

FUSION TECHNOLOGY

XEIKON'S NEXT STEP TOWARDS FULLY AUTOMATED DIGITAL LABEL AND PACKAGING PRODUCTION

High-end labels. One pass. One platform. All digital.

Digital technology holds the promise of fully automated, unattended label and packaging production from customer order to delivery. Xeikon's new concept, Fusion Technology, brings this promise a step closer to reality. Combining full color printing and embellishment on one single digital platform, it targets the high-end label and packaging market. And as acknowledged industry expert Michael Fairley confirmed: "If you can integrate embellishment techniques in one automated production line in which you can change any element on demand at any stage, then you have the beginning of a completely automated system for the future."

Digital printing has all it takes

Customer engagement is today's mantra, and packaging is one of the tools to nurture it. Brand owners have their work cut out for them: Building a recognizable brand and protecting it, is one thing, trying to win share of mind and wallet in a fiercely competitive and increasingly information-cluttered environment is another. In order to maximize a packaging's selling power, designs need to be more eye-catching and sophisticated than ever. But these branding, design, and graphics requirements have not been the major challenges for label and packaging converters. To succeed, brands must cater to an increasingly diverse customer base, producing versions targeted to specific geographic, demographic, and psychographic groups. Brand owners want to take advantage of seasonal or event-related offerings and test marketing, while product life cycles in general continue to shorten. Lastly, in an effort to lower capital requirements and with sustainability ever-higher on the agenda, brand owners, producers and retailers have started to embrace lean supply chain management practices, reducing their stocks and adopting just-in-time inventory policies.

As a result of all this, label and packaging converters have had to accommodate a proliferation of SKUs, increasingly complex jobs, ever-shorter runs, and faster turnaround times, which puts conventional technologies at a disadvantage since shorter runs mean more frequent, time-consuming, and expensive make-readies of presses and finishing equipment. Digital printing, however, can overcome these limitations like no other technology can: By nature it offers unlimited variability. Not only is it uniquely suited to the production of multi-version labels and packagings, the absence of set-up costs also makes it ideal for cost-effective short to medium runs. And last but not least, it needs no further proof that it can meet the highest quality standards.

Building on strengths

With Fusion Technology, Xeikon builds on its extensive expertise in digital production. Its range of dry toner electrophotographic five-color presses, geared for the label & packaging market, have been continually improved and fine-tuned, making them among the best available, which is why they remain the cornerstones of the Fusion Technology concept. Its application-tuned dry toners have been specially developed to meet the requirements of this market in terms of print quality, color gamut and accuracy, light-fastness, food safety, and brand protection. The X-800, its in-house developed digital front-end with integrated color management module, is generally accepted as the most powerful and complete front-end in the industry. It ensures a seamlessly automated digital printing workflow while enabling integration with existing workflows and any market-leading third party applications, such as design packages, web-to-print applications and MIS.

... But it has been stifled in its growth

All this explains why digital growth has accelerated in recent years: For 2015 no less than an estimated 30% of all new installations are digital presses, coming from only 1% in 1996. Estimates vary, but the consensus figure puts the global digital label and packaging print market currently at over \$3.5 billion, with its value growing at 20% per annum¹. Digital printing technology has many advantages and offers opportunities that cannot be provided by conventional printing, but it has been constrained by the need to have analogue, mostly offline, embellishment and die-cutting — requiring separate, expensive tools for each design. Not only does analogue technology limit the degree of personalization and variability, the preparing of the tools also results in a complex process, which introduces time delays and an increased risk of errors.

Embellishment adds value

While digital printing offers higher added-value and is more profitable than conventional technologies, the embellishment operations have the potential to add even more value.

