



PRINTING PRODUCTIVITY

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HYBRID PRINTING: THE KEY TO FUTURE PROFITABILITY

When is a flexo/digital hybrid narrow
web press a viable solution?

THE LABEL PRINTING INDUSTRY IS EVOLVING RAPIDLY

A common challenge label printing companies are facing today is how to achieve and maintain a lucrative cost price per square meter in their overall label and packaging print production. The daily incoming order flow doesn't always come in the desired sequence or quantities, and can involve rush requests for a quick turnaround. Orders can be scheduled to print as optimally as possible. However, several factors can influence the best effort to achieve the highest possible efficiency.

These include:

- Shorter print runs
- Processing different types of labels
- More diversified jobs
- One or more order flows congesting production capacity.

These factors are all due to changing customer demand and a rapidly changing industry. This poses several challenges.

COMMON CHALLENGES FOR LABEL PRINTERS

Do any of these challenges sound familiar in your business?

- Minimum flexibility for small jobs. How can maximum flexibility be achieved while maintaining low cost?
- Demand for multiple press technologies to process different types of labels. Is it possible to process all orders on a single press?
- Difficult to achieve and maintain a lucrative price per square metre in combination with processing smaller and more diversified jobs. How can this be attained?
- In most printing environments there are separate order flows. When an order comes in, it is either laid out for digital or flexo print, which is dependent on the available production capacity. How can orders be streamlined regarding logistics, process flow optimization etc.?

For companies facing these challenges, a flexo/digital hybrid press could fill the gap by providing converters with the capability to combine flexo and digital printing inline, as well as converting in one pass.



IS HYBRID THE ANSWER?

A hybrid solution can bridge the gap between conventional flexo and digital printing machines. Thanks to its flexibility, a hybrid press is beneficial in many ways. Although initially a larger investment, the ongoing ability to exchange print technologies and produce labels in either flexo or digital print, or a combination of both technologies, is a significant long-term advantage of a hybrid press.

Considering the lifetime of the press, with frequent diversity of workflow, the return is higher productivity. It also provides label printers with more flexibility in production planning that can be extended to their clients, which in turn increases customer satisfaction.

THE BENEFITS OF HYBRID PRINTING

- An ideal economic model is achieved with optimized workflow.
- No more need for separate workflows. Benefits of a combined workflow include the possibility to choose which technology is used for each job: flexo, digital or both. Some label designs are better suited to print partly in flexo, and the rest digitally. When the job size approaches flexo volumes, the hybrid is a versatile solution to efficiently meet these needs.
- Lower overall costs for end product on small and medium-sized jobs:
 - 0-3000 running meters in narrow web
 - Jobs around 70,000 labels per job [in comparison regular job size of digital industry supplier = 10,000 labels]
- In hybrid solutions, 100% color gamut is achievable, also in combination with additional lacquer/metallics. With 4-color and 6-color traditional printing solutions, 70-90% color gamut can be reached, while a hybrid solution PMS colors can enlarge up to a 100% color gamut.
- Minimize capital equipment investment: no need to choose both a digital press with offline converting and a flexo press.
- In comparison with two presses, one hybrid press offers a smaller footprint, lower waste due to inline converting instead of offline converting, and fewer operators needed.
- Variable data is an added value to customisation.



Flexo and digital printing, all in one pass

Other advantages of a hybrid solution:

- Use of top coated material resulting in higher quality
- Use of a wider range of substrates: both supported, and unsupported materials are suited to hybrid and can be printed in a wide range of web tensions
- Inline printing stations provide better service conditions
- Consistent gloss values, thanks to the possibility of applying varnish with inkjet, gloss values may differ
- Use of spot colors on shorter runs are more efficient
- No speed limitation like with standalone finishing
- Fewer color print stations needed in hybrid



