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NAVIGATING AI INNOVATION IN THE LOGISTICS INDUSTRY

25 use cases from industry leaders to guide the development of an effective AI strategy

A business of Marsh McLennan

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Introduction

Artificial Intelligence has become a focal point for many sectors as it rapidly evolves from a conceptual framework into a transformative solution for re-configuring, even reimagining, entire processes and workflows.

The logistics sector is no different with many operators already assessing how AI can be applied to their operations. However, serious challenges to successfully leveraging AI remain within the sector. Oliver Wyman's guide is designed to help you navigate this current complex landscape and assess AI's implications for logistics. By highlighting key trends from across 25 use cases, we provide insights into how organizations can effectively utilize AI technologies, enhance operational capabilities, and, most importantly, become more competitive in the marketplace.

Executive Summary

Understanding Artificial Intelligence's strategic importance

Artificial Intelligence (AI) is transforming from an experimental technology to a tangible productivity driver, with research showing widespread adoption in enterprise. This leaves CEOs at a critical juncture: either adopt a 'wait and watch' approach to reduce exposure to any perceived risks, or embrace AI now to remain competitive, especially as the technology is predicted to automate up to **40% of task hours by 2030**[1].

In logistics, AI promises to transform demand forecasting, route optimization, and warehouse automation. However, adoption is slower in this sector compared to other data-centric industries. This is due to key challenges such as the limitations of IT legacy infrastructures and the lack of real-time data capabilities.

AI applications in the logistics industry

Despite these obstacles, our review of 25 AI-driven use cases from leading logistics operators reveals the sector is embracing the technology, with most AI applications used for back-office white collar productivity optimization, while increasingly being integrated into physical automation processes.

For instance, Routine Automation is employed for tasks such as transaction processing, which includes managing emails and quoting prices, as well as automating customer service. Relational or Human Interaction Support utilizes applications including chatbots to assist with customer service, provide delivery updates, or conduct initial job candidate screenings. Expert Systems deliver advanced applications for asset allocation optimization, assessing carbon footprints, and improving delivery routing. Finally, Enhanced Robotization and Automation cover areas including warehouse automation and autonomous delivery robots.

The immediate advantages of most non-industry specific AI-enabled solutions are clear. They require minimal IT maturity for integration and are suitable for short-term deployment. Conversely, expert or enhancement-level automation demands high levels of technological capability, including robust IT stacks and well-structured data, to deliver tangible and reliable results.

AI's impact on logistics varies, with Freight Forwarding and last-mile parcel segments showing significant potential for automation, while the impact on Contract Logistics is more limited as it focuses on enhanced robotic capabilities. Overall, AI is projected **to improve EBIT by 1% to 2%, representing a notable opportunity for an industry with average profits of 3%-5%**[2]**.**

[1] Source: Oliver Wyman Forum Generative AI Survey, October–November 2023

[2] Source: Oliver Wyman Survey of Logistics Executives, 2024

Strategic steps for AI implementation

However, many organizations struggle to recognize the profitability of their AI initiatives. The primary reason is rooted in the predominantly fixed cost structure of most addressed processes. A lack of appropriate metrics and incentives also obscures the savings generated by AI.

To design a successful AI strategy, organizations should prioritize scalable AI use cases aligned with their business objectives and establish proper governance to contain inherent risks. A phased approach is recommended: starting small with manageable applications like chatbots or basic automation helps build confidence and expertise before scaling organization-wide. Companies must also enhance workforce readiness, addressing skill gaps through training to foster an AI-literate culture.

Ultimately, AI represents an opportunity to harness unstructured data without the need for substantial investments in data infrastructure. However, leveraging the full transformative potential of the technology will require a more advanced infrastructure that properly combines external and internal technical capabilities.

About The Use Cases

Use cases have been extracted from official announcements about AI innovations introduced by logistics operators. Our objective was to consolidate these use cases, categorize them, and extract relevant facts and data points where available. Additionally, we estimated the potential impacts on the industry at large.

Behavioral data sources

The behavioral data utilized in this report originates from Oliver Wyman Forum's research. We specifically highlight insights that are pertinent to the logistics industry, ensuring a focused analysis.

Recommendations for strategy and implementation

Our recommendations for defining strategies and best practices for implementation are grounded in our extensive experience assisting clients in developing their data and AI strategies. These insights aim to provide actionable guidance for organizations looking to enhance their operational efficiency through innovative solutions.

1. Understanding Artificial Intelligence's Strategic Importance

Acknowledging and understanding AI and its evolution is now essential. The potential of the technology for accelerating productivity and creating new business opportunities is unquestionable – however, questions about its full potential and return on investment remain unanswered.

