The power of web platforms based on modular design in a user-centric apparel market

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1. The fragmented apparel market.

Users’ needs for apparel are heterogeneous, so the “a few size fit all” strategy will not work. Indeed if user’s needs are highly heterogeneous (multicultural society resulting in diversified morphologies, more obesities, more individuality), only small numbers of users will tend to want exactly the same thing resulting in volatile seasonal sales patterns. Evidence of this is the increasing returns by mail orders (upto 40% for some articlegroups) and the huge “end season sales and price reductions” by e-and retailers affecting their profitability dramatically. Consumers also like to discover new shopping experiences: today, the internet world creates a network environment where consumers can easily and individually express & buy their personal needs & desires, anywhere and anytime. Thus clothing e-and retailers will have to listen to their customers turning their organisations upside down from a buyer/manufacturer-centric into a web-consumer-centric organisation. Implementing web user-centric innovation processes offer great advantages over the buyer/manufacturer-centric innovation development systems: indeed today, thanks to internet, consumers even can “freely share-reveal” theirs innovation by others, thus becoming product-developers, offering a very necessary complement to and feedstock for retailers-manufacturers. In order to be able to manage this turnaround more consumer-centric knowhow concerning product development, fit, measurements and style has to be acquired throughout the Value Chain. This is possible by integrating these new processes.

2. A user-centric web technology for the apparel market.

These e-user-centric processes have to connect “interactively” manufacturers, sourcers, designers, modellers, buyers, salespeople, merchandisers and consumers. Only webbased e-solutions are applicable. These teams have to work closely together (collaborate) in the same “space”, even if they are spread all over the world! Therefore, these technologies have to be internet based (available on the web) without downloading - applications today move from the PC to the Net. Indeed only “in real-time” communication between the different players/actors/teams up to the consumer in the clothing Value Chain can offer these heterogeneous “individually cut-to-fit & time-to-market” consumer fashion on demand. These e-solutions must make it possible for retailers to offer store managers the application to place up to 2 orders (1/n, one-to-few) a week integrating in their decisions the collaboration of the product- and merchandise managers. The e-catalogue merchandise managers from the e-Tailers must be able to cooperate with the sourcing department in order to launch small runs ”online”, thus bringing latest ‘online’ fashion at reasonable prices. Crucial also for e-Tailers
is an e-solution that can manage the "cost-effective and timely unit production (1/1, one-to-one) of highly customized goods upon demand."

3. The software.

The existing e-solution from Douëlou nv is based on a “e-toolkit-for-user innovation approach to product design”, called BIVOSOFT tm. The “do-it-yourself B2C design toolkit” contains a “multi-level configurator” linked to the purchase/product-development department (B2B) up to the manufacturer. This is the collaborative feature of the software. Also B2B2C (consumer-centric toolkits in the retail chain) and B2C2C (democratising innovation spread freely over the web- WEB 2.0) scenario’s are linked in this multi-level context. The multilevel configurator can be static or dynamic and published on a webpage, into a virtual webshop (incl pricing) or on a e-catalogue depending on the wishes and knowhow of the user/level. This layered architecture offers e-Tailers the possibility to trial the “collaborative product design for modellist-designers-manufacturers” — layer 0&1 (= 2,5 D design toolkit) before offering their customers the ultimate interactive 1/1 custom tailored buying/innovation experience- layer 4. Thus with Bivosoft tm it’s possible to offer experienced users a high-end toolkit, there where non skilled consumers could work into a closer "solution space" within a low-end toolkit.

