

Fixed & Flexible Automation Solutions For The **3PL Industry**



75% TOTAL OCCUPANCY

3002 COMPLETED ORDERS

534 IN PROGRESS ORDER

TOTAL ITEMS PICKED **6433**

TOTAL INVENTORY COST **1.85 M**

LEVEL OCCUPANCY

ROBOTICS

NO. OF ROBOTS **50**

THROUGHPUT **5246** sorts/hr

PERFORMED **START**

IN PROGRESS **START**

PENDING **START**

WES/GE

A B C D

ADDVERB

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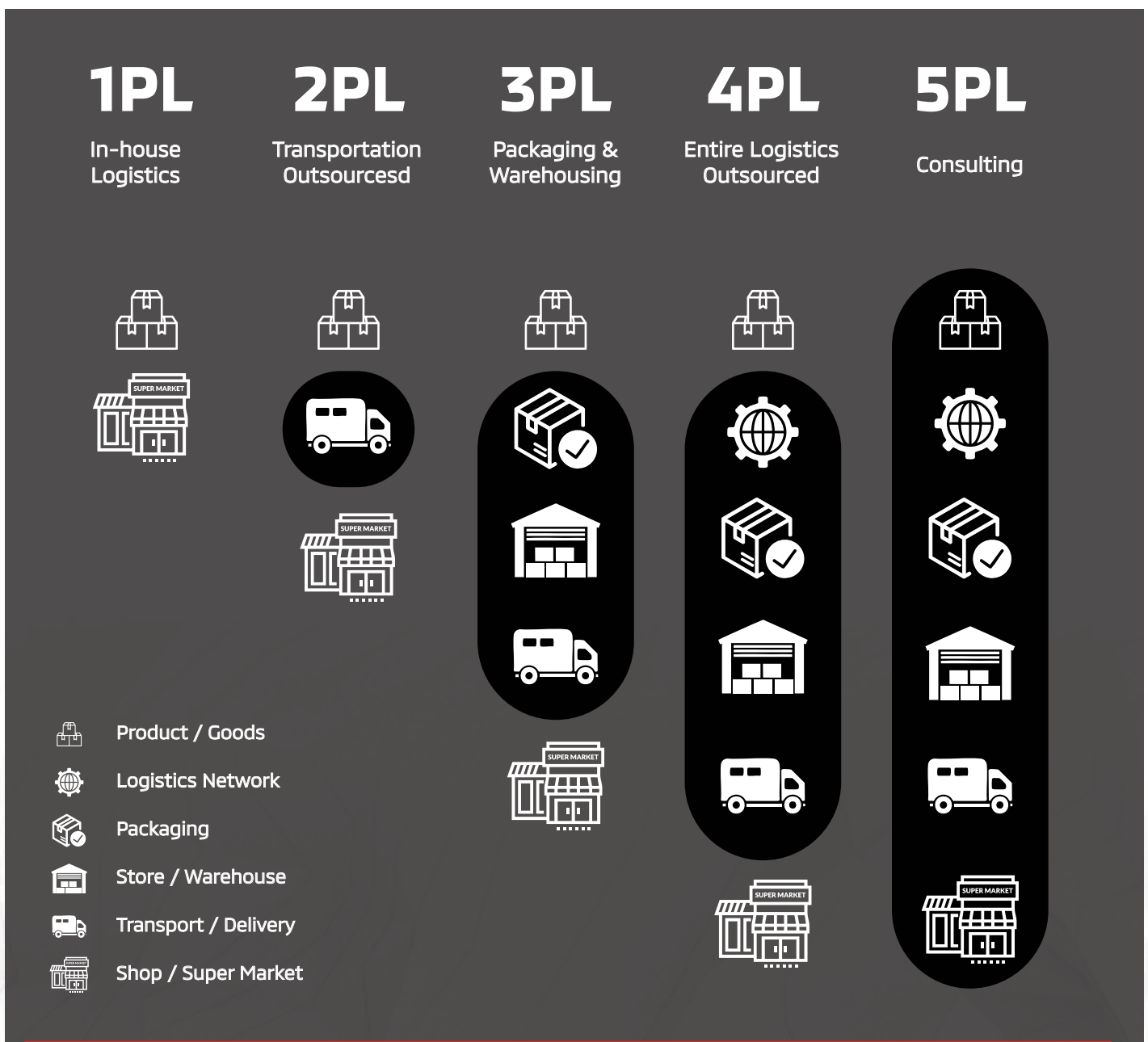
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The 3PL Industry

