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Logistic

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Picking and ergonomics

Distribution and design form the cornerstone of effective warehouse management, playing a vital role in determining efficiency, productivity, and ultimately, the profitability of your warehouse operations.

In this realm of logistics project management, **“picking”** stands out as a pivotal term, critical to maintaining optimal productivity within the supply chain. However, intertwined with this

concept is another equally important aspect: **ergonomics**.

Together, they form an impeccable synergy that can aptly be termed the new “lifestyle” of logistics.

The significance of order picking cannot be overstated—it accounts for approximately 40-50% of total warehouse operating costs.

The swiftness and accuracy of this process directly influence the benefits reaped. This is where the spotlight falls on **the Golden Zone**, a term central to

Picking and Ergonomics, the New Logistics “Lifestyle”

our discussion. **But what exactly is the Golden Zone?** No, it's not a reference to the latest James Bond flick; rather, it refers to the strategic location housing high-turnover references within the middle segment of a shelf.

In essence, the Golden Zone epitomizes the sweet spot for your inventory. With stock positioned here, everything transpires swiftly, facilitating effortless retrieval of required materials, sans the need to bend or stretch. This translates to reduced travel time between product picks, elevating both ergonomics (promoting sustained productivity) and overall efficiency.

Taking things up a notch are automated picking stations, ushering in a new level of ergonomic excellence. **The Goods-to-Person (GTP)** picking method serves as a prime example. Here, automation becomes the indispensable partner to order picking and the workforce. This approach not only ensures high-paced goods delivery, thanks to well-designed height placements, spatial arrangements, lifting systems, signage, and supporting auxiliary equipment, but also places a premium on worker performance and comfort.

Operating within these systems virtually eliminates excessive movement for employees, directing all

“Automation becomes the right hand in order picking”.



necessary actions to their dedicated workstation. This optimization significantly boosts individual productivity and minimizes operational time, as previously mentioned. Nonetheless, it remains crucial to equip staff with appropriate tools and rotate tasks to ward off fatigue and repetitive motion injuries. Here, we underscore certain equipment that addresses these vital considerations:

- Picking stations furnished with position indicators for references and quantities.
- Incorporation of artificial vision or laser indicators to facilitate goods handling.
- Flooring that is both cushioned and adjustable in height to accommodate each operator's needs.
- Thoughtfully calibrated lighting aligned with natural light and efficient air-conditioning within the work environment.

If Industry 4.0 once took center stage in showcasing the latest logistics trends, today the enchanting buzz revolves around picking and ergonomics. Embracing this solution, among others, has propelled the logistics sector towards automation and digitization.

In the words of Socrates:

“The secret of change is to focus all your energy not on fighting the old, but on building the new”.

2 The end of the line, the beginning of automation

Line ends are new beginnings in logistics processes. And it is here where the feared bottlenecks occur. And although the whole process is important, it needs automation (and artificial intelligence) to maintain an adequate rhythm of work.

Applying flexible, robotic and autonomous tools, with a minimum intervention of labor, in activities of packaging, classification and distribution or review and quality control, among others, will help us avoid the dreaded “end”.

Optimizing the processes that consist of the preparation of the products once the product is finished with theft, for example, could be a good solution and these being great allies for efficiency and speed when operating without almost committing mistakes.

We automate, what should we not forget?

That said, we can get an idea of how line endings work and what problems they can cause us. We have also seen that automation reduces costs, labor loads and improves productivity.

We automate, what should we not forget?

The production process must be analyzed in order to understand and analyze it, it is to know what is manufactured and why in that way. In other words, being aware of what we manufacture to assume that not all solutions, no matter how much we like them and seem to us to be the most innovative, have to be valid.

Have a vision of the future and adjust our lenses to be able to add dimension to the project according to capabilities. And here, we point out again, we avoid bottlenecks. We have to think about the whole and the individual to see how it affects the whole because the volumes have to be adjusted to each stage so that we don't fall into previous errors.

And for operations that do not add value, automation, of course. The implementation of an automated system allows for increased efficiency and speed, as well as improving the ergonomics and safety of operations.

