Industry Guide

Consumer Goods Industry Update

kardex

Tips, trends & insights

Get ready – warehouse order fulfillment is changing

By drawing conclusions from several leading studies, this industry guide, reveals top trends and insights with a focus on intralogistics. We'll walk you through how consumer demands and technology will cause massive disruption to current infrastructures and why automation is your all-around tool to combat warehouse order fulfillment chaos.

It's time to prepare your warehouse for a safe, efficient, and resilient future.
Topics to discover:

- Impacts on the consumer goods industry
- Order fulfillment
- Meet Kardex

Impacts on the industry

Will technology, COVID-19, and consumer behavior turn warehouses upside down?

For order fulfillment facilities to be successful in the future, it's essential to understand what changes and challenges the industry will face. With economic forecasts swaying unpredictably, warehouses need to implement new solutions based not only on what works now but also ten years from now. At Kardex, we find many companies start with small, but modular and scalable solutions. This leads them down an open path – one that provides the ability to grow and extend solutions when and if needed. Ideally, sales and automation grow together.

We identified four trends that will have a significant impact on the consumer goods industry. These are important to keep in mind when planning warehouse operations and strategic investments.

1. Worldwide pandemic

Experiencing a global pandemic, retailers and warehouse managers cannot escape its repercussions. The consumer goods industry has undoubtably seen drastic shifts in operations and supply chains. Due to the spike in online shopping, warehouse operations need to remain in full flow, perhaps even more so than before. A few areas will continue to shift:

Hands-free/contactless shopping experiences. In their report, The Future of Retail 2020[1], e-Marketer stated that companies are focusing on delivering a "Frictionless retail experience that includes the rise of click-and-collect, easy returns, mobile order-ahead, cashier-less checkout, and other innovations that streamline retail transactions". These types of innovative shopping styles became the norm over the past months.

Consumer spending. Some sectors saw huge spikes in sales while many plummeted. According to Visual Capitalist[2], grocery delivery service had a 558.4% increase compared to April 2019 while retail apparel was down 51.9% from last year. What we don't know yet is which sectors will continue to thrive and which will barely survive the pandemic and the associated contraction of the economy? Do consumers miss an in-person visit to the grocery store or will they continue to shop online?

Warehouse footprint. Combining the impacts mentioned above to the strict physical distancing guidelines, warehouses are in a pinch for space and need to retrofit their operations. Physically separating workstations, installing hand sanitizing stations, and reworking traffic flow leaves facilities in need of more space. If you couple this with new consumer habits like click-and-collect, it provides the question, "What do future warehouses look like and what tools are necessary to keep operations successful?". The answer starts with an underlying foundation: an automated, efficient production and order fulfillment process.

Kardex Tip

By design, shelving has three main space limitations: wasted storage capacity, wasted aisle space, and wasted ceiling height. Vertical storage can recover up to 85% of the floor space currently occupied by shelving and drawers by eliminating the aisle spacing and utilizing the full ceiling height.

[1] e-Marketer; The Future of Retail 2020; Andrew Lipsman; December 19, 2019

[2] Visual Capitalist; How U.S. Consumers are Spending Differently During COVID-19; Iman Ghosh; May 21, 2020

Recovered wasted rack & shelving space using vertical automation

Ceiling height (meters)	Eliminated shelving sections	Space savings (percentage)	Space savings (square meters)
4.5	31–35	76%	29.5–30.5 sqm
6	45–49	82%	42.5–44 sqm
7.5	59–65	85%	52–57 sqm
9	73–80	88%	66–67 sqm
10.5	87–94	89%	76–80 sqm
12	to 100	91%	86 sqm

Recovered wasted drawer system space using vertical automation

Ceiling height (meters)	Eliminated drawer cabinets	Space savings (percentage)	Space savings (square meters)
4.5	19	53%	8 sqm
6	28	66%	15 sqm
7.5	36	74%	21 sqm
9	46	80%	29 sqm
10.5	55	83%	37 sqm
12	65	86%	45 sqm

2. Industry 4.0

According to Statista[1], Industry 4.0 will be a Macrotrend for 2020. This will certainly impact the overall consumer goods and supply-chain industries. We'll see advances in automation, robotics, artificial intelligence (AI), and the reality of a Smart Factory (highly digitized and automated production facility).