1.1. Why tackling AI's evolution today is "mission critical" for companies

AI is transitioning from experimentation to mass adoption at pace, with over **80% of enterprises expected to integrate Generative AI (Gen AI) applications into their operations and infrastructure by 2026**. Companies that fail to adopt Gen AI are projected to lose critical competitive positioning, or face disruption from faster-moving competitors. This is a prominent concern for CEOs who are considering leveraging AI defensively to avoid being left behind.

Such defensive approach is understandable. For instance, by 2030, Gen AI is expected to automate up to 40% of current task hours, which will greatly enhance productivity and redefine roles within organizations.

This shift means businesses must challenge how they run their operations to minimize future disruptions – and leverage the benefits offered by AI. For example, AI tools can empower employees to work more efficiently and generate better ideas, in turn creating more effective design processes and supporting the development of new products.

AI also opens up new growth opportunities by fostering innovative product offerings and operational models, enabling businesses to meet rapidly evolving customer expectations. Use cases reveal AI can also improve customer satisfaction by automating routine customer service tasks. Additionally, AI's advanced data analytics capabilities allow companies to extract actionable insights from large volumes of unstructured data, transforming data sets into valuable strategic assets.

Such benefits are crucial to logistics companies and their future success, especially since a substantial part of their value added services still depend on manual, repetitive tasks both in the field and in direct client interactions.

1.2. AI adoption in the logistics industry trails behind data-centric sectors

While AI adoption remains in its early stages across most sectors, the technology shows unprecedented individual adoption rates both in breadth and speed, with more than **50% of white-collar workers** beginning to use some form of Gen AI in 2023. However, these numbers mostly reflect individuals' adoption and experimentation with executives reporting that structured efforts are only just beginning with 70% of use cases still in the proof-of-concept phase.

Concerningly, a recent survey conducted by the Oliver Wyman Forum across sectors in 16 countries indicates that the **transportation industry is among the lowest in AI adoption**, with a penetration rate of approximately 50%. This rate is only slightly higher than that of the education sector at 46% and the public sector at 36%. In contrast, the technology sector shows a significantly higher adoption rate of 75%, followed by financial services with a rate of circa 60%.

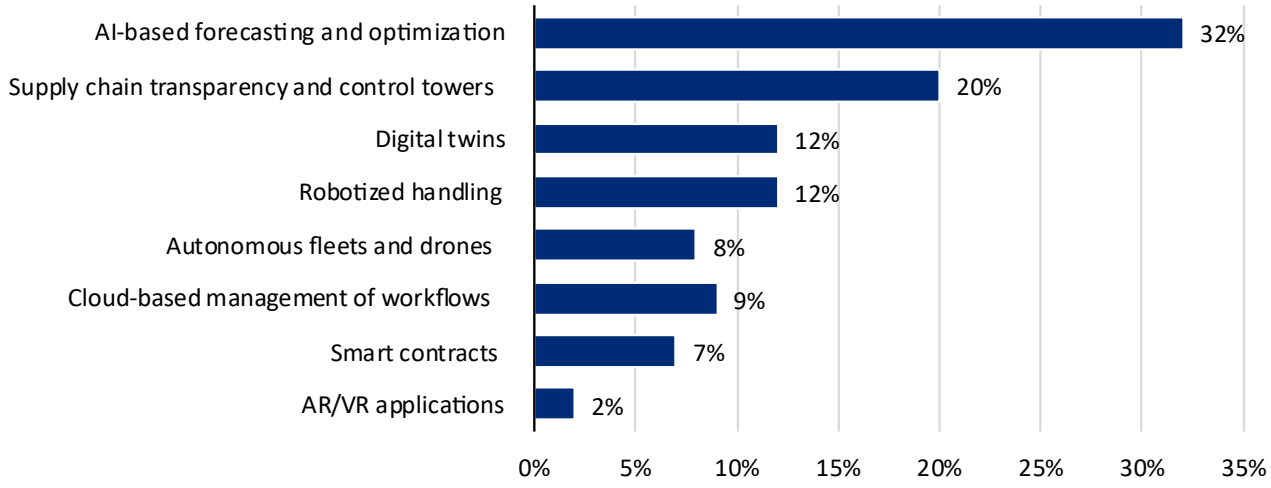
Several challenges hinder AI adoption in logistics, including legacy infrastructures that often lack connectivity and real-time data capabilities, as well as the need to restructure extensive operational data models for effective real-time AI utilization.

1.3. Logistics executives are confident in AI's potential

In the recent OW Forum survey, respondents were asked which sector would benefit most from AI. Healthcare was identified as the top beneficiary (nearly 40%). This was followed by transportation at 35%, and then education, media, environmental conservation, and energy, with each receiving between 30% and 25%[3].

Notably, **90% of respondents from the transportation industry expressed confidence that their sector would significantly benefit from AI technology**. One-third of logistics executives (32%) see AI as the most disruptive technology in their industry, ahead of the potential benefits of supply chain transparency (20%) and digital twins (12%). Respondent feedback indicates a strong belief (30%-40%) in AI's automation potential, which is comparable with sentiments across various industries[4].

