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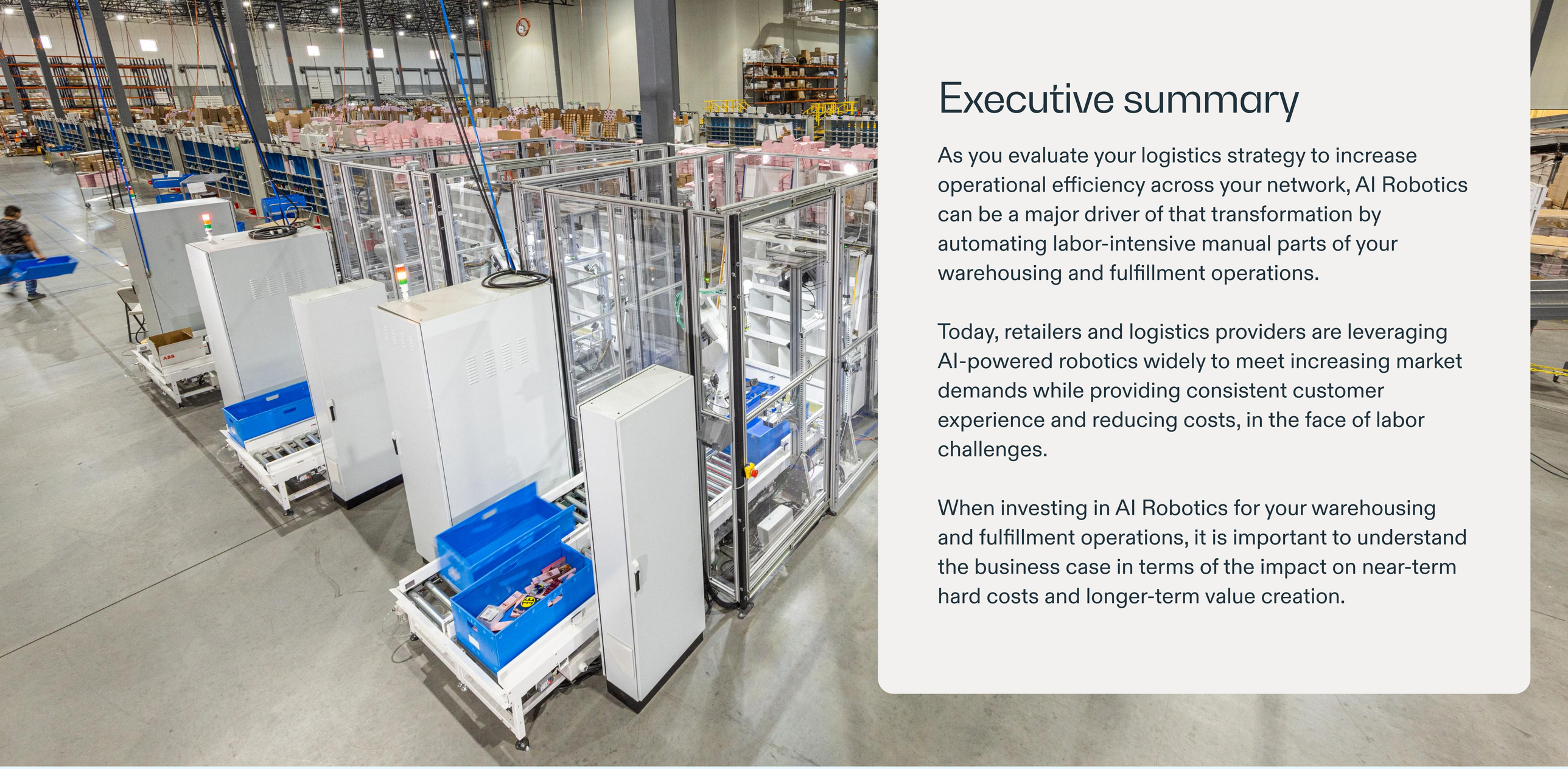
Making the Business Case for AI Robotics

Understanding the true costs of your manual operations



Executive summary

As you evaluate your logistics strategy to increase operational efficiency across your network, AI Robotics can be a major driver of that transformation by automating labor-intensive manual parts of your warehousing and fulfillment operations.