More and more automation will take over or at a minimum support picking, sorting, inspecting, storing, handling, and classifying products. New technology will provide up-to-the-minute inventory accuracy, reduce overstock, and allow for mass customization.

The benefits of automation are not going unnoticed: the likelihood that machines will match or outperform human performance is rapidly increasing. According to the Wall Street Journal, the broader market for warehouse and logistics automation topped $53 billion in 2019 and will exceed $80 billion in 2023[2].

[1] Statista; Trend Compass 2020; Melani Adam; December 2019

[2] The Wall Street Journal; Warehouse Robotics Startups Drawing Bigger Investor Backing; Jennifer Smith; January 7, 2020

A new logistics paradigm is emerging
10 prominent technologies that could remake warehouse operations[3]

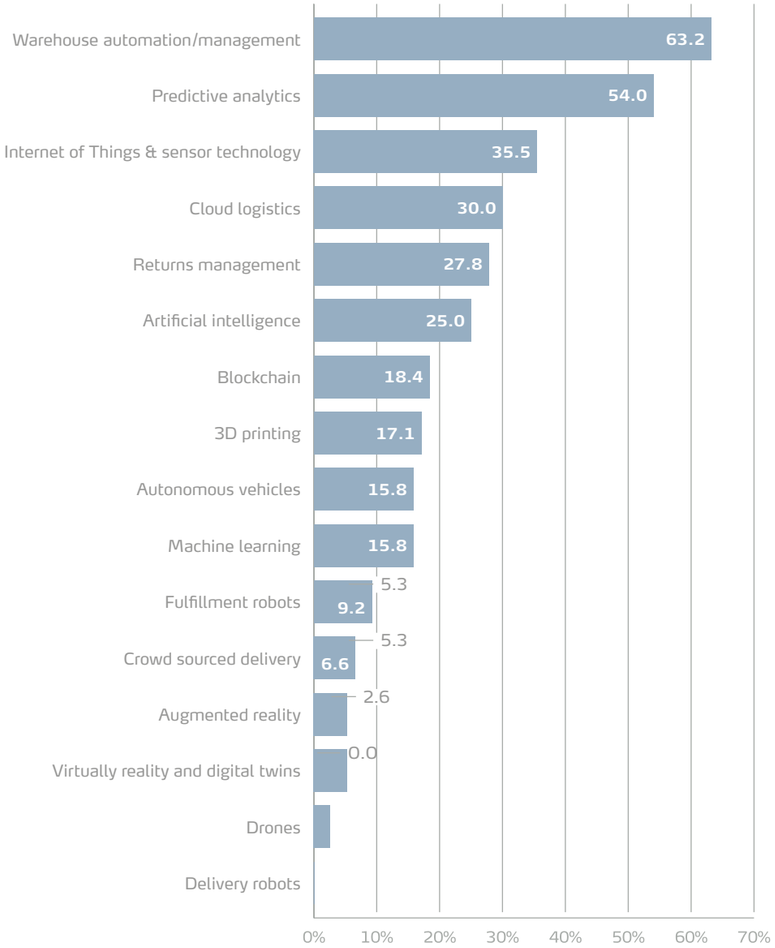
Multishuttle system	Typically used with an automated storage and retrieval system (ASRS) that moves goods (mostly on pallets) in three dimensions to store and retrieve items without human intervention.
Analytics tools	Algorithms that help operators analyze performance, identify trends, and make predictions that inform operating decisions, often using machine learning to improve over time.
Optical recognition	A sensor that scans items (often on six axes) to apply sortation and other logistics. Examples include a conveyor's diverts, laser-guided vehicles, and camera-based movement of drones.
Conveyor connection	A connection between two disparate conveyor systems that often uses decision logic to affect the flow of items. Typically, connections integrate different systems of flow. For example, push and pull flows.
Management system	Analytic and digital systems that integrate analytics, performance reporting, and forecasting tools, allowing managers to easily control a fill system such as a warehouse.
Smart storage	Storage solutions that use advanced analytics and digital tools to place and retrieve items in the most efficient way, adjusting storage media based on the product, picking, and order characteristics.
3-D printing	Also called additive manufacturing, this process creates parts by adding layers of a material (metal or plastic, typically) to create a desired shape.
Swarm AGV robots	Autonomous guided vehicles (AGV) that operate freely or on digital tracks to bring items (often from a storage rack) to a picking station based on instructions from the order-flow-software.
Smart glasses	Glasses that augment and assist the reality of wearers – for example, by displaying directions to storage locations for picking – reducing inefficiencies of searching.
Picking robot	Systems with robotic arms that mimic human picking motion. Picking robots can be fixed (with good brought to them) or mobile (traveling to storage to pick items).