Exhibit 1: What applications will drive the biggest disruptions in supply chain and logistics activities?
(In % of responses ranking each application as most or second most disruptive; N=54)



Source: Oliver Wyman Survey, 2024

[3] Source: Oliver Wyman Forum Generative AI Survey, October-November 2023
[4] Source: Oliver Wyman Survey of Logistics Executives, 2024

2. AI Applications In The Logistics Industry

Our analysis of the 25 use cases reveals AI is being increasingly integrated into logistics and is already reshaping operational efficiency. In particular, our research highlights a shift towards optimizing back-office productivity while enhancing physical automation processes – but challenges and blind spots remain.

2.1. AI-driven productivity benefits will soon extend beyond basic task automation

The scope of AI applications is extensive and still evolving, yet current use cases can be categorized into several key areas, each offering distinct advantages.

Routine Automation streamlines repetitive tasks such as data entry and customer support, resulting in significant time savings and reduced errors. **Relational or Human Interaction Support** enhances customer experiences through personalization and sentiment analysis, fostering better engagement and higher satisfaction rates. **Expert Support** aids in decision-making and diagnostics, improving accuracy and efficiency in various fields, including healthcare and finance.

Predictive Analytics focuses on forecasting sales and customer behavior, allowing businesses to optimize inventory and marketing strategies effectively. **Real-Time Data Processing** provides real-time monitoring of transactions and supply chain management, enhancing operational efficiency and responsiveness. The application of AI in **Enhanced Robotization and Automation** significantly improves robot navigation, increases the precision of robotic movements, and enhances safety in their operational environments. Finally, Gen AI as a **Creative Agent** supports content creation, allowing for faster production and enhanced creativity in writing, design, and video editing. While Gen AI is among the most popular applications in our use cases, it is not commonly utilized in the logistics industry at this time.

Overall, these categories illustrate how AI can transform processes, improve decision-making, and enhance customer interactions across diverse industries, leading to significant productivity gains.

Table 1: Simplified classification of AI applications

AI capability category	Example of functions
1. Routine Automation	Data entry; invoice processing; scheduling tasks; image processing
2. Relational or Human Interaction Support	Customer support (chatbots); personalization of services; sentiment analysis; language translation; voice recognition
3. Expert Support	Decision making; diagnostics; risk assessment; financial forecasting
4. Predictive Analytics	Sales forecasting; customer behavior prediction; fraud detection; maintenance prediction (predictive maintenance)
5. Real-Time Data Processing	Transaction monitoring; supply chain management; performance monitoring; market analysis
6. Enhanced Robotization/Automation	Computer vision; 3D vision; navigation; safety
7. Creative Agent	Content creation (writing, design); video editing; music composition; art asset generation

2.2. Emerging AI applications in logistics focus on white-collar productivity enhancement

AI applications within the logistics industry are deployed across a wide range of use cases primarily focused on enhancing white-collar productivity, while increasingly being integrated into physical automation processes.

Analysis of logistic operator AI use cases reveals the majority are unsurprisingly productivity oriented. For example:

Routine Automation: Utilized across tasks like transaction processing (such as managing emails and quoting prices) and customer service automation.

Relational/Human Interaction Support:

Chatbots

Applications focus on chatbots for customer service. For instance, a leading logistics operator's customer chatbots have reduced agent handling times by 50%, with 30% of queries managed without any human intervention.

Job candidates

Initial candidate screening or merged interactive job boards reduce effort, increase efficiency, and enhance user interactivity, leading to up to a 25% increase in job seekers per job.

Expert Automation Systems: Advanced applications include asset allocation optimization, carbon footprint measurement, and delivery routing, with no clear feedback yet on AI's benefits.

Predictive Analytics: Used in route tracking, ETA prediction, and vessel tracking to enhance real-time decision-making. For example, another leading operator utilizes AI for predictive shipment scheduling, ensuring smoother operations and increased customer satisfaction.

Real-Time Data Processing: Image, video, or live data feeds are used to identify defects in goods; automate packaging; enhance warehouse safety; monitor driver behavior to reduce accidents; and optimize package retrieval for delivery drivers.

Enhanced Robotization/Automation: Provides solutions spanning warehouse automation (loading, unloading, picking, and space optimization of up to 30%); parcel sorting; packaging optimization; defective goods identification; surveillance analysis; driver behavior analysis; and autonomous delivery robots.

