

# Advanced automation generates profit and labor positions

**Not only new hi-tech products can generate labor positions and profit in high salary areas.** Gyllensvaans, which is one of IKEAs leading Swedish suppliers of furnitures, shows clearly how an advanced automated hi-tech production process is much more important than hi-tech products for generating new labor positions and profit in conventional industries such as the furniture industry.

BY HENRIK CHRISTIANSEN, COOL GRAPHICS

**I**n 1952 Gyllensvaans Möbler in Kättilstorp in Sweden received a humble, but also rather self-confident letter about buying furniture. It basically said: “We want to buy furniture, and our payment conditions are net 10 days”. The sender was the, at that time, totally unknown IKEA. Gyllensvaans decided to sell furniture to IKEA and the foundation for a more than 60 year long cooperation was established.

**DURING THE PAST 60 YEARS** IKEA has established itself as the absolute world leader in furniture-kits at rea-

**Automation in the furniture industry is the key to maintaining production, working positions and profits locally**

sonable prices and get the furniture manufactured with such a consistent, high quality level that buyers all around the globe are more than satisfied. Walking through a typical IKEA store most customers probably

assume that such a successful concept only can be established using a network of sub-contractors in low salary areas, but nothing can be more wrong. The key to the concept is to establish long-lasting agreements with sub-contractors, which can fulfill IKEAs extremely strict demands to quality and price, but not necessarily from low salary areas. Gyllensvaans exemplifies outstandingly that one can produce quality furniture to very competitive prices even in high salary areas and generate new labor positions – as long as one understands to automate the production process.

**TODAY GYLLENSVAANS** manufactures around 100,000 ”Billy” bookshelves and 30,000 other pieces of furniture per week and deliver them to IKEAs stores all around the world. Mats Gyllensvaan says: “Gyllensvaans manufactures most of the colored “Billy” bookshelves sold in Sweden, Europe, the USA, the Middle East, Asia, China and Japan.

**GYLLENSVAANS’ SUPERB** exercise has been to automate the production- and packaging lines with Yaskawa robots and advanced control technology. Basically, the raw boards enter in one end of the factory, while the finished,

**Mats Gyllensvaan on a gangway overlooking the installation of 55 Yaskawa robots.**



packed products leave in the other, basically untouched by human hands.

For a more detailed explanation: The big boards arrive on pallets from Swedspan in Hultsfred. The boards are lifted by forklifts to conveyors, which transport them to the laminating machines, which add the laminate in the decided color. Then the boards are sawn down to the appropriate sizes by cnc-controlled sawing machines. Robots then lift them to pallets to be transported on

conveyors in the packaging lines. Each specific element in the “Billy” bookshelf has its own pallet, as this is required for automating the packaging lines.

**GYLLENSVAANS HAS 53 ROBOTS** and 45 are installed at the packaging lines. Each packaging line has a different number of conveyors and robots. All robots in each packaging line are controlled by a central computer system. The first robot takes the flat transport box from a pallet and erects it into the needed box size for all “Billy’s” parts. Then, with two robots working in tandem the first takes the specific part from the transport pallet and put it on the conveyor, while the second takes it from the conveyor and position it correctly in the box. Depending on the number of items in the specific “Billy” bookshelf the following robot pairs put each their specific item, including the assembly manual in the correct language, into the box. A new robot closes the box and finally a robot takes the finished, closed box from the conveyor and to the delivery pallet, which is then transported automatically to the plastic wrapping machine and then to the storage for the finished goods. Johnny Jarhall from Yaskawa Nordic explains about this sophisticated robotic solution: “At the end of the day the task of each robot is not extremely demanding, so the real challenge is to link all robots and conveyors together. It is obvious that if just one element runs out of tune the whole assembly line stops immediately.” Mats Gyllensvaan adds: “It is extremely rare that anything unexpected happens, even though some of our robots are more than 15 years old, but in case something happens, we always have a few robots on stock in our warehouse, and we can substitute a robot and get it up

## It is the automation of the manufacturing process and not only advanced products, which generates competitiveness. So not only new hi-tech products can generate labor positions and profit in high salary areas.

and running with a new software in less than 30 minutes.”

**GYLLENSVAANS’ FIGURES SHOW** that since the start of the cooperation with IKEA, they have never been forced to lay-off employees due to the automation. Since 2004 the turnover has nearly doubled at the same time as the prices have been reduced, and even in the crisis years from 2009–11 the turnover increased. However, in the present situation it is more difficult to obtain competitiveness due to the strong position of Sweden’s krona. In 2011, Gyllensvaans 212 employees produced for € 98.8 mill resulting in an impressive sale of € 466,000 per employee. The personnel costs € 11,8 mill, which generates an even more impressive 12.5% relation between salary costs and turnover. This brings Gyllensvaans in group with some of the most advanced hi-tech companies in Scandinavia.

**GYLLENSVAANS PRODUCTION** line is among the most impressive ever made in automation and robotization, but they have not done anything, which other companies in many other conventional industries cannot do, if the will to development and innovation is present. Johnny Jarhall adds: “With this very advanced computer controlled production process combined with our new humanoid robots, it would in principle not be any robot-technological challenge to assemble the bookshelves to a finished product at Gyllensvaans, but it would of course totally conflict with IKEAs concept and generate a lot of transportation costs. But for a lot of other manufacturing companies in high salary areas there are a lot of opportunities to both improve the profit and generate new labor positions, if creative thoughts are made about how to automate and robotize the manufacturing line – even if one does not manufacture the world’s most sophisticated product.”

**THE OVERALL CONCLUSION** is that it is the level of automation of the manufacturing process, and not the product itself, which creates profit and new labor positions - also in high-salary areas, because, with all respect, the bookshelf “Billy” is not a real hi-tech product, but its production line is. As a consequence the whole debate about what can be produced profitably in high salary areas should be revised, because profitability is not just a question about the product’s technological level, but much more about how automated the production process is. Much more products can be produced in high salary areas and much less has to be outsourced with appropriate automation, so the real discussion should be about automating and robotizing the production process with less focus on the produced product’s technological level.



### facts

Gyllensvaans Möbler is a family business located in Kättilstorp outside Falköping in Sweden. Nils Gyllensvaan founded the company in 1946 and delivered Gyllensvaans first furniture to IKEA in 1952.

Gyllensvaans Möbler employ about 250 people and with a annual sales amount to approximately 816 million SEK. Most of the production consists of bookshelves, mainly IKEA’s world famous ”BILLY”. 170.000 pieces of furniture is produced each week.