

A high-angle, wide shot of a busy industrial factory floor. The scene is dominated by yellow robotic arms, likely KUKA models, positioned at various workstations. The floor is cluttered with machinery, conveyor belts, and stacks of cardboard boxes. Several workers in hard hats and safety gear are visible, some standing near the machinery and others further back. The lighting is bright and even, highlighting the metallic surfaces and the organized chaos of the production environment. The overall atmosphere is one of active, automated manufacturing.

6 Ways End-of-Line Automation Edges out the Competition

Automation in the food and beverage (f&b) industry has emerged as a key competitive advantage. Those that choose to automate processes are quick to see the benefits, such as increased production, greater flexibility, and a safer workplace.

“Increasing operational efficiency, throughput, and quality are always key drivers for incorporating automation,” says Jamie Barber, director of product development at Schneider Packaging Equipment, A Pacteon Company. “Consistent product quality is important for any manufacturer of goods so customers know they’re always getting the best from the brand. Automation can help maintain that consistency and repeatability.”

And it’s no secret that consumer demand is greater than ever before for faster, more convenient and a better selection of options. On top of that, f&b companies continue to face rising costs and a global labor shortage with no end in sight. These challenges weigh heavy on an industry striving to improve operational efficiency to meet the demand while also adhering to strict and important food safety guidelines.

End-of-line automation is one solution to these challenges and a great place to start transforming your operations.

“If you want to increase the reliability and consistency of getting your product to customers in a timely manner and at an affordable price, automation will ensure your success in doing that,” says Barber.

With the right equipment and partner, end-of-line automation can ensure your product is packed, prepared, and delivered where it needs to be, when it needs to be there.



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DIRECTOR OF PRODUCT DEVELOPMENT AT
SCHNEIDER PACKAGING EQUIPMENT, A PACTEON COMPANY

6 REASONS TO CHOOSE END-OF-LINE AUTOMATION

Can't find reliable labor? Costly mistakes slowing down your ability to meet deadlines? Growing volume no longer meets your production speed? High labor costs spiraling? If you're reading this, you've probably already answered yes to one or more of these questions. Automating your packaging line is a great first step to solving these challenges and more. Here are six reasons end-of-line automation might be right for you.

1 INCREASED OPERATIONAL EFFICIENCY AND PRODUCTION VOLUME

More efficient operations and higher throughput go hand in hand. The smoother things run, the faster you can move product through your warehouse. Of the many advantages to be gained from automation, this is maybe the most obvious but also most powerful with lasting affects throughout your production cycle.

As Barber notes, as a result of increased operational efficiency and higher product volumes, automating your end-of-line packaging can in effect "remove the potential for human error and all the other limitations you have with manual labor. For instance, a robot can operate 24 hours a day and at the same throughput. You won't see variation from shift to shift, from accidents, or injuries. Plus, robots can handle much heavier loads than we can manually."



2 A CONSISTENT AND QUALITY PRODUCT

Automation can also play a vital role in increasing the quality and consistency of your products by removing the human factor. Fewer manual tasks ultimately results in less variety and variance within the handling of the product and the packaging.

Consistency was an important consideration for PIM Brands, a leading manufacturer of popular brand name confections and snacks, when they were updating their end-of-line packaging automation. The company recently updated and expanded its original system

to include new Schneider case packers, palletizers and robotics, which are able to process 30 cases per minute.

“When you automate, you get better results of the product,” explains Chris Greco, manager of project engineering at PIM Brands. “It’s more repeatable. You’re not relying on a person to do something exactly the same way each time. A person putting a case onto a pallet might put it down differently every time...whereas a robot, it’s the same movement all the time, and it’s more precise.”

This consistency at the end-of-line packaging stage is especially important to the manufacturer because what leaves their warehouse is ultimately what the customer sees.

“When the product is consistently good, not damaged, and is presentable when it gets to the shelf, that is inviting for the customer to buy and take home,” adds Greco.



