cavanna
All Around Your Flowpack

3 Strategies to Optimize Bar and Cookie Production

The right product handling strategy requires an understanding of business drivers, service needs and competitive positioning.

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It's no secret that much of the machinery used by food manufacturers in the United States has been in service for many years. And while this equipment may achieve basic functional needs, it often lacks speed and adaptability.

For brand owners, the decision to modernize isn't an easy one. Investment in new systems can be costly and disruptive. Yet holding on to outdated equipment also carries risk: Over time, excessive costs of operation and missed opportunities eat away at profits and put a drag on the business's ability to remain market competitive.

One area of particular importance for bar manufacturers—those who produce candy bars, biscuits, granola bars, cookies and the like–– is product handling. Keeping up with competitors' line speeds, flexing to respond to shifting consumer or retail demands and operating cost-efficiently often come down to effectiveness of feeding, flow wrapping, cartoning and case packing functions.

With this in mind, manufacturers should consider the following three strategies to get the most from their product handling strategy.

The Toll of Hidden Costs (and Some Not-So-Hidden Costs)

Modernizing equipment for today's lean manufacturing brings Total Cost of Ownership into a new light. Upfront investment in new machinery may be significant, but the ROI can be quick if it's able to address the costs itemized below.

Cost	What's Lost Interaction	Typical Savings from Modernizing
Changeover Speed	Uptime, Opportunity	20 minutes to 2 minutes
Damaged Product	Ingredients, Energy	40% product loss to less than 5%
Labor	Salaries, Benefits	8 employees on 3 shifts to 4 employees on 2 shifts
Maintain and Clean	Uptime, Labor	1 hour/day to 15 minutes
Multiple Suppliers	Employee Time	5 suppliers down to 1; one service call
Service and Repair	Uptime, Parts	On-call servicemen to remote repair
Optimized Space	Rent, Construction	1500 sq ft to 800 sq ft; 4 machines in the space of 2
Limited Versatility	New Opportunities	One packaging format to 12 formats
OVERALL EFFICIENCY	***Bottom Line***	***From 60%, 70% or 80% to over 90%***

Strategy 1: Assess Your Current Operations with an Eye for Total Cost

Sometimes good enough is, well, good *enough*. But too often CPG (consumer packaged goods) companies "make due" with outdated machinery and processes simply to meet existing line goals. Yet failing to consider impact on total costs of operation can carry risks to the business, as the company may unknowingly fall behind others on efficiency or carry too much year-over-year expense in areas such as maintenance cost or downtime that make it more difficult to compete.

Recognizing efficiency needs. How can you best assess if your operations are competitively efficient? Because drags on productivity often come on gradually, they can be difficult to discern—until they reach a critical point disruptive to operations.

It's therefore important to be proactive. To avoid undue downtime or revenue loss, it's essential to continually assess line efficiency and proactively monitor for size and frequency of gaps against industry goals. This process is relatively simple: To identify baseline efficiency, calculate the theoretical output of the flow-wrapping line if it were running at full speed during entire shifts for an entire week with no errors, lost product, slowdowns or unscheduled downtime. Then add up the actual output during that time. Divide "actual" by "theoretical" and you have an efficiency percentage, with 100 percent being the unachievable ideal.

For example, let's look at a flow-wrapping line with theoretical maximum speed of 60 cookies per minute. At the end of an eight-hour shift, you could have 28,800 units packed (480 minutes x 60 = 28,800). If you count up the actual output in that shift, and find you have only 25,632 units on the pallet, your efficiency is 89 percent (25,632 ÷ 28,800). Though 100 percent is unachievable, 98 percent and 99 percent are not out of the question. (Although OEE and performance goals are directly attributed to the product, the operators and how the system is laid out, an efficiency percentage below 95 percent is generally considered poor.)

In addition to recognizing low efficiency percentage, another indicator of the need to modernize product handling may be inability for some parts of the line to keep pace with others. For example, consider the experience of one cereal bar manufacturer. It sought to boost the speed of the line to over 600 packages per minute (ppm) when it needed to match the rate coming out of production. The challenge was made all that much more difficult by the stickiness of its product.