Today, retailers and logistics providers are leveraging AI-powered robotics widely to meet increasing market demands while providing consistent customer experience and reducing costs, in the face of labor challenges.

When investing in AI Robotics for your warehousing and fulfillment operations, it is important to understand the business case in terms of the impact on near-term hard costs and longer-term value creation.

1 / Labor-related cost impact

2 / Throughput and capacity impact

3 / Accuracy-related impact

AI Robotics

Robotic solutions, powered by modern deep-learning-based AI, automate previously manual tasks in your warehouse that involve picking, packing, loading, and unloading.

Trained on millions of picks made by robots in warehouses around the world, AI-powered robots can handle most items on Day One with high speed and accuracy, and keep adapting and learning over time.

What this means for you

Beyond direct wage-related labor costs, factors such as indirect labor costs, accuracy, and throughput, can account for up to 25% of your operational costs annually.

AI Robotics helps lower these operational costs by automating manual, labor-intensive tasks throughout your logistics network.

A comprehensive analysis of your current costs will help you understand the true impact AI Robotics can have on your operational efficiency.

This guide is intended to be used alongside the Covariant AI Robotics Business Case Calculator. If you are not working with an AI Robotics expert at Covariant yet, contact us.

Contact us >

1/

Labor-related cost impact

Direct and indirect labor costs account for a majority of the operational costs at warehouses and fulfillment centers that can be reduced with automation.

Direct labor costs

Wages

Hourly wage
x Associates per station
x Shifts per day
x Days per week
x Weeks per year

Paid benefits

Days of paid holidays & sick leave per year
x Associates per station
x Shifts per day

Must be calculated for peak and non-peak scenarios.

Indirect labor costs

Recruiting & onboarding

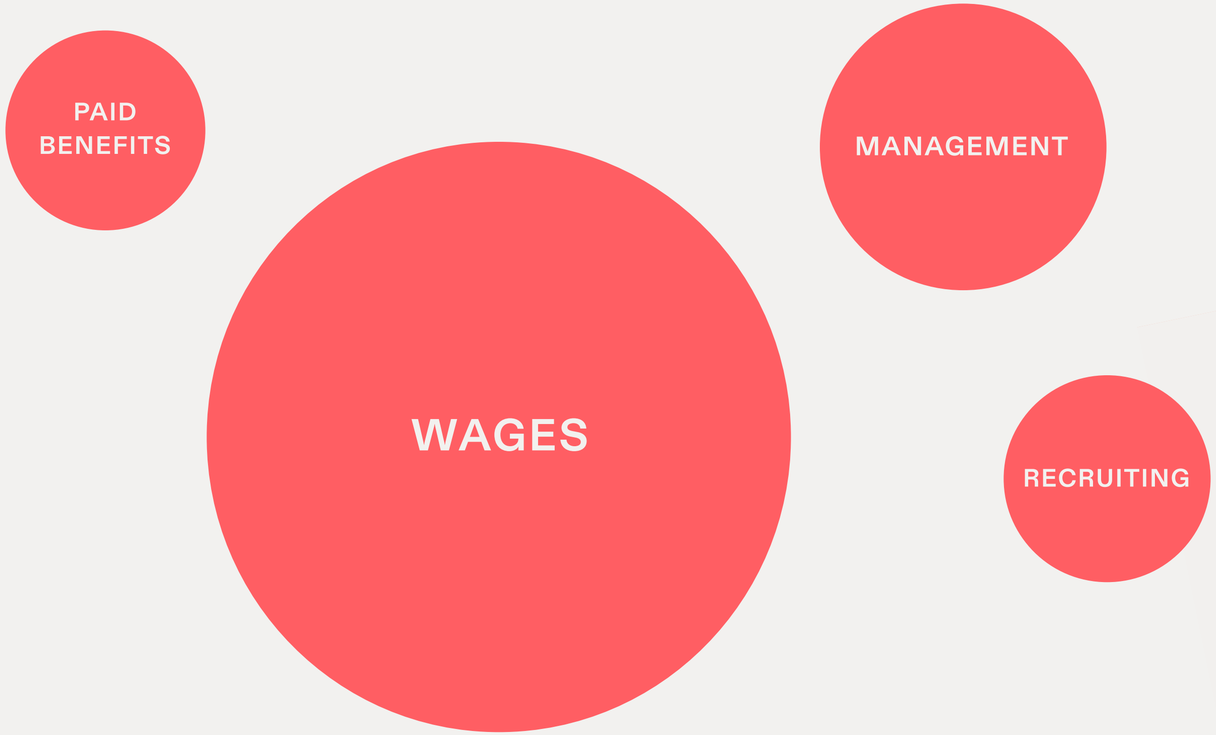
Recruiting fees
Training costs
Productivity ramp

Management & supervision overhead

Manager-to-associate ratio
↘ Number of managers
↘ Manager wages & benefits
↘ Fully loaded cost of managers

Overstaffing, in anticipation of turnover, leads to even higher management and recruiting costs.

