ROBOTIC CUTTING INTELLIGENCE

Romanian printer digitalizes die-cutting for small-to-medium batches and creates an automated, eco-sustainable production site thanks to Elitron technology

DEM Media creates green displays and packaging with water-based inkjet and two Kombo TAV systems

by Lorenzo Villa

Doru Ursu was still a student when, in the mid-1990s, he began working at an advertising agency in Galați, a Romanian port city on the Danube just a few kilometers from the Ukrainian border. Together with his partner Marcela, who would later become his wife and business partner, the entrepreneur discovered a vocation for manufacturing and, in 2000, founded DEM Media. The company opened its doors using the home garage as a production space, where first a welding machine was installed, along with a small workshop featuring a hot-wire cutting machine and a vinyl plotter. The initial offerings were limited to tarpaulins, pre-spaced vinyl, and shop window decorations. However, growing turnover encouraged Ursus to purchase their first large-format digital printer and a VHF milling machine for processing wood and plexiglass.

The turning point came in 2006 when Arabesque, the country's leading distributor of building materials, entrusted DEM Media with the setting up of retail stores, events, and trade fairs. Consequently, they purchased land on the outskirts of the city and built a 2,000 m^2 production site where, over the following years, they installed a Multicam milling machine, a die-cutter, a Kongsberg i-XL44 and a C64 cutting system, as well as a Durst Rho 800, which was later replaced by a Rho P10 250 HS featuring automatic loading and unloading.

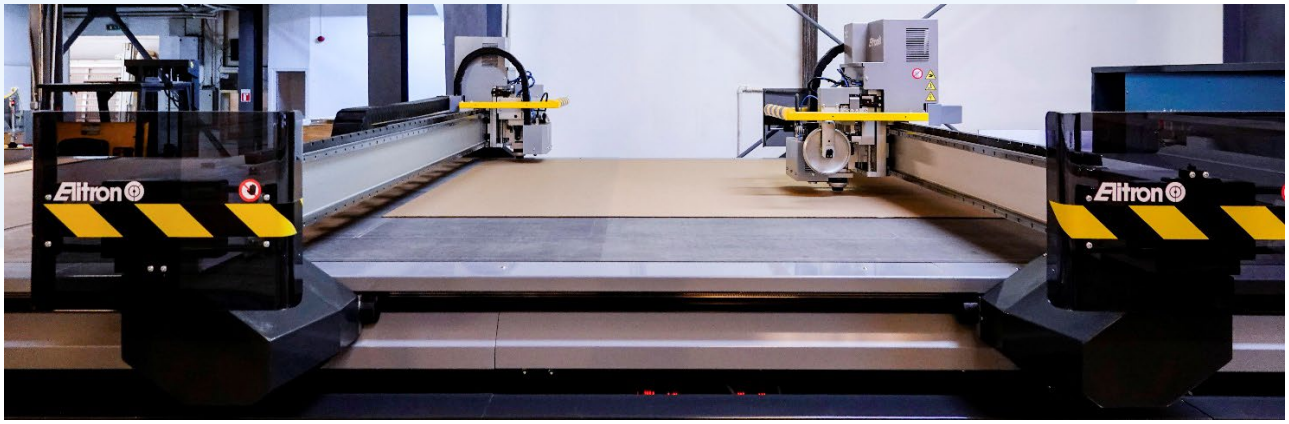
In September 2023, DEM Media moved its UV printing and flatbed cutting operations to a new location in Bucharest. With the purchase of two water-based printers and two Elitron Kombo TAV-R systems, it transformed the original headquarters into a dedicated production site for displays and packaging.

Diversification, Creativity, and Efficiency to Prosper in a Changing Market

DEM Media owes its success to the pioneering attitude and spirit of sacrifice of its founders, supported by a team of skilled and passionate employees. Across its two facilities, the company replicates a turnkey supply model that spans consulting, graphic and structural design, printing, cutting, assembly, packaging, and logistics. The product portfolio includes all types of decorative and promotional materials made of paper, plastic, composite materials, wood, and metal, though their true specialty lies in corrugated cardboard displays and exhibition solutions. DEM Media counts advertising agencies, print shops, retailers, hospitality businesses, manufacturers, and large food and beverage brands, including Nestle, among its clients.

