TECSYS

TECSYS' Optimization Consultants Deliver **Optimum Slotting and Over 21% Increase in Warehouse Capacity to LifeScience Logistics**

CASE STUDY

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LifeScience Logistics

INDUSTRY

Healthcare
3PL

THE CHALLENGE

The Company needed to expand and optimize its warehouse operations in order to support its growth, go after new markets and add new customers to its commercial business.

TECSYS' SOLUTION

TECSYS' warehouse optimization and performance management to deliver optimum slotting.

THE BENEFITS

Significantly improved warehouse layout and optimized slotting that translates into being able to fill more orders with the same number of people and ship more orders on time, plus improve customer satisfaction.

Improved capacity

21.6%

Reduced required square footage

20.5%

« Today, we have more storage locations, a much better layout, and we have conveyor systems - all that was designed for a higher volume output. »

Bal Snow
Manager of Information Technology
LifeScience Logistics

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ABOUT LIFESCIENCE LOGISTICS (LSL)

Founded in 2006, LifeScience Logistics (LSL) is a third-party logistics provider committed to offering the highest quality, flexibility, and compliance in healthcare supply chain solutions. LSL operates out of four cGMP compliant and FDA registered facilities totaling more than 1.35 million square feet of fully validated and temperature mapped space. Since its inception, LifeScience Logistics has been leveraging TECSYS' supply chain platform, enabling LSL's management to securely deliver, on behalf of their customers, healthcare products at the right price without sacrificing on quality.

LSL has two distinct businesses. 3PL services to a large private client and the commercial business, the 3PL services for pharmaceutical manufacturers such as generics, branded, cosmeceuticals, and research material for universities. Their pharmaceutical customers manufacture and promote their products, and LSL acts as their distribution and the back office arm for them – LSL handles all of the customer service, and shipping, and accounts receivable.

CHALLENGES

With LSL's continued growth and dedication to customer service, the Company needed to expand and optimize its warehouse operations in one of its facilities in order to go after new markets and add new customers to its commercial business. To this effect, LSL called upon TECSYS' warehouse optimization and performance experts to assess their challenges and help them achieve their objectives.

LSL had to lease an additional warehousing suite then come up with a racking design in an effort to meet the requirements of its customers. The original design of the warehouse wasn't really set up for this kind of growth. "We didn't anticipate the volume of the commercial clients, and the type of products that they would have, so it wasn't really configured in a way for optimal output." Snow added.

"The large private client's business is stable but the commercial business is where we saw basically a double in volume in 2016 and that just continues to grow. We grew faster than expected, so we needed some help, and that's when TECSYS' optimization team came in and really helped us make sure that space was made for what we needed."

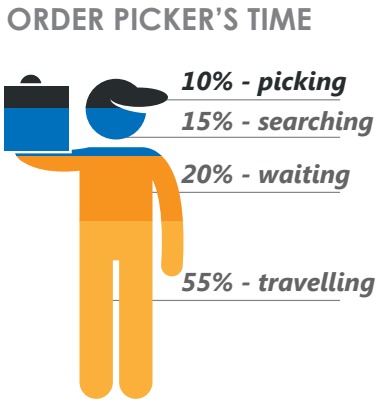
Bal Snow, Manager of Information Technology, LifeScience Logistics

TECSYS' WAREHOUSE OPTIMIZATION

Initially, LSL had a racking company provide them with their analysis of the racking plan, and how they would use the space. Snow commented: "We thought, who better to really know how the system can be optimized with the space, than having somebody who knows warehousing and the TECSYS system. It made a lot of sense to pull TECSYS' optimization consultants to make sure that the configuration of the system versus the racking layout are in sync."

EFFICIENT PICKING - KEY TO WAREHOUSE OPTIMIZATION

According to an industry study, order picking represents over 50% of a typical distribution center's operating cost. About 55% of an order picker's time is spent traveling, 15% searching, 20% waiting and only 10% is actually picking products from inventory locations. Through strategic design and slotting initiatives, there are significant operational improvements that can be made to increase workforce productivity and often reduce cost. Slotting is a key initiative to design and implement the most optimal locations to store inventory in a warehouse in order to improve overall supply chain operational efficiency.