3 AN ANSWER TO YOUR LABOR SHORTAGE



End-of-line packaging has traditionally been an incredibly labor-intensive and manual process. With labor in short supply, however, these types of jobs are hard to fill and quick to turnover. Automation can help make this job quicker, easier, and safer for the worker by using a set of equipment to aid in packaging, labeling, loading and unloading, case packing, palletizing and more.

At Schneider, they are also adapting to the large turnover manufacturers are experiencing by creating more documentation for the machines. For example, a lot of manual and guidance content is now available directly on the machine or operator interface. Schneider also offers a variety of training packages where they develop a training program specific to the customer and their machine. They invite all their customers to their on-site research and development training lab.

“There can be frequent turnover at some of these manufacturing plants. Where they may have once had long-term seasoned employees, they’re now dealing with people who have just been there for a few weeks or months. It can take time to become familiar with the equipment. Giving operators on-screen guidance and simplifying format changeovers definitely helps with faster adjustments and reduces production disruption,” adds Barber.

4 FLEXIBILITY TO MEET CONSUMER DEMANDS

To meet the ever-changing demands of today's consumers, many brands are constantly changing their products, whether that's the packaging or the product itself, and adding new, fresh options and variety. Having flexible equipment that can quickly adapt and change without large reinvestment is now a must-have.

These solutions often include key technologies like robotics and different types of linear actuators or servos that are more adaptable to different formats that won't need extensive modifications in the future.

One of the key solutions Schneider features on their machines is a system called ProAdjust®, which enables an automatic changeover process. For example, if you are running Flavor A today and then Flavor B a few hours later, an automatic changeover system can make the adjustment with the press of a button.

PIM Brands utilizes Schneider's ProAdjust technology on its case packers to optimize the changeover process, which otherwise would be a manual task.

"With ProAdjust, you go over, you push a button, and the adjustments are made automatically. Those are precise to the point where the cases are formed the exact same way every time and there's no tweaking here and there," says Greco.

Barber concludes that eliminating the manual nature of a traditional changeover not only saves time but further ensures a quality product. "When you're handling changeover manually, there is a lot of room for error. The operator may misread a measurement or an adjustment point, and when they ramp up production, they end up with damaged product or machine jams that interrupt production. So, automating this process saves on time and wasted product," he explains.



5 CREATING A SAFER WORKPLACE

In end-of-the line packaging, many traditionally manual tasks are very repetitive but also performed at a high rate of speed. This often leads to injuries and safety issues.

“Automation helps reduce the overall cost for the manufacturer and helps keep prices down on the products by reducing workplace injuries,” says Barber.

“When you consider lost time due to illness or injury, or just lack of available labor, automation removes all those associated costs. You don’t have to worry about illness or injury with a robot. It’s there and able to run all the time.”

Automation also allows for skilled workers to apply their talent in a manner more suited for themselves. “It’s really

hard to find people who want to do that repetitive work like packing products and loading pallets,” adds Barber. “It’s easier to retain employees who are maintaining machinery or working toward making that equipment as efficient as possible. So, implementing automation can actually help with employee satisfaction and retention.”



6 FINANCIALLY IMPACTFUL



"Automation allows us to produce more product... and increase our capacity, which increases the supply to meet the demand, as well as enhance our product with consistency,"

CHRIS GRECO

MANAGER OF PROJECT ENGINEERING AT PIM BRANDS

When it's all said and done, running a business is all about the bottom line. For years, the return on investment when it comes to automation simply wasn't there. Today, however, the perfect storm of rising costs, consumer pressure and a global labor shortage is making automation a more realistic solution.

For PIM Brands, automation has allowed them to produce more product and ultimately meet the demands and new

challenges manufacturers face. "Automation allows us to produce more product...and increase our capacity, which increases the supply to meet the demand, as well as enhance our product with consistency," explains Greco.

He also notes that while labor is not a huge concern for PIM Brands, investing in automation has helped them significantly reduce headcount, optimize operations, and in turn, reduce the cost of making their product.