Working with Cavanna Packaging Group, a supplier of integrated flow-wrapping solutions, the manufacturer moved to a custom solution that included a row distributing system, an in-line loading system, a three-level storage unit and a Zero 5 flow-wrapper. The new set-up facilitated more than 99 percent efficiency at a continuous speed of 660 ppm, and the stickiness of the product was overcome with conveyors that separated rows carefully. An added benefit? The system could be adjusted quickly to handle 28 packaging-size configurations.

Meeting demands for adaptability. How important are capabilities for different configurations? Not every business seeks to be entrepreneurial. However, constant changes in the market often dictate that companies adapt to remain competitive. Over time, as advancements are made and business trends shift, those with resources to adapt are best suited to maintain their competitive position. As an example, confectionary bar producers with modern equipment can often capture revenue opportunities in ways that those with legacy equipment simply can't. They're often able to quickly reduce package sizes to meet a price point, portion sizes to a retailer demand or increase package options for expanded retail SKUs in ways unavailable to others. Lack of flexibility can lead to opportunity costs for those with

legacy equipment as potential projects call for capabilities that they are unable to deliver.

Carrying a competitive level of operational cost. Also important is examining what it takes to keep the line running. Compared with legacy equipment, modern flow wrapping systems require less maintenance, have shorter repair stoppages and usually require fewer operators. These differences may not seem that great at first. But year over year, the impact of this cost creep on total cost of ownership (TCO) can be profound.

Companies that rely on outdated equipment often carry a drag on productivity and can find themselves with an operational cost burden that impedes or limits their potential for financial success.

Operating seamlessly through integration. Another area cookie and bar manufacturers should examine is the hand-offs that occur during product handing. All too often, brand owners stick with a hodgepodge of legacy equipment simply because it's what was purchased in generations prior. However, there's much more to high-speed flow-wrapping efficiency than meets the eye. Much of the important work is done upstream, preparing products properly for high-speed delivery. When flow-wrapping machinery is running at maximum efficiency, the sorters, feeders and conveyors are feeding or holding the product so there are the absolute minimum of errors and rejects.

For a flow-wrapping system to both maximize speed and minimize defects, the upstream processes must handle often delicate products with care, hitting a sweet spot that is both fast and gentle. Systems designed to work as one from in-feeding to case-packing have carefully considered all these factors—and accommodated for them in the design to maximize efficiency. As such, operational effectiveness shouldn't be an equipment-level focus, but rather a systems-level focus.

What's more, integrated product handling systems are more seamless to operators and more painless to service technicians. Synced electronic controls take operation efficiencies to another level by making many daily tasks easier and faster. For example, on strictly mechanical equipment, a changeover from a package containing two rows of four cookies to a package with one row of eight cookies might take 30 minutes or more. With electronic controls and integrated equipment, that process could take only two minutes. And the benefits that true integration can bring when it comes to servicing are many, such as coordinated training and maintenance.

Vertical buffers can optimize feeding and mitigate time lost to microstops.

Strategy 2: Scrutinize Your Service Calls and Maintenance Schedules

If you ask most bar manufacturers about their production performance, they'll start talking about productivity purely in terms of line speed. However, that's only one part of an operation's performance. Just as important—if not more—should be having a sound track record for minimal line disruption associated with maintenance, service and repairs.

Setting up for service efficiency. One often-overlooked way brand owners can make a significant impact in this area is by choosing one supplier for all feeding, flow-wrapping, cartoning and case packing. Having one supplier creates one-stop accountability, streamlines service and minimizes the level of resources needed for re-engineering during times of growth or change. In addition, equipment for a single line that is designed to work together draws from a common technical knowledge base, easing the repair and maintenance processes around points of equipment hand-off.

Also, building a relationship with a single-source provider delivers many intangibles that contribute to total cost of ownership. For instance, who better to service a system than the engineers and technicians that designed, tested and installed that system?