To meet the stringent requirements of the food packaging and POP sectors, the DEM Media has obtained the relative key certifications as demanded by food industry multinationals.

A "Green Factory" for Packaging and Displays



Although the administrative headquarters moved to the capital, DEM Media concentrated its strategic investments at the Galați plant, home to its most experienced operators and technicians. It was here in 2022 that the concept of a fully green, energy-independent production hub took shape, designed to produce eco-sustainable communication materials across short, medium, and long runs.

“Working with national and international agencies, brands, and retailers, we thoroughly analyzed their needs and adapted our offerings by pushing our UV printing and existing cutting systems to full capacity,” explains Doru Ursu, CEO of DEM Media. “Ultimately, we

concluded that to compete seriously in paper conversion and packaging, we needed more automated and eco-sustainable digital technologies."

Working within a limited budget, DEM Media aimed big and decided to apply for European grants dedicated to technological innovation. At the same time, they began evaluating inkjet printing presses and automated digital die-cutting systems. With goals to expand volume, it quickly became evident that cutting and creasing presented the main production bottleneck requiring a solution.

Water-Based Printing and Kombo TAV-R for an Automated Production Workflow

On the printing side, DEM Media chose to focus on water-based technology. Following careful analysis, the company acquired an HP Latex R2000 for offset-quality sampling and short runs, as well as a Hanway HighJet 2500D for medium volumes. The Chinese-built multi-pass press, equipped with an automatic bottom-suction feeder and a high-capacity stacker, offered the best ratio of price, quality, performance, and operational costs.

DEM Media then tested automated cutting systems from major manufacturers, including Elitron's Kombo TAV-R, which the team had observed in operation at a Belgian box plant a few years prior and which already had several installations in Romania handled by Elitron's local partner, Printman.

“We were skeptical about the speed, but we tested all the machines under identical conditions, and Elitron's performance positively surprised us,” says Ursu. “Using the same files and substrates, the Kombo TAV-R proved to be the most productive among all the automated cutting solutions we tested.”

Upon successful completion of the bureaucratic grant application process, DEM Media installed two printers and two Elitron cutting lines nearly simultaneously. These were integrated into a workflow that also includes Esko’s Automation Engine and ArtiosCAD applications, along with Elitron’s Elipack 3D CAD software.

Automation, Autonomy, Energy Efficiency: The Strengths of Kombo TAV-R

Productivity and automation are vital for DEM Media, but the company also places strong emphasis on the environmental and economic sustainability of its processes. In this regard, the Kombo TAV-R proved particularly efficient due to its compact footprint and proprietary EPMS (Elitron Power Management System) technology, which adjusts suction pump power according to actual demand, reducing energy consumption by up to 50%. Additionally, thanks to their patented Airo Panel technology and a unique roller conveyor pallet handling system beneath the cutting bed, the Kombo TAV-R can feed severely warped sheets and stack them without requiring and attachment nicks. The system’s maximum pile height capacity (1.4 m) and high reliability allow DEM Media to complete long digital cutting cycles, all totally unattended by operators.

“With our previous printing and cutting equipment, we struggled to handle runs of 200–300 sheets even with three or four operators. Now, a single operator efficiently produces 1,500 sheets,” highlights Ursu. “More than just an economic advantage, we brought in-house operations that we previously outsourced to box-making partners, reducing our time-to-market from days to hours.”

DEM Media processes single, double, and triple-wall corrugated board for its jobs. Furthermore, most orders do not involve film lamination.

“Clients ask us to eliminate plastic film to create products that are easier to recycle,” Ursu concludes. “Having a 100% digital, automated, and water-based workflow gives us a unique position in the market.”

To further minimize its carbon footprint, DEM Media installed a 50 kW photovoltaic system, covering approximately 50% of its current energy needs.

Elitron
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Equipped with two Kombo TAV units, the Romanian converter now enjoys growth margins that were unimaginable just a few months ago and is preparing to expand its offer of custom packaging.