Variable data possible with a hybrid press

THE DIFFERENCE BETWEEN CONVENTIONAL, DIGITAL AND HYBRID PRINTING FROM A TIME CONSUMPTION AND COST PERSPECTIVE

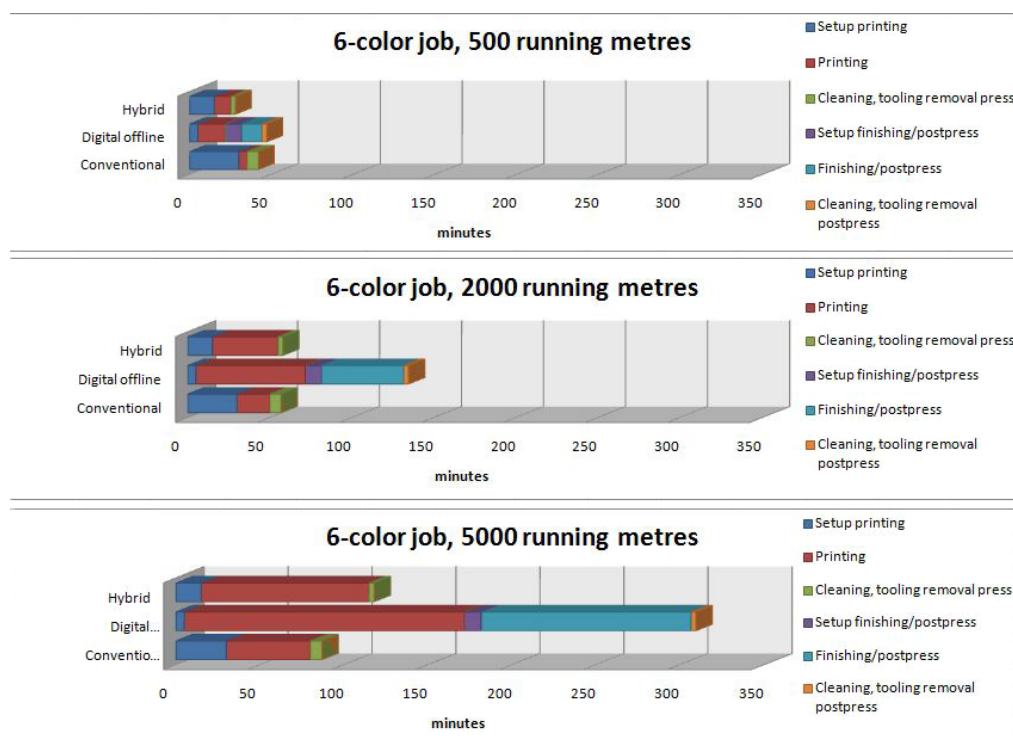
We compared different job sizes in conventional (flexo), digital offline and hybrid printing from 500, 2,000 and 5,000 meter run lengths. It was clear that the length of time needed changes with the different steps of a print production process, depending on the order size.

The chart below outlines the results, reflecting the time required for the different stages of a print process against the various job sizes in running meters. Note the crossover point between hybrid and conventional on an order of 2000 running meters. Regarding time, hybrid is most advantageous up to 2000 running meters, while flexo had competitive results beyond 2000 meters. Even for smaller job sizes of 500 running meters, hybrid proved to be the best option from a time point of view.

It is also interesting for label printers to understand how both printing technologies differ from a cost perspective, and how the costs compare with each other. The following points should be considered:

Per label: the digital space focuses on costs during printing, whereas the conventional world tracks production cost of the whole label.

Tooling: in today's market, there will always be plate costs in flexo printing. Only a small percentage of conventional printing does not require plates (100% process colors). However, in the digital process, there are also additional costs along the way to the end product (e.g. the application of cold foil).



From printing to finished label: the digital process requires several steps and involves the creation of waste and risk of failure in each step. In the event of failure, the entire process must be repeated. With the conventional process, printing and converting happen in one pass.

Service and maintenance: in comparison to digital systems, conventional printing typically requires less service and maintenance owing to minimal equipment issues.

Lead times: an inline process results in shorter lead times for the conventional process, and a better price per unit than the digital process in offline steps.

DIGITAL AND CONVENTIONAL PRINTING COMBINED IN HYBRID

Digital printing used to be a slower process in comparison with the converting process, so the two were previously separated. However, as both processes are becoming more comparable regarding speed, they are more frequently combined. Together, they are approaching the speed of flexo. Conventional flexo has



Label printed on a hybrid press

also become faster in converting, owing to shorter set up times.

