



Reduce case costs and help simplify production processes

On-demand printing can help reduce SKU complexity and improve operational efficiency



Achieve cost savings while simplifying production and case SKU management

It is very common for manufacturers to use pre-printed cases and maintain a variety of cases for different products and product sizes. This mode of operation works, but is there a better way?

This white paper explores how you can simplify your production, lower waste and inventory levels of pre-printed cases, and achieve operational efficiencies by moving to an on-demand case printing solution.



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Meet packaging demands, drive efficiency and reduce costs?

While there is a lot of noise around shelf-ready packaging, most shipping is done in pre-printed cases. The challenge for producers is to identify solutions that can meet daily production needs while driving operational improvement.

Achieving operational improvement is made even more challenging as the increase of product variety is driving a proliferation of new, pre-printed cases with product-specific information and ITF-14 or GS1-128 bar codes.

On-demand case printing technologies can now help to simplify operations and reduce the expenses associated with designing, planning, buying, stocking, and using pre-printed cases.

Operational challenges and pre-printed cases



Challenge:

Increasing variety of products

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

Challenge:

Importance of uptime

For perishable and non-perishable products alike, it is imperative that the line keeps running. In addition, finished goods inventory ties up capital and therefore, it is far better to fill, pack, and ship product as quickly, accurately, and as efficiently as possible. Adding packaging complexity does nothing to simplify or improve this process; in fact, it makes things more difficult. Also, each additional SKU likely has an associated product changeover. With constant pressure on operating margins, it is imperative to simplify manufacturing processes and to increase production uptime.

Challenge:

Lowering shipping case costs

Many manufacturers utilize pre-printed cases that include a variety of branding and product information. Using pre-printed cases creates several financial and operational challenges. These can be measured to determine the impact on your bottom-line. These challenges are a function of the time and effort required to juggle a variety of case SKUs while also making sure that the correct cases are on-hand. This cost is incremental to the cost of pre-printed cases and when evaluated, could prove to erode operating margins.

On-demand case printing

Many producers have adopted on-demand case printing to overcome the challenges of SKU proliferation, increased production demands and the costs associated with pre-printed cases. On-demand printing can achieve comparable print quality and can be easily integrated into your production line.

Hidden costs of pre-printed packaging



New case SKU costs

These include time and resource costs associated with creating a new case SKU such as design/artwork creation, print sample production, approval time, as well as the cost to maintain a new case SKU through its life cycle.

On-demand printing reduces:

- Sampling, approval, and artwork file management costs in that case samples can be edited, printed, and approved on your production line.
- Design times with the capability to easily edit messaging or codes on one of your existing standard case designs.
- Pre-printed case requirements regardless of SKU growth. Standardization to fewer, standard cases means less SKUs to manage overall.

Maintaining optimal inventory

These include costs associated with purchasing and maintaining inventory levels, as well as inventory storage costs.

On-demand printing reduces: The time required to manage and optimize purchasing of pre-printed cases as well as physical inventory costs. This allows fewer SKUs to be managed in a just-in-time inventory management process.

Staging of pre-printed inventory

These costs are incurred to ensure adequate work-in-process inventory levels and include the moving of inventory back and forth from the production line to stocking locations.

On-demand printing reduces: The number of case SKUs that have to be staged, managed and transported to and from the production line and the manpower associated with moving pre-printed cases in and out of the production area.

Production error costs

Costs related to running out of product-specific cases during production – leading to unscheduled downtime and the cost of rework.

On-demand printing reduces: The need for product-specific cases, especially if inventory should run out during production. Each case is printed directly on the production line, exactly when needed, by an operator or production planning system. This helps to improve process efficiency and avert downtime, rework and scrap.

The cost savings are clear

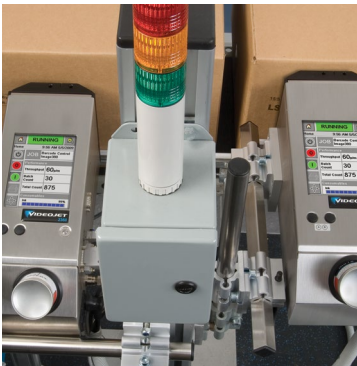
This chart shows the financial benefit of upgrading to an on-demand printing solution versus using pre-printed cases. In this scenario, the manufacturer stocks 40 types of pre-printed cases and two different case sizes. Taken into consideration is the cost of storage space, scrapping of materials and case changeover.*

| Annual cost (USD) | Cost per SKU | Pre-printed | | On-demand print | |
|-------------------|--------------|-------------|------------------|-----------------|-----------------|
| | | SKU's | Total | SKU's | Total |
| Space | \$ 672 | 40 | \$ 26,880 | 2 | \$ 1,344 |
| Scrap | \$ 225 | 40 | \$ 9,000 | 2 | \$ 450 |
| Change over | \$ 125 | 40 | \$ 5,000 | 2 | \$ 250 |
| TOTAL COST | | | \$ 40,880 | | \$ 2,044 |

