High class meets mass production

For Belgian furniture manufacturer Gaston Bauwens NV, the production of classical living room furniture to an excellent standard of quality and high-volume manufacturing output are not mutually exclusive objectives. The company produces flat pack furniture for self-assembly which neither fits into the built-for-life category nor does it cater to the low-cost furniture market. It is here that the company stands out from its competitors. What makes this producer different is that through cost-analytical design and equipment of its furniture and by optimizing its process technology for high output production, it is able to keep prices to a reasonable level.

The ability to produce top-quality furniture in large quantities within a minimum lead time was consequently the underlying challenge thrown out by Production Director Nicojan Bauwens, son of the present company owner and Managing Director, to HOMAG Engineering – and other contenders – when it was requested to bid for realization of the project. The desired outcome was the ability to produce what is actually an expensive quality item of furniture at lower cost, making it affordable to a wider circle of buyers. At the same time, production had to conform to the most stringent environmental standards and – a not insignificant factor – also had to guarantee a defect quota verging towards zero.

For the family firm, meeting these tough criteria meant that it could continue to prosper in the future while fulfilling its traditional role as a top-class furniture producer. Founded in the 1930s as a carpentry and joinery workshop producing grandfather clock cases as well as shoe and bathroom cabinets, from 1958 onwards the firm began producing furniture in grander style. At the time the region supported around 25 producers, of which only a small handful still remain today. The Jan Bauwens company

group, which has now grown to encompass three individual firms active in their own fields of production (solid wood and period furniture, furniture made of veneered panel materials and solid fronts, and furniture with plastic surfaces) was seeking to secure its future and to assume a significant role both in the Belgian and the international market. A new and future-oriented product sector was consequently defined as an additional mainstay in the form of high-quality flat-pack furniture. This move was designed to simultaneously counteract dwindling demand for solid wood and period furniture, and so provide added security for the company's future survival and growth. To achieve this objective, the Solid Wood division of the company decided to invest around 10 million Euro in additional production and storage space for the production of flat-pack furniture, a high-voltage cabin for power generation and new state-of-the-art production facilities.

HOMAG Engineering concept with impressive features

The suggestion for the interface-free lamination of furniture components including longitudinal and transverse processing submitted by HOMAG Engineering immediately made a big impression on the decision-makers at Bauwens due to the striking features it had to offer. They were particularly impressed by the proposed complete processing sequence with networked machine components at the individual processing stations from the respective specialist producers within the HOMAG Holzbearbeitungssysteme AG Group. "The submitted production concept", recalls Nicojan Bauwens, "clearly demonstrated that HOMAG had correctly understood what we were looking for and were able to address all these needs with cohesive solutions. From the first consultation where we outlined our requirements through to the final project meeting and placement of order, we were quickly able to reach a decision in favour of the HOMAG Group plant within just six months". An equally important factor for him in the decision-making process was the Group's sales

structure with its close-meshed network of local agents and subsidiaries available to lend support. For Bauwens, this meant a designated contact person to oversee the entire project, short distances and easy communication.

Pure economic considerations naturally also played a substantial role in the final decision. Here, the “stable name” of HOMAG (original Nicojan Bauwens quote) provided the assurance not only of future perspectives, functional reliability and after-sales service, but also the prospect of further-reaching development and production process innovation in the future. “The experience, expertise and the specialist credentials of HOMAG Engineering provide tangible material benefits with a positive knock-on effect on our flat-pack furniture pricing calculation”, adds the Production Manager as a further reason for the company’s decision to go with the German manufacturing group.

Optimized efficiency due to Group-wide systematics

The Group synergy generated by the “everything from a single source” methodology also provides tangible economic benefits for Gaston Bauwens NV. Because standardized platforms are used for all components of the assemblies supplied by the HOMAG Group machine manufacturers involved, the interfaces otherwise required when mixing products from a variety of different manufacturers are no longer needed. In addition, the effective networking technology means that user interfaces of all the machines can be uniformly structured. As a result, not only do operating staff have a quicker grasp of the operating system, but similarly structured documentation such as manuals and operating instructions also help to simplify machine handling. At the same time, the installed service hotline makes faster servicing possible at any time of the day or night.

Another tangible benefit and cost-effective factor is the achievement of minimized set-up and resetting times due to an advanced degree of automation and the higher-level production line control system which oversees all the sections of the plant.

Highly qualified environmentally compatible production engineering

Alongside the ability to produce a top-quality item of furniture at lower cost and at the same time provide the assurance of environmentally compatible production, another unique selling point targeted by the engineers at Bauwens was the ability to laminate workpieces over extreme widths of 1300 millimetres in both paper and plastic. In addition, two application systems had to be alternately available, so allowing the different adhesive types needed for paper and foil to be applied as required without involving any additional work. It also had to be possible for thin panels to be laminated without problems, meaning a high degree of flexibility for both decor and back panels. Another difference is that only hot-melt glue is used instead of white adhesive and urea for laminating. This is not only more ecological but also helps cut down on the considerable amount of cleaning work which is otherwise required.

Instead of veneered surfaces, the solid wood flat-pack furniture comes with paper surfaces in every conceivable type of decor finish and wide-ranging different combinations. While furniture produced here used to be finish assembled first for quality reasons and only then lacquered using a complex process, now no surface treatment at all is required. In addition, a consistently high standard of visual and colour quality is guaranteed. The cut, grooved and drilled furniture components are immediately flat packaged ready for shipment following sizing and edge banding.