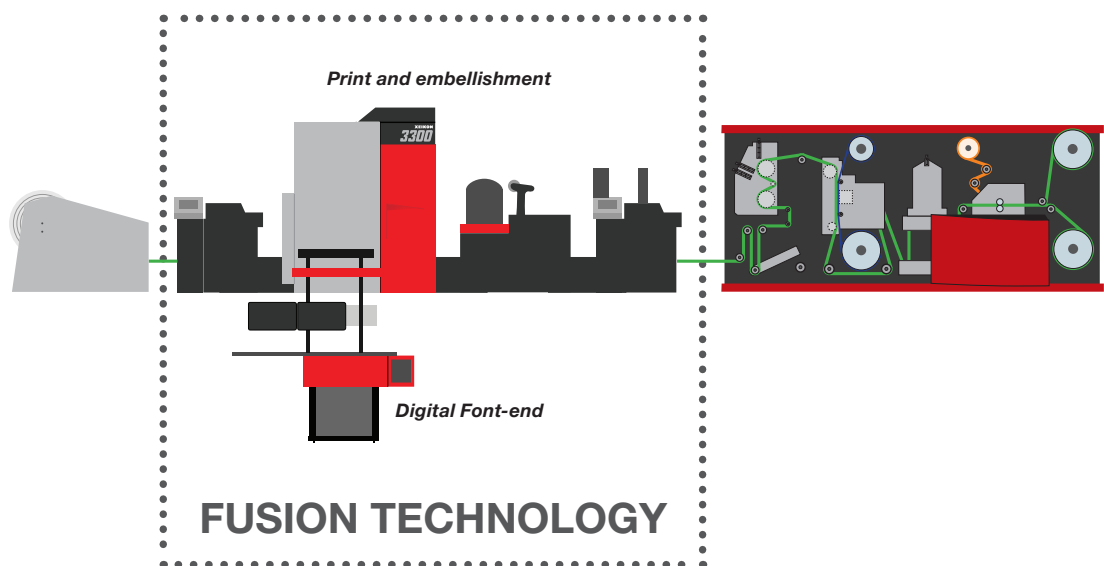
This is especially the case for the high-end label and packaging market, i.e. the luxury goods market of wine & spirits, health, beauty & cosmetics and some segments of the beverage and food industries. Even more than for other market segments, brand owners demand flawless print quality, guaranteed color performance and consistently accurate brand color reproduction. To further enhance their luxury look & feel, high-end labels are likely to include one or more added-value embellishments, such as cold and hot foiling, spot varnishing, and screen prints as well as security features and interactive content.

The missing link

Although there are huge benefits to be gained from integrating a digital press in an otherwise conventional workflow in order to reduce the print costs of shorter, more targeted production runs, digital printing really comes into its own in an integrated workflow, automated from digital origination through digital printing to digital die-cutting.

Xeikon has already digitized and automated several steps in the label and packaging production workflow. Apart from the printing (see sidebar 1), it has also automated the final step: With Xeikon Vectorizer, the front-end can also drive a digital cutter, enabling converters to die-cut different jobs in one pass. With Fusion Technology, Xeikon now wants to address the missing link by combining its five-color digital printing press with a range of digital embellishment techniques on one platform. After all, most embellishments are fundamentally additional printing steps.

¹ Source: Labels & Labelling Consultancy



The concept explained

The cornerstone of Fusion Technology is Xeikon dry toner electrophotographic five-color printing, which is second to none for the high-end label and packaging market as it easily matches the offset and flexo benchmark quality for this market segment. Added to this are several digital embellishment printing techniques.

While Xeikon has been offering the building blocks for customized total solutions with varying levels of automation and integration for some time now, the integration implied in its Fusion Technology is of a totally different order. The digital embellishment modules are not just put inline with the digital press, they are components of an entirely new modular machine with the digital front-end taking care of the prepress, data processing, color management and press operation, but also — and herein lies the fundamental difference — of the full control and operation of all embellishment modules: A print job is dropped in a hotfolder, RIP'ed and the different channels are sent to the relevant modules, including the press, without further manual intervention. Because every embellishment module is digital, every single design element in the design can be made variable or personalized, which opens up huge opportunities for new applications.

For the time being, Xeikon sees an interest in digital modules for hot and cold foiling, for applying screen prints, matt, gloss and structured flood and spot varnish — including raised varnish, and a digital braille module for pharmaceutical applications (This list is not meant to be exhaustive). Its in-house expertise in digital printing technologies other than dry toner electrophotography makes it easier to evaluate different technologies on their own merits in order to determine the most suitable one for each Xeikon-branded embellishment module.

Depending on the application requirements in terms of printing and finishing, these digital embellishment modules are positioned before and/or after the digital five-color press. The resulting configuration produces a digitally printed and embellished label or packaging in one go.

The promise

Fusion Technology offers converters the true flexibility to produce virtually any label or packaging on demand. It makes it possible to do instant re-runs of previous jobs because all the necessary parameters are in one digital file, but more importantly: Because converters will no longer need to invest in expensive tools, they will be able to produce short runs with high added-value cost-effectively.

The concept made tangible

At Labelexpo Europe 2015 Xeikon is demonstrating one of several possible future configurations to illustrate the potential of combining full color digital printing and digital embellishment technologies, such as hot and cold foiling, screen printing, matt, gloss and structured flood and spot varnishing, and braille. The setup shown is producing the full color self-adhesive label on the right. The digital screen white (a high opaque white), which is favored by the health, beauty & cosmetics and luxury beverage industries, is generated by a module separate from the five-color printing module. Both modules are driven by the same digital front-end.



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