[3] Image Source: McKinsey & Company; Automation in Logistics; Big opportunity; bigger uncertainty; 2019

In the State of Retail Supply Chain Report[4], from 205 responses, it found that 63.2% are currently investing in warehouse automation/management.

How will companies sticking to manual, traditional operations match the speed, precision, and efficiency of companies switching to automation? They won't be able to.

Which technology are you currently investing in?[5]



[4] Eye for Transport/Quintiq; Dynamic Distribution Disruption 2019. State of Retail Supply Chain Report; Alex Hadwick; 2019

[5] Image Source: Eye for Transport/Quintiq; Dynamic Distribution Disruption 2019. State of Retail Supply Chain Report; Alex Hadwick; 2019

Kardex Tip

In our daily business, Industry 4.0 comes to life as well as it's tangible benefits. When making a case for automation, the evidence speaks for itself.

Traditional process: Person-to-Goods	Automated order fulfillment system
Order picker pushes a trolley up and down endless rows of racking to pick and fill orders	With little walking, the system delivers products to an ergonomic friendly picking window, increasing worker morale while decreasing worker injuries
Rising labor costs/selecting staff from a shrinking labor pool of candidates	Minimal staff required/minimal training necessary for new staff
Human errors are inevitable	Picking accuracy of 99%
50 lines per hour picked	Up to 600 lines per hour picked (at minimum, doubling picking performance)
120 bays of static shelving	One Vertical Lift Module (85% space savings); two Vertical Carousel Modules (75% space savings); two Horizontal Carousel Modules (66% space savings)
Static, open shelving may result in dirty, dusty and potentially even expired inventory	Inventory management software equipped with a FIFO (first in, first out) or LIFO (last in, first out) picking, mitigating the risk of dirt and dust impacting stock

Did you know?[6]
30% of operational warehouse workers will be supplemented not replaced, by collaborative robots by 2023.

[6] Visual Capitalist; The Future of Supply Chain Automation; Dorothy Neufeld; May 5, 2020 (Gartner 2019)

While we often envision warehouses in remote outskirts, that's not always the most efficient location. Cities are undergoing what Brookings Institution author Bruce Katz terms the "metropolitan revolution[1]". By 2020, more than 70% of the world's population will live in cities[2].

3. Omnichannel facilities

Micro-fulfillment can to ensure city slickers don't miss out on fast deliveries. It creates mini distribution centers in the back of retail stores, urban fulfillment centers, and dark stores to serve local markets. While a retail space might look like a traditional bricks and mortar store when walking by, it, in fact could be serving as an outlet for e-commerce returns and fulfillment points. The Future of Fulfillment Vision Study shows 76% of retailers are compiling online orders with store inventory and six out of ten retailers surveyed think this number will continue to increase[3]. Another study, Dynamic Distribution Disruption 2019, showed e-commerce returns at bricks and mortar stores increased from 24.2% to 35.5% and as a place to ship from, increased from, 25.8% to 30.3%[4].