For example, robotics stands



out here for the great advantages they offer. The robots adapt to multiple processes and product formats, standing out for their simplicity and ease of implementation.

The number and configuration of the robots respond to the workflows according to the needs of the user. They can move or be static with various configurations to suit line layouts. Robotization is very adaptable and can be deployed quite quickly.

What if we also tell you that artificial vision in packing solutions is key?

Imagine systems that make decisions on their own based on the environment. This is already possible to artificial vision. And it is that it is becoming more and more perfected and it is possible to create sensitive, safe and efficient systems.

For those who still do not know, artificial vision or Computer Vision, is the technology that “combines cameras, edge or cloud computing, software and artificial intelligence (AI) to allow systems to ‘see’ and identify objects” according to [Intel](#).

Everything around us generates data or what is the same, digital content. Thanks to artificial vision we can take advantage of this content so that systems can understand the environment through the digital images generated.

The solutions are wide and varied. From robotic arms that stop when faced with a jam, [automatic palletizing and pallet transport systems](#), order preparation or the classified organization of products based on images, they are possible thanks to this technology.

A “nos stop” system with consistent results under minimal supervision. Being the key to artificial vision analysis, machine learning (ML) and deep learning (DL) cannot be missing here. And as we see once again, artificial intelligence (AI) is with us.

We are seeing how in every process, in every sector, from electric vehicles to sports mobile applications, artificial intelligence is a key and fundamental support point. In recent years we have seen a unique milestone, never experienced before, **the development of multiple technologies that have been incubated at the same time and have matured until they integrate with each other.**

A world that has evolved faster than expected and with a momentum that generates a very interesting debate about the future, is ours now.

“Yes, it’s crazy! Everyone has to lose their reason, everyone, and the sooner the better”

**Us.
Yevgueni Zamiatin**



3 Logistics design, your great ally.

The markets have evolved, they are more digital and the online route has developed like never before. But everything that advances also encounters a significant increase in problems, especially those related to warehouse management.

Many of the problems have their origin in the design. Because as in fashion, “cutting and tailoring” is what we need to adapt to new situations, as well as a point of customization to adjust to market fluctuations.

With a good design, you will have a great future

Optimizing space, due to lack of it, is one of the most important main problems. Storing more and better is one of the maxims that has been applied in the

logistics environment due to the rising cost of logistics land.

According to the logistics and transport association UNO, in its Report on the price of logistics land in Spain, the interest in locating last-mile supply platforms, due to the increase in online sales, in the vicinity of areas where there is a large population density, has caused the square meter to increase.

We no longer only talk about the height of the warehouse through the use of much higher racks, now we talk about the mezzanine with removable systems for unloading and moving packages. Small spaces become the new vanguard and design “loft” thanks to the “Ikea” concept in logistics.

Taking advantage of minimal space, in height and with modular options is no longer just closed to homes, it opens up

the world of automation and logistics.

Other options are the installation of compact storage systems such as “pallet shuttles” or what is the same, a semi-automatic high-density storage solution, “racking system” mobile shelving or “drive-in” compact shelving.

And the second key point is the choice of a good management system. **The Warehouse Management System (SGA) or Warehouse Management System (WMS) is a great pillar in the management and design of the warehouse**, being the software that automates the processes and does daily monitoring of a warehouse.

A poorly implemented Warehouse Management System (WMS) will involve management and process automation problems, causing setbacks at