3PL and the Logistics Landscape

Third-party logistics (3PL) refers to outsourced partnerships where specialized service providers handle elements of supply chain operations for their clients - from warehousing, inventory, and transportation to value-added services like customs or returns processing.

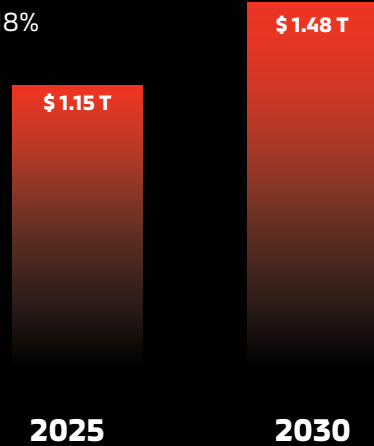
- 2PLs provide transportation services (e.g., trucking companies, airlines), with focus only on the movement of goods from one point to another.
- 3PLs Offer a wider range of services beyond transportation, such as warehousing, inventory management, order fulfilment etc.
- 4PLs act as a supply chain integrator, managing end-to-end network for a client, focusing on strategy, planning, and optimization of the entire supply chain.



Industry Size and Growth

Global 3PL Market

CAGR 5.18%



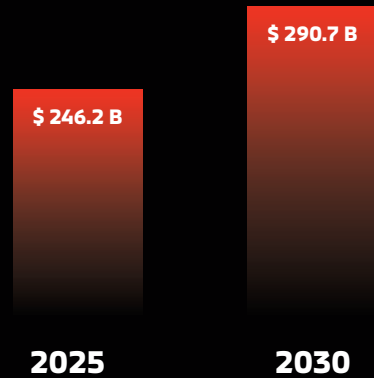
3PL market in USD Trillion

The Global 3PL market is projected to grow from US \$1.15 trillion in 2025 to US \$1.48 trillion by 2030, reporting a CAGR of ~5.18%

[Mordor Intelligence]

US 3PL Market

CAGR 3.38%



3PL market in USD Billion

The North American market continues to swell. US 3PL alone is expected to jump from US \$246 billion in 2025 to US \$291 billion by 2030, reporting a CAGR of ~3.38%.

[Mordor Intelligence]

Why do Shippers Prefer a 3PL?



Customer Satisfaction: 91% of 3PL users and 97% of providers report successful partnerships, indicating strong collaboration and mutual benefits.

[Supply Chain 247]



Cost Savings: 75% of shippers state that utilizing 3PL services has led to overall logistics cost reductions, emphasizing the financial advantages of outsourcing.

[PLS Logistics]



Service vs. Price: In 2024, 74% of shippers prioritize service quality over cost when evaluating 3PL partnerships, underscoring the importance of reliability and performance.

[Inbound Logistics Magazine]

Operational Trends & Growth Drivers

E-commerce Boom & SKU Proliferation

Exploding SKUs, frequent promotions, expectations of shorter delivery timelines, and same-day fulfillment are pushing 3PLs to optimize space and operations at scale.

[Mordor Intelligence]

Omnichannel Fulfillments + Reverse Logistics

Handling multiple fulfillment channels (B2B, B2C, D2C) and a surge in return flows requires flexibility and system integration.

Labor Shortages & Slim Margins

Acquiring skilled staff, training them, and controlling costs have become perennial pain points for manual or semi-automated operations. **76% of Supply Chain Companies Facing Worker Shortages** [Descartes Systems Group survey]

Expectations for Granular Visibility

Today's shippers demand tight SLA adherence, real-time tracking, and analytics—forcing 3PLs to evolve digitally.

