

4th International Conference on Mass Customization and Personalization in Central Europe (MCP - CE 2010)

MC&OI and the Financial Crisis - Challenge and Opportunity September 22-24, 2010, Novi Sad, Serbia



"MANAGED CUSTOMIZATION" IN THE GARMENT INDUSTRY

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Abstract: Driven by customer- and market-demand, more and more garments need to be customized or personalized. Brands and manufactuers who do not repsond to this demand are at risk to put themselves at a competitive disadvantage. This paper describes the concept of "managed customization" as a way to introduce mass-customization capabilities organizations in the garment industry.

Key Words: *Mass Customization and Personalization, Garment Industry, Customized Workwear*

1. INTRODUCTION

This paper is based on the experience of Brandvis Ltd., which provides a solution for workwear brands in the garment industry. The solution allows to customize workwear garments, certify the garments against the relevant industry standards (e.g. EN 471), produce orders in small-batches as low as 50 units and deliver them to customers within 4 weeks [i].

The paper will first give an overview of the workwear market and point out why customization is relevant and challenging in this market. We then introduce the relevant mass-customization concepts and will explain their applicability to the garment industry.

The paper will then introduce the notion of »managed customization« based on platforms and templates and will demonstrate the relvance and importance of these concepts for the workwear market in the garment industry.

2. THE GARMENT INDUSTRY AND THE WORKWEAR MARKET

The U.S. market alone for workwear reached \$11.7 billion in 2008, an increase of 5.4% over 2007 [ii]. Of this, technical workwear represents approximately \$4.0 billion, or approximately 60 million garments. The customized technical workwear segment is conservatively estimated at 10% of this. The European Market is approximately the same size as the U.S., estimated at \notin 4.27 billion in 2008, with the average spend per worker estimated at between \notin 75- \notin 100.

Historically most of the garments get produced using mass-production/built-to-stock approaches, means you can only sell whats in the warehouse. Adopting mass-customization strategies and concepts is challenging. This is true for all industries, but maybe especially true for the garment industry. At the same time the pressure to deliver on the market demand for cost-effective, customized workwear garments is mounting.

As a result you can segment to workwear market in to companies, who have not started to do/offer any customized products yet, but are very interested to do so in the very foreseeable future and the companies, who actually offer customized products, but are always very interested to optimize their ability to do so even further. In the later case you can also see that in some cases the attempt to offer customization falls into one of two categories:

- »Wanna-be« customization were customers are offered a very limited number of choices and options
- »Un-managed« customization were customers are offered to customized everything

»Wanna-be« customization is easy to implement. Most of the time it is a glorified version of a build-tostock (BTS) approach in the sense that everything that can be customized will be built before the order is raised.

»Un-managed« customization allows to customize everything (almost to the extend of engineer-to-order (ETS)). This is good for the customer, but makes it very difficult for the vendor/manufactuer to deliver on it from a price and also from a delivery time point of view. In general the flexibility this approach offers to end-customers is not needed in the garment industry.



Figure 1 – Different levels of customization

Customization itself and introducing customization to an organisation is generally difficult. To make matters worst this is especially true for customized workwear, because hi-visibility, high-performance workwear needs to be certified.

Europe was at the forefront of introducing regulation around High Visibility Clothing with EN471 being introduced in 2003. The Canadian Standards Association (CSA) and the American National Standards Institute (ANSI) then introduced CSA –Z96 2004 and ANSI 107-2004, both modelled on EN471 in 2004 [iii]. Failure to comply with these standards can lead to prosecution [iv].

To certify a garment is a process that can take three weeks to three month and requires to built a sample, which will be send to a cerification institute (e.g. SGS in the UK [v]). For mass-produced garments this is (in general) acceptable, but for customized garments it has a direct, immediate and negative impact on the time to delivery. One popular approach to get around this to take certified, mass-produced hivisibility garments and put logos on it afterwards. This is dangerous, because the post-production customization can hurt the fabric and can potentially invalidate the performance of the garment, when it comes to Foul Weather Protection (i.e. EN 343). It also creates a risk, because putting a logo on the garment after the fact or customize the garment in any other way that effects the outshell of the garment, might reduce the amount of reflective material that is visible and as a result invalidate the garment to be considered a hi-visibility garment (i.e. EN 471).

Therefore in most cases a recertification is necessary, but then you are back to dealing with the delays this (re)certification will add to your leadtime.

In summary the workwear brands face four main challenges when trying to offer customized workwear:

- Design Customization consumes the time of the design team
- (Re)certification is required to maintain compliance with relevant standards (a legal requirement)

- Customized orders typically need to be delivered in small batches (that factories cannot adjust to)
- Customized orders can take anywhere from 3-6 months to deliver

In this chapter we showed that customization of hivisibility, hi-performance workwear garments is something that the industry needs to embrace more and and more and that implementing customization can be more challenging that it may be apprear at first glance.

