

Your warehouse - to automate or not?

Why and how to automate your warehouse.



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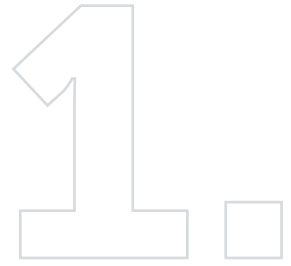
Everyone's talking about automation and robotisation. Newspapers, journals and websites are packed with stories from experts setting out why they believe further digitisation and automation are essential to business survival. The government too is involved in the debate. But is automating your warehouse necessary? And how far do you need to go?

Some reassurance to start with - if your current warehouse is working well, you should ask yourself whether large-scale automation is necessary. Automation requires investment, considerable effort and can permanently turn the work of many of your employees on its head. Is it all worth it? Our advice is this: don't get carried away by hype. Think critically. And ensure that you are well informed. This document will help.

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A well-functioning warehouse? Automate anyway.



Even if your warehouse is currently working well, there may be good reasons to automate anyway.

You expect growth for your warehouse

You might not have problems in your warehouse right now, but how will things look if the number of orders increases by ten, 50 or 100 per cent? Does your warehouse have the capacity to handle all those orders on time? Will employees get in the way of one another? Do you have enough space to store all the additional stock that you'll need?

Your competitors are doing better

The market situation may demand investment in the warehouse. Perhaps your company is incurring higher costs than its main competitors. It may be that other companies deliver more quickly or more consistently than you. In these circumstances automation may offer potential, even if your customers are not currently asking for lower prices or shorter delivery times. Automation can help futureproof your competitiveness.

Strategic decisions

To answer the question of whether or not you should automate, listen to your departments, from leadership to the warehouse floor. What is the company's strategy and what do its turnover forecasts look like? What are the challenges and expectations of marketing, sales, procurement and production? Could automation solve problems elsewhere in the company?

Is the warehouse really working as well as you think? Do you encounter so many of the same pain points every day that you've just got used to them? Walk the warehouse floor and take a critical look at your processes.

These are indicators that you should seriously consider automating your warehouse:

- The management has a strategy aimed at future expansion and turnover growth
- You expect (strong) growth for the warehouse (orders, stock)
- Your competitors deliver more quickly or at lower prices
- You've grown blind to the pain points in your warehouse



Bottlenecks in your warehouse?

Reasons to consider automation.

2.

Different pain points in the warehouse can indicate a need for automation. What pain points do you see in your operation? Have you found structural solutions for them or are you putting out the same 'fires' every single day? For example:

- Failure to meet delivery times
- Pressure on the warehouse floor
- Lack of space in the warehouse
- Physical impact on employees
- Too many mistakes

Failure to meet delivery times

Customers expect to receive orders tomorrow if that is what you promise them, but do you always meet your promises? Are all orders ready when the trucks arrive at your docks? Do you have sufficient permanent staff? Or do you need to make greater use of additional, temporary workers or pay overtime?

Reliability is one of the key requirements customers place on their suppliers. Yet companies are increasingly stretching their order times to the limits, allowing customers to place orders ever later, resulting in increased pressure on the warehouse. This is an e-commerce trend that is increasingly permeating other markets. Some online stores, for example, have order times as late as midnight, with the final truck of the day leaving just 30 minutes later. Try processing those kinds of order without any automation!

Pressure on the warehouse floor

Doesn't a manual warehouse offer the advantage of allowing you to bring in unlimited additional labour? Not necessarily. Capacity in a manual warehouse has its limitations. Employees can easily get in one another's way. Order pickers end up waiting in a queue at busy picking locations. Forklifts have to queue on major routes through the warehouse.

If you have to make use of additional employees at peak times, there's no chance of efficiency. Productivity quickly sinks at precisely the time you really need it to improve. In addition, when people get in one another's way, there are arguments and frustration. Motivation falls, as does diligence.



Lack of space in the warehouse

As turnover or the range grows, stocks grow too. Can you still get all of those goods out? A warehouse with a utilisation of 98 per cent might not yet be full, but efficient working will have long since ceased to exist. How long do forklift drivers need to search for an empty pallet location? Is that pallet in the right location? Are you forced to bury quick-moving items in corners that hamper your ability to access them quickly?

In a warehouse that lacks space, efficiency suffers. The goods receipt area stays full as there's no room to decant incoming goods, so unloading the next truck or container also creates problems. As a result, pallets often get left on the floor (and in the way) in working aisles. In cases like these, many companies decide to rent external warehouse space – but this is not an efficient solution either because trucks then need to go back and forth between the two locations.





Physical impact on employees

It may be that you have space to expand the warehouse as orders grow, ranges expand and your stock increases. But what are the implications? As manual warehouses grow, walking and driving distances extend. In some warehouses, order pickers walk more than 15 kilometres in a single day, which puts considerable strain on the body and wastes time. Bigger is not necessarily always more efficient. It's certainly not good for ergonomics.