3 Secrets to Successful Service

Italian supplier Cavanna brings a unique level of service to the U.S. flow-wrapping market. Three areas it emphasizes in particular with regard to service include:

Problem vs. product focus. Customers might find it a bit odd that the staff at Cavanna often doesn't mention flow-wrappers when discussing potential installations. That's because the actual flow-wrapper is only one piece of the puzzle. The staff examines current operations to identify all the problems in the line. Only after thorough and open discussions about production goals and possible solutions to problems can efficiency guarantees be developed.

Convenience. Although Cavanna is based in Italy, it maintains a 24/7 service department that can move on-site. In addition, it houses a fully stocked U.S. parts depot in Atlanta. All customers have access to interactive manuals. Or, if they prefer, they can simply scan parts on their machines using a tablet and the parts will be reordered.

Remote diagnostics and repair also are an underpinning of convenient service. Users can share performance information back and forth with technicians and examine situations together—hands-free and in real time—using smart glasses and cloud-based data sharing. The remote technicians see exactly what the plant floor staff sees on machines, so they can provide immediate guidance.

The right training approach. Proper operation and maintenance is important to keep equipment humming along. To this end, Cavanna starts every engagement with an offer of introductory training when clients come to inspect the equipment before it's shipped. Once the system is shipped and being installed, staff provides in-depth on-site education where customers are exposed to hands-on and classroom training for several weeks. There's also an option for more intensive ongoing training that's completely interactive, where operators learn how to set up and adjust the equipment to a level where they're even tearing it down and rebuilding it themselves. (Now that's service!)

Assessing service level. When bar manufacturers identify whether maintenance and repair is meeting acceptable service levels, typically three factors will be most important:

- *Skill-level availability.* Are service technicians available when needed, and how much time is lost to connecting with the type of assistance needed?
- *Ease.* Is the service provider easy to work with and able to provide meaningful training support during times of repair?
- *Stock support.* How long does it take to access spare parts?

Time is money, and weakness in any one of these three areas can result in costly downtime.

Partnering for performance. Also, consider your supplier to be a key ally in determining your equipment's effectiveness. Staying current with what is happening in the industry is important to not only setting reasonable overall equipment effectiveness (OEE) targets for your operation but also recognizing when outdated equipment may be contributing to higher-than-average unplanned downtime, loss due to quality rejects, variance from production rate and the like.

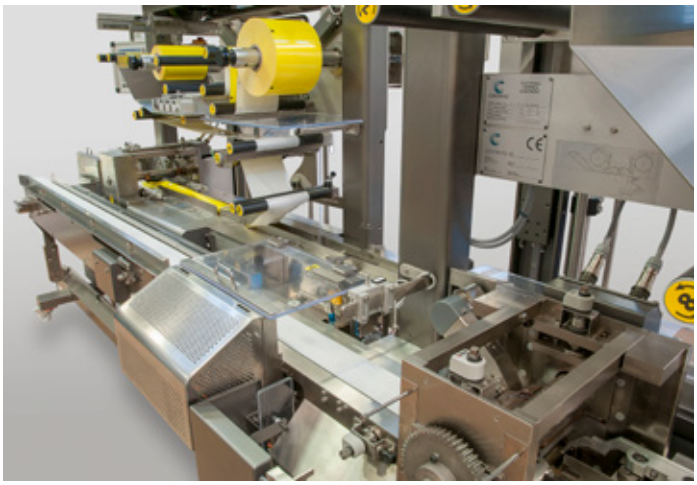
Strategy 3: Periodically Assess "Future Focus" of Equipment

Many small and mid-size cookie and bar manufacturers rely on basic, off-the-shelf equipment that has been adequate for their needs even though it might be decades old. An all-too-common occurrence though is growth in size or type of business through the years where equipment hasn't kept pace for the operation as a whole.

Recognizing equipment strategy as a strategic business driver—or limitation. Equipment that was "fast enough" to get the job done in a company's early days can eventually hit a point where it hinders business growth potential. Too often, no one notices when this tipping point occurs because they haven't taken time to periodically assess performance.

Or perhaps the legacy equipment packages only one product in one configuration. It is very difficult to calculate the opportunity costs of business that might have been booked if equipment had been more versatile.