While “fully loaded” costs often take into account direct labor costs, indirect labor costs should be factored in as well, which can account for 10—15% of total labor costs.



How AI Robotics can help

Automate parts of your operations that have a high rate of staff turnover or are hard to recruit for, and reduce your labor costs with AI Robotics.

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Throughput and capacity impact

Meeting your operational throughput and capacity targets is a crucial factor for your total cost of fulfillment. So when evaluating how automation can help, it’s important to ensure you are analyzing the correct throughput metric.

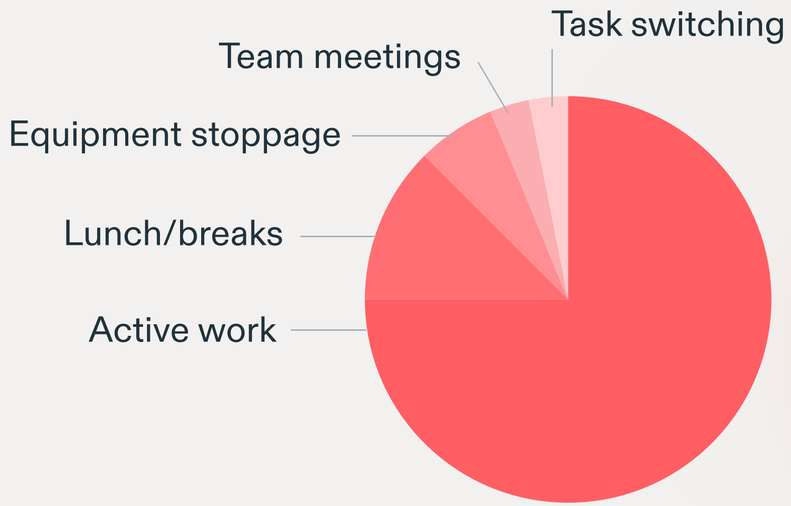
Active manual throughput

Throughput of associates when they are at their station or actively working on the floor.

Total manual throughput

Throughput including scheduled inactive times (e.g. lunch breaks) and unexpected interruptions (e.g. equipment failure).

The total manual throughput should be taken into account, instead of a nominal target throughput that is only limited to active working time, as it is a more accurate representation of your true operational throughput that must be met with automation.



How AI Robotics can help

Leverage always-ready autonomous robotic stations to easily scale with the changing throughput needs of your operations.

3/

Accuracy-related impact

Errors in order fulfillment have a significant negative effect on your margins and add to your per-order costs. The two categories of accuracy-related costs that can be reduced with automation are:

Identified errors

Mistakes caught in time result in rework costs, with the following factors:

1. Number of reworked picks per year
2. Rework UPH, which will be lower than the normal speed

Unidentified errors

Can lead to expensive returns process, factoring in:

1. Total items returned per year due to manual errors
2. Average cost per returned item, accounting for items that are restocked, resold, refurbished, and discarded

Rework and returns should be included in calculations of your manual fulfillment operations, as they can represent up to 10% of your operational costs.

Total cost of fulfillment

How AI Robotics can help

Reduce order fulfillment errors, and the related costs, with AI-powered robots that automate error-prone manual processes in your operation.

