings are strategically targeting high-value loads using real-time location data. As thefts surge, responding after the fact is too late.

THE AI SOLUTION:
Predictive AI identifies geographic "hot zones" and alerts teams before a shipment enters a danger zone. Integrated with telematics and mobile apps, AI systems detect unscheduled stops, route deviations and spoofed tracking. Immediate countermeasures like law enforcement alerts or rerouting can be triggered.

Risk #3: Load Damage & Product Spoilage

THE PROBLEM:
Temperature-sensitive or fragile cargo is vulnerable to mishandling or environmental shifts that go unnoticed until delivery. Recovery is often too late.

THE AI SOLUTION:
AI-driven monitoring integrates sensor data across Carriers, telematics and IoT devices. When anomalies like temperature spikes, sudden vibrations or route delays occur, AI predicts spoilage risk and enables mid-route corrections. This saves product and preserves brand trust.

Risk #4: Carrier Vetting Gaps

THE PROBLEM:
In a rush to meet deadlines or save costs, many organizations accept Carriers without thorough vetting. AI-enhanced fraud can fool even experienced Shippers and 3PLs.

THE AI SOLUTION:
Advanced AI platforms now aggregate years of incident reports, FMCSA data and real-time digital footprint analysis to vet Carriers at the shipment creation stage. If a Carrier's phone number, bank info or physical address raises a red flag, the system halts the transaction instantly.

Risk #5: Lack of Real-Time Intelligence Sharing

THE PROBLEM:
Even with good systems in place, freight crime evolves faster than internal teams can respond.

THE AI SOLUTION:
Emerging tools like AI-powered "risk crawlers" scrape global data sources such as social media, news sites and transport databases. They deliver real-time alerts tailored to a Shipper's locations, Carriers and lanes. These feeds function as the logistics version of a live radar map, empowering proactive decisions without human overload.

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HOW AI AGENTS ARE REDEFINING EFFICIENCY IN LOGISTICS OPERATIONS

Despite the pace of innovation, many logistics operations still run on emails, phone calls and outdated systems. AI agents are stepping in to bridge the gap between advanced technology and day-to-day manual processes. Rather than replacing logistics professionals, these tools serve as practical allies, augmenting operations by automating repetitive, high-volume tasks that slow down workflows and strain resources.

By streamlining these time-consuming tasks, AI agents free teams to focus on the work that truly moves freight forward, boosting speed, accuracy and margins in the process. For Shippers, this means faster decisions, reduced costs and better visibility. For 3PLs, it means scaling services without scaling headcount.