For example, what about when a granola bar company suddenly needs to expand rapidly to meet demands from a new market, such as energy bars? Or what if the trend from abroad of replacing secondary cartons with flow-wrapping continues expansion in the United States, just like the move toward flexible packaging at the shelf has occurred? The future always favors the well-prepared.



To support efficiency, the innovative layout of Cavanna's Twin Slim flow-wrapper can run two lines in the space traditionally occupied by one.

Lastly, it's important not to overlook the role of total footprint when weighing strategic value of flow-wrapping systems. Existing equipment may be taking up far more space and be using more labor than the business needs—space and resources that could be devoted to running additional lines or developing new business.

Consider one European chocolate bar manufacturer that replaced its major multinational equipment with a Cavanna Twin Slim flow-wrapper. It was able to maxi-

Key Reasons Cookie and Bar Producers Choose Cavanna

- **System integration.** Integrated systems deliver consistent quality. Having design, engineering and fulfillment all stem from the same source resolves conflicts before they become problematic.
- **Versatility.** Designing each machine not only to achieve a specific operation but also to be open to expanding operations is a key consideration in the age of SKU proliferation.
- **Custom-fitted.** Customized lines create smooth transitions between feeding, sorting, flow-wrapping, cartoning and case packing. The benefits are less downtime for maintenance and stoppages.
- **Clean and safe.** The peace of mind that comes from robust equipment designed to stay clean and built to last allows food companies to focus on more pressing business concerns.
- **Unified support.** Complete system installations provide full, unified support. It's always preferable to have only one phone number to call and only one point person to consult.
- **Knowledge base.** Technicians who build machines are the technicians who service it. They understand every piece of equipment, the underlying design philosophy, and the fastest solutions.
- **Long-term trust.** Open communications from build to daily operation makes the difference.

mize production inside an 8 m x 10 m footprint, going from 100 pieces of product per minute to 500 pieces. The complete system also included two robots that further increased production and reduced labor. In the end, four employees on two shifts did the job where once eight operators on three shifts were needed, opening considerable resources to invest elsewhere in the company.

Anticipating change in the regulatory climate. There's no denying that food safety advocates are increasingly pushing for increased regulations around sanitary operations, with even dry goods being a focus area. Even if a bar manufacturer is not ready to retrofit its facilities or invest in new space to support the water demands associated with more stringent sanitary wash-down, it behooves business owners to prepare operations for such a future. Becoming efficient using equipment that is sanitary-supportive gives the operation an advantage when the time for transition eventually comes.

Whether a company is following HACCP [hazardous analysis critical control point] Principles, preparing for Food Safety Modernization Act deadlines or bringing production in line with Ingress Protection ratings, its eye toward the future will certainly pay dividends.

What Can You Do?

By considering all your current costs—and potential gains—the total value proposition of your product handling approach can come into clearer focus. The heart of any cookie and bar production is the efficiency and flexibility with which output can be managed. Speed, adaptability and maximizing uptime are core not only to current competitive position but establishing a successful business into the future. When you calculate the profitability of new equipment over decades, you have begun the process of setting reasonable yet reliable ROI time scales. Complete, customized flow-wrapping systems can be the foundation for efficient and flexible operations for years to come.

The Zero 5 NKZ from Cavanna facilitates fast format changes for flow wrapping slug products, with special features that make it adaptable for many product shapes and slug configurations.

About Cavanna Packaging Group

Cavanna is an Italian company leader in the flowpack wrapping systems field. It designs, produces and distributes worldwide automatic machines and turnkey systems for singlepack and multipack wrapping of food, pharmaceutical and non food products. A family company, Cavanna is a safe and reliable partner the customer can turn to with absolute confidence, to study and create together custom-made packaging solutions. This orientation toward the customer allows Cavanna to offer full, 360-degree service. The strengths of Cavanna are: competence acquired in a 57-year history, continuous assistance to the customer and a DNA strongly oriented to research and technological innovation. Cavanna features four plants, 42 agencies covering 58 nations, more than 5,000 machines and completed lines installed worldwide, more than 900 customers and more than 100 patents registered. Come and visit us...We will show you how we work!

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