Scalability Across Peaks

Seasonal surges during Christmas, Halloween or promotional events expose capacity limitations; manual systems struggle to scale without cost or performance penalties.

Why This Matters to 3PLs

Competitive necessity:

As global freight volumes grow (5–6% CAGR) and outsourcing rises, 3PLs must evolve from reactive fulfillment providers to proactive supply chain enablers.

Client expectations:

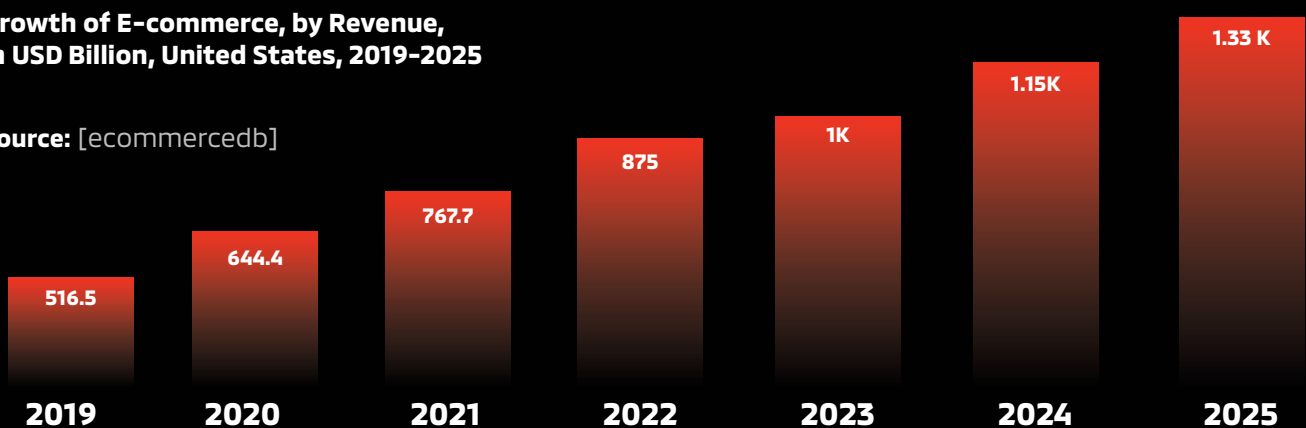
Brands increasingly offload logistics complexity—but expect 3PLs to deliver agile, tech-enabled solutions with measurable SLAs.

Margin pressure:

Unless efficiencies improve near-term, failure to modernize can erode profit margins, damage client relationships, and limit growth.

Growth of E-commerce, by Revenue, in USD Billion, United States, 2019–2025

Source: [ecommercedb]



3PL & Automation - Challenges and Solutions

Critical Challenges in 3PL

76%

of supply chain leaders report workforce shortages, 56% in warehouses

[Descartes]



35%

of warehouses report $\geq 1\%$ picking error rates

[SST Lift]



60%

of 3PLs use over 90% of capacity; another 28% operate at 80–89%

[NTT Data]



\$816B

U.S. returns totalled \$816B in 2024, expected \$890B in 2025

[Forbes]



5.5%

per 100 workers is warehouse injury rates

[Bureau of Labor Stats]



80%

of consumers expect same-day shipping or faster

[McKinsey]



How Automation Solves for 3PL Challenges

Challenges in 3PL

How Automation Solves It



Labor shortages and retention

Automation handles repetitive tasks, reduces labor dependency & improves retention by providing safer environment.



Picking errors and manual inefficiencies

Automated picking procedures & robotic sorters enable high precision operations, eliminating errors entirely.



Inability to scale during seasonal surges

Flexible automation systems enable businesses to adjust to changes in volume, SKU types, & process variations.



Space constraints

AS/RS utilizes every available cubic inch to enable high-density storage, recovering up to 80% floor space.



Returns management & reverse logistics

Automated sortation & inspection streamline returns, shortening cycle times and minimizing manual handling.