Share of the population that live in urban areas 2018[5]

80% of global GDP was generated in cities

[1] The Metropolitan Revolution; Bruce Katz and Jennifer Bradley; June 11, 2013

[2] The Guardian; UN report: World's biggest cities merging into 'mega-regions'; Anna Tibaijuka

[3] Zebra; Reinventing the Supply Chain: The Future of Fulfillment Vision Study; 2018

[4] Eye for Transport/Quintiq; Dynamic Distribution Disruption 2019. State of Retail Supply Chain Report; Alexis Hadwick; 2019

[5] Statista; Trend Compass 2020; Melani Adam; December 2019

Micro-fulfillment also addresses how to handle multiple consumer purchasing points. Today, 41% of consumers use two or more channels[6]. According to Zebra's 10th annual shopper study, 51% of online shoppers ship to home, 35% pick up in stores, and 29% ship to an alternate location[7].

With all these shopping channels, how can you be confident your order fulfillment is accurate? Do you manage one integrated warehouse for all sales channels or do you manage several facilities, each one designated to a specific sales channel? And are these located in remote areas with plenty of space or in smaller outlets scattered throughout cities?

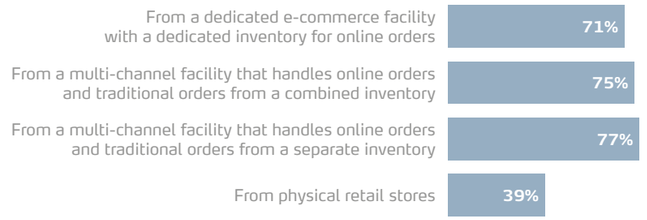
Plan for future approach to physical order fulfillment[8]

B2C plan to change how to fulfill orders in the next 3–5 years

USES JUST 1 METHOD 42%

USES 2+ METHODS 65%

Plan in the next 3–5 years



B2B plan to change how to fulfill orders in the next 3–5 years

USES JUST 1 METHOD 59%

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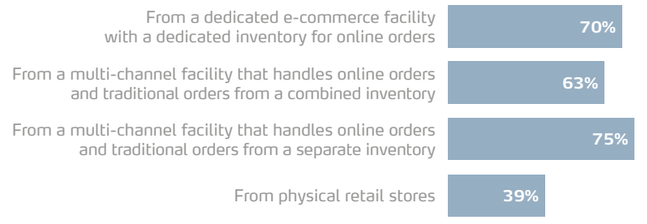


[6] Foresee. Foresee Experience Index: Retail CX Rankings; Eric Feinberg, Jose R. Benki, Rebecca Berry, Jeff Sylvester; 2018

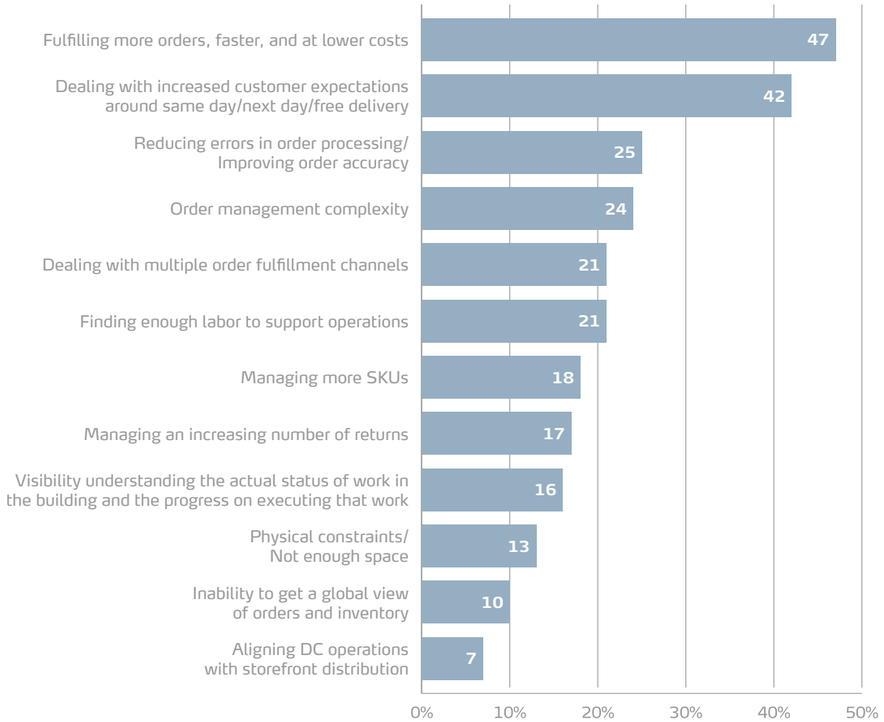
[7] Zebra; Reinventing the Supply Chain: The Future of Fulfillment Vision Study; 2018

