Re-structuring Production

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The Challenge

Actions to mitigate the unsustainable environmental and social impacts of the textile and clothing industry tend to focus on fibres and process chemicals on the textile side[1] and wages and working conditions on the garment production side.[2] While worthy endeavours, neither of these lines of actions addresses one of the main causes of the negative impacts: overproduction.

In parallel, research to improve the production process through technologies such as Industry 4.0 tends to focus on lowering costs, improving speed and increasing efficiency,[3] all potentially leading to only greater overproduction. Indeed, this approach follows the

automation paradigm of replacing human labour, rather than an empowering paradigm with human knowledge at the centre. Concretely, it imagines shiny new machines and factories replacing old equipment (as well as people), rather than improving the smartness of existing facilities.

The Approach

The TCBL approach takes a step back from these contradictory signals, to look at the overall structure of the industry's manufacturing value chains from two perspectives: how can we better take advantage of the hidden efficiencies of human knowledge and how can we support a shift to producing fewer, more sustainable items of higher quality? And in both cases, how can we recover capacity by improving the business prospects of existing businesses and workers, rather than simply imagining future (and investment-heavy) scenarios?

To answer these questions, we worked together with TCBL Associates across Europe facing the real challenges of surviving in a changing market. Here are some of the main insights gained from the case studies.

- Independent designers and designer/producers tend to be more agile and responsive to shifts in customer attitudes towards sustainability, but they lack the entrepreneurial capacity to be able to scale up, expand, and/or network with others.[4]
- When designers do try to collaborate with other designers and/or small-scale producers, a number of barriers emerge: different pattern-making techniques, different conventions for styles and assembly, the lack of widespread services and digital platforms suited to small businesses, etc.[5]
- Traditional garment manufacturers those surviving in the Western Hemisphere, mainly in Eastern Europe are facing two parallel challenges: the difficulty in finding skilled workers (people who know how to sew) on the one hand, and the diseconomies of producing for increasingly reduced lot orders with facilities designed for production-line assembly, on the other.[6]
- Too often there can be a disconnection between small designers and manufacturers surrounding placing and accepting orders: each could benefit by having a greater understanding of the needs of the other without increasing risk unduly, if at all.
- As their clients become ever more fickle and demanding, many garment producers are attempting to diversify with own design/production lines paralleling their third-party orders. This generally requires separate facilities but can balance their risks; above all, it gives them an opportunity to experiment new approaches and systems.[7]
- Textile manufacturers have facilities with important investments and long lifespans making for little flexibility, only partially mitigated by retrofitting or software enhancements to decrease set-up and re-tooling downtime. They find however far greater flexibility if they can capture opportunities in production scheduling,

including through big data analysis of existing and planned production runs: reselling extra metres (end of the roll), short runs produced in downtime, available dead stock, simplifying or adapting designs from larger orders, etc.[8]

By addressing these issues and opportunities from a holistic perspective, we can imagine a scenario where sustainability is driven by the following elements:[9]

- Business models based on flexible short run production and shared conventions for smoothly interfacing roles and facilities.
- Networked independent design and production facilities capable of sharing and adapting models, distributing workloads, and producing locally.
- Engagement of customer/citizens in social production and territorial knowledge exchange, increasing awareness and appreciation of the qualities of materials and craftsmanship.

The Pilot Projects

Three innovation projects have been launched in order to validate some of the concrete aspects of this scenario in practice, through the direct involvement of TCBL Labs and Associates. In the first, a Short Runs on-line service aims to facilitate collaboration between independent designer / producers and manufacturers capable of producing in small lots. On the designer side, the service first goes through a series of steps to test readiness to produce, linking to TCBL support resources where needed, e.g. for prototyping, choice of accessories, etc. Once this process is complete, a matchmaking function delivers a map of possible producers. On the manufacturers side, the service briefs on short runs definitions and procedures and allows a company to turn on/off their availability for short runs production.[10]

The second project aims to take a fresh look at the organisation of workflows and workplaces for garment production. Experimenting a team assembly approach adopted in the automotive industry in the late 1970s, the goal is to allow for more flexible scheduling of procedures assigning batch goals to a team rather than defining every step that is more responsive and agile while allowing for workers to communicate, share methods, and, above all, learn from each other. Favouring group or cluster rather than in-line arrangements of workstations according to job types, the testing to date has shown a significant increase in worker satisfaction and productivity, with gains of up to 10% in turnaround times.[11]

The third project explores ways to bring out hidden territorial knowledge about sewing while engaging citizens and consumers in the production process. It builds on the idea of the TCBL Café, a sort of upscaled sewing café that introduces regular meetings, designer models, thematic sessions, and on-site support to ensure quality and professionality while maintaining a social approach to collaborative production. The TCBL Café model has spread throughout the TCBL network of Labs having a focus on community engagement, and a recent initiative is now working on the development and exchange of sewing kits specifically designed to be assembled in a collaborative sewing environment.[12]

From these experimentations some archetypal models for the future emerge what we are calling TCBL Business Model Magnets[13] such as the networked sustainable fashion designer, the short runs producer, the local production hub. As these models attract participants in the TCBL ecosystem each can transition towards one of the new roles. Some will need to scale up their artisan approach, some to scale down their mass production systems, some to scale out through networked collaboration. To all, TCBL aims to show the way and provide the concrete tools to support those transitions.

[1] See for example https://www.greenpeace.org/international/act/detox/

[2] See for example https://www.fairwear.org/

[3] See for example http://softwearautomation.com/products/

[4] https://tcbl.eu/project/overcoming-obstacles

[5] https://issuu.com/tcbl/docs/independents_business_case

[6] https://issuu.com/tcbl/docs/workplace_design

[7] See TCBL Associate Katty Fashion https://tcbl.eu/directory/katty-fashion-ltd

[8] See TCBL Associate Trafi https://tcbl.eu/directory/fabio-giusti-trafi-creativit%C3%A0-tessile-srl

[9] See TCBL Business Model Magnets https://issuu.com/tcbl/docs/tcbl_business_model_magnets

[10] See forthcoming Deliverable 5.5

[11] See https://issuu.com/tcbl/docs/workplace_design

[12] https://issuu.com/tcbl/docs/sewing_kits

[13] https://issuu.com/tcbl/docs/tcbl_business_model_magnets