"Automation gives you the flexibility to not have to rely on a person to do a repetitive job. It gives you the ability to do that repetitive work without spending a large amount of money," says Greco, adding that "in the end, whatever the initial investment, it pays off to be more consistent and more reliable."



TYPES OF END-OF-LINE AUTOMATION EQUIPMENT

Whether it comes in a bag, box, carton, pouch or roll, just about anything can be carefully and reliably packaged with the help of automation. When it comes to end-of-line solutions, where you are handling products that are already in their primary packaging, there are a couple of different types of machines that can automate the process. From palletizers to case packers to robotics, each solution is chosen based on the specific needs of an individual operation. Those needs are based on a number of factors, which often include floor space, production rates, the amount of different variation they have in the product or SKUs, and cost.

Depending on your operations, you may use one or several of these systems, but typically they all work together through a conveyor system.

“Sometimes it’s a complete end-of-line solution, or sometimes it’s just a palletizer. It really depends on the customer and the requirements, but most of the time, the ideal scenario is we’re doing the complete end-of-line,” notes Barber.

PIM Brands, who had been running Schneider case packers for years, recently upgraded its end-of-line packaging equipment to a complete solution, including new cartoners, robotic palletizers and case packers.

“We had an older case packer, but it wasn’t keeping up with the speeds of the newly installed cartoner, so we did this project to replace that case packer with a case packer that can keep up,” explains Greco.

Prior to upgrading to a complete end-of-line solution, cases would come off the case packer and then somebody would have to hand palletize them. PIM Brand’s new solution eliminates that human touchpoint, so that the product is not being touched from when the bulk product is dumped to the pouching machines until it comes off the palletizer. As a result, the manufacturer has been able to reduce headcount, while also optimizing the efficiency and consistency of its products.

“One of the reasons we put it in the case packers and put in the palletizers it to match the speed of newer equipment, but also to better automate our lines to reduce headcount,” adds Greco. “When we put in the first case packer palletizer system

from Schneider, we went down to one person per shift operating the end of line. So over three shifts, that's a big difference."

PIM Brands set up is one example of a complete end-of-line solution, but the options are customizable based on your business needs. For example, you could use a very monolithic solution that handles the materials and product all within one framework. There are also methods where you distribute those pieces individually in an area that is connected through conveyance.

"You might have a dedicated machine that just erects cases, and it sends those cases down to a loading module that would load the product either with a robot or some other type of electromechanical solution. Then they would transfer to another machine to seal the cases and then continue on to a palletizer," Barber explains.

From there, you get into palletizing. "Within palletizing you can have very different solution sets," explains Barber. "We have anything from very small compact palletizers up to sophisticated multi-line systems."

Schneider primarily works with robotic palletizing because of the flexibility afforded with these solutions. The advantages of robots include reliability, long lifespan, and low maintenance. Robots can also adapt very quickly with

minimal adjustment to accommodate different sizes, pack patterns, formats and shapes of product.

These advantages were especially important for a coffee manufacturer who worked with Schneider to create a flexible solution that could adapt to their ever-changing packaging requirements. Over the last few years, the manufacturer has changed their packaging multiple times to appeal to consumers. Their container sizes have transitioned from a bulkier format to a more condensed format that is more efficient not just on the grocery store shelf but also more appealing to the consumer for home storage.

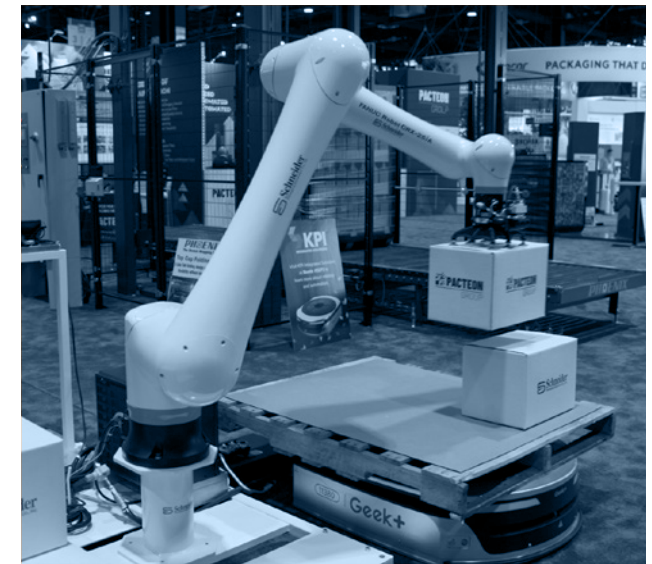
"As they've transitioned through the lifecycle of their products and packaging, they were able to do it with minimal reinvestment into the machines. Because they had a lot of robots in place, it was a less complicated change to the equipment," explains Barber.