AI at Work: Beyond Predictive Analytics

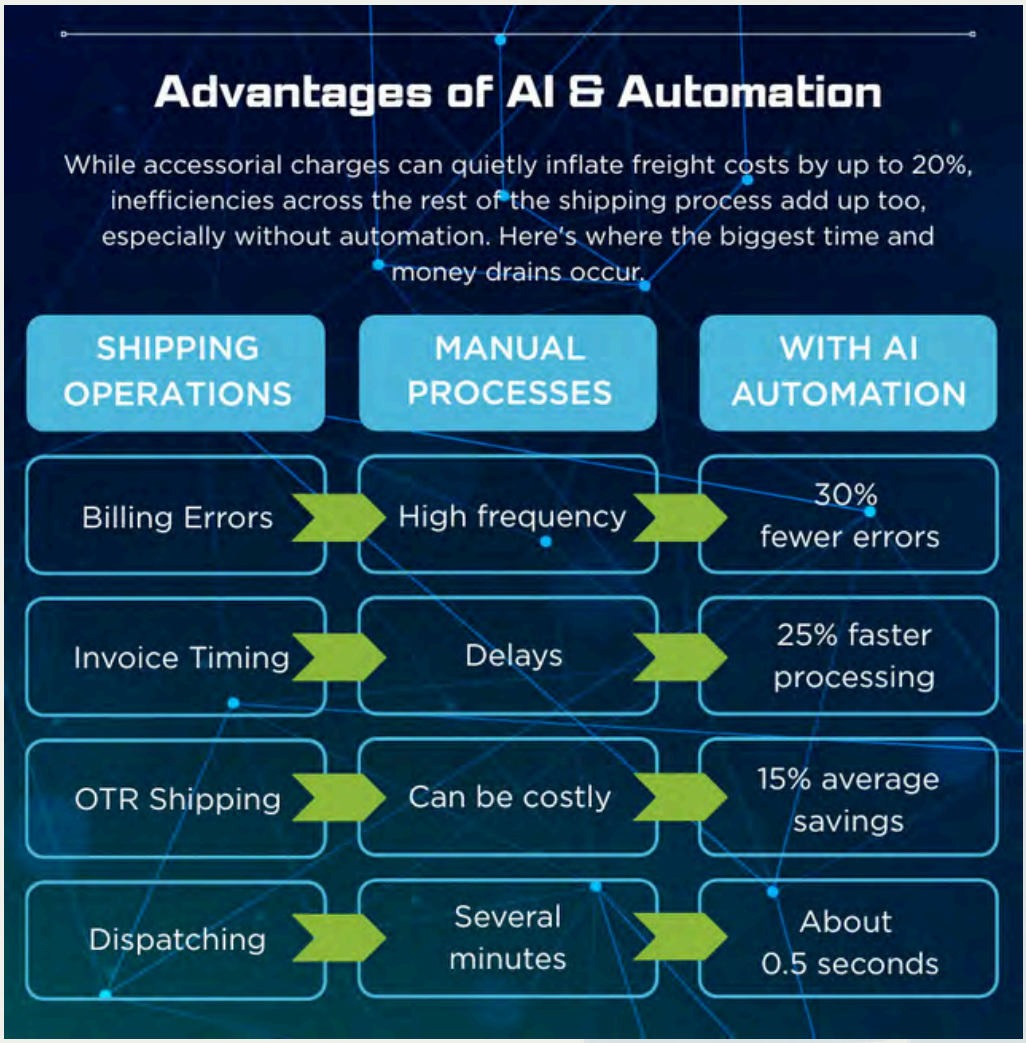
Traditionally, AI in logistics was synonymous with predictive analytics. Tools that estimated rates

or optimized routes based on historical data played important roles but were narrow in scope.

Now, AI agents powered by language models can understand natural language, perform real-time actions and interact with humans and systems alike. This evolution enables the agents to manage tasks across the entire shipment lifecycle, from quoting and scheduling to carrier communication and document management.

What This Means for You:

For Shippers, this intelligence can automate load planning and vendor communications. For 3PLs, it can enhance responsiveness, differentiate service and improve operational throughput.



How AI Agents Integrate into Daily Workflows

What makes these AI solutions impactful is their seamless integration with existing systems. Instead of requiring users to switch platforms, agents can operate directly within email, TMS environments or even web portals.

For example, when a spot quote hits a logistics professional's inbox, the AI can extract the necessary details, research benchmark rates and draft a competitive response within seconds. Similarly, for appointment scheduling or load tracking, agents can interact with carrier portals, validate data and follow up, all with minimal human intervention.

What This Means for You:

This matters to Shippers who are managing complex supply chains and small teams, and to 3PLs balancing multiple accounts while trying to exceed service expectations.