Table 2: AI in logistics use case summary table

AI Capability		Use Case Category	Description
1. Routine Automation	1	Business transaction processing	Manage emailed business transactions, performing tasks including quoting prices, accepting loads, setting appointments, and checking freight in transit.
2. Relational or Human Interaction Support	2	Customer service chatbot	Calculate delivery times and inform customers, enabling message replay, cancellation, or automated adjustments during delivery.
	3	Sales team training/ Sales team support	Simulation of client situations to train sales force/AI companion to summarize client interactions.
	4	Data sources convergence	Merging large number of career sites into single Gen AI-powered career site.
	5	Recruitment chatbot	Chatbot facilitating initial interviews and screening candidates for various positions.
3. Expert Support	6	Asset allocation optimization	AI-powered territory allocation to optimize terminal locations and postal code assignments.
	7	Asset allocation optimization	AI analyzing parcel agent and community movement data for optimal location of urban delivery boxes.
	8	Delivery routing optimization	AI-driven algorithms for real-time route planning and predictive analytics.
	9	Carbon footprint measurement	AI algorithm that calculates environmental footprints.
	10	Network planning	Machine learning used for planning and managing package-flow levels amidst changing marketplace demand.
	11	Trade lane comparison feature	AI-powered analysis of trade lanes for material procurement cost-efficiency and informed decision-making in global trade expansion strategies.
4. Predictive Analytics	12	Tracking & ETA	Solution to improve visibility and shipment control via predictive analytics, reducing potential delays or claims.
5. Real-Time Data Processing	13	Package scanning	Utilizing camera system running at 120 frames per second to remove manual scanning process.
	14	Defective goods identification	AI-powered systems that pinpoint defective items in fulfillment centers to minimize damaged goods being shipped to or returned by customers.
	15	Packaging optimization	AI model that selects the most efficient and protective packaging for delivering a product.
	16	Warehouse safety surveillance systems	AI-integrated advanced robotic security for surveillance, analysis, and enhancement of safety in logistics operations.
	17	Drivers' behavior monitoring	Onboard camera system monitoring driver behavior to decrease accidents and violations (for example, seatbelt or stop sign violations).
	18	Delivery van picking optimization	Vision-assisted package retrieval to help drivers quickly find packages.
	19	Autonomous robot delivery	Autonomous robots for parcel delivery.

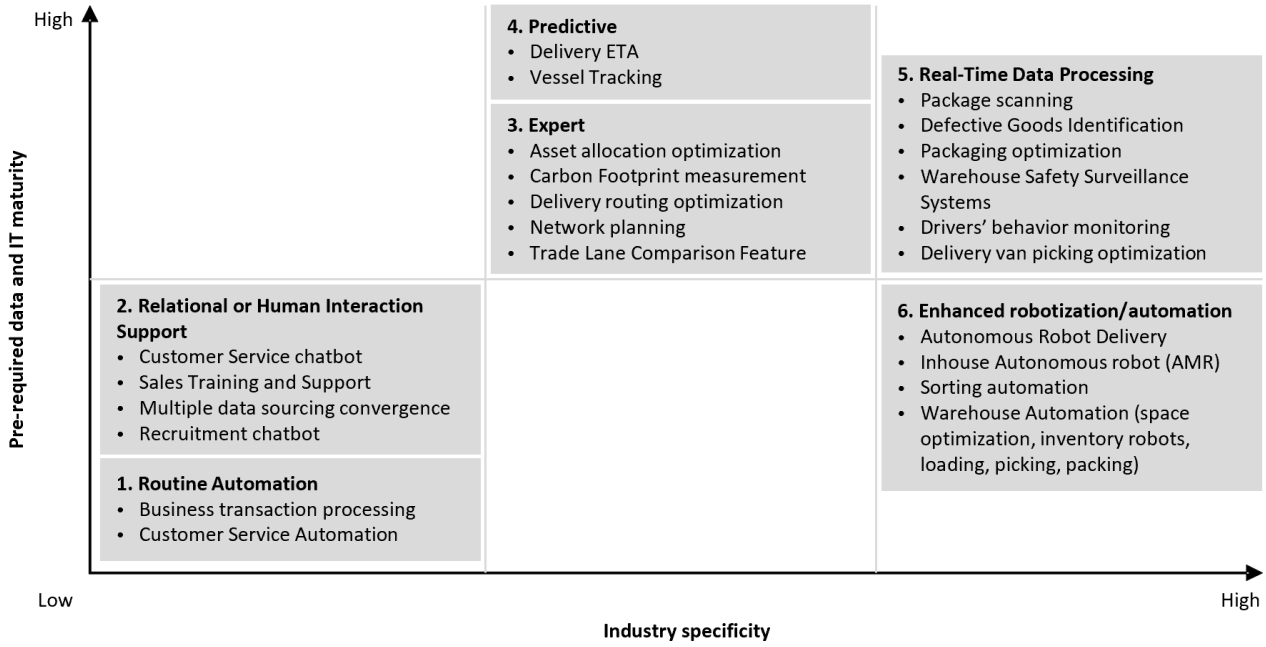
AI Capability		Use Case Category	Description
6. Enhanced robotization/ automation	20	Inhouse Autonomous Robot (AMR)	AMR technology enabling fully autonomous path planning and dynamic obstacle avoidance within warehouse environments.
	21	Sorting automation	AI-powered sorting robot that aids in efficient e-commerce shipment handling.
	22	Warehouse automation (space optimization)	AI solutions used to arrange space for speed and pick up inventory.
	23	Warehouse automation (inventory robots)	AI-powered robotics automating inventory tracking by scanning items autonomously in warehouses using 3D cameras and sensors for real-time reporting.
	24	Warehouse automation (loading)	AI-enhanced robots for depalletization and repalletization.
	25	Warehouse automation (picking, packing)	Robotic arms sort, stack, and consolidate items using advanced computer vision and AI systems.