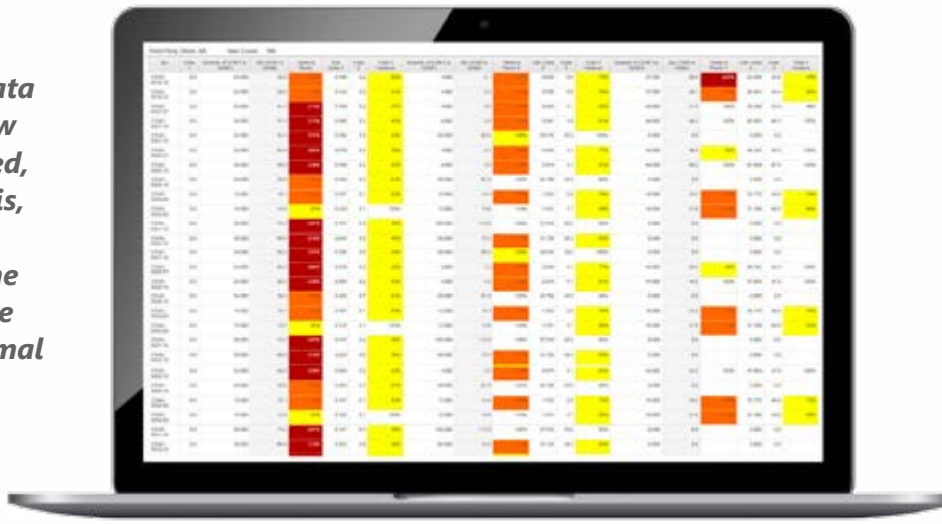
According to Dino Stamatiou, Director of Analytics & Optimization at TECSYS: "In a slotting exercise, analytics comes first! We not only need to know the capacity of the storage locations but also the cubic capacity of the item that is being carried – how much room it takes on the shelf – and as importantly the frequency and most popular way it is sold and shipped – it could be a unit, a pack, a case or a pallet- then make sure it is reflected accurately in the item master. It is critical to have quality information about products in inventory in order to achieve optimal slotting strategy and positive operational results. The questions are: how much space is needed, what kind of racking and how much racking is needed and where to place the items for optimum picking efficiency."

There are a number of variables that enter into the slotting equation. These include:

- Line item order history during peak and normal operations;
- Product dimensions & product weight;
- Environmental or temperature requirements;
- Overall cubic space in the facility;
- Storage medium available within the facility and
- Growth trends and projections.

"We first validate the quality of the item data in terms of how they are stocking it and how they are shipping it, so everything that is red, orange or yellow, highlighted in the analysis, designate a degree of variability between actual product measurement and data in the item master. So these variables needed to be addressed in order that we conduct an optimal slotting initiative."

Dino Stamatiou, Director of Analytics & Optimization, TECSYS



VOLUMETRICS AND VELOCITY

The next step is looking at volumetrics for high velocity items for volumes shipped within a certain period of time, as well as frequency of orders and how often they are ordered over a period of time – so it is the actual movement of inventory. This is to understand the highest velocity items, the volumetrics behind these items and the inventory capacity by item.

ORDER CHARACTERISTICS

In this optimization initiative, TECSYS' optimization consultants were looking for the sizes of orders that LSL picks on a regular basis: are they case picks, eaches picks, or pallet picks. For example LSL picked 5000 orders of eaches, the second most popular unit of measure is a case - this is telling the optimization team the nature of the work being done.

From a slotting perspective, the warehouse should be organized in such a way to accommodate these types of picks, as well as the most popular customers and type of orders, while taking into considerations velocity and size of each item. For example LSL sold 900 orders of an item as master pack which means that this item should be stored as master pack on the shelf to accommodate optimum picking efficiency. The volume, the velocity of the different SKUs, the nature of picks of those SKUs and the spacing required for each SKU, all of which become input in the slotting strategy and solution.