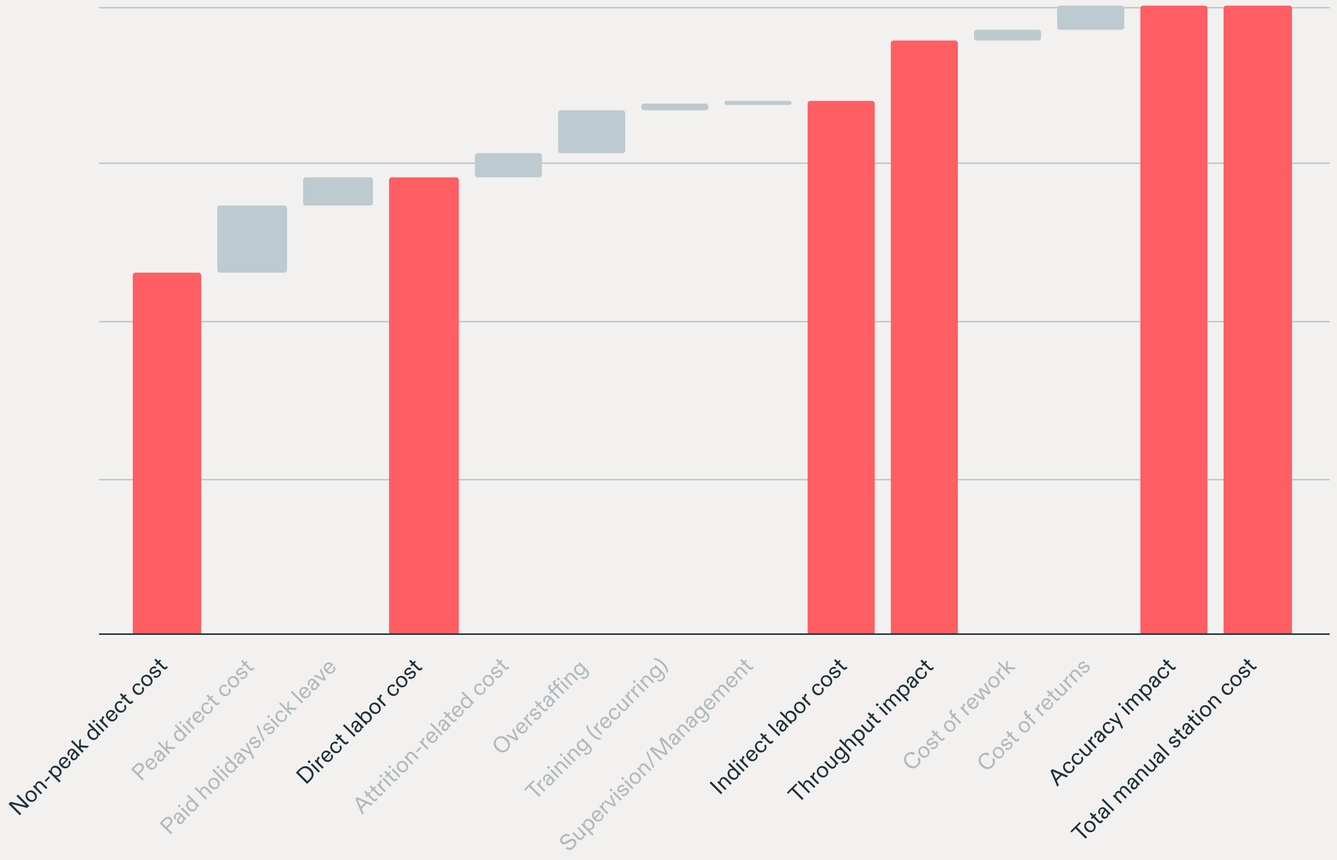
Investing in AI Robotics to increase operational efficiency

Across your logistics network, manual operations represent the largest unsolved opportunity to increase efficiency and reduce costs.

Manual tasks such as picking, packing, loading, and unloading, can represent up to 60% of your operational costs.

A deeper analysis of your operations can help reveal the true cost of these manual operations, with cost factors that may not have been previously accounted for.

Leveraging AI Robotics to automate manual item handling in your operations can significantly impact these costs and reduce labor dependency, driving higher operational efficiency.



About Covariant

Founded in 2017 by the world's leading AI Robotics research scientists, Covariant delivers AI-powered automation solutions that address the change and scale of today's modern warehouse.

Robots powered by the Covariant Brain — the first commercially available AI foundation model for robotics — automate the broadest set of manual functions in warehouses from order sortation and induction to order picking and depalletization.

With offices in North America and Europe, Covariant robots are deployed in 15 countries across 4 continents in industries spanning apparel, health and beauty, pharmaceuticals, logistics, and general eCommerce merchandise.

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