SAVINGS \$ 38,836

*Assumptions: 1) Each SKU requires 64 ft² of storage space at a cost of \$10.50 per ft²; 2) For each SKU 150 cases are scrapped each week at a cost of \$0.03 per case; 3) For each SKU there is one changeover per week; 4) Each changeover requires 10 minutes of labor at \$15 per hour.

Opportunities with on-demand printing



Simplifying new product launches

New product launches usually require creating new case packaging designs or tweaking existing designs. Pre-printed cases take time to design, prototype, approve, and plan for production. All of these actions add to product launch activities and can delay launch if something goes wrong.

On-demand printing solutions can help speed your time to market. They simplify new product launches by reducing the time and effort to create and approve new case packaging. You can design the packaging information and print prototypes directly on your line, and the approval process can be shortened by having the right people on the line to review changes as they are made. By addressing the issue directly on the line, resolution takes minutes instead of weeks for new packaging to arrive.

Lowering case maintenance costs

Producers with products sold under different brands, sizes or flavors face escalating challenges with the growing amount of pre-printed information on their cases. Unique information placed on the case increases the number of different case SKUs that must be ordered and stocked in each of their production facilities.

On-demand printing lets you reduce your number of unique case SKUs because you print the required information as needed on the line. Over the long run, this can save your company money, allowing you to focus inventory management activities on fewer standard case SKUs.

On-demand printing can simplify new product launches by reducing the time and effort to design and approve new case packaging. Now you can create customized case information in real-time and print prototypes directly on your line.



With an integrated on-demand printer, the printer can identify what is being produced and can help ensure proper packing and printing of both product and case.

Reducing production management costs

Making sure the correct cases are on the line, and in the right quantities, takes effort and requires a process to minimize mistakes. Pre-printed cases require operation resources to get the right cases on the line when they are needed, and to make sure the wrong cases have been removed so that your line employees cannot make mistakes.

On-demand printing alleviates this problem because the correct information is printed on the case as it is packed. With an integrated on-demand printer, the printer can identify what is being produced and can help ensure proper packing and printing of both product and case. This frees up your production staff to focus on other production functions.

Reducing the impact of product shrinkage

Product shrinkage typically is caused by damage to the inventory while stored in primary stocking locations. This can happen if a forklift runs into or mishandles the items or as a result of water or environmental damage. Further product shrinkage can occur as case designs are obsoleted and the remaining case inventory cannot be consumed.

With a print on-demand solution, when cartoned inventory is damaged and needs to be reworked, cases can be printed immediately on the line and product recartoned without concern of inventory levels of pre-printed cases. And, in the case of design changes, new artwork can be downloaded directly to the printer and cut into production immediately, eliminating the need to have new cases printed and having to dispose of obsoleted case inventory. Printing what you need, exactly when you need it, helps to reduce the impact of product shrinkage, simplify operations and reduce associated costs.

Help reduce production errors

Items packed incorrectly in pre-printed cases complicates product disposition during the unfortunate event of a recall. Additionally, this mismatch can create confusion in the supply chain. This may result in product returns if automated case bar code scans don't match expected delivery information. The ramifications of making mistakes can ripple throughout your entire operation and greater supply chain.

Helping to eliminate these types of production errors, Videojet offers Code Assurance. When integrated with all of your Videojet printers on your line, Code Assurance enables you to get the right code in the right place, on the right product, time after time. Producers can also synchronize the printer integration process with their production planning process to improve production efficiency.

If integration of a printer into your line cannot be accomplished, the process can still be error-proofed by using bar codes and scanners to select the correct information to print. By integrating scanners into the printing system, the operator can scan a work order bar code or the UPC bar code of the item being packaged to tell the printer what to print.

On-demand solutions, clear and simple



Printer cleaner on



Printer cleaner off

Producing high quality print with minimal operator intervention

Print quality when it counts: Videojet has developed a unique technology for our Large Character Marking system that purges the printhead to help ensure superior print quality. This purging can occur as often as before every print, without wasting any ink, helping to ensure the highest quality print with minimal operator interaction.