Most AI-enabled routine automation solutions such as email management and customer interaction **require minimal IT maturity for integration**. As these solutions can be implemented across multiple industries without requiring strong prerequisites, it makes them ideal for lower technological infrastructures.

Conversely, expert or enhancement-level automation demand high levels of technological capability, including robust IT stacks and well-structured data. Examples include delivery route optimization and network efficiency improvements, which contribute more broadly to operational improvement. High IT maturity levels and data quality are also essential prerequisites for AI's application in areas such as ETA tracking and vessel monitoring.

More than half of the use cases featured in this guide have been developed internally by the screened logistics operators. Non-industry specific applications like routine automation or customer support, as well as AI-enhanced robotic solutions, will depend more heavily on external partners.

Exhibit 2: Logistics AI use case mapping



2.3. AI implementation costs are falling, timelines are shortening

Although assessing the cost and return on investment (ROI) of a complete AI transition remains challenging, recent project examples indicate that the cost-per-use case ranges **from €0.5 to 1 million**. These projects typically have a swift implementation timeline of approximately six months, resulting in a **10% to 20% reduction in the addressed cost base**, or a 1.5% to 2% increase in enhanced revenue. However, it is important to note that the latter improvement has yet to be observed in the logistics industry.

Table 3: Examples of AI use cases investments and returns

Category	Use case	Investment	Months of implementation	P&L impact[5]
Routine Automation	LLM (Large Language Models) driven **automated reporting tool** to save field engineers time and improve quality of reporting/insights.	€500 K-1 MM	3-6 months	Operating costs reduced by 10-20%
Relational or Human Interaction Support	**Personal advisor** that automates actions on behalf of clients and makes proactive suggestions.	€1.5 MM	12 months	2.5% revenue uplift
Expert Support	**Client behavior analysis** and recommendation engine for personalized marketing at scale.	€1.5-4 MM	4-12 months	1.4% to 4% revenue uplift

[5] Source: Oliver Wyman Quotient Research

Category	Use case	Investment	Months of implementation	P&L impact[5]
Predictive Analytics	**Predictive models** trained with years of claims behaviors for adversarial claims detection.	€500 K	4 months	Operating costs reduced by 15%
Creative Agent	**Gen AI** diagnostic and reporting tool for the call center.	€500 K-1 MM	3-6 months	Operating costs reduced by 10-20%

AI investments include **the design, training, and maintenance of AI models**, and various one-off costs such as compliance. The high training needs of Large Language Models (LLM) have caused **exponential year-on-year increases in costs** (up to 3x since 2019), but these costs are decreasing — as the Chinese Deepseek LLM breakthrough demonstrated.

DeepSeek has attained performance levels comparable to ChatGPT while reportedly incurring only $5.6 million in development costs, a stark contrast to the over $3 billion spent on GPT-4. The environmental impact of DeepSeek's technology is claimed to be significantly lower as well, with a **90% reduction in energy consumption and a 92% decrease in carbon footprint**[6].

However, defining ROI upfront might be challenging due to the technology and its capabilities' increasing speed of progress as well as decreasing costs. Nevertheless, companies cannot afford to wait for a more stable environment; to do so would expose them to the risk of being outpaced by competitors or disrupted by emerging players capitalizing on the technology.

[6] Source: Press CNN, The Guardian

2.4. Up to +2% EBIT impact from AI in logistics

The potential impact of AI across various logistics segments will also differ based on the significance of back-office operations. Typically, the Freight Forwarding segment (see use cases 1, 2, 11, and 12 in Section 2.2) is more susceptible to automation in areas such as quoting, customer interactions, and status checks. In the parcel industry, the last-mile segment is likely to be the most affected, with further optimizations in loading and routing (see use cases 8, 10, 17, 18, 19, and 21).

Conversely, the Contract Logistics segment (see use cases 14, 15, 16, 20, 22, 23, 24, and 25) may experience less impact, as AI-enhanced solutions primarily build on existing robotic technologies. In this area, the primary benefit of AI is enhancing robots' grasping capabilities and increasing their autonomy in less standardized environments. This potentially expands the addressable areas for such solutions.