Lack of real-time visibility and control

Integrated scanners, IoT sensors, and software (WMS) provide live inventory data, ensuring accuracy.



Workplace safety and compliance risks

Automation takes over the heavy lifting and repetitive motion part, improving safety, reducing injuries.



Expectation of faster delivery

High speed efficiency of automated systems enables 3PLs to process and fulfill orders much quicker.

Fixed & Flexible Automation in 3PL

What are Fixed and Flexible Automation Solutions?

Fixed Automation

It refers to automation systems that moves and operates on fixed infrastructure like tracks, rollers. Examples might include **Conveyors, AS/RS Shuttles & Cranes**. These are built to execute repetitive tasks efficiently within high-volume production environments.

Understand it this way...

Fixed automation is a like a train, operating on rail tracks. Fast, efficient, but rigid.

Flexible Automation

It refers to automation systems that move and operate free from fixed infrastructure restrictions. These can adapt and reconfigure themselves to handle various tasks or processes without significant manual intervention. Examples include **Autonomous Mobile Robots (AMRs)**

Flexible automation is like a jet ski, can move anywhere in the water. Agile, reconfigurable, and responsive.



Why 3PLs Need Both to Truly Optimize Operations

While fixed systems are the go-to reliable system for repetitive tasks that require speed and repetitive accuracy, adaptability in dynamic environments is not their strongest suit. Once 'fixed', these systems leave little room for the thought of changing layouts, flows, processes to cater seasonal peaks, unexpected client shifts, or process improvements.

Example:

Conveyors initially laid out for material flow from points A-B and C-D – might become a tall task to change from A-C or B-D, considering the new flow better aligns with business' evolving warehouse strategy.

Flexible automation fills this gap. It enables warehouses to adapt and be flexible in their warehouse strategy – be it layout changes, variable material flows, re-worked zone locations or anything else. All while working alongside humans in a safe and agile manner, requiring no extra infrastructure.

Taking the above example, AMRs in place of conveyors would pose no hindrance to warehouse managers in whatever change they decide on. **AMRs would simply adapt to them and continue to perform as good as ever.**

Takeaway Insight

The most efficient 3PL strategies strategically combine both technologies to maximize operations: use fixed systems for speed, high-frequency, accurate and stable flow; deploy flexible solutions for high-mix picking, returns, surges, layout changeovers, and higher interaction with humans.

This hybrid approach ensures resources are always optimized for changing demands. It also future-proofs operations against evolving customer expectations and market shifts.



The Rise of Automation in 3PL

- Post-COVID E-commerce growth surged adoption of automation—94% of U.S. consumers are expected to continue frequent online shopping, fuelling fluctuating storage needs and order velocity. [The Supply Chain Exchange]
- Modern facilities overlay robotics onto traditional systems: AMRs handle transport, robotic sorters process multi-client orders, ASRS and shuttles manage dense storage efficiently.
- According to Shopify, an estimated 67% of US consumers expect same-, next- or two-day shipping. 3PL automation significantly speeds up essential warehouse operations, meaning providers can process and fulfill orders much quicker. [Hopstack]
- SupplyChainBrain notes flexible systems “reduce costs and empower adaptation as demands change,” essential for 3PL environments with evolving client mixes. [Supply Chain Brain]

Takeaway Insight

3PLs face a balancing act: throughput demands versus flexibility needs.

An optimized hybrid—using the high efficiency of fixed automation where volumes are predictable, and the agility of flexible automation where variability reigns—is today's gold standard.

It's what separates legacy 3PL operations from future-ready orchestration.



DHL, US



Mondial Relay, France



Maersk, Australia



DHL, Australia

Automation in Phases -The Go-To Approach

What is a Phased Approach to Warehouse Automation?

A phased approach involves introducing automation in incremental stages, rather than attempting a complete overhaul. It lets 3PLs strategically automate key operations first, while maintaining business continuity and then scale over time.