[8] Image Source: DHL Supply Chain; The E-Commerce Supply Chain: Overcoming Growing Pains; June 2019

4) E-commerce

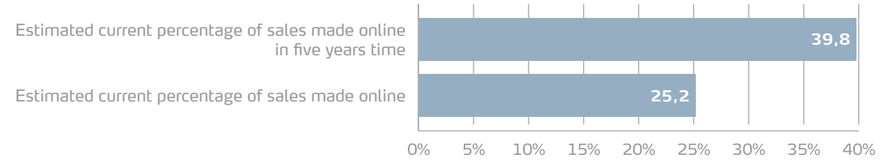
The rise in e-commerce and its roller-coaster of delivery and personalization demands have put a massive strain on warehouse operations. A recent study by Kardex and Modern Materials Handling showed e-commerce is the primary driver of fulfillment and distribution pain points.

The impact of e-commerce fulfillment on order management, fulfillment and distribution processes



Did you know?
Worldwide, shoppers return an estimated $642.6 billion in goods each year, which is continuing to be a problem for warehouse facilities that do not have efficient processes in place.[1]

Estimated Online Sales Now and in Five Years' Time[2]



Despite t he difficulties companies are facing in perfecting e-commerce order fulfillment, it is not a trend to overlook. According to e-Marketer, the global e-commerce market will reach $5 trillion by 2021, up from $3.5 trillion in 2019[3].

Of course, to benefit from the online spending surge, warehouse solutions must meet consumer demands. The countless demands from consumers create a circus juggling act for many warehouse operators. To gain customer loyalty, it is now essential to have accurate information about product availability, shipping, and inventory. According to a recent BRP Study, "digital consumers" are driven by rapid order fulfillment and delivery, with 77% of consumers more likely to shop at a store if it offers same-day delivery[4].

The Future of Fulfillment Vision Study found that "within five years, 78% of logistics companies surveyed expect to provide same-day delivery and in ten years, 39% anticipate delivery within a two-hour window"[5].

Warehouse managers must strategically consider these future predictions: it is critical to have the right tools in place to succeed in the e-commerce world.

Learn more about order fulfillment

[1] Marketwatch; Consumers return $642.6 billion in goods each year; Andria Cheng; June 18, 2015

[2] Eye for Transport/Quintiq; Dynamic Distribution Disruption 2019. State of Retail Supply Chain Report; Alex Hadwick; 2019

[3] e-Marketer; Global Commerce Report; Andrew Lipsman; June 27, 2019

[4] Dematic; 7 Secrets to a Future-forward Omni-channel Fulfillment Strategy

[5] Zebra, Reinventing the Supply Chain: The Future of Fulfillment Vision Study; 2018