Other areas in which flexo and inkjet have come together:

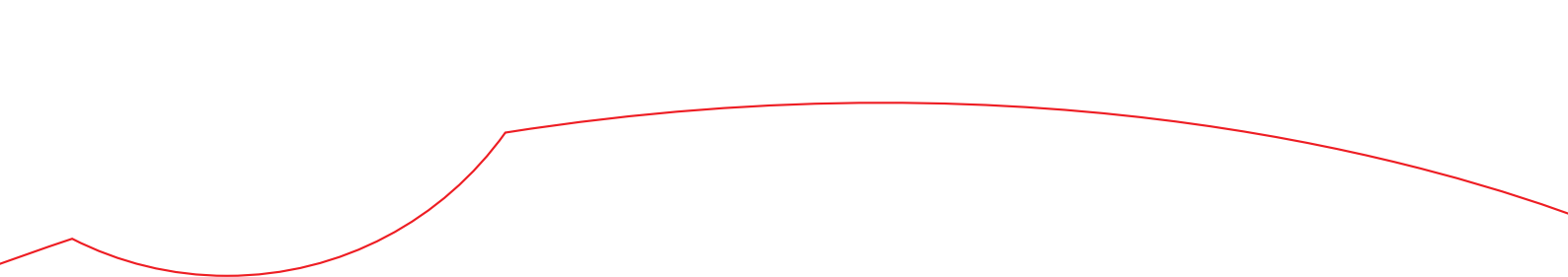
- UV inkjet has similarities to UV flexo: same curing and inks have the same chemical specs.
- 60 lines/cm image screening is visually similar to inkjet 600dpi in terms of quality (less than 600dpi = lower quality).
- Colour management and pre-press process of conventional flexo fit 100% with the hybrid process. It can be done in-house or in a pre-press environment.

WHAT THE INDUSTRY EXPERTS SAY ABOUT HYBRID

Mike Fairley, Director of Strategic Development at Labelexpo Global Series commented: 'Half of all narrow web presses installed in Europe last year were digital, with inkjet now representing 35 percent of all new digital press installs.'

He predicted that hybrid presses would reach around 5 percent of total digital installations. According to Fairley, a wide range of inkjet/finishing and conventional hybrid machines offer label converters at every level a whole new world of personalization, serialization, versioning, test marketing, ultra-short runs, security features and more. Digitization of conventional presses, along with the new hybrid technology, still has a major place in the world of longer runs and highest quality production.

Thomas Hagmaier, President of FINAT said: 'As a label printer, I think there is a real need for hybrid to give you differentiation between digital and standard label production, and the machine builders are taking on this trend ahead of time. There are new possibilities to make labels with this combination, and we cannot predict what might happen – and that is the challenge of hybrid machine.'



Tarsus Labels & Packaging Group Managing Director, Lisa Milburn identified hybrid digital/conventional press launches as a key show trend at Labelexpo 2015.

Peter Lewald, Head of Sales Europe Digital Colour Systems at Domino comments:

‘To answer the question whether hybrid is an ideal solution, it is highly recommended that label printers review their label production and job structure over the past 3-5 years. They need to determine if the overall quantity of labels produced is the same, but that the number of print jobs has increased [i.e. more job changes]’.

‘When a label printer’s daily production consists partly of job structures, so-called job families, hybrid printing can be a very profitable solution. Within job structures, the recurring variable part of the label, for example the image, can be changed without stopping the press. This variable part is better suited to inkjet, while other parts of the label may be more advantageously printed in flexo’.

‘Ideal hybrid job profiles can be found, for example, in the industrial, home, and personal care sectors, where often a slightly different version or a variation of language is applied. Companies aren’t yet fully aware that job structures can streamline label production to an optimum in costs, benefits, and efficiencies. With these print job structures, it is not only the cost of printing that needs to be considered, but also additional costs such as plates, inventory, set-up time, finishing, etc’.

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[Source: By Andy Thomas 29 Sept 2015 Labelexpo Europe keynote reflects upbeat industry]

[Source: By Michael Fairley 10 Nov 2015: Labelexpo targets the future]

