

STRATEGICALLY OPTIMIZING YOUR CURRENT SPACE

CHOOSING THE RIGHT APPROACH FOR
YOUR NEEDS.

White paper written by
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BACKGROUND

Over the past year, consumers have been forced to think differently. The ease of staying at home and shopping online has enticed millions throughout the world, especially with the added bonus of having your products delivered within a few days. As e-commerce continues to grow, consumer expectations grow even bigger. While two-day shipping was considered a luxury in the past, it has now become the standard. As retailers increase the number of SKUs offered, try to decrease order to ship time, and offer free shipping, distribution centers throughout the world are starting to crumble from the increased volume, the decrease in workers, and the expectations of consumers.

So, what is the answer? To some, it's simple: open a new distribution center (DC) to spread out the volume and reduce travel time between the DC and the consumer's front door. To others, it has created delays in shipping and endless hours trying to keep up with the increase in sales. What is the correct answer, exactly? Do you open a new distribution center and manage the implementation while also managing your daily operations? Do you go out and try to find qualified labor to help catch up? What if you can't catch up? Do you lose customers and potential revenue because of the inability to fulfill orders in the timeframe that has become custom? What if I told you we could increase throughput and efficiency out of your existing DC? Oh, and you don't have to find any more labor. If that interests you, read on to learn how you can maximize your current distribution center.



WHY MAXIMIZE YOUR CURRENT SPACE?

There are many benefits to maximizing your current space. The first and most obvious is cost. A new facility can quickly become costly. You would have to:

- Find the space
- Buy it or lease said space
- Complete tenant improvements
- Buy new capital equipment
- Hire new management personnel
- Implement new or existing software

The list goes on.

Additionally, suppose the strategy around opening a new distribution center is to be closer to the consumer. In that case, you need to replicate SKUs across both facilities. Doing this will add additional labor, freight, and inventory costs. While these scenarios make sense in certain situations, we first like to make sure your facility is optimized to make the best use of space to create a productive and profitable environment.

Secondly, experienced labor can be difficult to find and retain long-term employees become subject matter experts about the tasks, workflows, and systems within the facility. They know what to do when something does not go as planned and what works and does not work.

Lastly, the time component: employing new technologies, software, and / or process improvements will yield quicker results when implementing within your current facility. The time it takes to get a new distribution center up and running may exceed the time you have to catch up. Lead times have been increasing as we see supply chain shortages around the world. Do you have 12 - 18 months to wait? Or do you need efficiency gains fast?



WHAT CAN HELP MAXIMIZE YOUR CURRENT SPACE?

There are many different options you can explore to help maximize your distribution center. Through our experiences, we have seen three types of technologies that provide the best return on investment:

1. Software - Software has come a long way over the past 10 years. For many years, software was utilized as a reporting tool to help make better decisions and react to identified issues. It was used as a trial-and-error solution with real products and real people to see what worked and what didn't work. Now, software can do much more. Instead of a reporting tool, it can take all of the data and recommend the right decision. As opposed to being reactionary, software can predict an issue before it happens and put in the fix, so you never see it. Instead of trying something on the floor and watching the results over the next week, you can simulate various environments to get instantaneous results.

For example, in your current distribution center, you may have people walking the floor with carts. On those carts are several containers tied to an order. Your current software may build a pick path to help increase the efficiency of your pickers, but is it looking across all orders to find the best cartons to put on the cart? Is there an order that comes in while a picker is on a pick path that has a higher priority? It would make sense to re-assign that order to a carton that is currently on the cart. Let's say an order has to be out by 6 PM and it's currently 9 AM, do I have to pick it right now? Or are there better orders that create a higher pick density? There are endless scenarios where software can evaluate to create an optimal environment. The most interesting part of it all is that everything mentioned can be completed in milliseconds without any human intervention required.

2. Goods to Person (G2P) - There are two primary G2P technologies Hy-Tek offers. First up, is Exotec. Exotec is a 3D bin-level pick system that combines the dense storage capabilities of an AS/RS with a robotic tote delivery system. The ASTAR software system directs the Skypod robots to retrieve a tote containing the desired SKU from the storage racks. The robots not only travel in the X-Y direction but also "climb" the racks to provide 100% SKU accessibility up to forty feet in height. Once the tote is retrieved, the robot exits the storage area and travels to a software-directed pick-to-light