Order fulfillment

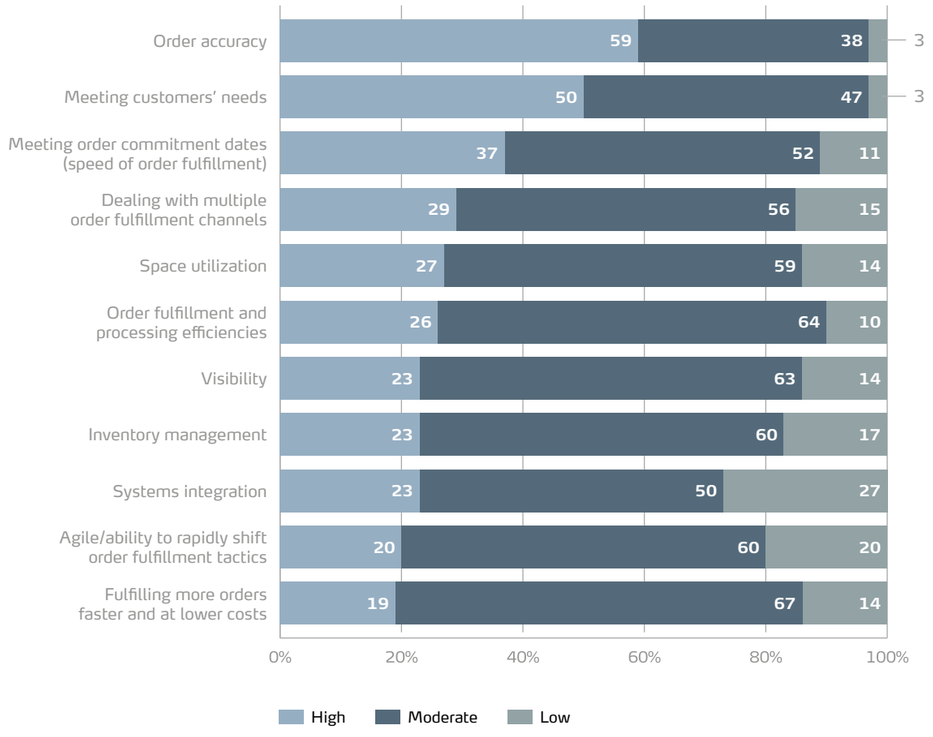
Today’s challenges

If you had 90 seconds to list order fulfillment headaches, what comes to mind? Do you jot down bottlenecks, low throughput, no transparency, product availability, and picking accuracy? Since the worldwide pandemic do shipping demands move to the forefront of this list?

In a Kardex and Modern Material Handling Survey, the below topics were named as high to moderate levels of concern in regards to online fulfillment.

- Improving order accuracy (97%)
- Meeting customers’ needs (97%)
- Speeding up order fulfillment times (89%)
- Dealing with multiple order fulfillment channels (85%)

Evaluating organizations’ fulfillment operations



This same survey showed that 95% of companies surveyed experienced delays or bottlenecks in their fulfillment operations. 40% face issues with order picking and processing, while 37% struggle with inventory management. We can only guess what this is doing to their customer experiences. It can’t be good!

A Voxware Study of 500 consumers found that 69% of respondents are much less or less likely to shop with a retailer in the future if an item they purchased is not delivered within two days of the date promised[1]. The only way to meet these expectations is an efficient intralogistics solution.

To retain customers loyalty, warehouse operations must play their part in contributing to outstanding customer experience.

[1] Website Magazine; The Impacts of Late and Inaccurate Deliveries on Consumer Loyalty; Allison Howen; December 7, 2014

Tomorrow's warehouse

The only way to overcome these struggles is to implement efficient warehouse solutions, tools, and technology. When considering new intralogistics, it's important to ask if they will:

