FRESH BREAD TAKES A FREE RIDE!

Colborne Foodbotics, LLC.

The Baking Industry today has a great opportunity to increase efficiency, reduce costs and make the single largest contribution it has made to date for the Sustainability initiative. This opportunity presents itself due to the unique physical properties of many fresh baked goods which until recently have pretty much gone unnoticed. As a result, our industry today unknowingly ships a substantial amount of air along with their products every day.

If we can replace the air with additional product, we would gain in so many ways. In essence, by packing extra loaves of bread in the bakery tray, those loaves travel through the distribution system for free! The benefits start at the bakery and follow right through the entire supply chain network. All it takes is putting more fresh bread, buns or rolls into a bakery tray and the resulting efficiency gains throughout the entire distribution system can be very impressive. The actual savings depends on the particular product and prior company practice. Real case studies done to date indicate that there are opportunities to add up to 25% more bread and up to 50% more buns into the tray.

The simple reason for this great opportunity is two fold. First, the fact that these fresh baked products shrink significantly by the time they arrive at the retail store is just recently being acknowledged. Second, it is only over the past five years that industry pioneers have tested, evaluated and proven the opportunity and developed a technology to analyze optimized pack patterns and gently compress packaged products at the bakery and load them into the bakery tray at very high speed and efficiently levels.

There was some surprising resistance to considering this opportunity early on. The two most popular concerns were: *"Compression will damage my product"* and *"Our company presently has the most efficient pack patterns possible"*. It is now well proven that compressing fresh product to its eventual shrink point prior to transportation actually increases shelf quality. It is also now very well documented, that although most companies have started using some compression, no one in the industry is yet close to optimum. There are however, a few who are making gains and developing plans to get there in the next few years.

The biggest problem today is the traditional corporate capital expense justification process. In most wholesale bakeries, the responsibility for preparing this documentation is a joint effort carried on between Engineering and Plant Operations personnel. There are many benefits to automating the bakery itself, but large portions of these benefits are intangible and difficult to calculate. This is why so many bakeries are still manually hand packing products into bakery trays and cases. Those that have ventured into automatic basket loading have generally done so with low cost solutions that are very limited in features and capability and may even end up decreasing efficiency and quality.

The huge benefits of increasing pack density come from the distribution side of the supply chain for the wholesale baker. The typical corporate capital expense justification process for plant equipment doesn't generally incorporate savings that occur outside the

plant or immediate local production area. Hence, what is estimated to be 80-90% of the savings and financial benefit of increasing pack density is ignored in the financial justification to top management.

It is estimated that distribution costs vary widely in the range of 10-50% of product cost depending on the business model of a particular baking company. We all know about the rise in wheat prices that are squeezing our margins. Fuel prices are also up and forecast to continue rising well into the future. Labor costs will also continue on an upward trend and it is likely that the cost of bakery trays will keep rising at accelerated rates due to their dependence on oil. All together, these inflationary factors are going to put considerable pressure on our businesses to become more efficient and minimize future price increases. The baking companies that best respond to these challenges will be our industry leaders of the future.

To better understand the savings let us answer a few pertinent questions and put the issue of increasing pack density into perspective:

What makes this opportunity possible?

Most of the benefit of increasing pack density comes from the shrinkage, compressibility and elasticity of bread and other baked goods.

From the time bread comes out of the oven it begins to shrink and by the time it arrives at the store or restaurant, it can have lost up to ¾ inch in its length or width. Since you have typically 5-6 loaves across in a bakery tray, this can add up to 4 inches or more of extra space in the basket when it arrives at the store.

How often do you ship other products loose in their package? It is being done every day in the Baking Industry! Why?

What is the technology that's required to provide these benefits?

Colborne Foodbotics' **BBL Systems** are designed to gently compress the bread and provide a snug fit into the basket. **POP**, a graphic software interface, has been developed to simplify optimization of pack patterns that maximize pack density. These powerful but gentle systems have now been proven to actually increase product quality by keeping the bread more secure on its bumpy ride to the store.

What are the benefits of utilizing BBL, POP and increasing pack density?

<u>In the Bakery:</u>

1. Labor Savings (fewer baskets to handle)
2. Reduced warehouse/shipping space required
3. Higher product quality (Gentle handling and vision inspection throughout)
4. Fewer "lost time injuries" and higher safety levels
5. Use of **POP**, a proprietary software tool to help facilitate pattern optimization.

