

Interview with
Xeikon's CEO Benoit Chatelard

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British Printing Industries
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BPI labels

Without labels – Printing directly on cans for small print runs

Dieter Finna

Tonejet presented a digital printing system for printing directly onto metal cans at Interpack 2017. It aims to meet the demand of small breweries for short print runs, and positions itself as a cost-effective alternative to labels or shrink sleeves. The shorter runs are currently experiencing a boom in the supply of cans, which could be significantly impacted by direct-to-can digital printing. What are the benefits of printing directly onto cans, and how could this become an interesting solution for label printers?

Over the past few years, craft breweries have been cropping up like mushrooms. This development has been evident in the US and Europe and is set to continue, according to market studies. The trend includes microbreweries, brew-pubs, contract brewing companies and regional craft breweries. As with all markets, packaging and labels play a huge role in selling the product. The best way to distinguish oneself from the competitors and to highlight the skilled art of brewing is to design a memorable label in order to differentiate the product from the crowd with originality being the key principle, which is why many labels are designed by local artists and are extremely attractive, striking or sometimes bizarre. Due to their small print runs and high design

variability, they are often produced using digital printing. This is a profitable market for the label industry, which means that it devotes considerable attention to it.

New trend in the Craft Beer market

While bottled beers are usually used for craft brewed beers, beverage cans have recently caught on in this growing market. Cans are lighter than glass bottles, which reduces transportation costs and also are unbreakable and thus, safer. They offer the possibility for wrap-around decoration, and can be cooled faster than bottles. In addition, they are popular because they are compact and 100% recyclable, in the same way as glass bottles.

For conventionally printed cans existing minimum order quantities are from approx. 100,000 pieces with delivery times of several weeks, and therefore, the customers require storage areas of more than 20 pallets. For small breweries this is often not an option, for the above mentioned reasons. In the "Craft Beer Market", with the required number of items usually between 10,000 and 50,000 pieces, only labelled cans offer an economical alternative for packaging.

However, small breweries must accept considerably higher unit

costs, compared to conventionally directly printed cans. With labelled cans, in addition to the printing, the label material is a factor which increases the costs.

No minimum order requirements

Digital direct printing on cans enables production in the quantities of packaging required, without having to consider minimum order requirements. Digital production technology also allows the use of unlimited personalisation and variation possibilities.

In addition, the market for small-scale drinks production includes not only craft beer, but also a growing market for non-alcoholic beverages. With the current growth in popularity for beverages with different flavours, beverage producers are using direct-to-can digital printing to respond quickly to either seasonal or regional trends, or unexpected peaks for their varied product offerings.

Digital printing system

The Tonejet digital printing system is specifically designed for the metal packaging industry. It integrates the Tonejet print unit with the iTrak transport system developed by Rockwell Automation – Tonejet is a member of the Rockwell Automation Partner Network. The company manufactures its own nozzle-less print heads which are based on drop-on-demand technology, using an electrostatic transfer process, also developed by Tonejet. According to the company, the ink system is entirely safe to use with primary food packaging and personal care applications.

The Tonejet direct-to-can digital printer produces labels in four colours. With a resolution of 600 x 600 dpi the solution achieves high image quality over 256 colour depths. In production operation, a conveyor brings the blank cans to

Attractive, digitally printed beer labels printed on a Mark Andy press



Source: Mark Andy



Source: Tonejet

an auto-load station. First, the cans undergo an inspection process with automatic ejection. The correct quantity of cans is positioned under the four print stations where each CMYK component colour is transferred. The unique feature of the Tonejet printing system - according to the company - is the thinness of the ink layer. During the print process, 15 times less ink is transferred than with conventional UV inkjet.

The special toner-type ink contains large pigment sizes, which are electrically charged in the print heads. During the jetting process, the carrier liquid is left behind so the ink layer is composed exclusively of pigment. In order to achieve adhesion onto the metal surface, and the corresponding smooth surface quality, a clear over varnish is applied. The result is an ultra-thin ink layer of half a micron thickness. The thinness of ink layer prevents cracking of the image. Currently, the system can print up to 60 cans per minute, with the speed being increased to 100 cans per minute with a forthcoming larger system.

Cost benefits

According to Tonejet, the cost of directly digitally printed cans is comparable with conventionally printed cans, due to the thin ink layer application. Print cost per unit is well below 4 EUR/1000 pieces. When making further cost comparisons with labelled cans, another advantage is that no additional costs are incurred for the substrate which is required for labelled cans. According to the company, a direct cost comparison shows a distinct cost advantage, with the cost of direct digital print-



Source: Tonejet

Left: Can during the printing process under a Tonejet-print head

Right: Printing unit 4-colour CMYK and transport system

ing about eight times lower than printed labels. This difference initially sounds like a threat to the existing business model for label printers. But it also offers new business opportunities. According to Tonejet, the digital printing system operates economically from volumes of 15 to 20 million units per year. From the point of view of small breweries, therefore, it is very unlikely that they will invest in such a digital printing system.

Moreover, the focus of small breweries is not on acquiring knowledge of printing technology, instead this is an opportunity for the printing industry. Since the small breweries will buy digitally printed cans from a printer with a tailor-made offer, this opens a new business area for digital printing, supplying local breweries with digitally printed cans. On the other hand, larger print shops could invest in a direct-to-can digital printing system, if the above-mentioned annual volume is reached.

Conclusion

Direct-to-can digital printing offers a wealth of solutions for the beverage market enabling the delivery of small volumes of individually designed cans. It is therefore only a matter of time before direct-to-can digital print will be used by the can market to print small batches. Tonejet's first installations of direct to shape digital printers are planned for early 2018.

This year, AWA Alexander Watson Associates has completed a study of digital printing on containers. In the conclusion of the study "Direct Digital Print for Container Product Decoration", AWA states that the next two years will provide better information about the next steps in the journey of digital direct-to-shape printing. A summary of the study can be found in our Digital Printing today special 2-2017, available as download in our online shop (<https://shop.gk-techmedia.com>).



Source: Tonejet

The iTrak transport system positions the cans exactly under the print heads