Elitron
ROBOTIC CUTTING INTELLIGENCE

Tupac Thrives in Display Production ...

Tupac AB have invested in a 22-metre-long Elitron cutting system with two cutting tool heads. This fully automated system queues pallets of material on conveyor tracks before and after processing.

By Felix Alnemark, Editor-in-chief, Sign & Print, Sweden



Based in Norrköping, Tupac is one of Sweden's largest manufacturers of displays and promotional campaign materials. The company was founded in 1990, when its core business was primarily die-cutting boxes.

"Today, our sales focus is on displays and campaign materials. That has been the case for the past fifteen years," says Lars Månsson, CEO.

Since then, the company has expanded its operations to include a broader range of products and services for in-store merchandising, including customised displays, packaging, protective packaging, product packaging, printed materials, design, storage, shop fittings, exhibition stands and distribution.

“From here, we handle everything from structural design, artwork and packaging components to all kinds of printed materials, posters, coupon pads and shelf wobblers,” says Markus Nyås, Sales Manager.

“Designs that drive our customers’ sales, increase their satisfaction, and foster long-term loyalty,” says Lars Månsson.

Tupac specializes in providing materials for retail display solutions, with a particular focus on grocery stores. Its displays are primarily made from corrugated board and cardboard.



Production is partly seasonal. When *Sign & Print* visited the company shortly before summer, the final deliveries for Christmas campaigns were being shipped.
“Our business is partly driven by retail sales cycles. We are currently working on an Easter campaign for one of our major customers. Our business continues to grow steadily, which is very encouraging and confirms that there is strong demand for our products and services,” says Markus Nyås.

From Standard displays to Bespoke Retail Solutions

In the past, major brands had in-house agencies handling creative work. However, as this became expensive, they turned to print management companies, which collected quotations from different manufacturers.

“But the creative side stagnated. A customer would start with one display and use it for several years. They would then ask us to quote for it over and over again, and we rarely received enquiries for new products,” says Lars Månsson.

After several years of focusing on standardised solutions, customer demand has shifted towards more distinctive products.

“Now, the larger customers have realised that standing out is essential, just as it was in the 1990s. There are much more bespoke jobs today, and we enjoy that. We have expert creative specialists and structural designers who specifically develop the designs,” says Lars Månsson.

As a result, projects and collaborations tend to last longer.

“We are now producing more large-scale and fairly complex displays. These projects take a long time because we need to develop and test numerous prototypes to get everything just right,” says Markus Nyås.

Making pallet displays more visually appealing in grocery stores and other retail environments has become increasingly important. Demand for these solutions is also increasingly driven by retailers themselves.

The company welcomes the shift towards more customised production. “Clearly, if you don’t stand out, it affects sales,” says Lars Månsson.



Markus Nyås says that, on the very same day, he received an enquiry for a project that would have involved a standard display just three years ago.

“Now it is much more sophisticated, with rounded shapes and a demand for innovative design.”

The confectionery industry is particularly good at pushing the boundaries of display design. In recent years, energy drink companies have also been among the sectors seeking creative campaign solutions.

“We are fortunate to work with major brands that recognise the value of investing in more elaborate displays. This not only increases our customers’ sales but also makes in-store displays more engaging and enhances the overall shopping experience,” says Lars Månsson.

More and more customers are displaying their products on pallets in stores and need to find creative ways to make these areas attractive and appealing. Retailers themselves have also started requesting such solutions.

“Our customers know that we invest a great deal of time in developing structures that are both innovative and designed to help them maximise in-store sales. Working together with our customers to develop new designs is what we are passionate about.



Material sheets are loaded onto pallets placed on roller conveyors. When a pallet reaches the cutting table, a lift raises it into position. Once the pallet is empty, it is lowered and travels underneath the cutting table on roller conveyors. On the other side, it is lifted again, loaded with the cut material, lowered and sent onwards along the conveyor rollers.

Considerable preparatory work goes into each project before a quotation can be submitted.

“There is a great deal of creativity, drawing, brainstorming and engineering involved before everything is ready and we work on the actual requested quotation,” says Markus Nyås.

Today, discussions often take place directly with the brand or brand owner. “If you go back ten years, advertising agencies managed these projects. Now, we deal almost exclusively with the brands directly. There are however still a few print management companies around, and we have good working relationships with them,” says Lars Månsson.

The Film Industry Ceased to be a Customer

I When Tupac was rapidly growing in display manufacturing, the film industry was an important customer. Film companies needed promotional materials and display stands for DVD releases. Television and video games were also significant customer segments, but both have virtually disappeared from the company's customer base today.