SOLUTION

Initially, a mere visual inspection of the existing warehouse areas indicated to TECSYS' optimization consultants that there are opportunities for improvements.

Bal Snow commented: "We really blew up the initial racking plan provided by the racking company, and made some significant changes based on the data and the recommendations by TECSYS' optimization consultants. This is including the slotting exercise – what types of locations we should have based on the types of unit of measures we are picking, and made some real significant changes. We had a pick module section, we built a designer rack, adding a mezzanine to it for future growth, because we are only going to grow. We changed some of the racking in the facility that ended up not really making a lot of sense, because it was flow racking. It really opened our eyes with the kind of industry knowledge that TECSYS brings and what can be done to make the operation much more efficient. It did delay the project a little bit, but we thought it would be better to get it done right and accurate the first time."

The TECSYS Optimization team looked at ways of adding racking without impacting the work flow, such as adding more racking without impacting the actual products on the shelf. The warehouse was reconfigured for optimum capacity to meet LSL's growth needs; added more racking and redesigned their low unit of measure for their picking area to support mezzanines and automation, so it gave LSL additional room to grow.

In one of LSL's warehouse section areas, TECSYS' optimization consultants determined that there are opportunities for improvement for storage capacity by:

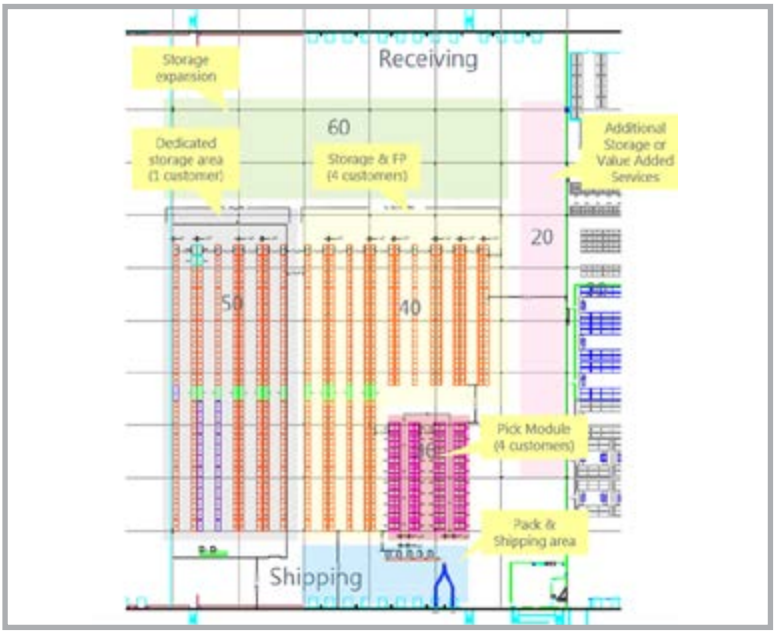
- Substituting the single one-deep rows with two one-deep rows of selective racking. This, in addition to improving storage density, improved the stability of the racking and operational safety in the warehouse.
- Reorganizing racking rows and aisles from the west side of the area.

TECSYS' approach has enabled LSL to increase capacity in the warehouse by 708 pallets, an increase of 21.6%. It also enabled LSL to optimize the square footage utilized by pallets, reducing it from 9.77 sq. ft. to 8.11 sq. ft. per pallet, freeing up 1,470 sq. ft. to the company's warehouse operations.

With LSL's anticipated increase in business volumes – such as number of new clients, orders and SKUs, TECSYS' Optimization consultants recommended upgrading the Pick Module to a multi-level structure. A multi-level Pick Module requires a certain degree of automation to drive efficiency. This entails the installation of a powered conveyor, transforming the de facto Cart Picking process into a conveyor zone-based pick-and-pass system. This picking process has the potential to attain a significantly higher pick rate of up to 150 lines per hour.