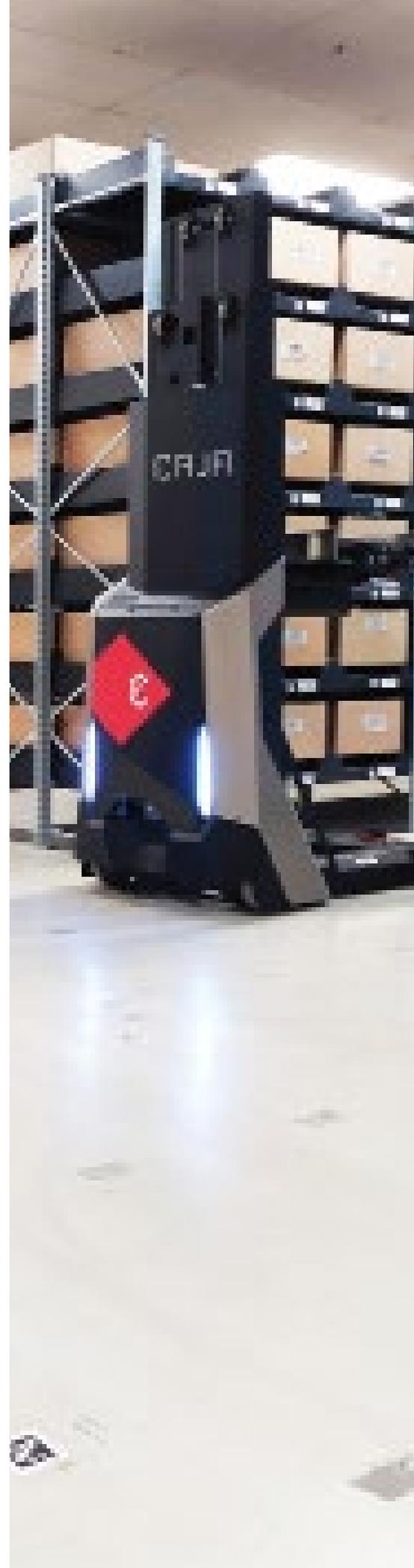


picking station. After the appropriate units are retrieved from the tote and placed in order-specific totes, the robot returns the tote into storage. The built-in ASTAR software optimizes inventory management and the movement of the Skypods and can be easily integrated into an existing WMS (Warehouse Management System) to provide a seamless automated pick process.

The second G2P technology is Caja Robotics. Caja provides a 2D automated goods-to-person solution that works well in existing brownfield facilities because of its ability to adapt to existing infrastructures. By utilizing existing shelving racks, vendor cartons, and mezzanines, a lower capital investment and shorter deployment time can be achieved. Caja works especially well in dark store micro-fulfillment applications in existing, vacant storefronts, such as a mall anchor store that has since shuttered. The system utilizes two types of robots: a lift robot that allows cartons or totes to be retrieved from shelving up to eleven feet in height and a cart robot for retrieving from ground-floor locations. After the carton is retrieved, the robot travels to a pick station where the appropriate number of units are picked and placed in outbound order cartons. Once the pick is complete, the carton is returned to storage. The Caja system also provides the ability to batch pick cartons for staging to fulfill orders in the system queue, which minimizes transactions. Fleet management software utilizes advanced algorithms to optimize inventory and order management and can easily be integrated into an existing WMS system.

3. Autonomous Mobile Robots (AMR) - Lastly, are the Autonomous Mobile Robots. AMRs can help reduce labor in key areas. We look for non-value-added tasks such as:

- Pallet Movement - Are there long runs where an operator is taking pallets from point A to point B? This could be from inbound to put-away. Or maybe you are palletizing totes from a packing area and need to take those back to a pick area.
- Trash Movement - Do you have anybody collecting large gaylords full of empty corrugated containers and driving to a bailer or compactor?
- Assembly Areas - Are you assembling and/or kitting in one area, and need to take the finished goods to another location?



“... AMRs can help reduce labor and increase your overall efficiency.”

The above are examples of countless different scenarios where AMRs can help reduce labor and increase your overall efficiency. Below are some of the AMR OEMs partners.

- **F3 Nipper** - The Nipper is an automated pallet jack. It is specifically designed to move pallets for non-value-added movements. It can pick up and move pallets up to 1,100lbs.
- **AutoGuide** - Efficiently move pallets from multiple elevation pick and drop locations through a facility. Capabilities include fully automatic and manual lift movements up to 2,650 lbs and tugging up to 10,000lbs.
- **Mobile Industrial Robots (MiR)** - MiR offers a variety of different AMRs for different scenarios. The small MiR100 can move carts and lighter products, while the larger MiR1000 can move pallets up to 2,200lbs.



A shopping cart with a red handle is filled with several cardboard boxes. The cart is positioned over a laptop keyboard, which is visible in the background. The scene is set against a dark background.

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As e-commerce continues to grow, consumer expectations grow even bigger.

HOW DO I KNOW WHAT'S RIGHT FOR ME?

The first step to pick the best solution for your facility is data. Understanding benchmark productivities, current and forecasted volumes are key in finding the right technology with the financial justification. Furthermore, SKU characteristics, order profiles, and SLAs may fit one technology better than another.

The next step is identifying pain points. Hy-Tek evaluates the site and collaborates with your team to pinpoint the root cause. Is there a lack of storage driving the need for a new facility? Is there an inability to get enough volume out the door? Or maybe a combination of both? Based on the root cause, we can identify and validate the right technologies. Exotec, as an example, is an excellent fit for increasing efficiency while also increasing storage density in those facilities that have a 32' high or taller clear height. Caja Robotics is an excellent fit for facilities trying to maximize productivity and needs a fast implementation. Regardless of your situation, the data and site analysis help us determine how to maximize your current facility.



WHAT'S NEXT?

Considering which technology to implement and how to maximize your current facility is no easy task. An in-depth data analysis is required to develop the framework for structuring a plan and identifying technology options. Most importantly is partnering with the right company to assist with the discovery process every step of the way. The experts at Hy-Tek Intralogistics have the experience and technologies to guide your organization through this process.

Give us a call at **1-800-891-5504** or email us today at **info@hy-tek.com**.