VIDEOJET

Baked goods

Leverage on-demand case coding solutions to help reduce complexity and achieve cost savings

Evolving consumer flavor preferences and a shift to healthier food choices are causing baked goods producers to grow their product offerings. Product trends include gluten-free, low-fat, low-carbohydrate, non-GMO and some producers are even moving away from the use of artificial additives. These trends are creating greater complexity for baked goods producers.

The Challenges:

Manufacturers are being asked to place more information on shipping cases and cartons. Data such as product formulation, storage instructions, logos, bar codes and graphics are increasingly being requested from channel partners and customers. Holding inventory of pre-printed cases for this volume of different SKUs costs money in terms of material and storage. Additionally, the time to changeover shipping cases for each SKU slows down the production process.

Videojet Advantage:

Baked goods companies can benefit from the wide array of solutions Videojet offers to meet their desired coding requirements. Going beyond just batch, date or lot codes, Videojet equipment can print variable text, bar codes, logos, images, and 2D DataMatrix codes, using a variety of different technologies:

- Thermal Inkjet (TIJ) on paper carton or boxes
- Large Character Inkjet (LCM) on large paper cartons, boxes or shipping cases

Both large character inkjet and TIJ products can be configured to utilize multiple printheads, allowing for large print areas. Additionally, Videojet products are supported by the largest service network in the industry, helping to keep production running and avoiding coder-related downtime.

Consumer trends and coding considerations

One of the biggest consumer health trends related to baked goods has been in the area of gluten-free products. Originally created for consumers with celiac disease or any intolerance to gluten, global retail sales for gluten-free products have doubled since 2007 to $2.1B, according to Euromonitor. In fact, products labeled as gluten-free have increased from $11.5B in 2010 to $23B in 2013. General Mills now offers more than 600 gluten-free products (www.generalmills.com).

Growing complexity

With changes in consumer tastes driving producers to generate new flavors, new ingredient formulations and allergen requirements, there is more complexity in baked goods manufacturing. While the number of production and packing lines usually stays constant, each is taxed to do more and more as the demand by consumer and channel partners grow. This growth increases complexity, especially for producers with frequent changeovers that use pre-printed packaging.

Consumers' taste preferences are also shifting to healthier baked goods options. According to a Mintel report, nearly 60% of households with one or more child buy baking and desert mixes with more natural ingredients such as non-GMO formulations.* Even traditional manufacturers have shifted recipes to include lower fat content, and even ingredients such as sugar and butter are being added back into products in order to replace artificial additives.

* Mintel report: *Baking and Dessert Mixes,* August 2014
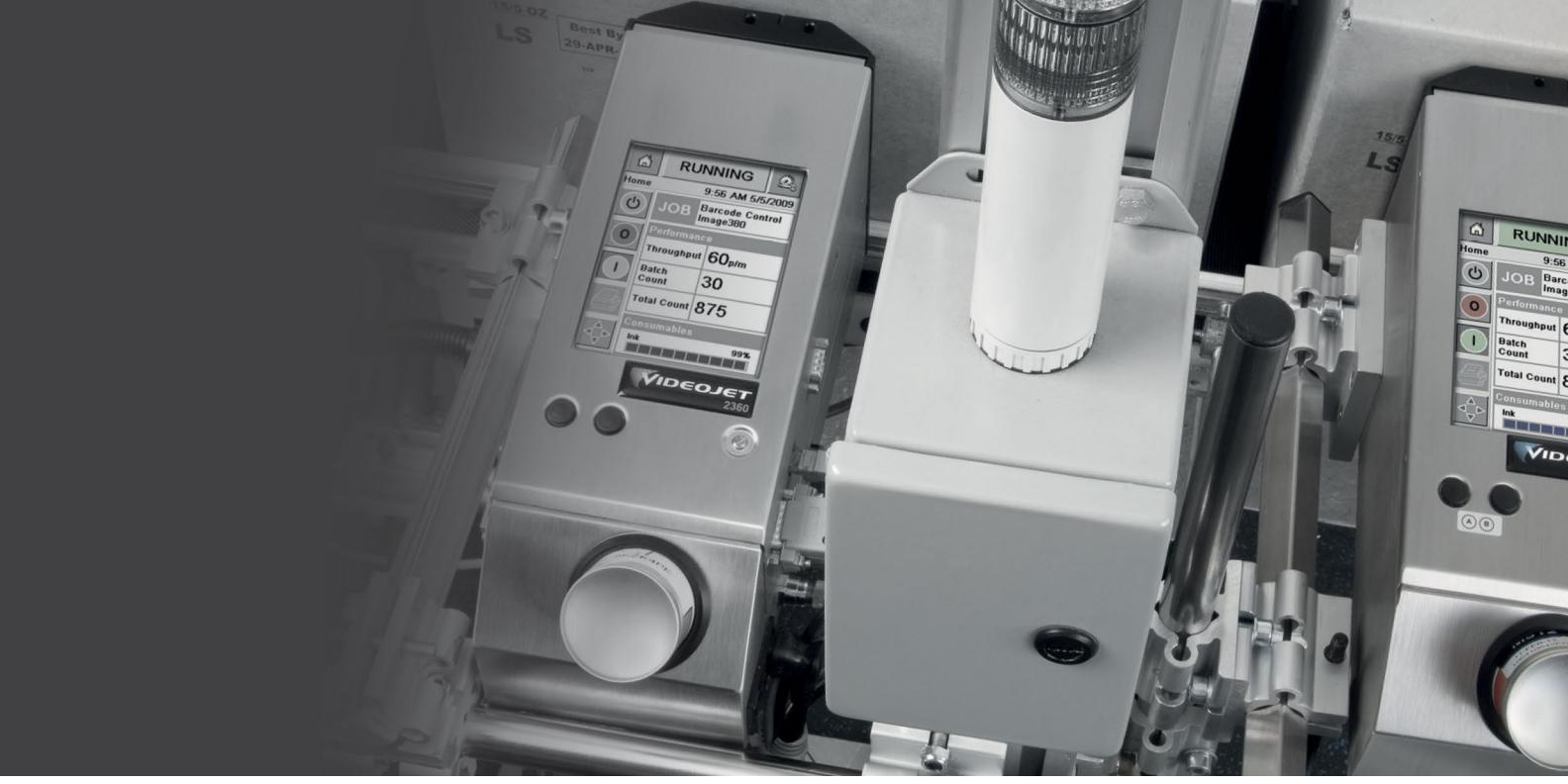
Channel coding requirements