Simple printer control: In hectic production environments, time is money and errors painfully consume both. Simplification of processes and interfaces is a great way to improve the daily activities of your associates. The user interface is the primary point of interaction with the printer – both in controlling the printer and in getting actionable status information back from the printer. Videojet has developed a user-friendly interface that presents operational information in a simple manner that uses a touch-screen interface to guide operators.

Simple printer operation: During the course of daily operation, printers will run out of consumables. In some situations, running out means the printer stops printing, which has a dramatic impact on production. In other cases, the print quality begins to decline. A low consumable warning provides advance notice of this potential issue, helping to avert the likelihood of unscheduled downtime.

Adding ink is as simple as installing a can into the printer. You can reload the ink while still printing, so there is no need to stop production. And the can is sealed outside of the printer, so there is little chance for spilled ink – helping to ensure a cleaner, safer operating environment.



The Bottom Line:

On-demand case printing can help remove complexity and cost from your production

With less pre-printed SKUs to design, print, purchase, manage and store, an on-demand case printing solution offers producers a new level of simplicity, efficiency and cost savings. Videojet case coding solutions also provide exceptional print quality, easy integration and minimal required operator interaction, all helping to improve your operation.

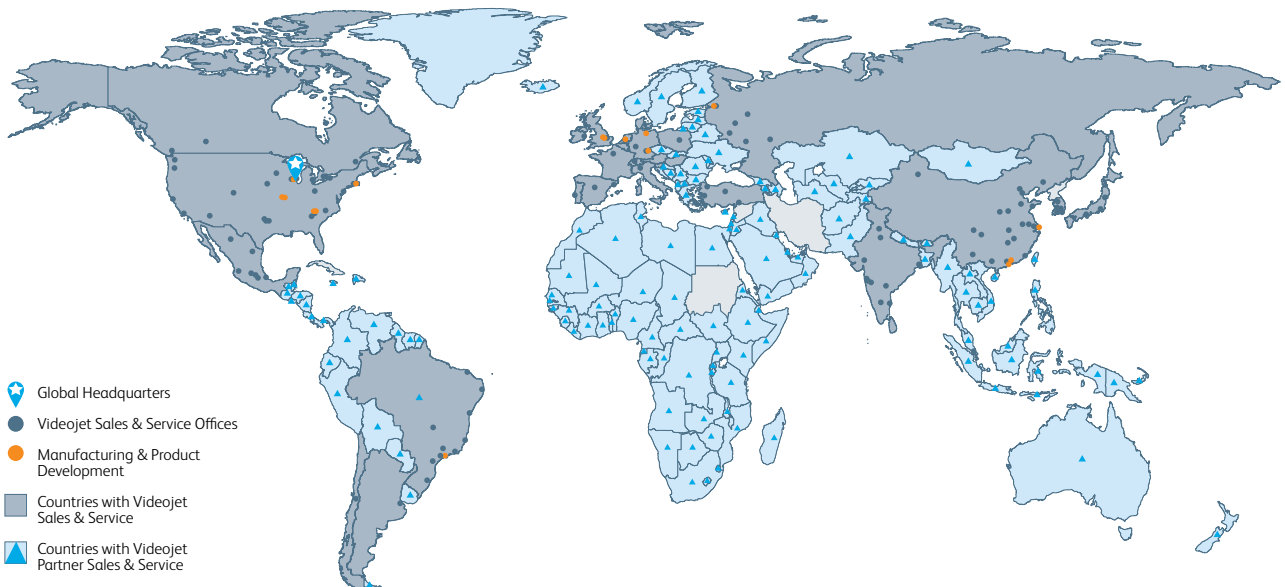
Peace of mind comes as standard

Videojet Technologies is a world-leader in the product identification market, providing in-line printing, coding, and marking products, application specific fluids, and product life cycle services.

Our goal is to partner with our customers in the consumer packaged goods, pharmaceutical, and industrial goods industries to improve their productivity, to protect and grow their brands, and to stay ahead of industry trends and regulations. With our customer application experts and technology leadership in Continuous Ink Jet (CIJ), Thermal Ink Jet (TIJ), Laser Marking, Thermal Transfer Overprinting (TTO), case coding and labeling, and wide array printing, Videojet has more than 325,000 printers installed worldwide.

Our customers rely on Videojet products to print on over ten billion products daily. Customer sales, application, service and training support is provided by direct operations with over 3,000 team members in 26 countries worldwide.

In addition, Videojet's distribution network includes more than 400 distributors and OEMs, serving 135 countries.



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