3. MASS CUSTOMIZATION CONCEPTS IN THE GARMENT INDUSTRY

The concept of mass customization is attributed to Stan Davis in Future Perfect and was defined by Tseng and Jiao (2001) as "producing goods and services to meet individual customer's needs with near mass production efficiency" [vi].

The concept of mass customization is to combine the efficiencies of mass production with the flexibility of custom design and ordering. Despite demand from commercial customers and consumers, very few industries have successfully implemented mass customization solutions/processes and those that have usually specialize in individual customization of high value items such as automobiles. Although it is not a new problem and the demand for a solution is increasing, mass customization has all but eluded the garment industry and the workwear industry in particular.

Mass Customization concepts are understood to various degrees in a given industry vertical. So far the focus in the garment/apparel industry has not been on mass customuzation per se, but more on finding ways to do personalization as cost-effective as possible (e.g. Nike.ID [vii]).

As a result most of these offerings provide good value in the sense that getting a customized (or more precise a personalized) Shirt or a pair of Sneakers for a multiple of the price of the mass-produced good is perceived a good deal. At the same time it is clear by now that all of the offerings that are out there will start to compete on the level of customization/personalization they allow/support, the price and the leadtime.

In that sense the adoption of (mass-)customization in the garment industry seems to follow the same adoption pattern as most other innovations, means early adopters will have an advantage by just having »the innovation«. Over time the innovation will become mainstream and you cannot differentiate yourself anymore by having »the innovation«. The situation has reversed itself, means you are putting your orgainsation at a competitive disadvantage, if you do not have/implement the innovation. At the same time it will come down to your ability to exploit/use the innovation in the most optimal way [viii].



Figure 2 – Adoption of Innovation

Historically the garment industry was/is catalogbased, means the customer can choose from a fixed set of products, variations and options. The catalog gets developed/refreshed between 2 to 5 times a year (the socalled seasons). In this context the cost of change is small compared to the cost of producing the garments and since the catalog is evolving at a managable speed, the need to have more sophisticated concepts to manage the change is limited.

But at the same time product managers are by now much more aware of the lack of flexibility they have to deal with and the (sometimes hidden) cost that is associated with not managing the catalog.

The concepts that are most useful in this context are the template and the platform. A template describes a product and all variations of it. The aim of a platform is to make the set of parts/materials that is needed as a base for the templates more manageable.

Using an analogy with/from the automotive industry the platform allows you to define a lot of different cars, while optimizing/maximizing the number of shared parts between these templates/cars. VW for instances uses the PQ35 platform to build more than 12 cars (Audi A3-Q3-TT, VW Touran-Caddy-Golf, SEAT Altea-Toledo-León, Škoda Octavia-Yeti-Superb) [ix]. Obviously each and every car/template can be configured to produce the instance the customer wants.

The template describes the product and all its variations and manages the number of end-products that can be configured. At the same time the platform minimizes and manages the number of parts you need to implement the templates.

In this chapter we introduced the concept of a template and a platform for the garment industrie. These concepts are not new and are already widely used in the automotive industry. Applying them to the garment industry will help to increase the managability of customization for workwear manufacturers.

4. MANAGED CUSTOMIZATION

In the context of the situation the industry is in it becomes important to understand the implementation of mass-customization not as a project, but as a journey (as a process/as a philosopy/as a an effort of continous improvement).

But to succeed in this endeavour you must be able to manage the process and to measure your progress.

It is our experience that introducing the concepts of templates and platforms to an organization, increases the manageablity of customization significantly. With the introduction of templates and platforms to an organization customization becomes mangeable.



Everything that the BOM can build

Figure 3 – Managed Customization

There are lots of obvious and some not so obvious advantages that come with managed customization. Obvious advantages are the improved ability to enter new markets and win new customers.

Non-obvious advantages are:

- Better ability to manage and also measure the journey
- Better ability to manage execution namely vastly improved ability to communicate between manufacturing and sales (this is what we can built) and sales and the customer (this is what you can buy/configure)
- In the case of workwear the ability to communicate with certification bodies

In a study that was conducted by Brandvis we found that more than half of the catalogs we analyzed had a lot of overlap with respect to the styles and configurations offered in the catalog, means more than 50% of the products can be expressed by means of templates. But even in the cases, where the catalog itself was well structured, the reuse of fabrics and components between templates was in many cases limited. In contracts the Brandvis collection is 100% based on templates and the reuse of fabrics and components between templates is 80%.

In the case of Brandvis, introducing »Managed Customization« to our customers has proven to be very successful. It seems to be a sensible, first step on the journey towards mass-customization.

5. CONCLUSION/SUMMARY

This paper showed that the demand to customize workwear is increasing. At the same time there are unique challenges in the workwear market (e.g. due to the fact that workwear needs to be certified), which make it beneficial for the manufacturers in the market to adopt proven mass customization concepts (e.g. the concept of a template and a platform) to manage the customization itself and also the process of introducing customization the organisation. We call this »managed to customization«. To that extend we are looking at »managed customization« as a tool to drive the implementation of mass customization in an organisation.

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