

CASE STUDY

Systematic Food Assembly How Shaving Seconds Helped Hy-Vee Increase Productivity & Improve Savings

Client

Iowa-based Hy-Vee, Inc., is an employee-owned retail grocer operating across nine Midwestern states. Hy-Vee is one of the largest privately held companies in the country, operating 570-plus business units with more than 75,000 employees.

Challenge

In 2017, Hy-Vee built its Fresh Commissary, a 240,000-square-foot commissary that today supplies more than 250 of the company's stores. In 2023, the company's continuous improvement efforts identified opportunities to speed up operations and productivity. TBM was brought in to help determine where the work should be focused in what was a large, end-to-end assembly process with multiple components.

Solution

After analysing Hy-Vee's operations, TBM recommended incremental time-saving actions to boost productivity and profitability. Collaborating with Hy-Vee's Lean team, they executed four Kaizen initiatives, starting with packaging, resulting in significant cost savings and improved profitability.

Results

- Realised significant savings in four months
- Packaging productivity soared by reducing downtime, idle labour, and optimising assembly to takt time.
- Staffing standards and faster changeovers cut start-up times by 53% and 60%, driving efficiency
- Streamlined the label verification and control process to reduce the time spent obtaining label approvals by 75%

Since its founding in 1930, Hy-Vee's stores have operated autonomously, with each choosing their own inventories, setting their own prices, and testing their own distinct ideas and concepts.

The model has been successful and has enabled Hy-Vee's expansion and diversification. Hy-Vee has evolved and grown along with prevailing consumption behaviours, and the company and its customers have benefited from its longstanding focus on continuous improvement along the way. In fact, Hy-Vee is regularly listed among Progressive Grocer's PG 100 rankings of the top food and consumables retailers in North America.

Speed is everything for a company like Hy-Vee – whether that means reducing time spent in checkout lines to improve customer satisfaction or making changes to its own internal processes and procedures. In 2023, the company made improving productivity at the Commissary a top priority, and sought outside help to build a plan that could identify and execute impactful changes.

Drawing Up the Recipe: First Steps

Hy-Vee's Fresh Commissary is ground zero in providing prepared food, supplies and support to more than 250 stores in the company's network. The scope of operations across the Commissary is massive, with a complex end-to-end process involving multiple, significant components all required to perform in synchronicity to achieve the best results.

For Hy-Vee, the Commissary plays a crucial role in maintaining quality, efficiency, and cost-effectiveness across its numerous and diverse business units. For a sense of the size and scope of the operation, the **Commissary is equipped with a 940-ton central ammonia refrigeration system, as well as three custom-built, 50-ton washdown blast units for cooling cooked products.**

This specific commissary system consisted of a series of core, large-scale functions, including inventory replenishment, manual assembly, and packaging, and the team commenced a deep dive into the operation to find those pockets of the line where time improvement could drive the most impactful, tangible gains. With these challenges in mind, we agreed to focus first on a small but vital piece of the operation involving

approximately 40 employees working in the Home Meal Replacement (HMR) team within packaging. Our thinking here was that the HMR part of the packaging chain was the closest stage to the actual end user, and that any improvements we made working upstream could easily pull from the supply of products produced from assembly, and not cause bottlenecks.

Hunting for ‘Empty’ Packaging Time

Once we narrowed our diligence efforts to the packaging elements of the operation, the best avenues for improvement opportunity stood out more boldly on the process map. From this analysis, we narrowed the lens even more to what we believed could be three fruitful areas to begin the exercise:

Labelling & Weighing Anomalies	Idle Labour Time	Label Verification/Approval
<p>Closer inspection identified multiple issues in labelling and weighing processes causing slowdowns across the line, including assembly.</p> <p>Key Improvements:</p> <ul style="list-style-type: none"> • Accurate positioning of text on different-sized labels • Consistent dispensing of labels • Labels triggered only when packages were confirmed within weight ranges 	<p>Identified excess labour as the weighing and labelling operator was idle during proper equipment function, leading to non-value-add tasks like stacking trays.</p> <p>Key Improvements:</p> <ul style="list-style-type: none"> • Applied Lean principle of Jidoka—automation with a human touch • Fixed glitches in the labelling process and reduced unnecessary paperwork • Freed the operator to focus on value-add tasks like inserting trays into cases • Helped identify headcount that could be better deployed elsewhere 	<p>Label verification and quality control slowed productivity, requiring operators to stop, complete paperwork, apply a new label, and wait for quality sign-off during SKU changes.</p> <p>Key Improvements:</p> <ul style="list-style-type: none"> • Collaborated with Hy-Vee’s leadership to streamline the process • Reduced time spent on label approvals by 75%