Key Components of a Phased Approach

	<u>Initial Phase</u>	<u>Middle Phase</u>	<u>Final Phase</u>
Key Achievement	Get going in quick-win automation zones	Parallel system deployments for other processes	Maximizing capacity, throughput, savings
Explanation	<p>Start with use cases that provide fast ROI (e.g., sortation, tote movement).</p> <p>Use mobile or modular systems that require minimal layout changes.</p>	<p>Run new systems alongside existing operations to de-risk implementation.</p> <p>Use these pilots to fine-tune performance metrics and layout flows.</p>	<p>Gradually add conveyors, shuttles, AS/RS once flows are stabilized.</p> <p>Avoid upfront capital strain and preserve layout flexibility.</p>



Why is it the Go-To Approach

Benefit	Why It Matters to 3PLs
Minimizes Disruption	Business-as-usual continues during deployment—no need to halt operations.
Spreads Out CapEx	Lower upfront investment; build ROI before reinvesting.
Faster ROI	Quick wins generate early value, helping secure leadership buy-in.
Increased Internal Buy-In	Teams adapt gradually; reduced tech fatigue and resistance.
Scalable Across Sites	Templates from pilot sites can be reused in future deployments.

The reality for 3PLs is that operations can't stop. A phased deployment protects productivity, allows for continuous learning, and delivers value at each step.

[Spiceworks Article]

For 3PL providers navigating multi-client operations and seasonal complexity, phased automation isn't just safer—it's smarter. With a clear path to scale, minimal risk, and proven ROI milestones, this method aligns perfectly with the fluid, high-stakes nature of third-party logistics.

Addverb 3PL Case Studies

In this section, we highlight three real-world examples where Addverb's comprehensive automation solutions—combining fixed and flexible systems transformed 3PL warehouses. Each case study outlines the client's challenge, the solution implemented, and the measurable results achieved.

Maersk — Fixed + Flexible Omnichannel Fulfillment

Client Challenge:

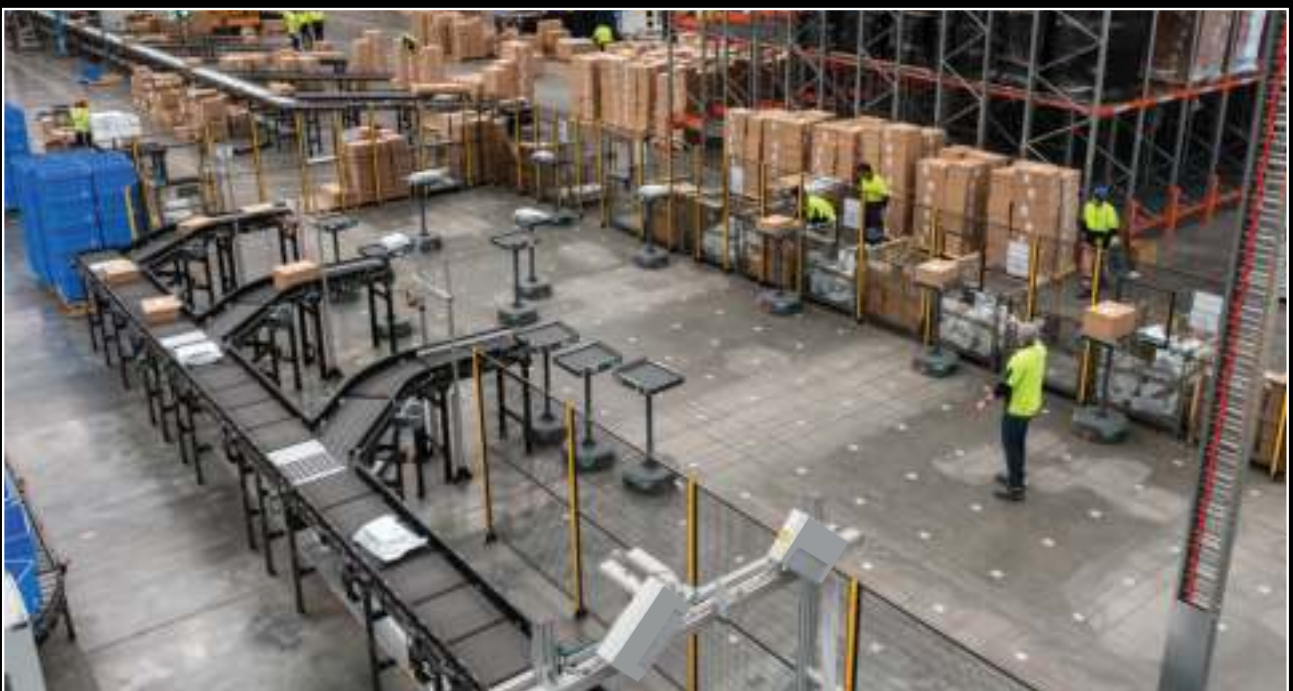
- Maersk's 3PL hub managed a mix of footwear (60%), apparel (30%), accessories (10%) with for a global sports brand.
- Required to run complex, high-volume B2B and B2C operations from a brownfield site.