From Assistant to Autonomous Co-Worker

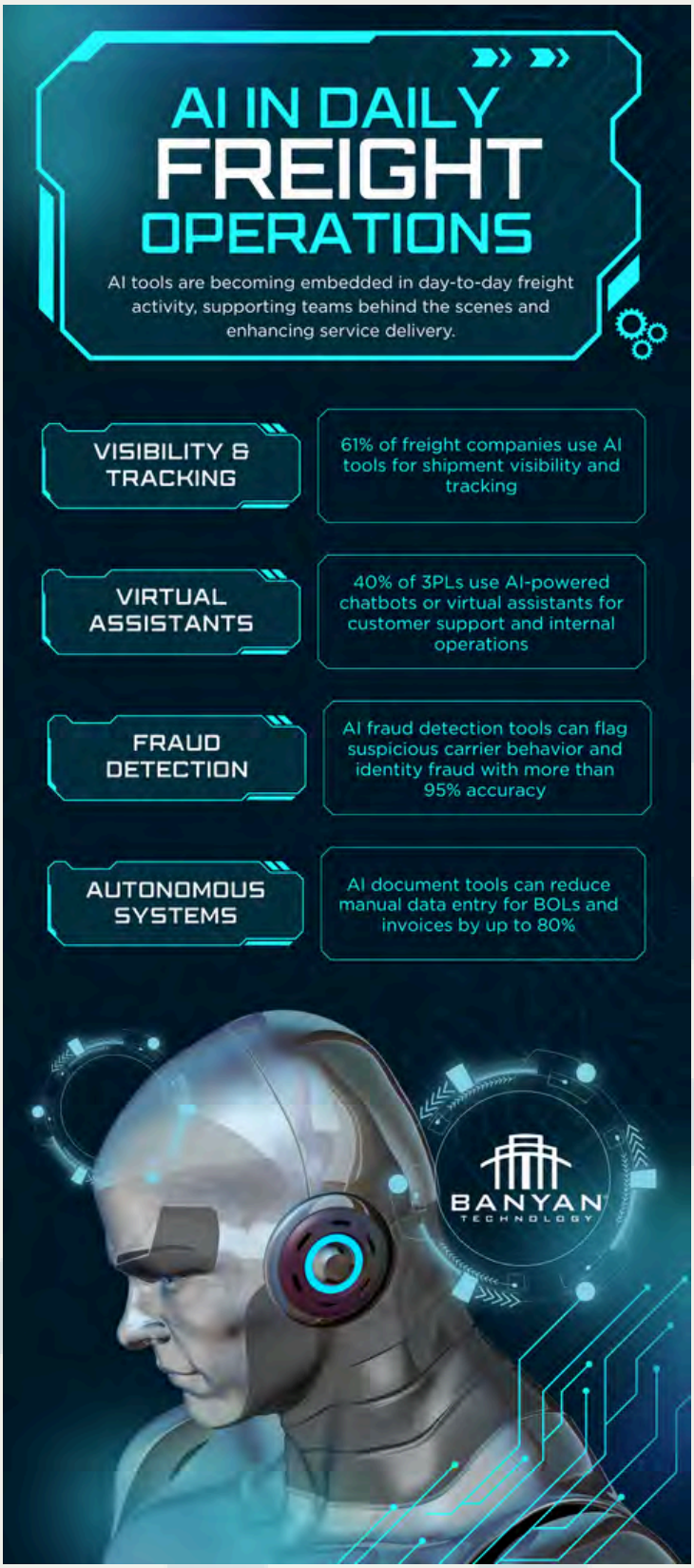
AI agents can operate on a spectrum of autonomy. In low-risk, routine scenarios, they can fully handle

transactions. In more complex cases, they serve as co-pilots, providing suggestions or completing preliminary work that a human reviews. This dynamic lets teams scale efficiently without compromising control and gives professionals the bandwidth to focus on relationship-building and complex problem-solving.

What This Means for You:
For Shippers, this means fewer delays and faster resolutions. For 3PLs, it is a way to grow accounts while containing overhead.

Use Cases Across Modes
AI agents are proving their value across transportation modes by managing the unique demands of full Truckload, the complexities of LTL, and the unpredictability of Final Mile. They also support operational tasks like dispatching, appointment scheduling, and carrier vetting, helping teams work faster and smarter across the board.

What This Means for You:
Shippers benefit from reduced delays and manual work so your team can focus on strategic logistics decisions. 3PLs gain scalability and service quality by automating complex, high-volume tasks across clients and carriers.



Overcoming Skepticism Through Measurable Value

While some industry professionals remain hesitant about handing over tasks to AI, real-world implementations show significant gains. Teams using AI agents are turning around quotes in minutes instead of hours, booking more loads and reducing cost-per-transaction, all without downsizing staff or increasing costs. Instead, they delay new hires while increasing throughput, focusing their teams on higher-value interactions.

What This Means for You:

For Shippers, this means better cost control and stronger business growth. For 3PLs, it is the ability to scale service delivery and improve profitability.

Looking Ahead: Table Stakes for Tomorrow

As the logistics industry continues to digitize, AI agents will not just be an advantage, they will be essential. Companies that fail to explore these tools risk losing ground to competitors who do, especially those that can offer quicker, more reliable service to more customers.

Whether you're a broker, carrier, Shipper or 3PL, now is the time to evaluate how AI can be a force multiplier in your operations. The future is not about replacing the human element, it's about equipping logistics professionals with the tools to thrive in a faster, more connected freight landscape.