Most baked goods manufacturers sell to different channels such as grocery stores, club stores, drug stores and distributors. Apart from different packaging types such as family size offerings with zipper pouches, to grab-and-go pillow packaging, outer case coding requirements also vary. Channel partners are requiring more than just a simple date and time stamp on shipping cases. Increasingly, information such as product formulation, storage temperature, logos and customer addresses are being added to the outside of the case. Manufacturers are often using pre-printed cases to meet requirements from channel partners. However, issues can occur with inventory management when using pre-printed cases, including having to purchase large quantities that can become quickly outdated, as well as delays during changeover.

The increasing variety of retail product options places pressure on packaging teams to create more SKUs with product-specific printed information. It also places a higher burden on manufacturing teams to accurately source, manage and properly utilize its active packaging SKUs.

Disadvantages of pre-printed packaging include the need to purchase and store large quantities of cases. Not only must producers outlay the capital investment to procure and store these materials (which are usually purchased by the truckload and can take six plus weeks from order to delivery), but they must also carefully manage the accurate and timely swap out of packaging with each SKU produced. And with large pre-printed quantities on hand, errors or required updates to case packaging can be both costly (in regards to waste) and time consuming to implement. A print-on-demand coding solution can help eliminate the costly caveats of pre-printed packaging.

Videojet on-demand coding solutions
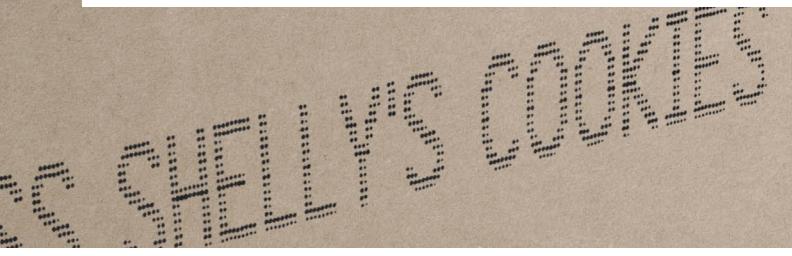
Large character inkjet

Large character inkjet printing is a cost-effective way to customize standard corrugate shipping cases and shelf-ready boxes. These systems can replace or customize your pre-printed shipping boxes, making them retail-ready with product pictures, bar codes, logos and shipping information. Customized boxes help enhance efficiency in your supply chain and allow adding software systems which track your product through the distribution channel. Large character inkjet is ideal for larger graphics, text and bar codes on cases. Videojet high resolution large character printers provide print resolution up to 180 dpi and print heights up to 2.8 inches. In addition, multiple printers can be operated from a single leader unit, or can be controlled remotely from a central location.