The benefits calculated by Nicojan Bauwens as a result of his concept for "low-cost, environmentally compatible production"

- Low-cost production through process-optimized production
- Less production outlay
- Lower costs by cutting out the lacquering process including all ancillary expenses
- Reduced energy consumption
- Elimination of furniture assembly
- Facility for packaging furniture in parts
- Simpler transport (= lower transport costs)
- Self-owned fleet of vehicles for improved delivery service, no transport damage, lower logistics outlay
- Low-cost quality furniture for the customer
- ...and last but not least, economical use of wood due to lower consumption of this precious natural resource, and elimination of laborious veneer preparation and processing.

As a result of this optimization program, the company can afford to keep a warehouse offering 15,000 square metres of storage space well stocked with flat packed furniture, meaning faster delivery times for customers. Consequently, the new "flat-pack furniture" product division accounted for no less than 30 percent of Group turnover in its first year. With the tendency rising, the Group is focusing on achieving a 40 per cent share in 2007.

Display board

1) Production plant for knock-down furniture

► Flexible production line for laminating and dividing in a single pass

Involved companies:
BARGSTEDT
FRIZ
HOMAG
HOMAG Engineering

Plant components:

- Feed including infeed roller conveyor
- Lamination above/below
- Longitudinal saw
- Angular transfer
- Transverse saw
- Angular transfer
- Stacking
- Higher-level line control
- Use of two different glue application systems on separate carriages
  Glue system with roller application for PUR hotmelt glue for PVC foil
  Glue system with wide-slot nozzles for EVA/PO hotmelt glue for decor paper foils
- Raw panel workpiece parameters
  Length: 1200 – 3000 mm
  Width: 254 – 1300 mm
  Thickness: 3.2 – 60 mm

Display board
2) Production plant for flat-pack furniture

► Flexible production line for four-sided sizing and edge banding in a single pass

Involved companies:
BARGSTEDT
HOMAG
HOMAG Engineering
WEEKE

Plant components:
- Double-sided feed
- Double-sided longitudinal sizing and edge banding
- Angular transfer
- Double-sided transverse sizing and edge banding
- Curved conveyor
- Drilling
- Double-sided stacking with turnover station
- Higher-level line control
- Use of four drilling machines (at customer request): 2 machines deployed, 2 in set-up status
- Edging materials: off the coil
  Thin edges 0.3 – 0.8 mm (paper, melamine, CPL)
  Thick edges 1.0 – 3 mm (ABS)
- Servo technology with standard trimming units
- HSK 63 toolholder with standard trimming units
- U-shaped machine arrangement

The company

GBO Furniture

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Founded:	1935 by Gaston Bauwens 1951 expansion and reorientation by Jan Bauwens
General Management	Jan Bauwens, Managing Director Son Nicojan Bauwens, Production Daughter Jannic Bauwens, Finance
Administration	Luc Vecruysse, Head of Sales
Plants	
Bauwens:	Furniture with veneered surfaces and solid wood fronts, sawmill
De Akker:	Heavy-duty solid wood furniture, period furniture
Solidwood:	Flat packed furniture
Workforce	around 400
Company size	Site: 166,500 sq.m. Covered area: 80,000 sq.m. Production area: 42,000 sq.m. Furniture warehouse: 38,000 sq.m. Forested areas used for own felling
Turnover	Group: 40 mill. Euro in 2006, 2007 + 6 % Proportion of flat-packed furniture: 30 %, 2007 + 35 % Export share: 40 %
Sale	Through trade
Advertising	Trade journals Trade fairs Show truck

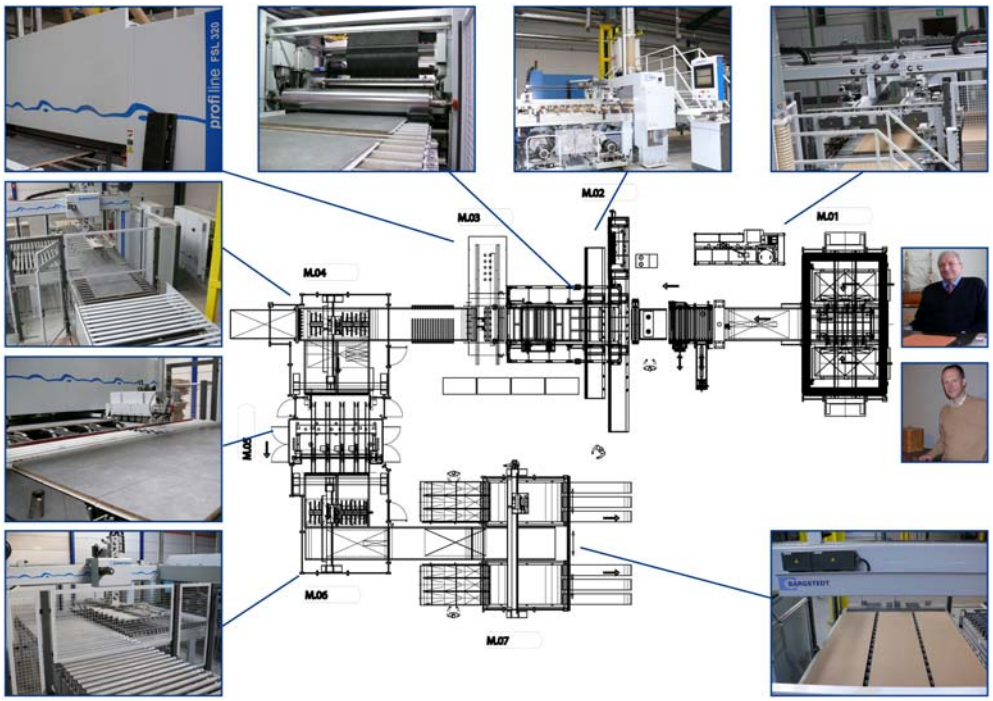

Fig. 1:

Plant layout

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