Ultimately, based on reported use cases, the benefit of AI for the logistics industry ranges from +1% to +2% of EBIT. While this may appear modest compared to other industries, it represents a significant opportunity for an industry that typically operates at average profit levels of 3% to 5%.

Table 4: Examples of impacts by use case type

Capability area	Impact range
1. Routine Automation	**10%-20% (non-industry specific)**
2. Relational/Human Interaction Support	**10%-20%**
• **Customer service chatbot**: Resolves 70% of queries immediately, handles 30% of inquiries without human intervention, and reduces agent handle time by 50%. • **Recruitment platform convergence and chatbot**: Increases job seekers per job by 25% and accelerates hiring.	
5. Real-Time Data Processing	**5-10%**
• **Package scanning**: Eliminates manual scanning and enhances data accuracy. • **Defective goods identification**: Three times more effective than humans. Also improves recycling and reuse through automatic flagging. • **Warehouse safety surveillance systems**: Improves safety by up to 30%, reducing accidents. • **Delivery van picking optimization**: Saves 5% of delivery time; for example, over 30 minutes per route.	
6. Enhanced Robotization/Automation	**20-25%**
• **Autonomous robot delivery**: Handles up to 30 deliveries per day, still below 100-120 for a human delivery. • **Sorting automation**: Sorts packages for 100 destinations simultaneously, replacing manual sorting (for example, for small packets), but not suitable for large volume sorting. • **Warehouse space allocation**: Optimizes storage by 30% compared to non-automated facilities. • **Inventory robot**: Scans 10,000 pallets per hour, eliminates manual checks, enhances safety and customer service, and reduces reliance on manual stock checks. • **Robotic arms**: Enhances efficiency and safety; reduces heavy lifting; improves ergonomics by 30%; increases processing speed and accuracy; cuts fulfillment processing times by 25%; boosts shipping accuracy; and achieves a 25% reduction in cost to serve, but requires 30% more maintenance staff.	

Table 5: Simplified impact of AI on the cost structure of different logistics segments
Directional

AI category	Impacted cost base	Forwarding % sales	AI Impact	Parcel % Sales	AI Impact	Contract Logistics % Sales	AI Impact
1 Routine Auto/ 2. Rela. Support	Non-addressable SG&A	10%	-	5%	-	5%	-
	Addressable SG&A	5%	-20%	5%	-10%	5%	-10%
3. Expert/ 4. Predictive Anal.	Fixed costs (building/network)	-	-	15%	-	20%	-
5. Real-Time Processing/ 6. Enhanced Automation	Operating costs (sorting, picking, packing)	-	-	20%	-2.5%	50%	-1.5%
	Transportation and other sub. costs	80%	-	50%	-2.5%	15%	-3%
	Margin	5%	-	5%	-	5%	-
	Total AI impact cost reduction % revenue	**-1,0%**		**-2,3%**		**-1,7%**	

Note: When evaluating the benefits of AI on a specific process, only a portion of the cost base is considered addressable. For example, in picking-and-packing operations, **only 30% of the total cost** is deemed addressable, with the remaining **70% is allocated to the movement of items** within the warehouse.

3. Strategic Steps For Successful AI Implementation

AI technologies offer transformative benefits even within companies grappling with legacy systems. However, a clear strategy and an optimized IT infrastructure for the creation of an effective AI roadmap are crucial in navigating upgrade paths. A failure to do so could result in negative outcomes and poor returns on investment.

3.1. Most organizations fail to acknowledge the profit of their AI initiatives

Most companies are not investing enough in AI

According to the Oliver Wyman Forum survey, approximately **85% of CEOs**[7] report they are "investing incrementally or heavily" in AI. However, **38% of employees**[7] indicate that they have not observed any specific actions or changes within their companies to implement AI. In the logistics sector, executives reveal that they allocate less than **15% of their IT budget**[8] to new technologies, which is less than **0.5% of their overall revenue**[8].

[7] Source: Oliver Wyman Quotient Research
[8] Source: Oliver Wyman Survey of Logistics Executives, 2024

Few have implemented AI successfully at scale

Despite the significant potential for enhanced productivity, numerous organizations struggle to acknowledge the profit and loss impact of their AI initiatives. While **97% of organizations leverage AI**[9] as a catalyst for transformation, **a mere 17% report**[9] that their investments have surpassed expectations. Additionally, **53% of CEOs**[9] express concern over the lack of "proven and feasible use cases" for AI adoption. This despite approximately **70% of employees**[9] worldwide utilizing AI in their work, and among this group, only **11% indicating**[9] that AI has negatively affected their productivity.