In a manual warehouse, ergonomics has plenty of room for improvement. Employees need to walk, bend, reach, twist and lift, sometimes while carrying heavy goods. This risks triggering physical problems which can lead to sick absence and, in worst cases, complete incapacity for work. In warehouses with an ageing workforce, the risks can be exacerbated.

Too many mistakes

When time is short, pressure is high or the space is too small, the likelihood of mistakes increases. Employees remove items from the wrong picking locations, count incorrectly, put boxes on the wrong pallets or load the wrong pallets onto the wrong truck. If these mistakes go unnoticed - and especially where they become systematic in nature - deliveries become plagued by errors and customers complain.

Mistakes also lead to lost time and additional costs because, sooner or later, you're going to have to fix them. That might mean an employee needs to pick the same order again, or a courier has to make an urgent delivery. Even if you don't incur any additional costs, it may be that your colleague in the sales department has to offer the customer a bigger discount for the damage or inconvenience suffered. It's worth checking with your sales department to find out what the average costs of a mistake actually are.

Benefits of warehouse automation.

3.

Automation helps to tackle all pain points but offers additional benefits that go beyond streamlining daily warehouse operations to help strengthen the competitiveness of the company as a whole. So what exactly are these benefits?

The biggest benefits of warehouse automation:

- Your costs fall
- Your service level to customers increases
- The number of mistakes and complaints falls
- You reduce lead times
- Satisfaction improves among employees
- Safety (for goods and the work environment) improves

Your costs fall

Automation helps you to reduce structural logistics costs. The main cost saving is in labour. Automation reduces or can even eliminate actions such as walking or driving that have little or no value. When employees are steered by a Warehouse Management System (WMS), walking and driving distances can be reduced considerably. In fact, with implementation of a goods-to-man system, employees can remain at their workstations without having to move at all.

Automation also means more efficient use of space. An automated storage and order picking system occupies less floor area than a manual warehouse with single-bay racking or multi-tier shelving. It makes efficient use of the height in the warehouse and eliminates the need for wide working aisles that would otherwise be needed to allow employees and tools to move around and pass each other. This approach could enable you to postpone warehouse expansion or new construction for a considerable time.



Your service level to customers increases

With automation, you can increase your storage and order picking capacity so all orders are delivered on time. As your order pickers have to devote less time to walking, driving, searching and navigating, they can concentrate on their actual tasks of picking, packing and dispatching orders. This can also create opportunities for new, value-adding activities such as labelling products, assembling kits, etc.

The number of mistakes and complaints falls

Process automation means that IT systems take over responsibility for certain decisions. By accurately steering, monitoring and verifying people's tasks, the quality of the operation is less dependent on individual knowledge and experience. Put more simply, computers make fewer mistakes than humans. The number of orders delivered complete, on time and in full increases. As a result, the number of complaints from customers decreases.

You reduce lead times

The days of a logistics manager being judged on cost savings alone are largely confined to history. In addition to costs, factors such as speed and reliability of delivery are now just as important. In e-commerce or parts distribution, speed of delivery is a criterion that distinguishes one company from another. A company that can deliver an online order or supply a car workshop with parts same day will have the edge.

With automation, you can reduce your lead times. A semi-automated or automated order picking system significantly reduces the time needed to pick orders. It's easier to schedule urgent assignments too. For a crane or pallet carrier in an automated warehouse, this isn't additional workload, whereas an order picker may need to walk to the far side of the warehouse for just a single item.



**Satisfaction improves among employees**

Automation decreases the physical strain on employees. Ergonomics improve, reducing the physical impacts of the role and their implications. At the same time, safety increases, with people having to complete far fewer physical tasks. The result is an improvement in satisfaction which helps reduce employee turnover, ensuring you retain more of your knowledge and experience.

Employees become more productive in their work, having to perform fewer unnecessary actions, such as covering long distances. They make fewer mistakes too, another important factor in employee satisfaction.

Safety (for goods and the work environment) improves

An automated storage and order picking system means your goods are safely stored and inaccessible to unauthorised parties. The likelihood of theft falls. For companies with a large stock of high-value items in their range, this is a compelling reason for automation.

Automation also increases environmental safety. Consider the storage of hazardous substances. An automated system takes into account the fact that they should never be stored alongside one another and never makes mistakes. In the unlikely event of a fire, an automated warehouse offers the option of CO₂-based extinguishing methods because the storage area is off limits to personnel.

Practical tips and considerations for warehouse automation.



We have seen how automation can help to resolve pain points and/or improve competitive position. There may, however, be practical considerations that must be taken into account when deciding whether or not to automate.

- Keep the right stock
- Automate the right processes
- Take the range into consideration
- Determine whether your premises are suitable
- Seek advice on the right software
- Choose the right timing and phasing

Keep the right stock

If you no longer have space in your warehouse, automation could offer a solution. But are you really short of space? Or do you just have more stock than you need? Stock management often gets neglected in many companies. With proper demand forecasting supported by smart algorithms that take seasonal patterns and other factors into consideration, companies can gain a much more accurate idea of what stock they actually need. It is often much less than they think.