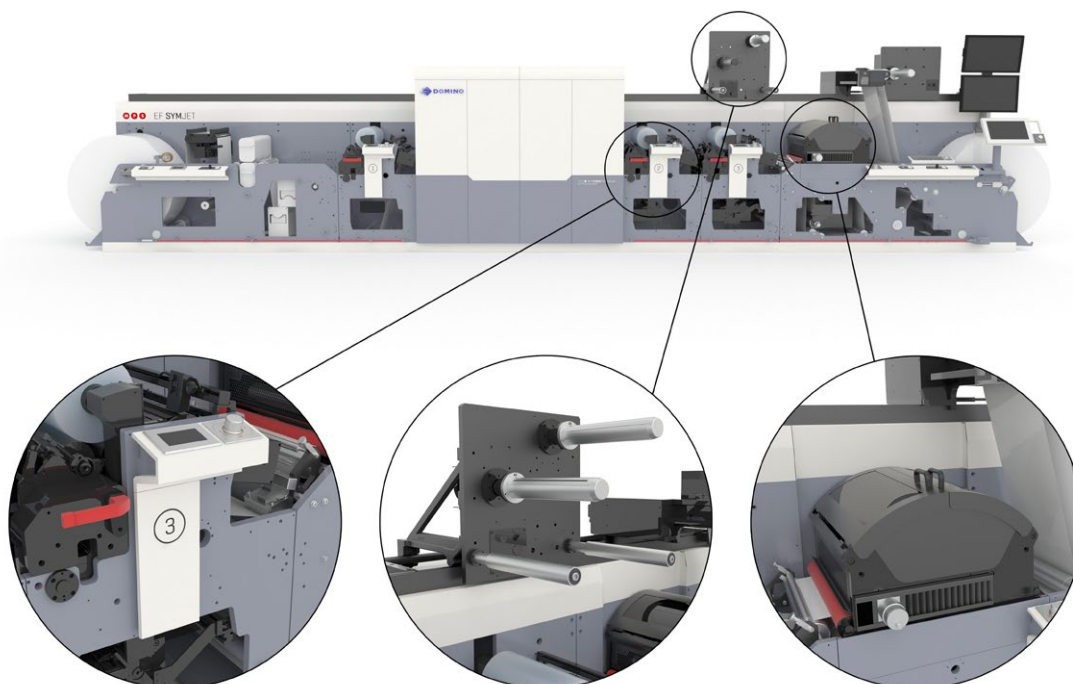
MPS' HYBRID SOLUTION: EF SYMJET PRESS

MPS, a press manufacturer best known for its conventional flexo and offset presses, launched its first hybrid printing solution; the EF SYMJET, together with digital partner Domino.

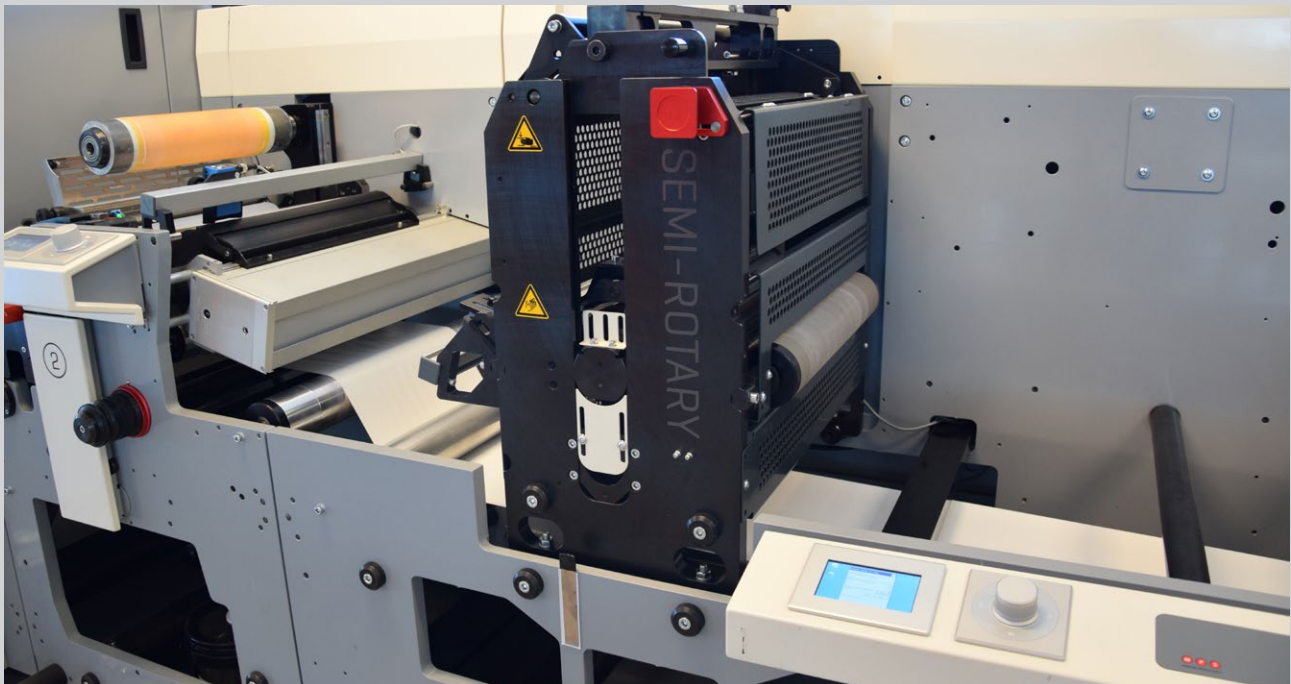
The MPS EF SYMJET press combines the stability of the existing MPS EF flexo platform with the integrated well-proven Domino N610i inkjet engine, allowing converters to combine flexo and digital printing as well as converting, in one pass. Bringing together years of proven experience and expertise, the digital Domino has a 333mm maximum print width, while the MPS EF multi-substrate press is wider at 430mm. This gives converters the option to run more labels across, when operating in pure flexo mode, and at higher speed.