Reasons for not acknowledging AI profits

The primary reasons stem from a predominantly fixed cost structure of most addressed processes. This limits the full realization of reduced variable costs, thereby capping the overall effect on operating expenses. Additionally, in the absence of appropriate metrics and incentives, the savings generated by AI remain obscured within internal reporting, preventing them from translating into tangible cost reductions or revenue increases. Last, without the redeployment or reduction of excess capacity, the benefits of AI go unrecognized, resulting in static costs and unrecorded improvements in margins.

3.2. A structured strategy is crucial to leveraging AI's full potential

While most logistics players are still exploring the capabilities of AI, some key lessons can be derived from AI strategies of early adopters:

1. **Business alignment**: Align AI initiatives with business development goals focusing on scalable applications to create tangible value.
2. **Governance and risk management**: Establish structured governance and accountability to mitigate AI's inherent risks.
3. **People**: Bridge talent gaps by providing Gen AI training and fostering a culture of safe experimentation.
4. **Data and AI ecosystem readiness**: Define an AI infrastructure deployment roadmap to scale and enhance industry-specific capabilities.

First, **aligning AI initiatives with business development goals** that focus on scalable applications is critical to create tangible value:

Business mission alignment

A successful AI strategy requires establishing a cohesive vision that aligns with the company’s mission and business objectives. However, the expected productivity gains will bring into question the value added of existing strategies, which typically focus on how to best manage people’s productivity. As there will be less value in the execution and the proper management of these traditional means, companies will need to rely more on their ability to innovate with new services and provide new added value for their clients. In turn, this will require more R&D and deeper client intimacy.

Scalability

Companies grapple with identifying high-impact, scalable AI use cases. While quick-wins can be effective tactically, many fail to integrate transformative changes across the entire organization with less than 54% of AI projects moving from pilot to production.

[9] Source: Oliver Wyman Quotient Research AI Connectivity to P&L

Economic viability

Flexibility is required within the transformation business case because of the uncertainty surrounding any optimization's potential as well as the rapid decline in costs. However, enterprise should adopt a portfolio approach coupled with a culture that embraces the right to fail. Striking the right balance will enable successful use cases to fund inconclusive initiatives.

Establishing structured **governance and accountability** is also instrumental to mitigating the inherent risks of AI deployment. Yet many organizations lack a **clear governance model**, with only **3% saying they are proactively identifying**[10] potential risks from AI. Without top-down leadership and structured risk management, AI initiatives will struggle to align with overarching business strategies.

Adopting a thoughtful approach to compliance, ethical standards, biases, and regional regulations will create an ecosystem for AI to thrive within responsibly. Building a **phased implementation** plan is recommended to achieve this. To draw up an effective and manageable plan, begin by identifying high-impact, low-complexity use cases, and limiting the initial focus to one or two contained areas. Establish workflows and adjust processes for these use cases, using any lessons learned to build out scalable solutions where all critical risks are properly contained.

Bridge talent gaps by providing Gen AI training and fostering a culture of safe experimentation; **40% of logistics executives**[11] identify access to talent as the most significant challenge, with access to financing ranked much lower **(15%)**[11]. A significant number of businesses lack the **talent and knowledge** to deploy effective AI solutions, with understanding workforce realignment and providing Gen AI-specific training remaining key hurdles.

Conversely, most advanced companies have **increased organizational AI readiness** by promoting safe experimentation, providing focused training for employees (for example, job-specific, hands-on workshops), and fostering an innovation-friendly culture through storytelling and internal success stories.

Finally, building a **streamlined data structure** plays a pivotal role, allowing the leverage of quality data to enable scalable AI adoption at speed. However, only **18% of companies**[12] say their data infrastructure and management is fully ready to optimize the impact of AI (see next section).

3.3. A solid AI infrastructure is crucial for unlocking industry-specific capabilities

A fully structured AI infrastructure deployment roadmap is essential for achieving scalability and enhancing industry-specific capabilities.

AI represents an opportunity to harness unstructured data without the need for substantial investments in data infrastructure, with many AI solutions cloud-based and open-source, facilitating their adoption. Implementing AI-driven solutions allows organizations to rapidly deliver visible digital enhancements to both employees and clients. The resulting productivity gains can be significant, making ROI more apparent, and potentially justifying a more comprehensive technological upgrade across the entire organization.

However, several risks must be considered. First, there is the danger of failing to adequately ring-fence applications and protect their reliability, leading to, for example, systems hallucinations such as wrong recommendations or chatbot misbehavior. Second, organizations may be tempted to limit their transformation efforts to superficial changes that are only sufficient for achieving marginal improvements.

[10] Source: Oliver Wyman Quotient Research
[11] Source: Oliver Wyman Survey of Logistics Executives, 2024
[12] Source: Oliver Wyman Forum, Adapting to AI in an Evolving World

These may be positive for showcasing in external communications, but risk ignoring the real and profound transformative potential of the technology.