FROM RATES TO ROUTES

How Early AI Adoption Pays Off

Artificial intelligence has moved well beyond being a talking point in logistics. It is now embedded in procurement strategies, pricing models, carrier sourcing, and exception management, often without the end user realizing it.

For Shippers and 3PLs, the shift is not theoretical. AI is already influencing who wins freight, how quickly loads get covered, and whether operations run at a reactive or proactive pace.

“AI won’t replace people in freight, but people using AI absolutely will replace those who don’t,” said Jason Roberts, SVP of Digital Enablement at MODE Global.

The companies that will thrive are not necessarily those with the flashiest tools, but those that integrate AI into everyday processes in ways that drive measurable value.

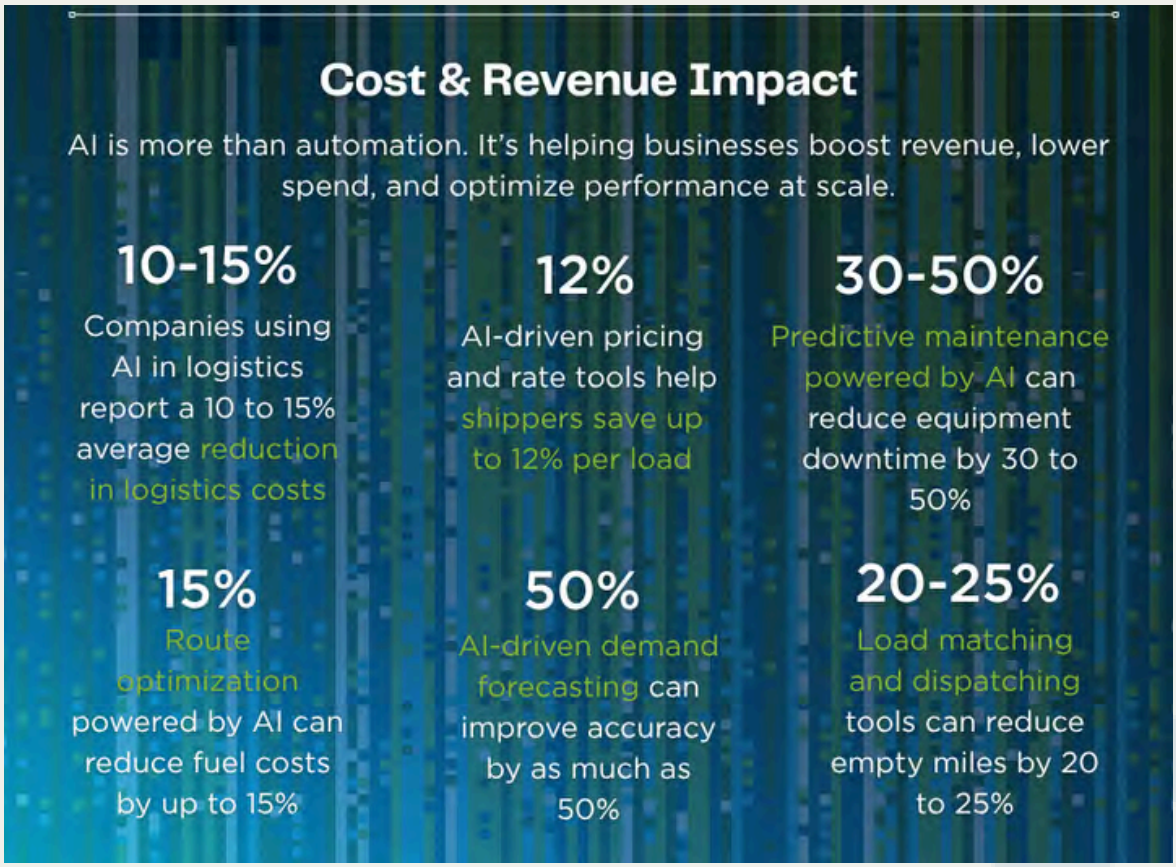
This integration allows human teams to focus on building trust, solving problems, and making smarter strategic moves.

The Current AI Landscape

AI has become one of the fastest-adopted tools in the freight space. Platforms promote capabilities such as automation, predictive analytics, and real-time decision support. However, not all solutions deliver on these promises.

