



Offering ¾ automation, the EFI Vutek h5 hybrid roll/flatbed printer is one of EFI's production inkjet printing solutions for the super-high-speed market

SIGN OF SUPERIORITY

A new generation of super-high-speed digital printing devices could accelerate an analogue-to-digital transition for producers of signs and display graphics, believes Ken Hanulec



Ken Hanulec is Vice President Worldwide Marketing at EFI

One of the advantages many analogue manufacturing processes have over digital equivalents is speed, but a clear disadvantage is the cost model – most analogue processes require long set-up times and are not cost-efficient for the low volume and customised production that customers increasingly demand to optimise their marketing spend.

On the digital side, net throughput – speed minus production make-readies, etc. – has historically been one of the shortfalls. Although digital production of signs and display graphics enables the provider to profitably produce smaller runs, even down to a quantity of one, with insufficient speeds, these digital technologies cannot displace significant percentages of product produced using analogue technologies – such as rotary screen printing or offset.

But all of that changes with the entry into the market of super-high-speed digital printing devices that can deliver equivalent or better quality than analogue at speeds and costs that change the cross-over point between analogue and digital from a price/performance perspective. At the same time, these digital devices allow operators to also cost-effectively produce the shorter runs and versioned content that brands increasingly are demanding, all on one device for the ultimate in production flexibility.

The key is bringing total cost of ownership (TCO) of digital devices in line with that of analogue devices. But in considering TCO, it is not enough to simply factor in the printing device and consumables. It is important to look at the entire workflow from a platform perspective.

By that we mean, what are the steps required to get from file to finished product, how much labour is involved, what type of waste is created during makeready, how long it takes to set a press up and what needs to be done to change over from one job to the next.

CHANGING TECHNOLOGY

We've been having these discussions for years now, but what has changed as we move into 2021 is the imminent availability of a new generation of super-high-speed digital printing devices combined with streamlined workflows and automation that are competitively positioned with

"2.5 billion square metres of production is in the crosshairs for conversion to digital"

traditional analogue production processes from a TCO perspective, even for quite long runs.

First, let's take a look at some of the technology changes in the printer that make this transformation possible. To be clear, there is likely to be a need for analogue printing technologies for certain

types of applications for the foreseeable future. But as digital continues to improve, its share will also grow.

According to recent data from I.T. Strategies, the global total signage and display market produces 6.4 billion square metres of product per year. Of that, 61% is already digital, but that leaves 39% currently produced using screen printing or other analogue technologies. That would

“Super-high-speed digital printing devices can deliver equivalent or better quality than analogue from a price/performance perspective”

equate to some 2.5 billion square metres of production that is in the crosshairs for conversion to digital.

There are several emerging technological improvements in the digital printing arena for signs and display graphics that are set to accelerate this transition, including:

- Smaller drop sizes for inks, that when combined with superior dot placement delivering near-litho quality with a 5pl drop size. This not only improves quality, but it reduces the amount of ink required to achieve a high-quality image.
- Hybrid curing technology that uses UV LED curing to 'pin' the image in place while taking advantage of a second inline stage of mercury arc curing for more flexibility and durability on the final cure.
- New vacuum systems that hold substrates in place, even if they are not completely flat, such as corrugated. Stronger vacuum pressure means the substrate stays locked in place during printing without the need for material edge guides. This improved hold-down enables the printer to handle a wide range of material, including BC corrugated board with up to a 12mm edge or centre warp.
- The ability to handle a wide range of

materials up to 12mm in thickness and 8kg sheets, while also being able to manage material as thin as 120gsm litho stock.

- Up to three lanes of printing enable the printing of more finished boards per hour, with the same or different images.
- The option to use very large rolls of media, or two rolls at the same time. High precision servo driven motion

ensures smooth and precise material movement through the printer at up to 350m in 1.25 seconds. Larger rolls mean fewer stoppages to change out media.

