Why the Integration of Automation in Apparel Manufacturing Will Change the Outsourcing Landscape

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It is a well-known fact that the fashion sector is one of the most labour intensive industries, in which developing countries manifest a comparative advantage based on their low cost per working hour.

It has turned into a competition between companies to chase after the holy grail of sourcing locations combining low labour expenses, the most favourable trade agreements, governmental policies, as well as supportive exchange rates, which causes them to relocate production.

China, having been the number one go-to country for this purpose for a long time, had to make space in the room for other players like Bangladesh, and furthermore even more cost-competitive countries like Vietnam and the Philippines.

The toughest challenge for fashion companies in this complex environment is to balance quality, speed, capacity, risk, and price. In a crowded outsourcing market everybody heading the same direction, bottlenecks ensue. This is where true innovators realise they have to rethink their strategy to gain an advantage and differentiate themselves to maintain their margins.

As a response, Adidas, the German sports giant, successfully implemented a fully automated, so called ‘Speedfactory’ in the footwear sector in Germany. The foundation for a second plant was already laid. Does automation in apparel manufacturing present an alternative go-to solution, putting an end to the classic outsourcing as it is still being taught in business schools?

For many still unimaginable, the pace of technological progress shows that companies could actually be closer to completely automate their garment factories than is obvious from the outside. “I do not see
anything standing in the way of the fully automated factory of the future in the next five to 10 years”, says CEO K.P. Reddy of Softwear Automation.

In the near future, it will most likely become a standard for ordinary people to walk into a store, be measured by a body scanner, and involved in the design process to let a favourite piece manufacture “to go”. Buying tailored clothing could become as easy as ordering a coffee at Starbucks.

Of course, automation does not come without limitations.

While the knit sector already presents a high degree of automation able to produce an entire garment on a 3D knitting machine, sewing lies a step behind as only machine for certain “single” operations such as button hole machines or automated cutting machines are available.

The actual hurdle to assemble a complete garment by sewing without human intervention, on the contrary, is high. Nevertheless, one company managed to do what others thought was impossible.

Softwear Automation, an American company, invented a robot able to handle deformable material, to rotate fabrics, and line up seams precisely with the ability such as human garment workers. The cooperation of LOWRY, a fabric handling system, with automated sewing machines, introduces the Sewbot™, a fully automated sewing robot.

Since 2016, Sewbots have made progress from tackling simple operations in the home goods sector to more complicated tasks in apparel manufacturing. Softwear Automation will ship out its first fully automated T-shirt production line to a Chinese manufacturer in summer 2018.

With this pace, the company is on track to build an entire basic automated factory by 2027.

Even as the knit sector is already highly automated, recently developed software additionally allows advancements in mass-customisation on complete flatbed knitting machines, which, as of now, presents the highest degree of automation.

"The reason [mass-customisation] hasn't happened before in knitwear is that the design tools that exist are very old fashioned, almost like 1980s, 1990s-style CAD”, demonstrates Alun-Jones, founder of Unmade.

This breakthrough provides freedom in the production process. Companies can produce customised items without the previously time-consuming programming. The major advantage is cost-efficiency by being able
to manufacture for the same unit costs as would be the case for a mass-produced product, according to Unmade.

These automated technologies can absorb mass-customisation and fast mass-production, feasible to produce on-demand in destination hubs. One advantage of automation is that “[a] customer would be able to produce in a high labour market like North America or Western Europe at a cost comparable to producing in China”, reveals Anastasia Simons. This, in turn, reduces the need to use outsourcing.

Aside from that, automation has an ecological advantage for a sustainable manufacturing practice, provides quality accuracy to a millimetre, and delivers high capacity.

One T-shirt Sewbot alone “will allow a single operator to produce one million shirts per year”, reveals Interviewee Anastasia Simons. This is a rough 270% capacity increase from a T-shirt manufacturer in Portugal, where brands such as Karl Lagerfeld, Hugo Boss, Inditex, or Nike manufacture to keep up with speed and trends.

Overall, automation claims a clear win to outsourcing with regards to the aspects speed, quality, capacity, risk and sustainability.

For the majority of companies, the implementation will come down to a question of time and costs.

Potential first investors for these automations clearly are industry leaders, strongly revenue-backed brands, retailers, and transnational manufacturers with a large R&D budget or companies, which receive subsidies from the state to invest in automated technologies.

Therefore, centres of mass-production, for which the investment of automated manufacturing practice is not yet economical enough, must stay aware of an increased local competition in the future. Affected economies are normally countries with low minimum wage, inflation rate, and real wage growth – classic outsourcing destinations.

Automation has the potential to change the sourcing landscape and offers a direct alternative to outsourcing. Yet, the fashion industry will – once again – not see a transition happening overnight.

The integration is conditional on market requirements. If the trends of speed, customisation, and sustainable manufacturing practice are highly demand-driven by the consumer, automation has a chance to rapidly prevail its assertiveness on the market.
But even then, automation cannot be completely seen as a substitute for traditional outsourcing. For those large companies’ investors, it presents rather a supplement next to its familiar and reliable classic (human) production method, which accompanied garment manufacturing since the beginning.

Anastasia Simons predicts that even despite automation, “brands will still outsource parts of their manufacturing to traditional manufacturers who instead of employing 1000s of workers will now hire 300-500 people to maintain and operate the machine”.