Designed for label and flexible packaging printing from thin unsupported film to thick carton board, the press offers all possible converting options, including multi-layer label production, die-cutting, and lamination. As customer demands are for shorter runs with greater variation, the new hybrid EF SYMJET provides an alternative option that is both flexible and affordable.

- Established MPS EF flexo platform (430 mm or 340 mm)
- Integrated Domino digital inkjet unit
- Speed digital/hybrid 50–75m/min
- Up to six colors and digital white
- Kyocera 600dpi engine



EF SYMJET print unit and integrated converting



ROTARY DIE SOLUTION FOR VALUABLE COST AND TIME SAVINGS

An MPS die solution can be integrated with the EF SYMJET hybrid solution, with the capability to run in both semi- and full-rotary mode.

The switch between semi-rotary and full-rotary mode is very easy and fast. In full-rotary mode it performs as a normal rotary die.

The unit, like all other converting modules in the EF SYMJET hybrid solution, is integrated into the system and controlled by the main control panel. MPS has developed a quick-change hoist and integrated lay-off table for very fast tool changing when changing in between semi-rotary and full-rotary mode.

Advantages in semi-rotary mode are:

- Only one die cylinder instead of one for every repeat
- Smaller flexible dies
- Less down-time for setting-up die cutting
 - a) no change of die cylinders, just the plate with an integrated plate changing tool
 - b) easier and quicker mounting of usually smaller flexible dies

- No speed consequences for digital printing
- Fast cylinder changes with the use of the quick-change hoist system
- Higher speeds
- Bottom up die cutting
- Male-female cutting

UNIQUE AND FUTURE PROOF SOLUTION

Domino's Peter Lewald says that the uniqueness of the EF SYMJET hybrid solution lies in the fact that this combination has a modular design, with unlimited future possibilities. A label printer could in the future consider upgrading the press to 4- or 6- or 8-colors, bypassing inkjet or flexo, or even removing the inkjet unit, and using the digital and conventional units as standalone presses. The EF SYMJET also prints a wider web than using inkjet only.



IS A HYBRID PRESS A VIABLE SOLUTION FOR YOU?

Answering the question as to when a hybrid narrow web press is the viable solution is dependent on some factors. For example, the quantity of smaller sized jobs, the degree of processing of different types of labels, more diversified jobs, and to what extent workflows congest production capacity. It is recommended that a label printer reviews the number and type of jobs run over the years, to determine whether the job structure might be more favorable with hybrid printing.

Initially, a larger investment, the ongoing ability to print labels by either the flexo or digital process, or a combination of both technologies, is a significant long-term advantage of a hybrid press. The added cost is repaid by greater efficiency. Considering the lifetime of the press, with frequent diversity of order flow, the return is higher productivity. It also provides label printers with more flexibility in production planning that can be extended to their clients, which in turn increases

customer satisfaction. Other hybrid advantages include combined order flow, 100% color gamut, variable data and minimised capital machinery investment.

The MPS EF SYMJET is a viable alternative when looking for a true hybrid solution that combines flexo and digital printing inline, or allows them to be used separately, as well as offering the printing and converting of a wider web in one pass.

WANT TO TAKE YOUR PRINTING PROCESS TO THE NEXT LEVEL?

If you want to discuss how hybrid printing can help you to make your printing process more viable and take it to the next level, **feel free to reach out** to one of our specialists. They are happy to help you.

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ABOUT MPS

MPS, a Netherlands-based solution-oriented flexo and offset narrow web press manufacturer, with years of flexographic printing expertise, recognizes the challenges facing label printers. Through the use of knowhow and capabilities, MPS continuously helps customers enhance their printing processes. With more and more digital and hybrid solutions being introduced to the market, MPS tackles the question of whether hybrid solutions are hype or the future.

To gain more insight into digital printing, MPS partnered with digital expert Domino to join expertise of the two companies and together examine in which scenarios a hybrid solution is the viable solution.

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