Case with pre-printed color logo and ingredients listing along with variable, on-demand printing
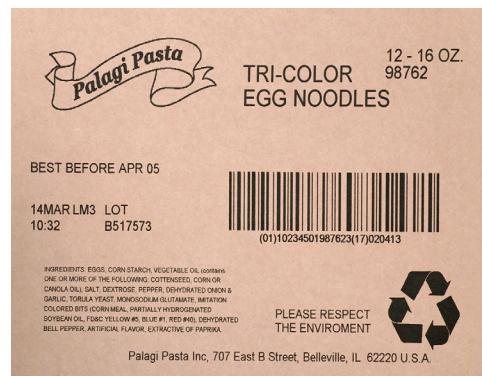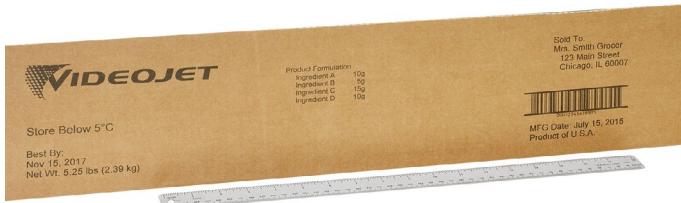
**Case with all information printed on-demand**

Thermal inkjet

Select thermal inkjet (TIJ) printers are able to use fast-drying solvent-based inks and can print at speeds up to 220 feet /minute.

Benefits of TIJ include a small footprint, maintenance simplicity, and ease of integration into production lines. Unique to TIJ is its ability to print tall, high resolution codes, images, and text up to two inches in height without slowing down the production line. Traditional TIJ printers are ideal for printing on porous substrates, whereas solvent-based TI is ideal on non-porous materials. Videojet TIJ solutions deliver a maximum resolution of 600 x 600 dpi, print heights up to a half inch per printhead, and the ability to easily stack up to four printheads for 2-inch messages. A solvent-based ink version is also available.

Figure 1

| Step 1: Waiting for print signal | Step 2: Heat generation creates steam bubble | Step 3: Bubble presses ink through nozzle | Step 4: Bubble shrinks, ink refills cavity |

Heater
Nozzle
Ink
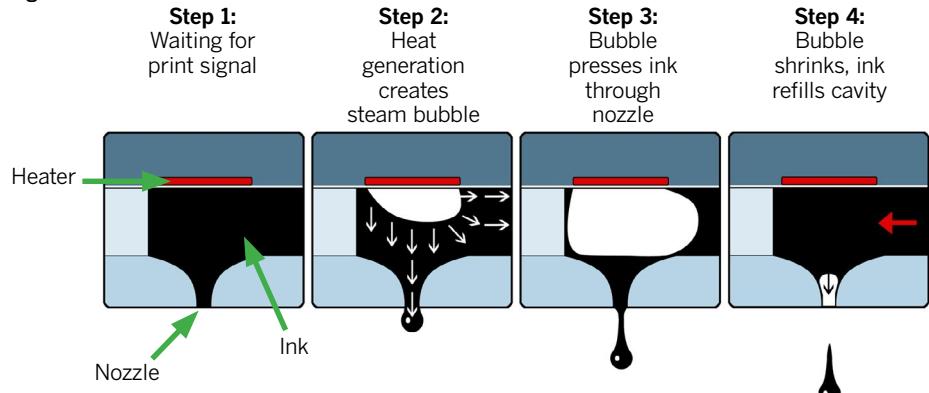
Benefits of on-demand printing

Reduced storage space: Due to different brands and products, many organizations have multiple types of pre-printed cases of the same size. If all information is printed on-demand, only one plain case type is needed per size. This can result in dramatic savings in required floor space and storage cost.

Reduced case inventory Besides large amounts of floor space, pre-printed cases also tie up significant amounts of working capital (inventory costs). On-demand printing on plain cases reduces these costs in two ways: the total number of cases will be significantly lower and the cost per case is less since they don't require printing.

L**ess carton obsolescence** Pre-printed cases with "old" variable data, due to a defunct product line, a major brand change, seasonal requirements or a promotion that ended typically are scrapped.

Improved equipment performance Long-term storage of corrugate can degrade the material over time and cause performance issues. Previous studies of case erecting and handling equipment have shown that "fresh" corrugate cases perform better. Fewer jams, better throughput and simplified setup lead to more uptime, production and profit.

Reduced changeover time By using generic cartons, cases are only changed when a different size is required. Print messages can be changed in seconds, so the line can be ready for coding different products in a few minutes, increasing production throughput.

Increased uptime Currently, case changes often delay the start of a production run. Finding the correct case, loading it in the case erector and adjusting the equipment all take time. With on-demand case printing, it's as simple as changing the message to be printed, and you are ready for production.

The most important result of moving to an on-demand coding solution is cost savings. For example, a large food manufacturer with multiple locations around the US had a payback of less than twelve months in one facility by switching to an on-demand case coding strategy.

The Bottom Line

With increasing demands for more product variety from consumers and channel partners wanting more and more detail provided on case packaging, using pre-printed case packaging may no longer be the right solution for your production. Videojet offers two on-demand coding solutions to meet your varied needs. Configurable to your production, Videojet TIJ and large character inkjet printers can offer improved efficiency, cost savings and the reduction or elimination of costly pre-printed packaging.

Ask your Videojet representative for more guidance, a production line audit, or sample testing on your substrate.

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