

# POWERFUL NEW IDEAS

*In Material Handling and Movement*

HOW EQUIPMENT MODERNIZATION  
IMPROVES SAFETY, PRODUCTIVITY  
AND COSTS



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## Executive Summary

The rapid rise of ecommerce—in addition to thriving plastics, automotive and tech manufacturing sectors—have created new challenges for warehouse and manufacturing facilities, leading them to look for new ways to drive operational efficiency in order to meet growing demand on labor and resources. Using right-sized, task-matched vehicles across operations can help optimize the entire warehouse or manufacturing process.

Differentiating between horizontal and vertical material handling can help inform vehicle allocation—reducing reliance on expensive, accident-prone forklifts where they are unnecessary and replacing them with tow tractors and trailers for faster, safer, more efficient horizontal material movement. Tow tractors are already a leading solution in many other industries and settings, such as airports, and can deliver similar value to manufacturing and warehousing applications.



# Introduction

## Rising Demand Exposes Operational Flaws

Rapid growth in ecommerce over the last decade has increased demand on facility workflows and heavy-duty industrial vehicles to record highs. In the U.S. alone, retail ecommerce rose from \$298 billion in 2014 to \$452 billion in 2017—driving labor shortages and leading facility managers to look for new ways to improve performance in order to meet the dual demands of rising volume and tight delivery windows.<sup>1</sup>

Developing more efficient workflows starts with careful evaluation of current industrial vehicle utilization. Production and warehouse operations are only as efficient as their employees and vehicles.

**According to one analysis measuring overall equipment effectiveness (OEE), the average warehouse operates at just 60% of its theoretical capacity, while even the most cutting-edge facilities only reach 85% efficiency.<sup>2</sup>**

Leading warehouse and distribution operators say the two biggest challenges inhibiting efficiency are insufficient space and inability to attract qualified employees.<sup>3</sup>

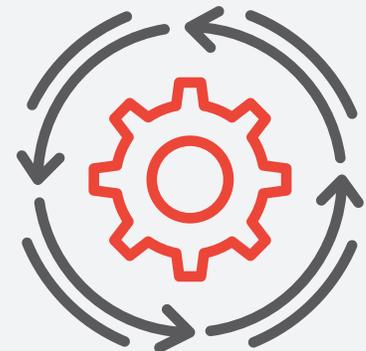
However, both of these challenges are symptoms of fundamentally outdated handling processes that—if properly addressed—can help alleviate the strain on manufacturing facilities and drive them toward more sustainable workflows.

One way to achieve this objective is through redesigned material handling and movement throughout the facility. Current facility best practices rely heavily on forklifts for both vertical and horizontal movement, but development of new vehicles and vehicle capabilities such as tow tractors and tug systems offer new alternatives with high ROI potential. Using right-sized and task-matched industrial work vehicles at each stage of the operation can minimize the challenges—and risks—created by inefficient, outdated processes, while also infusing new cost efficiencies that can stimulate operational growth.

## Drivers of Change in Material Handling and Movement

The traditional approach to keeping pace with rising demand in warehouse and manufacturing operations is to expand footprint. Unfortunately, while this does expand capacity, it also brings additional real estate costs, labor requirements and other new expenses. Forward-thinking operations are taking a new approach to improving productivity and capacity: integrating workflow innovations that emphasize productivity and safety without sacrificing cost efficiency.

Adaptations in material movement processes represent one of the simplest approaches to increasing facility performance and time and cost savings—in addition to other valuable benefits such as labor reallocation and increased workplace safety.



1 <https://www.statista.com/statistics/272391/us-retail-e-commerce-sales-forecast/>  
2 <https://www.cbinsights.com/research/future-factory-manufacturing-tech-trends/>  
3 [http://www.supplychain247.com/article/2015\\_warehouse\\_dc\\_operations\\_survey\\_results](http://www.supplychain247.com/article/2015_warehouse_dc_operations_survey_results)