



Digital label printing

The digital difference



The role of digital label printing in today's markets is expanding. Brand owners are demanding not only short runs and fast turnarounds, but a host of value-adding features ranging from variable data and track-and-trace information to security features, varnishing, hot foiling and embossing. Nilpeter worked closely with B&R to develop its PANORAMA label printing and converting solution – based on the Nilpeter DP-3 print engine – which it launched at the 2015 Labelexpo Europe.



Nilpeter's PANORAMA is controlled by a tablet.



The PANORAMA features a simple and highly intuitive user interface, presented on a 42" color touch screen. (Source: Nilpeter)



Modern consumer marketing is driven by a variety of factors, all of which impact the production and timely delivery of labels and packaging. Today's brand strategies focus on brand extension and differentiation – designed to increase market share and physically occupy more shelf space.

This has resulted in a dramatic increase of SKUs and a consequential reduction in label run length per item. When printed conventionally (by offset lithography or flexography) the fall in run length can have a serious impact on a label converter's margins – and ultimately their profitability.

When short-run jobs were the exception, converters would often run them at a loss, subsidizing them from the profits of the long runs. With short runs becoming the norm, the drop in profitability can prove fatal.

The benefits of printing digitally

Digital printing enables cost-effective production of short runs by eliminating the time-consuming and costly processes that make conventional printing unprofitable. Prepress is reduced to the generation of digital files, generally in PDF format. There is no need for films, plates or chemistry; nor is any time needed to set up the press or run waste until proper color and register are achieved.

Only what is needed is printed. Reprints can be produced by simply calling up the file and ensuring the right substrate is in place. This enables just-in-time delivery and significantly reduces – or eliminates – costly warehousing. It also eliminates the large portion of printed products – typically around 50% of everything printed – destined to sit around until they are obsolete. These excess quantities were traditionally made attractive by the "unit cost" model, in which costs appeared to be driven down by printing more than was required.

Ideal partner for inline synchronization

While these efficiencies are great, the Nilpeter PANORAMA takes it a decisive step further. As an inline solution, there is an uninterrupted flow from raw substrate to finished label – complete with all the special features including numbering, flood coating or spot varnishing (using flexo or screen printing), hot foiling, embossing and other enhancements, as well as final die-cutting and matrix removal.

This combination of digital and mechanical (analog) processes calls for a high degree of control and automation, which is where B&R comes in. Nilpeter has worked with B&R for years on flexo and offset litho systems. Familiar with the capabilities of B&R and its products, Nilpeter knew they would make an ideal partner for its PANORAMA project. B&R's experience and expertise helped take the project from kickoff to launch in only nine months.

"One of the strengths B&R brought to this project was its ability to deliver systems with real-time capability," said Søren Ringbo, Nilpeter's manager of digital products and PANORAMA project manager. "This means that adjustments for register, web tension, positioning, and so on are instantaneous – without compromising productivity and quality."



Søren Ringbo
Manager of digital products and
PANORMA project manager, Nilpeter

"Both Nilpeter and B&R have pragmatic approaches to problem solving. B&R also has experience beyond the printing industry that gives it a broader knowledge base to create innovative solutions."

This is no small feat given the variety of optional equipment that can be used in the modular PANORAMA line, which can be set up as a rotary, semi-rotary or flatbed solution. "Both Nilpeter and B&R have pragmatic approaches to problem solving," explains Ringbo. "And, because B&R has experience beyond the printing industry, it is able to draw ideas, concepts and principles from a broader knowledge base to create innovative solutions."

Recognizing digital differentiation

The PANORAMA label printing and converting solution uses single-pass UV ink technology. That means that ink is applied across the web in a single operation, rather than using a scanning process like a desktop printer. While there are fewer moving parts, the application – and curing – of individual colors takes place at different printing stations.

Proper placement of the web, both linearly and laterally, is essential to ensure accurate color registration. This also applies down

the line to the print enhancements and die-cutting. In fact, it grows more important at these later stages as the value of the label increases with each process.

While Nilpeter believes that using UV-curable ink is the best solution for most label applications, it also understands that there is no universal digital printing technology, and converting processes may require a number of different technologies.

The label and package printing markets are extremely complex. "There is no winning technology that covers all applications," says Jakob Landberg, Nilpeter's sales and marketing director. "Nilpeter has always been an advocate of 'combination printing' and has spearheaded technologies that bring together all the different processes for optimum results. With PANORAMA, we can now deliver highly reliable and productive digital printing and finishing applications, using B&R's systems, with results that meet brand-owners' expectations." ←