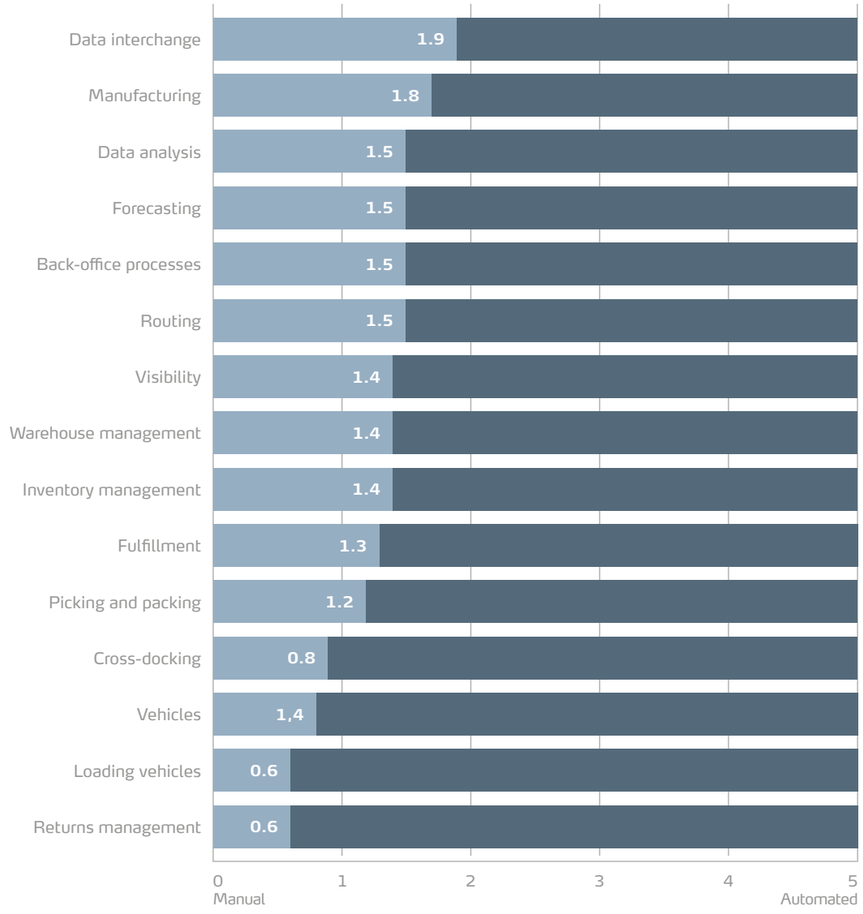
- Maximize warehouse space
- Meet same-day and next-day shipping demands
- Meet new requirements of social distancing
- Manage seasonal peaks and new trends flawlessly
- Eliminate downtime
- Deliver zero-defect products
- Provide impeccable order accuracy and short delivery times
- Maintain a constant availability of products
- Organize returns efficiently
- Show real-time data
- Minimize employee training time
- Adjust single-line orders accordingly
- Ensure ergonomic working conditions
- Keep intralogistics costs to a minimum
- Enable fast implementation of goods
- Allow scalable processes

The next step

Automation is the key to success and essential if you want to ensure sustainable growth. By combining automated storage solutions with software management systems and features like remote services and the right picking strategies, it checks all the above boxes. The result is an efficient, resilient, and cost-effective warehouse that proves it's return on investment (ROI) in approximately 18 months.

As a first step, many companies start by partially automating different parts of their supply chain. The EyeforTransport 2019 Survey, when asking retail, manufacturing, and logistics professional to rank the degree of automation in their warehouses; warehouse management, inventory management, fulfillment, and picking and packing ranked between a one and two (with five being full automation)[1].

Extent of supply chain automation[2]
Retail, manufacturing and logistic professionals ranked the degree of their supply chain automation; using a scale of one to five, with five representing full automation and zero representing fully manual processes



[1] Visual Capitalist; The Future of Supply Chain Automation; Dorothy Neufeld; May 5, 2020

[2] Visual Capitalist; The Future of Supply Chain Automation; Dorothy Neufeld; May 5, 2020

Conclusion

It's important to keep the conversation going once automation begins. The best type of solutions are modular and scalable and can be modified as a business develops. Therefore, it's essential to put existing solutions to the test. Do they still meet the business needs? Do they execute the most efficient order picking possible?

But what we worry about most are the businesses that are not investing at all. The ones who are still working with manual processes. Without automation, competitors will always be two steps ahead.