As a result, the changeovers were quicker and the uptime was increased. "We had more consistency and reliability from those robotic solutions to foster and support the changes," adds Barber.

Collaborative robots (cobots) are another emerging technology in the packaging space that is gaining traction with manufacturers. The technology is

especially useful for low to medium volume production lines where manual labor is still largely used to pick and pack cases. Cobots are also useful for monotonous, slow-moving tasks like stacking boxes.

"There are situations where you have large, heavy cases of product that are not moving at very fast rates. So it solves ergonomic issues where you don't want a person manually moving 40-pound cases all day and stacking them onto pallets," Barber explains. "It may only have to move two or three cases every minute and stack them on a pallet, but it's preventing those workplace injuries, and you have the reliability of a robot that's precise and always ready to go."



HOW TO GET STARTED WITH AUTOMATION

As we've discovered, there are a number of end-of-line packaging solutions to choose from. But before you make the investment, how can you be sure you are choosing the right equipment for your operations?

PIM Brand's Greco advises first evaluating your existing processes to determine which could be automated. PIM started with robot palletizers, which he says are lower cost and more modular, allowing them to move to another location if needed.

The manufacturer installed these robotic palletizers on lines where they weren't sure how much volume would actually be run on the line, giving them the option to be moved if the line didn't need it.

"Those are kind of good places for people to start if you're just...starting to get into automation. Those are the lines to kind of look at because you're starting off with something that is not a huge investment, but it kind of gets your foot in the door," explains Greco.

Barber adds that choosing the right partner in automation is also important. The key is selecting a partner that understands your objective and is an expert in handling your product—a point he says often sets one provider apart from the next.

"Being an expert in handling the product often makes or breaks an automation manufacturer," he says, adding that having proven success in moving and manipulating different products efficiently and with precision has been key to Schneider's success.

So how can you ensure your automation partner has the expertise necessary to meet your operation's needs?

Barber says it comes down to really qualifying your automation suppliers. "Having somebody with a good reputation and a proven track record delivering a large number of installations in the market segment you're dealing with, that's key."

Schneider has installed equipment in everything from start-ups to Fortune 500 companies. Regardless of your footprint, product or budget, Barber says anyone can start implementing automation with the right partner that really understands their customer.

"You need to be able to rely on them to provide the equipment you need because it is a large investment. You want to make sure that you're able to trust the company that you're working with...and when we have conversations between Schneider and PIM Brands, both companies understand that this is a partnership," adds Greco.

Barber concludes that, "it comes down to choosing a supplier who is going to put in the extra effort and really help them succeed by giving them some of the knowledge, skills and education learned through experience over the years."

ABOUT SCHNEIDER PACKAGING EQUIPMENT CO., INC.

With over 50 years of industry problem-solving in end-of-line automation, Schneider Packaging Equipment Company, Inc. is a leading manufacturer of case packing and robotic palletizing solutions. Headquartered in Upstate New York, Schneider designs state-of-the-art machinery for customers in industries such as: food and beverage, dairy, pharmaceutical, personal care, plastics, and paper. To date, Schneider has installed, and continues to support, over 3,700 world-class machines in some of the biggest manufacturing operations in the world. Driving solutions to address customers' specific issues pushes Schneider to constantly innovate technology, machines, software and ancillary services. For more information on Schneider, please visit www.schneiderequip.com.



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