

WHITE PAPER

# The Future of Packaging Printing

How VARIOMAN enables packaging printers to satisfy brand owners, operate more efficiently and sustainably, and be better positioned for the future

in partnership with



## Printers in the packaging industry currently face multiple challenges

Across the globe, packaging printing is undergoing considerable change as printers face considerable challenges in this highly competitive industry. These challenges apply to film, paper, and cardboard, as well as other types of printing.

Printers today must deal with changing demands from brand owners, increased operational pressures, growing environmental challenges, and pricing pressures—all while trying to maintain and increase profitability. Key challenges include:

1. **Changing demands by brand owners.** Brand owners are increasingly seeking new, innovative packaging solutions that allow them to appeal to narrower, more fragmented segments of consumers and markets. New packaging solutions allow brand owners to offer unique new products to build their brand and their market share. Brand owners' requirements include:
  - *High-quality packaging* that makes a positive brand impression
  - *Consistency* in printing and packaging quality
  - *Greater flexibility* (in addition to standardization and consistent quality)
  - *Competitive pricing* due to their own competitive price pressures



2. **A greater need for speed.** To help brand owners get to market quickly with new products or with packaging that communicates important features or other marketing information for specific customer groups, packaging printers need to be able to operate more quickly than ever before. This means just-in-time (JIT) production with quick changeovers and high availability.
3. **Growing environmental pressures.** Both customers and regulators are increasing their demands for more sustainable printing processes. This includes reduced waste, increased recycling, decreased energy consumption, and elimination of inks with volatile organic compounds (VOCs).
4. **Sustaining profitability.** While addressing brand owners' increasing demands, operating more efficiently, and responding to environmental pressures, packaging printers must do so profitably while preparing for the future of Industry 4.0. This will require more integration systems and increased automation.

In this challenging environment, packaging printers are being forced to reassess their strategies and production technologies. Challenging the way things have always been done is necessary to remain competitive, better serve brand owners in the future, and operate efficiently, sustainably, and profitably.

## Shortcomings with traditional packaging printing approaches

Historically, most packaging printing has been done using gravure or flexo. While these longstanding methods have multiple advantages, they also have considerable shortcomings.

	Gravure	Flexo
<b>Advantages</b>	<ul style="list-style-type: none"> <li>Industry standard in packaging printing, with long history</li> <li>Stable print form</li> <li>Simple to use</li> <li>High print quality</li> <li>Can use different types of ink and can print on different types of substrates</li> <li>Low machine investment</li> </ul>	<ul style="list-style-type: none"> <li>Dynamic, lots of new developments</li> <li>Print form not stable but relatively easy to produce</li> <li>Good for printing on flexible, thin materials</li> <li>Lower energy consumption than gravure</li> <li>Low machine investment</li> </ul>
<b>Shortcomings</b>	<ul style="list-style-type: none"> <li>High running costs</li> <li>Slow, expensive changeovers make shorter runs more difficult, costly</li> <li>Poor time to market</li> <li>Converter may inventory product from a longer run; adds cost and risk</li> <li>Solvent-based inks are dangerous and not environmentally friendly</li> <li>High energy consumption</li> </ul>	<ul style="list-style-type: none"> <li>Not standardized or easy to use</li> <li>Trying to match gravure quality is difficult and costly</li> <li>High process complexity</li> <li>Operating and tooling costs are high</li> <li>Solvent-based inks are dangerous, not environmentally friendly</li> <li>Printing with UV-based inks with photo initiators is expensive and not direct food compliant</li> <li>Converter may inventory product from a longer run; adds cost and risk</li> </ul>

Gravure and flexo are widely used in the packaging industry. They provide high print quality and can print on a variety of materials. However, these solutions don't meet the evolving needs and requirements of brand owners. They have high operating costs and poor environmental impact, and the slow, expensive changeover hurts the time to market, which is increasingly important. While beneficial for long runs of more than 100,000 sqm, gravure and flexo are not ideal for shorter runs.

In light of changes in the industry and the changing requirements of brand owners, it is important that packaging printers not be locked into the past, but rather consider what types of packaging printing solutions will best position them for the future.

## Why to consider offset

While offset printing has existed for years, previously, major offset press manufacturers were largely focused on the commercial and newspaper printing market. For packaging printing, most older web offset printing presses didn't offer consistent, high-quality printing, rapid changeover, or low costs.

However, due to technological innovations in offset printing, led by companies such as manroland GOSS, offset is increasingly a viable, attractive solution in many packaging printing applications. Offset now lines up well with the needs of brand owners and the requirements of packaging printers.

Advantages of offset include:

- Consistent and repeatable high-quality printing
- Flexibility in being able to print to multiple materials
- Faster speed to market
- Rapid changeovers—which save time and money and allow for shorter runs
- Lower operating costs
- Better sustainability due to lower startup waste, decreased energy consumption, and elimination of VOC solvents

Even packaging printers that have long used gravure and flexo solutions are increasingly interested in offset solutions. As one expert on the packaging printing market recently said, “Offset has huge advantages and arguably might be the future of the packaging market.”

## VARIOMAN was developed to meet packaging printers’ most important needs

manroland GOSS, founded in 1845 in Augsburg, Germany, is the global leader in web offset printing, with approximately 1,000 employees. After focusing primarily on commercial and newspaper printing system solutions for many years, the company saw an opportunity to bring its expertise to the packaging printing market. For the past several years manroland GOSS has interacted with multiple packaging printers to understand their requirements, pain points, and wish lists.