**“The IKEA concept in logistics.
Small spaces, designed to the
millimeter, personalized and
automated!”**

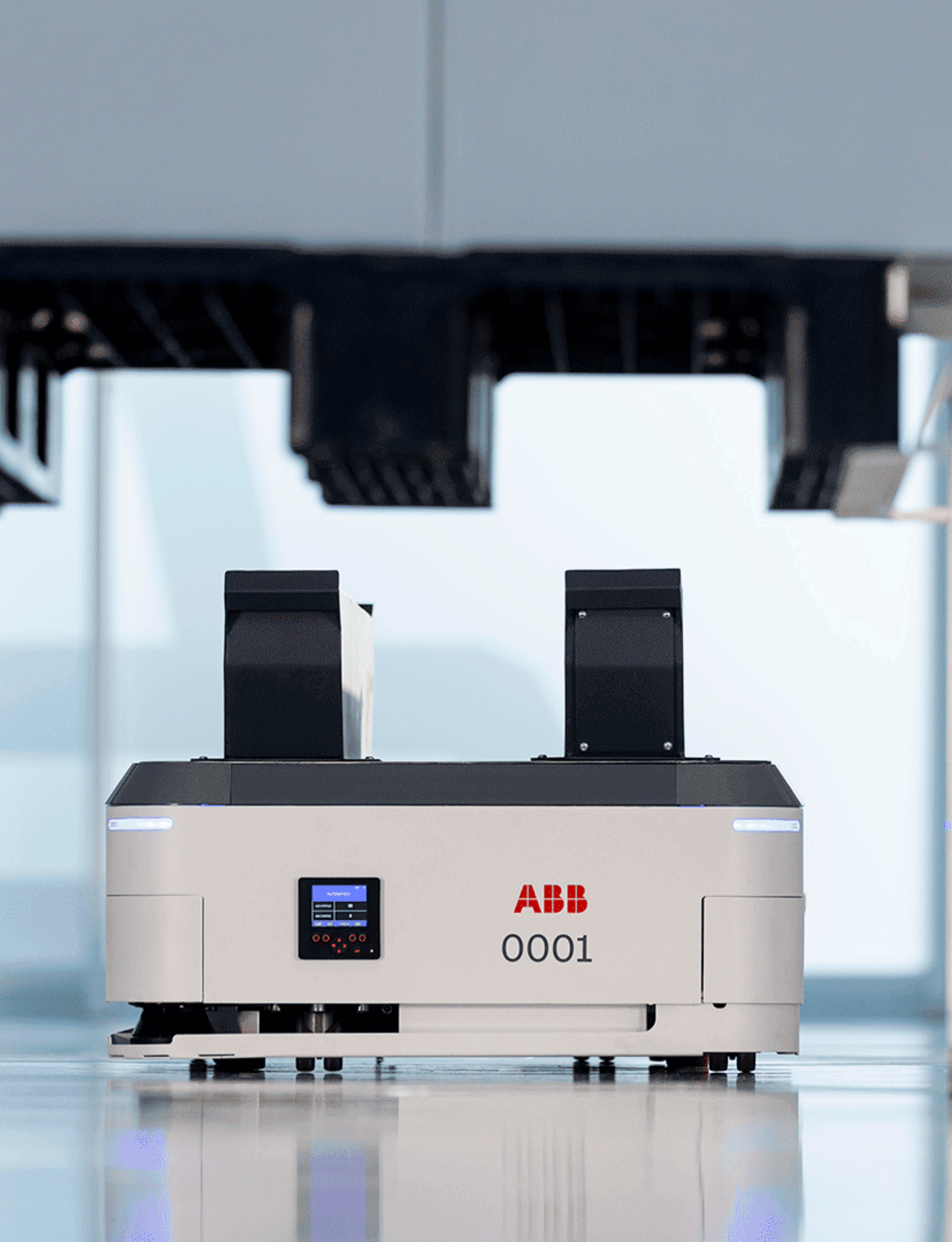
all stages. The implementation of logistics software such as a WMS ensures that product traceability from its origin to the warehouse entrance until it finally leaves the warehouse.

Here we have to point out that the great **challenge** in connecting the components of an automated system is the integration between the equipment control system and the WMS. This tool will help us a lot but we must also think that it is not as easy as turning on a computer and connecting the mobile with Bluetooth.

In addition to the two previous points, we must not forget that traceability in the supply chain is another pillar that will help our design to be efficient.

**“To talk about logistics design
is to talk about logistics
efficiency”.**

The control and optimization of processes can multiply the efficiency and profitability of the warehouse. So, if you can describe the warehouse in one sentence, make it this: **“Just in Time”!** The concept that perfectly describes how it should work.



Do not forget that [automation in warehouses](#) and the use of Warehouse Management Software (WMS) are the essential pieces in its design to control and monitor the entire process.

And as Benjamin Franklin said,

“For every minute spent organizing, an hour is gained”.

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