Furthermore, TECSYS' optimization consultants recommended to inverse the configuration of the conveyor in the shipping area and move it to the left side of the distribution center in order to provide access to two dock doors instead of one. This really made further improvements in optimization and flow.

BEFORE



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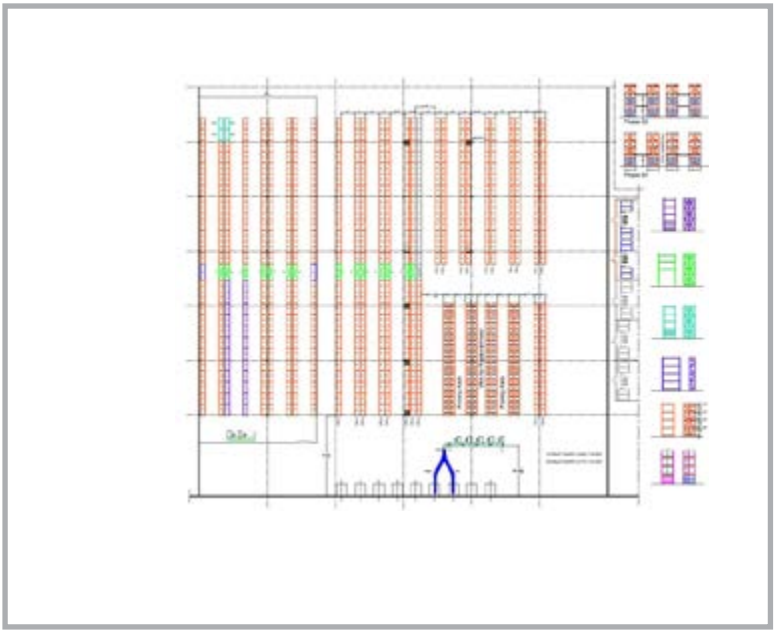

"The main thing that we accomplished first is to really take a look at the orders and picking data. TECSYS has such a good handle on the reporting and the data of our operations. TECSYS came up with a lot of information that we didn't have when we started the initial layout process. So, taking that, and then having the TECSYS consultant on site going grid by grid on a CAD drawing and come up with a much better warehouse layout, it was phenomenal!"

Bal Snow
Manager of Information Technology
LifeScience Logistics

RESULTS & BENEFITS

The slotting exercise has resulted in higher efficiency in LSL's warehouse, moving LSL's higher velocity items closer to shipping. So, in essence this has improved orders shipped per hour.

"At the end of the day, the optimized space was the ultimate. Initially, we really thought we were going into the initial meeting with TECSYS and the layout is kind of off limits, by the end of Friday when we left, we had changed everything," Snow added.

The closer the items are moved to their ultimate destination, the shipping area, the less travel is required by LSL's warehouse associates and that translates into more picks in less time, or they can do more picks with the same amount of time. That should translate into being able to fill more orders with the same number of people and ship more orders on time, plus improve customer satisfaction. What it does, it increases the footprint of the warehouse so it is costing less, at the same time LSL can carry more inventory in the same square footage, so it has less carrying cost for each SKU.

Key Performance Indicator	Increase/Decrease
Improved capacity by 708 pallets	↑ + 21.6%
Reduced square footage required per pallet	↓ - 20.5%
Increased storage footprint by 1470 sq. ft.	↑ + 5.5%
Ability to attain a much higher pick rate	↑ Up to 150 lines per hour
Increased storage capacity by 394 pallets	↑ + 12%

"What we do is really all about client satisfaction, because we are going to be able to offer the service where we can meet the clients' expectation and handle the volume of their growing business. Today, we have more storage locations, a much better layout, and we have conveyor systems - all that was designed for a higher volume output. Basically, what TECSYS did, is make our warehouse operation much better so that we could meet our clients' expectations. We have probably about 20 clients in that facility right now and growing at the rate of about two additional clients per month, so fulfillment of orders is no problem!"

Bal Snow
Manager of Information Technology, LifeScience Logistics

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