The Elitron Kombo TAV-R cutting system has 2 gantries and 2 cutting heads that work simultaneously.

“It was such a large business that run on its own momentum. New film titles were released constantly, and large quantities of displays were ordered on an ongoing basis. Every new release triggered a major promotional campaign, bringing the whole operation into full swing,” recalls Markus Nyås.

However, according to Lars Månsson, Tupac had become too heavily specialised in the film industry at the time.

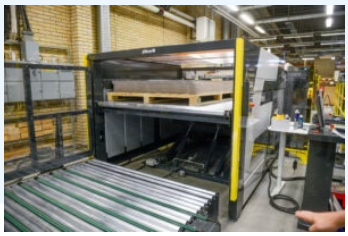
“It was difficult because the factory was full and everyone was busy, but we also understood that the business would eventually disappear. It is however quite difficult to change direction when you have a constant stream of work.”

The situation became even more challenging when the recession hit in 2008. In November of that year, the market collapsed, and within a couple of months the film industry had disappeared as a customer.

“Over the course of a year, we lost eight to nine million in revenue. It was a difficult situation when that happened,” says Markus Nyås.

The pandemic also affected the company, as demand for promotional campaign materials fell sharply.

Today, production is focused on the grocery retail sector, which is less sensitive to competition and economic fluctuations.



Once the material has been processed, it is loaded back onto a pallet, which has travelled underneath the machine before continuing along the rolling conveyor.

Digital Printing and Laminating

The industry segment in which Tupac operates has traditionally relied on screen printing. Around 15 years ago, the company made its first investment in digital printing. Since 2020, it has been operating an HP Scitex 15500, which is used to print almost all its materials, while smaller print jobs are handled by a Ricoh Pro C7200sx.

A few years ago, Tupac also invested in a laminating machine to accommodate very large production runs, for which both screen printing and digital printing can be too slow. For these jobs, the company sources large-format posters from external print providers equipped with offset presses.



The display manufacturer prints almost all materials on an HP Scitex 15500, with robotic feeding and unloading.

Several of the offset printing companies Tupac previously worked with have since closed down or sold their presses. Today, Tupac collaborates with FrontPac in Arlöv. Tupac laminates printed posters directly onto corrugated board to give the displays the necessary rigidity.

As the volume of customised jobs increased, Tupac's existing cutting table became a bottleneck in the production process.

A Fully Automated Workflow

Shortly before summer, Tupac invested in a new cutting system through Nize Equipment, although calling it simply a cutting table hardly does it justice. The Elitron Kombo TAV-R is a fully automated solution featuring two cutting heads.

Sheets are loaded onto pallets positioned on conveyor rollers. As a pallet approaches the cutting table, the conveyor rollers rise like a lift, bringing the stack of sheets up to the cutting level. Once the pallet is empty, the lift lowers down and the pallet moves automatically underneath the cutting table.

On the other side, another lifting mechanism raises the pallet so that it can be loaded with the cut jobs. It is then lowered and continues along the conveyor rollers at the end of the system.



Displays ready for delivery to customers.

“When we make an investment, we ask ourselves: What will this investment mean for the company in the long term? What does our current and future order pipeline look like? For a long time, we understood the need to increase flexibility in our production,” says Lars Månsson.

“The cutting table came about because there are more and more campaigns, which means more bespoke items. We don’t want to build tooling for everything, so we cut them out on automated cutting tables instead,” says Lars Månsson.

Enquiries are also increasingly for exact quantities of display stands, as customers want to avoid over- or under-runs.

It is also common for the company to be asked by a customer about a concept for, say, twenty shops. That makes for short runs, even if the order values can be substantial.

“In those cases, the new cutting table is extremely valuable,” says Lars Månsson.

The company looked at several makes of cutting table and regularly visits graphic arts trade fairs on the Continent.

“There are really only three suppliers when it comes to this type of table: Kongsberg, Elitron and Zünd. We travelled around Europe, visiting, looking and testing. I’ve known

about Elitron for a long time. We first looked at them probably ten years ago, but the market was different then. Back then, it was more a matter of die-cutting larger runs," says Lars Månsson.



Cobra A 120-162 flatbed die-cutting machine.