- Improved ink circulation technologies that significantly reduce ink wastage and provide greater ink yield with up to 30% to 50% increase over previous technologies. This can translate to printing more than 139m² of material per litre of ink with four-colour greyscale printing.
- Automation options, including pallet-to-pallet automated material handling that can result in the production of more than 375 boards per hour with minimal manual labour.

“A new generation of digital printing is poised to move an increased amount of volume from analogue to digital”

These are all machine improvements that are coming online now with new super-high-speed digital printers.

SPEEDY SOLUTIONS

EFI in particular has developed three such solutions: the EFI Vutek h5 hybrid roll/flatbed printer with ¾ automation, a new Vutek super-high-speed printer – the company's fastest multi-pass/shuttle-based hybrid roll/flatbed printer – and an advanced, single-pass Nozomi display graphics printer that

leverages the proven technologies and advancements shown in the corrugated packaging market with EFI's market-leading Nozomi platform.

Achieving the best performance and lowest total cost of ownership requires more than just placing a printer in your establishment. It requires an examination of the entire file-to-finished-product workflow. Here are some examples that are important to consider:

In the analogue world, makeready can be extended due to the need to prepare screens and make sure colour is accurate. With digital printing, this work can be done in the digital front end (DFE) before even one drop of ink is placed on substrate. For example, with EFI's Fiery DFE, integrated colour management software gives digital print producers the ability to get colour right every time. EFI Fiery Edge colour profiling technology delivers out-of-the-box print quality and colour improvements in new Fiery DFEs. Plus, a host of new colour controls can tune colour to meet customer preferences, such as features to intelligently boost colour and adjust shadow detail levels.

EFI's super-high-speed printers also feature full integration with EFI software solutions, such as e-commerce storefronts for job submission and MIS/ERP solutions for business and production management.

In addition, newly available, cloud-based applications provide real-time data about the print operation that enable better and faster fact-based decision making. This can include dashboards for monitoring printer status, access to historical data in an interactive environment to transform print production data into actionable analytics, and robust notifications so nothing falls through the cracks in a fast-past digital environment.

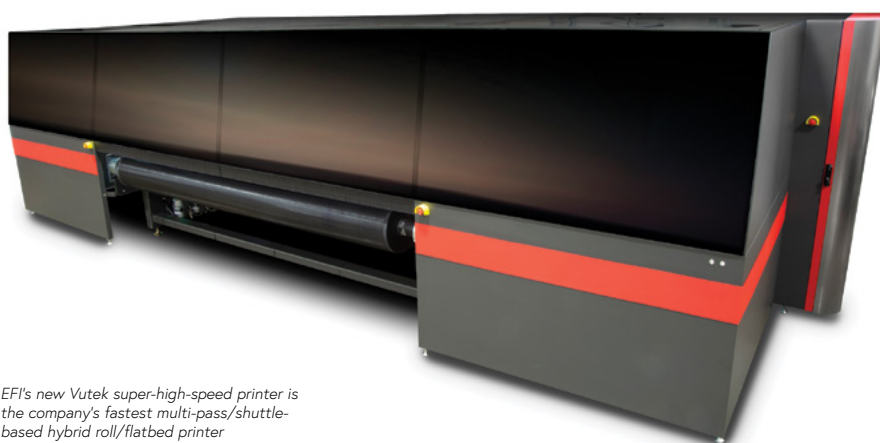
All of this adds up to a new generation of digital printing that is poised to move an increased amount of volume from analogue to digital, with the lowest digital TCO on the market, and the benefits of shorter cycle times, less waste and labour cost, and a more sustainable production footprint. ■

Footnote: Vutek is a registered trademark of EFI

Ken Hanulec is Vice President Worldwide Marketing at EFI

Further information:

EFI, New Hampshire, USA
tel: +1 603 285 9800
email: info@efi.com
web: www.efi.com



EFI's new Vutek super-high-speed printer is the company's fastest multi-pass/shuttle-based hybrid roll/flatbed printer