In the Distribution System:

1. Reduction in tractor trailer trips from bakery to depots
2. Reduction in floor space required at depots
3. Reduction in handling and personnel at depots
4. Less in/out at each customer stop => increase in customers per daily route => fewer routes => fewer route trucks => fewer drivers => fewer maintenance and support people
5. Reduction in required truck replacement capital cost
6. Fewer bakery trays in the system
7. Substantial reduction in annual replacement costs for bakery trays
8. Higher product quality and consistency delivered to end customer.
9. Major contribution to Sustainability Program

What is the magnitude of the benefits from increasing pack density?

Colborne Foodbotics has analyzed hundreds of bread/bun/roll pack patterns and run actual physical tests in the bakeries on a wide range of products. It is not uncommon for **POP** to identify opportunities to pack 25% more bread into a bakery tray and 50% more buns and rolls. Our experience indicates that as an industry overall, we could achieve pack density improvement of 15% in bread and 25-30% in buns/rolls. The magnitude of these benefits is huge, with both real bottom line improvement from very tangible cost savings and probably the single largest contribution your company will ever make to the Sustainability initiative our industry is strongly supporting.

To emphasize the real savings, we can refer to a recent customer analysis that indicated after a comprehensive test conducted on fresh product in the bakery they determined that their 53 ft. trailers, which generally carry approximately 1100 trays of product per load, will soon be carrying approximately 30% more units of product on each trip.

How do we calculate the financial impact of increasing pack density?

Increasing pack density translates into bottom line improvement as follows:

1. Labor savings in the bakery – come from material handler reductions. All product lading is fully automatic. Since higher pack density means fewer full baskets to handle and fewer stacks of baskets to move, there are also fewer people required to move them.

2. Reduced floor space required in the warehouse/shipping area – This can be evaluated on a plant by plant basis according to the need for additional space locally. Generally where there is little benefit, there is an opportunity to increase plant capacity with very little “bricks and mortar” expense.

3. Reduction in tractor trailer expense – Are all truck runs being made with full loads? If not, is there a way to combine some loads as you reduce each load further by increasing pack density?

4. Reduced floor space in depot – Similar to #2 above.

5. Reduced manpower in depot – Should be reduced in direct proportion to the pack density increase, possibly with a small efficiency adjustment.

6. Fewer route trucks, less fuel, maintenance and support - What does it cost you to operate each route truck? We believe that a reasonable estimate for the reduction is going to fall in the 50-75% range of the increase in pack density.

7. Fewer drivers – A direct result of #6 above.

8. Lower truck replacement capital costs – Also directly related to #6 above.

9. Reduction in required bakery trays – Directly related to the increase in pack density minus a small efficiency factor for transport of partially filled baskets.

10. Lower bakery tray replacement capital costs – First year should be reduced close to zero. Thereafter, annual expense should be approximately 20% below traditional levels.

The largest financial impact comes from the last five items above and can be estimated ***in their totality*** on a reasonably accurate basis with a quick analysis of transportation and bakery tray costs. However, to realize the full financial benefit may take a few years to accomplish. It takes a cross functional team working together to develop a coordinated plan to confirm optimum pack patterns, and develop a phased implementation plan to convert sales/logistics/plant systems to support the new pack patterns.

The process can be accelerated for all new products since they can immediately be set up to take full advantage of the benefits of increasing pack density. Where regional issues preclude a national change in pack pattern, BBL systems can easily be programmed to pack multiple patterns for the same product with no changeover.

In order to capitalize on the savings potential, top management, today's industry leaders, need to get more involved by pulling together cross functional teams that analyze the full benefits of increasing pack density. It is only through this process that as an industry, we can begin to take real advantage of this enormous opportunity. It's time that we start giving more of our bread, buns and rolls the free ride that they deserve and help protect the environment as a bi-product of our own savings.

Appendix A
Additional Benefits to Colborne Foodbotics BBL System

The Colborne Foodbotics BBL System offers a great deal of additional benefit other then ability to improve your current pack density. The following items are additional considerations when evaluating this system:

1. Labor Savings (fewer people, packing, inspecting, handling bread and setting up/maintaining equipment)
2. Significant improvement in operating efficiency (99.9+%)
3. Less equipment downtime (MTBF, diagnostics, reliability and changeover)
4. Higher level of flexibility (Capability of robots + universal tooling)
5. Reduced Bottlenecks (Single cell can handle 100+ loaves per minute)
6. Only bakery system to come with 24hr web based training/troubleshooting.
7. Higher Quality (Full Vision Based Inspection and Rejection). Including open bags!