Additional time-saving opportunities addressed in the packaging stage included developing standard work around start-up and shut-down time; improved workplace organisation; and utilising simple automation to prevent clog-ups and allow the assembly components to more easily “communicate” with each other.



Next Under the Microscope: Improving Assembly

After the packaging area, we focused next on the Commissary's HMR manual assembly process, which includes approximately 80% of the total headcount for the HMR area. Much of our Lean work here involved assessing and establishing takt time, or the speed at which products or services must be produced to keep pace with current demand. With three different assembly lines, and 15 to 20 SKUs on each line, it was imperative that standards for the line speed match the takt rate being maintained, including the staffing needed to support that standard rate.

We noticed early in the process that while the daily schedule referenced the Units Per Minute expectations, there was no way to verify whether the rate was being achieved. Upon further discovery, we realised that the belt speed was being controlled by a hard-to-access Hertz setting that wasn't standardised and had to be changed frequently. Additionally, the distance between the placement of trays on the moving belt was inconsistent and directly affected the productivity of the entire line. Standardising the Hertz setting on the control panel and creating "spacing" lines on the conveyor belt made tray placement more consistent, and helped the line achieve the desired takt rate.

From that point, our teams worked together to ensure that there were no existing bottlenecks in the entire system with operator cycle times greater than the established takt rate. We made several smaller but key improvements here, including eliminating idle operator time, redistributing work without going over takt time, and ensuring that materials were placed and positioned in the moving trays more efficiently and consistently. Finally, because our team knows that seemingly small, incremental improvements that add up to deliver value, we took advantage of several feet of unused conveyor belt space to reduce the size of the assembly area, which helped decrease lead time from assembly to the packing stage.

Identifying and Removing Changeover Time Sponges

Speed is everything in the food processing business, and at the Fresh Commissary, each of the operating stations had to be changed between each SKU that was produced. To add to the complexity, the ingredients and components involved were all disparate, making it crucial to prep all materials at a shift's end for the next run.

Changeover improvements illustrate how every second saved can bring value. With Hy-Vee, we worked with the team to create standard work organised by both external activities, or tasks that could be performed while the line was running, and internal activity – actions that had to be performed while the belt was stopped.

For example, one subtle but important change involved deploying the Commissary's "water spiders" simultaneously with one worker focused on replenishing current production materials, and the other overseeing preparations for the next run on both sides of the line.

Another changeover-fuelled delay driver involved the Commissary's required allergen/sanitisation wash, which we changed from a one-person to two-person job to make the sequencing (water rinse, foam, sanitise, spray) more efficient. For example, while one worker washed down one side of the line, the other could start the foaming and rinsing, and then the first worker could start on the second line. These were all subtle but very important issues that were identified and fixed, and which have all contributed to better results. One last changeover win was converting elements of table assembly to moving-line assembly, which helped cut operator cycle down by nearly two-thirds. In all, the work we did with Hy-Vee helped reduce the total number of time-absorbing changeovers they were doing by 53%.

Time Well Spent

At the same we performed the lean work with Hy-Vee, we also worked closely with them to help develop their "Managing for Daily Improvement" programme, which in turn created key metrics, and Leader Standard Work, including Hour by Hour tracking and problem solving. When all was said and done, it took only four Kaizen events over four months for this work to deliver increased cost savings to Hy-Vee, proving that every single second matters.

Satisfying an Appetite for Growth

With a proactive approach and strong focus on execution, we address industry challenges, including meeting consumer demand, navigating FDA regulations, and ensuring quality standards. Our commitment extends to assisting organisations in attaining sustainable success by leveraging our expertise in the manufacturing process, as well as proficiency in areas such as maintenance, sanitation, and regulatory compliance.

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