Featured Senior Design Project Sponsor

And the 2022-23 ISE Student Team

Vinh Nguyen Chris Nicholson Joseph Guzman Ali Shihab

Company overview: "Albertsons operates as a banner of Albertsons Companies, one of the largest food and drug retailers in the United States. With both a strong local presence and national scale, the company operates stores across 35 states and the District of Columbia under 20 well-known banners."* Albertsons has 23 Distribution Centers that service 2,500 retail locations. The Distribution Center in Tracy, CA services over 800 stores within a 2,000,000 sqft footprint staffed with 1,500 associates. Albertsons Industrial Engineering in Tracy, CA, is responsible for Warehouse Management System (WMS) programming, Warehouse Design, Engineered Labor Standards, Automation, and Continuous Improvement initiatives that drive efficiency and lower the price to put items on the shelf for our customers.

Sponsor's name and position: Adam Kowaleski, Sr. Director of Industrial Engineering

Project Goal: The project goal is to configure a section of the warehouse where cases are picked manually by an associate on a pallet jack. To complete the configuration the students are utilizing three data sets. First, they are reviewing physical attributes such as racking dimensions, case weight, and case volumes. This information can be queried from Albertsons WMS. Second – the students are looking at product velocity. How many units per day ship? Third, the students are evaluating the Engineered Labor Standard which provides discrete pick and travel times for the selection process. The design team will amalgamate all of this information to inform the operation where products should be slotted. Improved slotting will reduce the time it takes to complete the work and make the selectors' job easier!

*** From the www.Albertsons.com website**

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Albertsons: Featured Sponsor, cont.

Unique challenges/ problems to overcome: Unionized workers, referred to as "pickers", find products in the warehouse and stack them onto a pallet destined for a retail location. The "pickers" receive instructions via a headset directing them where to go in the warehouse, what products to select, and how many cases to pick. As each product is picked, they confirm vocally into the headset and are directed to another location. Once the pallets are completed, they are left on the docking floor, ready for loading onto a Safeway semi-truck and delivered to a designated Safeway retail store. Because Albertsons's warehouse in Tracy is the largest in northern California and the process of building a pallet involves human workers, the team has had a great opportunity to apply their ISE skills to solve a real tangible problem that will result in increasing Albertsons's warehouse efficiency.

Approach and methods: The team sees an opportunity to reduce a picker's pallet build time by recommending a better picking pattern by using linear programming to find the optimal picking pattern solution. Another issue the team has studied is the stability of the pallet load while the pallet is being built. A recommended solution is distributing the weight of the products evenly across the pallet – front to back and side to side. Also, we are considering how to assure that heavier items are placed on the bottom and lighter items on top when the pallet is being built. A third issue the team noticed is lack of efficient pallet storage. Heavier pallets of similar products ideally should be right above the bay where pickers grab the products. Because there is a high volume of product flow, the current first in first out slotting system prioritizes available space to store pallets rather than proximity to product bay.

Finding/ Recommendations/ Savings: The students are designing a proposed solution based on a type of priority queue so that the storage system and incoming pallet system can work together to allow priority on proximity over storage availability.

Overall experience: The team has felt welcomed and valued by Albertsons, which propels us to strive for great success. The sponsors have been providing excellent support and a great opportunity for industrial engineers to work on real life ISE related problems. The team has been granted access to their on-site facility and technology information systems, which allows us to best understand their processes, workers, data and issues. Albertsons's ISE team lets us make our own decisions of the project design and have provided valuable feedback. This makes us feel that our ideas are heard and motivates the team member's creativity.

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