Automation Solution Implemented:

- A hybrid setup: Pallet & Carton Shuttles, AMRs, multi-carton pick robots, robotic sorters, conveyors, and PicktoLight systems.
- All systems governed by an integrated Warehouse Control System (WCS)

Key Achievements:

- 100,000 pieces dispatched daily to over 2,500 locations.
- 16,500 pallet slots and 86,400 tote positions, supporting massive storage density.
- 420 cartons/hour/robot system's overall throughput.
- Robust omnichannel and return handling driven by system-wide orchestration.



DHL – Robotic Sortation System

Client Challenge:

- DHL Supply Chain needed to automate apparel sortation under high labor turnover and shortage.
- The target site operated near capacity with 24/7 manual operations and year-end peaks looming.

Automation Solution Implemented:

- A bespoke robotic sortation system featuring Zippy robots integrated with conveyors, scanning, and Addverb's Warehouse Execution System (WES)
- Delivered in under nine months (design to deployment) with full inbound and outbound automation integration.

Key Achievements:

- +300% throughput: from 20 to 100+ units/hour.
- 99.99% accuracy in order fulfilment.
- Automation system installed and delivered under 9 months.
- Zero additional staffing required during peak execution.



Mondial Relay – High-Speed Robotic Sorting

Client Challenge:

- Mondial faced growing demand that strained its sorting operations due to manpower and space constraints.
- Needed to boost sorting speed while improving worker safety and space utilization.

Automation Solution Implemented:

- Deployed 62 Zippy10 robotic sorters integrated into a compact footprint with multi-lane destinations.
- FMS-managed fleet with AI navigation, traffic control, and battery monitoring for optimized operations.

Key Achievements:

- 3,000+ sorts/hour, up from ~2,500 after incremental robot addition.
- 99.99% sorting accuracy across automated operations.



Conclusion

The third-party logistics (3PL) industry is at an inflection point. Rapid E-commerce growth, rising customer expectations, labor volatility, and space constraints are challenging traditional fulfillment models. In this environment, automation is no longer a question of if, but how intelligently it's implemented.

The key insight is that fixed and flexible automation are not competing approaches—but complementary strategies. Fixed automation delivers scale, structure, and repeatability. Flexible automation adds adaptability, scalability, and resilience. The combination of both creates an operation that is not just efficient, but elastic, precise, and future ready.

For 3PL providers, the ability to layer automation in phases, optimize for both current demand and future uncertainty, and manage operations through intelligent orchestration is what sets tomorrow's leaders apart. Automation doesn't replace the workforce—it enables it. It doesn't just reduce cost—it unlocks capability.

The most successful 3PLs of the next decade will be those who:

- Treat automation as a business enabler, not a bolt-on solution
- Blend fixed and flexible systems to match the unpredictability of their clients' needs
- Adopt a modular, scalable, and data-driven approach to transformation

This whitepaper underscores one unavoidable reality:

The cost of not automating is no longer operational with it's strategic.

To remain relevant, competitive, and profitable, the time to act is now. And with the right partner, automation can be simpler, faster, and more impactful than ever.