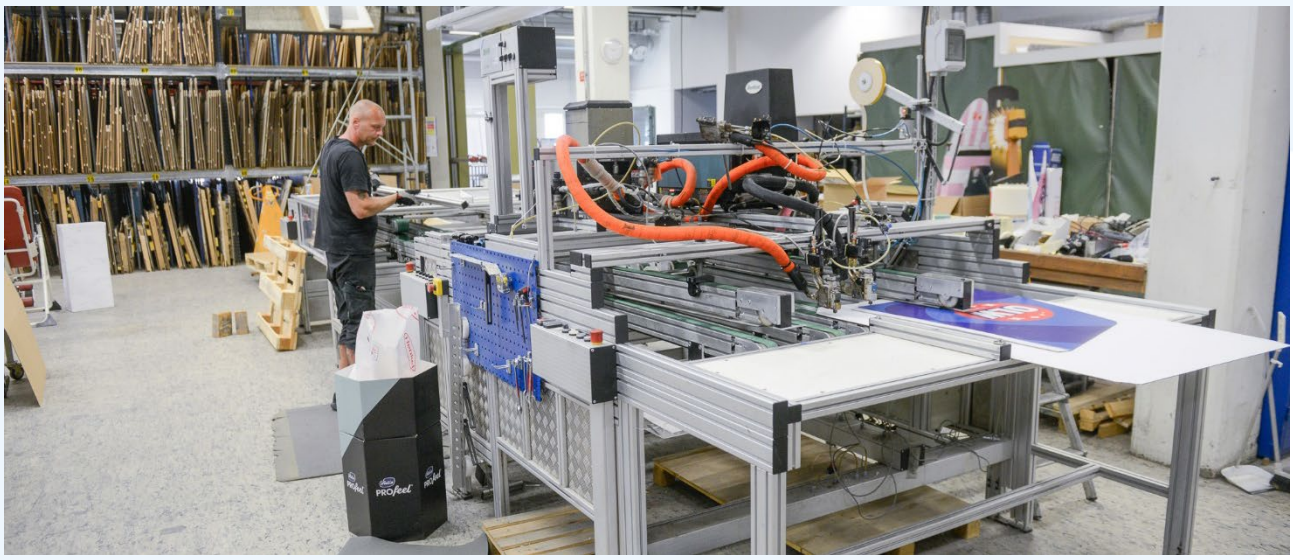
The company compared the different brands to identify the solution best suited to its production requirements.

"We went to Italy before making the purchase and received an excellent demonstration and a very warm welcome from Elitron. The company also has strong service capabilities through Nize Equipment, which made a very good impression," says Lars Månsson.

"It felt like a very well-engineered solution and a really good cutting table," says Markus Nyås.

The Italian supplier was chosen primarily because of the system's high level of automation and efficiency.

"Elitron offers something the other systems don't have: the integrated infeed and outfeed systems. You can load one pallet and then position another beside it. When you start the system on Friday, it processes the first pallet, sends the empty pallet underneath and continues with the next one. This table can keep cutting throughout the entire weekend without anyone needing to be there. The other tables don't offer that," says Lars Månsson.



Gluing machine.

Two Cutting Heads Share the Workload

The two cutting heads work methodically on the finishing operations, rather like two chefs using their own knives while carefully avoiding each other's working areas in a restaurant kitchen. The heads coordinate their movements to prevent collisions and can divide the work between them or operate in parallel to maximise efficiency.
If a knife on one cutting head breaks, the other head takes over the entire job. The system can be loaded with ten different jobs, and a code on the sheet identifies the corresponding cutting design. In the longer term, Tupac plans to use the software together with its digital printing press to group similar jobs and cut them automatically in an optimised workflow.
The sheets are scanned from underneath using the Elitron Seeker System technology, a dual-camera system that identifies registration marks to synchronise the cutting path with the printed image. The system also identifies barcodes and QR codes, enabling cutting files to be loaded automatically.



The pre-loading system elimates downtime by optimising material feeding, preparing registration-mark detection and positioning the material in a standby zone before cutting begins.

The Kombo TAV-R can process materials up to 20 millimetres thick. The table offers a cutting area of up to 3,200 × 2,200 millimetres, with a vacuum system comprising up to 32 zones to hold the material securely in place during cutting and creasing.

Whether the table is loaded with a single sheet or multiple sheets, the Airo Panel system unloads all sheets in a single operation. It uses suction to lift the entire stack and transfer it to the waiting pallet.

The new table has significantly increased production capacity. However, it is not faster than a die-cutting machine.



“It might cut fifteen sheets an hour if the job is somewhat complicated. A die-cutting machine can process four and a half thousand. So, it is not intended for the very largest production runs. However, you can increase its effective capacity because you can use it 24 hours a day, including weekends. We also have automatic die-cutting machines, so we still make tooling when production volumes are higher,” says Lars Månsson.

The investment has increased both capacity and flexibility, conclude Lars Månsson and Markus Nyås.