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The result of these efforts is that manroland GOSS has created VARIOMAN packaging systems solutions. VARIOMAN leverages manroland GOSS’s core competencies in web offset printing specifically for the packaging market. VARIOMAN is superior to gravure and flexo solutions and to other offset printing solutions for the packaging market. In addition to the main benefits of offset, VARIOMAN’s web offset solutions go further.



VARIOMAN Benefit	Description
<b>Print quality</b>	<ul style="list-style-type: none"> <li>VARIOMAN provides high-quality, high-resolution printing that meets the needs of brand owners and is of equal quality to gravure.</li> </ul>
<b>Flexibility</b>	<ul style="list-style-type: none"> <li>VARIOMAN has an "f" line for flexible packaging, a "c" line for cardboard and solid board, and a "b" line for book printing.</li> </ul>
<b>Changeover</b>	<ul style="list-style-type: none"> <li>VARIOMAN enables dramatically faster, less expensive changeovers because it uses a sleeve-based plate to create an image and doesn't require changing out heavy cylinders that are used in gravure and flexo. As a result:                             <ul style="list-style-type: none"> <li>A changeover on VARIOMAN takes <b>just 4-8 minutes</b> compared to 60-90 minutes on a gravure press.</li> <li>The cost to do changeovers on VARIOMAN is very low <b>at just \$16 sqm per plate</b> compared \$365 sqm for gravure and \$230 per color for flexo.</li> </ul> </li> <li>For printers that do more than one dozen changeovers per day—which is not uncommon—the savings of time and money are immense.</li> <li>These fast changeovers make it possible to do shorter runs cost effectively, improve the speed to market for brand owners, and increase the availability of the press.</li> <li>Also, converters aren't forced to inventory products for clients from long runs.</li> </ul>
<b>Operating costs/ROI</b>	<ul style="list-style-type: none"> <li>In addition to reduced costs related to faster changeovers, VARIOMAN also has lower ink cost per sqm compared to gravure and flexo, lower energy use, and overall lower run costs, which can be 25% below competitive options.</li> <li>For runs as small as 3,000 sqm all the way to 100,000 sqm and more, VARIOMAN has lower costs, with the most significant differences occurring on shorter runs.</li> </ul> <div> </div> <ul style="list-style-type: none"> <li>This means that even though the initial investment for VARIOMAN is typically higher than gravure or flexo, the payback is fast (often 6 to 12 months), the ROI is high, and companies can save millions of dollars per year.</li> </ul>
<b>Sustainability</b>	<ul style="list-style-type: none"> <li>As environmental issues grow in importance, VARIOMAN provides distinct advantages versus other packaging printing options due to low waste, solvent-free inks, less ink consumption, lower energy use, and more.</li> <li>These environmental benefits help printers save money, comply with regulations, and possibly realize tax advantages.</li> </ul> <div> </div>

VARIOMAN Benefit	Description
<b>Integration &amp; Automation</b>	<ul style="list-style-type: none"> <li>▪ Typical printing solutions require cobbling together a collection of different components.</li> <li>▪ VARIOMAN offers with PECOM-X an integrated solution where all of the components work together seamlessly.</li> <li>▪ Not only is PECOM-X an integrated workflow system, but the integration allows use of automation, further increasing productivity.</li> <li>▪ Automatic closed-loop color management systems provide consistent print quality and easy operation of the VARIOMAN.</li> </ul>
<b>Visibility &amp; Control</b>	<ul style="list-style-type: none"> <li>▪ Because VARIOMAN is integrated, instead of having multiple control panels, it has one centralized control center (part of PECOM-X). This improves the visibility and operation across the entire system.</li> </ul>

Overall, VARIOMAN leverages manroland GOSS’s expertise in web offset printing to improve printing for the packaging industry. Printers now have a high-quality, lower-cost solution that is more environmentally friendly and due to fast changeovers, works particularly well for shorter runs. VARIOMAN is an integrated, automated solution with improved workflow and enhanced systemwide visibility and operation.

In addition, manroland GOSS operates as a partner in working together to estimate VARIOMAN’s cost advantages, in planning, engineering, and implementing the solution, and in providing comprehensive ongoing lifetime service and 24/7 online and telesupport—which is uncommon in the packaging printing industry.

## Learn more about VARIOMAN

If you handle film, cardboard, or book printing, if print quality is extremely important to you and your customers, and if you frequently do runs of 3,000 to 100,000 sqm or even longer, you could increase your productivity and decrease your costs by using VARIOMAN.

To learn more, visit:

- [manrolandgoss.com](http://manrolandgoss.com)
- [facebook.com/manrolandgoss](https://facebook.com/manrolandgoss)
- [youtube.com/manrolandwebsystems](https://youtube.com/manrolandwebsystems)
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### USER REACTIONS

Among the benefits experienced by VARIOMAN’s initial users, those in the process of implementing VARIOMAN, and those considering this integrated solution are:

- Much easier to operate
- An extremely reliable press with repeatable performance
- Higher consistent print quality
- Faster changeovers resulting in much higher net output per shift
- Decreased startup waste
- Reduced run costs

As one potential printer who is currently evaluating VARIOMAN said, “I see this as a changeover press for average run lengths as low as 3,000 square meters.”

