



A MEMBER OF ROYAL APOLLO GROUP

Going Vertical and Solving Your E-Warehousing Real Estate Challenges!

Executive Summary:

Over the past few years, the warehousing and distribution industry has gone through major shifts. The sizes of these infrastructures has gotten smaller, and their locations have become closer to the markets they serve. Instead of catering to stores and other businesses, they are now committing to the consumer directly and promising shorter and shorter delivery times.

The e-commerce side of the industry was on the rise but with COVID-19, the growth went to another level. Today the demand is higher than ever before. The labor shortage is not helping, and it is not looking like it will slow down any time soon.

When you take the above statements and facts into consideration, it is obvious that the warehousing world is facing some challenges and opportunities that requires new technologies and automation to step in and save the day.

Vertical conveyance is not going to solve the problem but, for sure, will help address some aspects around space saving, and the ability to go higher instead of wider. It will complement other technologies and automation solutions that will work on solving the warehousing supply chain challenges.

Introduction:

Warehouse automation has been growing in this space for decades now, but it was not as critical and demanding as we have seen in the automotive or packaging and manufacturing industries in earlier times.

This growth initially started in Europe where real estate and talent were both expensive and limited. In the US market, the growth surged when the consumer started to order more on-line, directly from the warehouse while asking for quicker delivery. As a result, companies have to get their warehouses closer to the cities. This move impacted the cost for warehousing real estate as well as labor which led to more use of automation.

Previous Approaches:

Automating the warehouse certainly helps address some of the labor and demand challenges, but at the same time it brings its own opportunities. Now, end users are in a position where they need to make critical decisions when it comes to the level of automation they adapt. Some of the questions that need to be answered are:

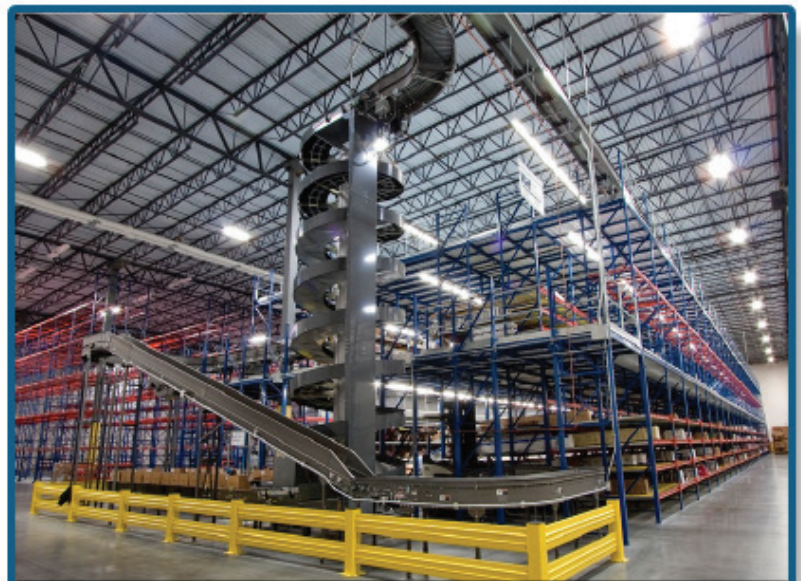
- Whether to use the latest and greatest technologies out there that might solve the issue but require heavy upfront investment and highly skilled labor. Or,
- Use more traditional solutions around conveyance and sortation that are more common, proven over the years and less demanding when it comes to talent and competencies. But these solutions might require more real estate.

This latter one seems a common approach to the solution especially since conveyance has taken a vertical direction in recent years. Yes, the designs have evolved to utilize the space above the floor level. The creation of overhead conveyance and multi-level pick modules has helped maximizing every bit of real estate within warehouses and distribution centers.

Vertical conveyance can be achieved in few different ways, to list a few:

-**Incline belts:** probably the most straight forward and oldest technique out there. This is a great solution when real estate is abundant, and cost is a decisive factor. These belts are capable of handling most of the products out there but there is no guarantee that the integrity of the package is preserved.

A subset of incline belts are spiral belts that have been used extensively in the past. These have maintenance issues, require multiple drives like incline belts and are not very compact.





- **Vertical Lifts:** Whether we are talking about a VRC (Vertical Reciprocating Conveyor) lift or a carousel style lift, vertical lifts are very common in systems where same type of product is conveyed and throughput rate is not critical due to the cycle time. Some of these lifts are capable of handling very heavy products. Their footprint is small and most of them are controls heavy and can be a maintenance hassle for the operations teams. Cost wise, they can be on the expensive end.

- **Spiral Conveyors:** Slat style spirals are the most recent solution for vertical transportation taking the best of both worlds. Spirals are small in footprint, capable of maintaining high throughput. They have a low controls requirement and most only require a single motor. They might not be the least expensive initially but depending on the brand, the total cost of ownership is more attractive than any of the other options.

New Spiral Applications:

With the rise of micro-fulfillment and warehouses geared toward e-commerce, new system designs and applications turned to spiral conveyors to help fulfill the need to save on space, keeping up with throughput while maintaining the integrity of the products.

Spiral conveyors have reached new heights with +30' feet in elevation changes and 3 or 4 level pick modules becoming the new standards increasing the demand for multi-level routing spirals (multiple entries or multiple exits).

Ryson Spiral Conveyors are playing a major role in these changes. They focus on the quality of the delivery and total cost of ownership (TCO) for the end users. All the spirals are currently running with one motor ensuring a low power consumption. The rolling friction allows the ability to handle heavy products up to 150lbs, running at speeds up to 200 fpm as well as starting and stopping fully loaded with a maximum weight of 3,600 lbs.

Customization is a key differentiator of the Ryson product line. First, their spirals feature a customizable modular design. And they also have a very wide range of models - ranging between 4.5' and 13' feet. They also have the ability to handle very small products (3" inches in diameter) all the way very large products that are over 48" inches in length and 30" inches in width.



Between the flexibility of Ryson's product line and the ability to be easily integrated with any conveyor and sortation system, the Ryson spirals can be a very attractive subsystem to implement with a variety of warehousing automated packages. You can [watch a detailed video](#) about this here.

Conclusion:

Even though spirals are helping to alleviate some of the warehousing real estate challenges, there is still room for improvements in order to be a true alternative to the traditional horizontal conveyance and sortation of products. Spirals are constantly evolving with the DC and warehousing operations to provide new functionality in product routing and ever larger elevation changes to make the best use of the volume, not just the area, available in a facility.

Warehousing has certainly evolved and today customers want their packages to arrive fast, accurately and most importantly not damaged.

The Ryson Spirals and the team behind them bring over two decades of experience and excellence in the packaging and manufacturing industries where reliability and Total Cost of Ownership are critical. Now they are working hard to mimic the same type of success in the DC and warehousing side of the supply chain industry.

For more information about Ryson's Vertical Conveying Solutions, visit www.ryson.com.

“Ryson’s Value Proposition is to provide reliable and durable products that have a low cost of ownership.”

Sources:

[Five Warehousing Challenges to Overcome for E-Commerce Success](#) | 2021-08-04 | SupplyChainBrain

[Future of the industrial real estate market](#) | Deloitte Insights

[2022 Retail Industry Outlook: The Great Reset](#) | WSJ