Bear in mind that an IT infrastructure can be progressively modified as applications evolve to cater to more industry-specific or even company-specific domains. However, it is essential to have a clear AI infrastructure roadmap in place from the outset in order to successfully achieve future implementation goals and ROI objectives.

The six key steps to successful road mapping are

1. **API-First Integration**: Build quick AI capabilities with minimal technical complexity and maximum flexibility using APIs.
2. **Hybrid AI Architecture**: Balance external AI innovation with the control of sensitive data and reliability at scale. To achieve this, adopt a Hybrid AI Architecture – that combines external AI services for tasks requiring advanced capabilities – with internal (virtual/on-premise) company servers running the AI model. Deploy a decision system to route AI tasks to internal systems or external services depending on needs.
3. **Embeddings**: Equip AI to leverage unique company data for personalized insights, combining tools that can convert documents into numerical vectors (embeddings). This will enable AI to efficiently retrieve precise data, and create a system for preparing, prioritizing, and selecting relevant data from documents for precise AI responses.
4. **Middleware abstraction layers**: Simplify AI integration complexity to create seamless operations across all platforms by using a combination of external communication tools – these handle the technicalities of connecting to multiple external AI providers – with a translation layer that converts standard business requests into the specific format that each AI service requires.
5. **Model Orchestration platforms**: Maximize AI performance by intelligently matching tasks to the ideal model. Model Orchestration ensures that multiple AI models work together correctly by routing data/queries to the best model, while middleware facilitates the communication and integration of AI models with other systems and data sources (for example, broader IT infrastructure, CRM systems, ERP systems, and databases).
6. **Fine-tuning ecosystems**: Customize AI to achieve deep domain expertise and uniquely tailored solutions. By implementing fine-tuned ecosystems, businesses can avoid problems caused by a lack of customization in pre-trained models and low accuracy in specialized output. Retrieval Augmented Generation (RAG) solutions augment the model's generative capabilities by pulling in up-to-date and ring-fenced company specific information, while fine-tuning adjusts the model's internal parameters to perform better, using specific types of data.

Conclusion: Huge Potential, But Logistics Must "Catch Up"

While the economic implications of AI investments remain uncertain, the transformative power of the technology is increasingly recognized, particularly within the logistics industry. The automation of repetitive white-collar tasks is a clear initial focus, enhancing productivity while simultaneously raising questions about the future value proposition of companies.

To navigate this landscape, organizations adapting their processes should seek ways to deliver greater value to their clients. Although many current AI applications in logistics are centered on back-office tasks and increasingly moving into operations, the most impactful innovations will likely emerge from new revenue streams generated by data monetization and the development of novel services.

What distinguishes AI from previous technological evolutions is its rapid adoption speed, coupled with decreasing implementation costs. This provides laggard organizations with access to a new technological platform that will enable them to potentially 'catch up' and transition faster to a more data-centric operational model.

While individuals have begun to recognize AI's benefits for their daily tasks and gained confidence in its productivity enhancements, the onus is now on companies to become as proactive and to begin leading, rather than following their employees into the AI era. Ultimately, organizations have yet to fully capitalize on AI's potential and must now devise a structured, phased strategy to ensure a safe, effective transformation into an AI-driven future — or risk being left behind by forward-thinking competitors.

Oliver Wyman can define your AI strategy using our comprehensive multi-step approach:

- **Strategic assessment**: We analyze your organization's capabilities, market position, and competitive landscape to identify AI integration opportunities that align with your business goals.
- **Use case identification**: We help pinpoint high-impact, low-complexity use cases tailored to your industry and operational needs.
- **Governance framework development**: We assist in creating a governance structure that defines roles and responsibilities for AI initiatives, ensuring alignment with your business strategy.
- **Data strategy and management**: We guide you in optimizing data management practices to support AI applications effectively.
- **Change management and training**: We develop training programs and change management strategies to promote AI readiness and foster a culture of innovation.
- **Implementation roadmap**: We create a phased roadmap outlining steps to scale AI initiatives, including timelines, resource allocation, and performance metrics.
- **Risk management and compliance**: We navigate the regulatory landscape and establish frameworks to manage risks associated with AI deployment, ensuring ethical standards and compliance.

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About Oliver Wyman

Oliver Wyman, a business of Marsh McLennan (NYSE: MMC), is a management consulting firm combining deep industry knowledge with specialized expertise to help clients optimize their business, improve operations and accelerate performance. Marsh McLennan is a global leader in risk, strategy and people, advising clients in 130 countries across four businesses: Marsh, Guy Carpenter, Mercer and Oliver Wyman. With annual revenue of $23 billion and more than 85,000 colleagues, Marsh McLennan helps build the confidence to thrive through the power of perspective.

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