Smart tools can help companies to reduce stock by ten, 20 or even 30 per cent as they realise that a large proportion of their warehouse space is taken up by obsolete stock. Less stock naturally creates more warehouse space, which may render automation unnecessary. If you do decide to automate, less stock will mean you'll need to invest less in storage and order picking capacity.



Automate the right processes

To automate, you need to standardise processes. For many companies that can be a problem. Over the years, unique processes will have been established for different customers so that you can meet individual requirements. In a manual warehouse, this is rarely a big problem. In an automated warehouse, however, it is expensive (and usually unfeasible) to develop dedicated software for each unique process.

Automation means making decisions, but this can be an extremely valuable activity. Consider that in practice, unique processes tend to be more costly than the value they actually add. Talk to your customers and you'll probably find that standardisation is not much of a problem for them. If it is, you may be able to find other ways to meet their demands while still enjoying the benefits of automation.

Take the range into consideration

If you opt for far-reaching automation, your range may present a challenge. The market has two types of storage and order picking system: one for standard pallets and one for plastic containers or boxes of similar dimensions. Your items must fit onto those pallets or into those containers or boxes. If they don't, you can have a customised system produced - anything is possible - but it will cost more. In practice, a combination of storage systems is often needed. These do not all have to be automated systems. For example, you can opt for an automated pallet warehouse to handle the bulk of your stock combined with a small manual warehouse for those items that are too big for a pallet.

Determine whether your premises are suitable

Does your warehouse lend itself to an automated storage and order picking system? A compact system will mean increased weight per square metre of space - does your floor have the load-bearing capacity for it? Some systems are particularly efficient if you can increase the height of your racking. Is the ceiling of your warehouse high enough?

When opting for automation, you should also consider what options you have for expansion. An automated storage and order picking system can easily operate for ten or 15 years. If the number of orders increases and the range expands during that time, will you be able to expand the system at your current location? If growth will force you to relocate after five years, you won't gain full value from your capital expenditure.





Seek advice on the right software

Perhaps you already have a WMS in place. Maybe an enterprise resource planning (ERP) system supports the processes in your warehouse. Are these systems capable of controlling an automated storage and order picking system? Or will you need a different system, perhaps one with a warehouse control system (WCS)?

If you opt for a combination of different storage solutions, an overarching software system is essential. That system will ensure that different processes are closely coordinated. In some cases, the supplier of the automated storage and order picking system will be able to offer such software, but this isn't always the case.

Choose the right timing and phasing

Depending on the decisions you make, automation can be a major investment. For many companies, finding the funding is a challenge. At the same time, automation requires considerable effort from the organisation – not just to implement a new system, but to learn how to work with it and get the best from it. The question is what return you will achieve on that investment and effort.

Remember that you don't need to automate your warehouse in one go. It can be completed in phases, one step at a time. If automation involves a combination of different storage systems, there is no problem implementing systems one at a time, perhaps with an interval of a year or more between each. In addition, many of today's systems can be scaled. You can start off small and expand as growth requires. Phasing also avoids the need to shut down an entire warehouse for a prolonged period of time.

5.

Can you see the benefits? Speak to stakeholders.

The next logical step in warehouse automation is to speak to stakeholders. This involves collecting information to help define and refine your ideas and work towards a business case. This is a feasibility study in which you assess the case for your investment plans based on cost, benefit, amortisation period, etc.

Want to know more about warehouse automation?
Please see our other publications on this topic:

- Glossary of terms relating to warehouse automation
- What is automation? (blog)
- Warehouse automation: you need these important stakeholders (blog)

Want to start making strides today?

Download our detailed 'Roadmap for Warehouse Automation', which contains a straightforward guide on the steps you need to take from starting out to implementation.



Get the answers you need with our automation survey.

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Any warehouse automated system study should start by mapping the current situation. How is the warehouse set up? How effective are processes? What are the characteristics of the material flow?

With this inventory list, you can then map much of your operation by yourself. Your answers will give you a clearer picture of how things currently stand. In addition, the list will enable your supplier to give you some initial advice on points for improvement in your operation and on possible automated system solutions.

Take a few minutes to complete our online questionnaire and take the first steps to optimising your operation.

[Start survey >](#)



Jungheinrich Intralogistic Solutions

Jungheinrich Intralogistic Solutions is the division of Jungheinrich that is responsible for the design, sales and realisation of warehouse equipment projects. Jungheinrich is one of the largest suppliers of intralogistics solutions in the world. We are specialists in the equipment and optimisation of warehouse and distribution centre logistics; from installing warehouse racks through to warehouse software, warehouse automation and robotisation.

We not only offer a wide range of warehouse and transport systems, but also retain all expertise in house. We analyse existing processes, identify potential and develop optimised strategies, including for your future requirements. And we do all of this on the basis of your individual needs.

Want to know more?

Please get in touch for a no-obligation chat: call 0800 357 457 or visit:
www.jungheinrich.co.uk

