



## **How to Build Sustainability into Your Strategy - Part 2**

By [Pat McGrew](#)

Inkjet printing and marking technology in late-stage manufacturing has been around for decades, enabled by the integration of print modules within the manufacturing environment. From the early days of low-resolution printheads to current options for high-resolution systems supporting single color or full-color imprinting, inkjet modules have been a cost-effective solution for adding print during the final production stages of everything from advertising collateral and catalog covers to product cartons and pallet wraps because they come in many configurations and module widths. Those modules get faster and more robust with every generation. With the growing requirement for sustainable manufacturing processes, the range of opportunities continues to grow.

### **The Value in Reducing Waste**

To build sustainability into your print and manufacturing strategies, look at which processes produce waste today. If sending unused printed material for recycling is part of the story, consider how options for late stage marking in manufacturing could reduce that waste. It begins with a value proposition.

Steve Atherton, Senior Manager of Product Management and Marketing for Fujifilm Integrated Inkjet Solutions, tells us that inkjet application engineering has made tremendous strides since the first heads were placed in manufacturing environments. We have reached the point that the print speed and quality previously available only in multi-million dollar inkjet presses can now be integrated directly into complex manufacturing environments. That opens new choices for where printing occurs in the supply chain.

Atherton says that modern inkjet solutions include not only the printheads but an entire environment focused on print quality: droplets delivered as needed, localized substrate control, workflow, a controller, fluidics to manage the ink, automatic image compensation, and a way to ensure that the ink dries before it moves to its next stage in the manufacturing process.

Other print module manufacturers are also following along, offering modules that make it possible to meet most manufacturing configuration needs, including installations in very wet, cold, hot, and dry environments. You can even find print modules that will print on an angle for particularly tight manufacturing requirements. The critical thing about print modules and the companies that make them is that they can usually find a solution to support late-stage marking in even the tightest manufacturing lines.

### **Late Stage Marking, Versioning and Sustainability**

Why is this a sustainable story? It allows designers to focus on the basic graphic template for their boxes, bags, covers, and pallet wraps while leaving room for variable content to be added in the last stages.

Some of the earliest examples of using inkjet to add information just before mail insertion come from printing companies that added inkjet modules to their finishing lines. It began with a cost-effective and time-efficient way to add addresses at the time of mail preparation, but innovative printers figured out that they could offer their clients more. Some became adept at providing data-driven and customer-specific discount offers sprayed on the catalog or circular at the point of final preparation. This is another example of late-stage manufacturing.

Now consider a box that holds a modern TV, blender, or vacuum cleaner. There are brand considerations and marketing taglines that may require one approach to printing, but for things like instructions and regulatory labels in local languages, designers may find themselves constrained by the available real estate. You've seen the boxes with several languages and multiple regulatory and warning labels. They tend to be hard to read, losing their value. Imagine that area having only the local regulatory and warning text in the local language. That is possible if an area is allowed for it and it is printed in the last stages of box production based on the quantities required in a specific market. The sustainability story comes from printing only what is needed for each market and eliminating the waste that happens when warnings or other information needs to change.

The value is in printing high volumes of master templates and then customizing for specific locations, products, discount schemes, regulations, languages, or specification requirements only as needed. The technique is valuable for pure manufacturing environments producing boxes, cartons, wraps, and bags, but is also widely used for catalog, marketing collateral, and other personalized print.