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The Evolution of Industrial Graphics: An Insider's View

Manufacturers will have plenty of new options to choose from in the coming years, all of which are designed to deliver more flexibility while keeping costs low.

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Decades of change have revolutionized the industrial graphics industry. Gone are traditional job shops that followed a simple "quote-order-produce-ship" business model. In their place are highly technical, process-driven operations—including many Six Sigma and ISO-certified firms—focused on production quality, environmental safety, and craftsmanship. What's behind this evolution?

Outside Influences

For one, globalization has led to a greater emphasis on just-in-time manufacturing and shipping of industrial graphics. Inventory management, kitting, and global procurement have become essential as industrial graphics manufacturers manage production from a central location to on-demand distribution worldwide. At the same time, an increase in litigation has created demand for warning labels and decals—not just for end users, but also for the workers assembling the products.

Perhaps most important: Whereas decals, labels, and other markings were once considered an afterthought by many companies, they're now seen as an important extension of an organization's brand and corporate identity. This has led companies to require that their decal manufacturers adhere to strict guidelines, such as Coca Cola's requirement of precise color matching of its logo across various materials.

Customers today are placing more value on industrial graphics than ever before, working closely with suppliers on research, development, design, and performance.

Technology

Entering the 1960s, industrial graphics manufacturers marked their equipment with water-soluble decals—the only technology available at the time. Within a few years, however, a variety of new techniques emerged. Pressure-sensitive adhesives and polyvinyl chlorides gave engineers much more flexibility in marking products. Then, in the 1970s, thermoplastic polymers became the first technology to offer a thick, clear, printable surface that was durable, scratch-resistant, and allowed the manufacture of face plates similar to auto dashboard instructions. Electronic components could now be designed to accommodate a window for information and backlighting applications (e.g., turn signals and low fuel indicators).

Printing Processes

With the more recent onset of digital printing, the industry has seen even greater changes. Quick and inexpensive, digital printing is now the production method of choice for most marketing and sales literature (replacing offset printing), billboards, and point-of-purchase materials (replacing screen printing). A promotional sign in the window of a fast-food restaurant, for example, has a short lifespan and generally needs to be produced quickly and in small quantities—making it ideal for digital output.

Digital technology does have its limitations, however, particularly when it comes to quality, longevity, and color-matching capabilities. That's why screen printing is still at the heart of the industrial graphics business. The only viable solution for a number of applications, screen printing's unique combination of highly pigmented ink and coating withstands direct sunlight and weather conditions for many years. No other solution matches its weather ability, and only very limited technologies enable printing on thick materials or aluminum. It likely will be many years before a cost-effective alternative is developed.

Still, digital and screen printing technologies are on a collision course, since OEMs today expect the best attributes of both—quality, longevity, speed, and price—and prefer to work with fewer suppliers who can deliver on all these requirements. That's why many industrial graphics manufacturers have purchased and are testing various types of digital output equipment, direct-to-screen printers, and other cutting-edge technologies, integrating what works into the production process.

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Current Needs and Future Innovation

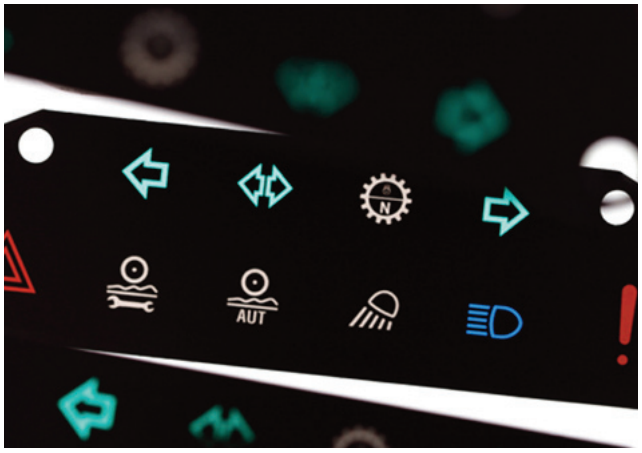
Digital printing isn't the only new technology coming to the industrial graphics industry. Manufacturers will have plenty of new options to choose from in the coming years, all of which are designed to deliver more flexibility while keeping costs low.

Sustainable solutions. Many innovative new materials—everything from biodegradable and sustainable substances, to substrates made from corn and soybeans, to vinyl that can be used on concrete walls—are in the works to help manufacturers meet both business and environmental demands.

Decals on demand. Another trend is the creation of just-in-time delivery processes for industrial graphics. Producing materials on demand means neither the supplier nor the customer needs to hold large amounts of inventory in stock, driving down costs. In fact, in the next five to 10 years, many large manufacturers likely will have marking film machines on their production floors to output safety markings, brand identity striping, and other graphics.

A hand press method is demonstrated.

Self-destructing signage. There's even talk of materials that can self-destruct after a specific period of time. Political campaign signs, for example, could be produced out of apple, corn, or other biodegradable material and simply disintegrate after an election—eliminating the need for someone to collect and dispose of the signage.



A backlit graphic.

As the industry continues to evolve, and as OEMs continue to push for more global, brand-friendly, and leaner solutions, industrial graphics manufacturers will need to remain vigilant about analyzing materials, technologies, and processes and eliminating waste. By doing so, they will ensure production of the highest quality, longest lasting, and most cost-effective materials.

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