The goal is not to simply “have AI” but to deploy it in ways that produce clear results, such as reducing tender rejections, shortening procurement cycles, or expanding carrier access when market conditions are tight.

The most effective strategies do not aim to remove people from the process. Instead, AI works as a co-pilot — automating repetitive tasks, spotting



trends faster than humans can, and supporting decision-making in real time.

"The winners will be the ones who embed AI into everyday decisions... It will be a co-pilot, a silent teammate," said Roberts.

Used this way, AI frees logistics teams to focus on higher-value activities such as negotiating rates, cultivating carrier loyalty, and delivering proactive updates to customers before problems arise.

Why Shippers and 3PLs Should Care

AI adoption is not about chasing trends. It is about securing a competitive edge in a market where speed, accuracy, and reliability are non-negotiable. The benefits are tangible:

- **Faster, More Accurate Pricing**

AI-driven algorithms evaluate historical lane performance, current market rates, and capacity availability, allowing teams to quote competitively without sacrificing margin.

- **Improved On-Time Performance**

Predictive models flag lanes at risk for service failures before they occur, enabling proactive adjustments that keep deliveries on schedule.

- **Expanded Carrier Network**

AI-powered sourcing tools uncover reliable carriers beyond existing rosters, which is critical when traditional networks are stretched.

- **Reduced Administrative Overhead**

Automating tasks such as load entry, appointment scheduling, and POD retrieval gives teams more time for customer engagement and strategic planning.

- **Data-Backed Negotiations**

With AI surfacing patterns and cost drivers across large datasets, negotiations can be based on facts rather than assumptions.

Barriers and Challenges

No matter how advanced an AI system is, poor-quality data will undermine it. In freight, data often lives in multiple TMS, CRM, and accounting systems, with inconsistent formats and duplicate entries that reduce accuracy.

"If your data is tainted, you've got a poisoned well... It doesn't matter how high-end your pipeline is — it's still bad water going through it," said Roberts.

The first step toward AI success is creating a single source of truth for shipment, pricing, and carrier performance data.

Shippers and 3PLs should focus on AI projects that address specific operational bottlenecks and deliver measurable results before attempting to overhaul every process.

If your data is tainted, you've got a poisoned well... It doesn't matter how high-end your pipeline is — it's still bad water going through it.

Top 3 Real-World AI Applications

1. Automating Low-Value, High-Volume Tasks: AI agents can handle tasks such as load building, appointment scheduling, and check calls at scale. By automating these functions, teams gain more time to secure capacity, manage exceptions, and build stronger relationships with partners.
2. AI-Driven Procurement and Pricing: Instead of relying solely on static benchmarks, AI analyzes market volatility, seasonal trends, and carrier performance to suggest optimal pricing. This minimizes

the risk of underbidding and reduces costly rebids.

3. Workflow Automation with AI Agents
AI can execute multi-step processes with built-in escalation rules. A load coverage workflow, for example, might begin with preferred carriers, expand to vetted external options if needed, and involve a human only when the situation requires judgment.

The Human + AI Model
Tomorrow's freight professionals will need skills beyond operations or sales. They will have to know how to direct AI tools effectively, determine which processes to automate, and interpret AI outputs in a business context.

Technology can make processes more efficient, but trust remains the currency of the freight business. AI should enhance these relationships, not replace them. "The real win is when customers come to you for insights they can't get anywhere else," said Roberts.

Short-Term Moves and Long-Term Payoffs
The evolution of AI in freight will not happen all at once. Understanding what is likely to happen in the near term versus the long term helps Shippers and 3PLs plan investments, prepare teams, and position themselves to capitalize when market conditions shift.

Short-Term:
Expect consolidation among AI providers as the market matures. Larger, established freight tech players are likely to introduce their own AI-driven capabilities, raising performance expectations across the industry.

Long-Term:
AI will become so embedded in freight operations that it will feel as natural as using a TMS today. Companies that adopt early will have processes and skill sets that give them a lasting advantage over slower-moving competitors.

When the Market Shifts:
In the next capacity crunch, AI-enabled Shippers and 3PLs will be able to cover more loads faster and at better rates.

AI is not an abstract future. It is shaping the freight market today. For Shippers and 3PLs, the opportunity lies in using it to win freight faster, avoid costly disruptions, and build stronger partnerships.

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