Layer 0 B2B manufacturing-cam incl BOM.
Layer 1 B2B product development —designer-modellist-patterns /cad
Layer 2 B2B sourcing, buying and purchase
Layer 3 B2B2C merchandise —sales (retail, catalogue, etail)
Layer 4 B2C consumer: e-Mass Customisation with 1/1 custom tailored
Layer 5 B2C2C consumer: democratised innovation by design

The “language“ of the e-toolkit must be convertible without error into the language of the intended production system at the conclusion of the user's design work. The interoperability between the different levels/layers/users will create effective collaborative design & commerce (c-commerce), thus linking the e-commerce/front-end into the e-business/e-CDIM (customer driven integrated manufacturing) back-end Cad (incl 1/1 patterns and Made-to-measure)-Cam applications. The Value Chain has to be built upon the Mto (made-to-order) principle (cfr Dell) where only components (fabrics and auxiliaries) are on stock in a ‘tight value chain’. This configurability-approach is based on an engineering database called EDB with modular components. Modularity offers standardised modular options which are selected and then configured into different end-products. This is why the traditional product-design architecture has to be re-invented. Building such a product database will help standardise the product development department making it less modellist and designer dependant. We call this the “Commonality“ which means that the components are standardised & then shared without compromising the variety of the end-product.

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If an e-retailer would offer the ultimate 1/1-layer 4&5- “custom-tailored “ buying & creation experience to a consumer, then Mtm (made-to-measure) knowhow has to be integrated in the back-office toolkit. Individual body measurements can be obtained either by measurement tape or by 2 & 3D bodyscans. In todays web-environment it is crucial to developed a “digital tailoring” user-friendly measurement system because most retailers become also e-Tailers thus selling clothing online.

This application developed within Douëlou nv is called LINOSOFT tm and guarantees average returns lower then 1% . Linosoft is patented under EEC application number WO 2001BE00190 / EP 1341427 and USA 20040078285 .

The concept offering tailormade B2C solutions for clothing at ready-to-wear prices, delivered in short production runs is possible because the loss of advantage of scale is compensated by the gain of advantage of scope (IT-process). From the CI (consumer identification) the individual body-measurements are derived , automatically translated into patterns (through alteration rules) and individual cut files up to the single-ply cutters.

There are thus 4 software components: Bivosoft TM, Linosoft TM (worldwide patented technology), e-Cdim and the Edb.

4. The collaborative Platform.

Web-interfaces has been build by Douëlou nv between the different web tools (Bivosoft Tm and Linosoft Tm) creating an e-Platform called Shirtsdotnet.com in 2004 (www.shirtsdotnet.com). Shirtsdotnet.com is a “collaborative platform for e-custom fit apparel”, today operational for men and ladies shirts. By developing this product platform, not only design, but also production is linked. Hence, it is imperative for the platform development to synchronise product and process variety from both design and production perspectives. The concept of process platform planning within Shirtsdotnet.com is proposed to support variety synchronisation from design to production. Shirtsdotnet.com is thus empowered to execute unique consumer-winning value at the lowest cost through the collaborative, real-time synchronisation of product services generated from the toolkits.

Shirtsdotnet.com also applies the “Webservics” technology which connects different e-commerce Platforms (= platform-interconnectivity) , thus offering tracking & tracing facilities . This e-application is called Bivotrack tm based on collaborative scheduling and e-fulfilment

Building the collaborative platform for e-Custom Fit Apparel for all-not only for shirts -clothing article groups is realisable because the 2,5 D online design tool Bivosoft tm, as the Mtm 1/1 methodology (Linosoft tm) is scalable & generic. The platform scalability offers serialisation and the ranging of product parameters that have to be changeable. Building this is a one-time initial cost (encoding the predetermined information) and when (and whilst) the Platform will be (is) operational the connected users (retailers, resellers, consumers) continuously “feed“ it. This is why the Platform acquires a dremendous knowhow which can be spread on a not expensive Asp (Application Service Provider) base over the web offering e-Tailers and their consumers always up-to-date content. Because the Platform is “scalable “ , enlarging the Shirtsdotnet.coms’ offerings with trousers is feasible in the short term.

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For the Shirtsdotnet.com Asp solution the SDN-SC ( supply-chain) can be used or the e-Tailer SC ( supply chain- weavers & cmt-manufacturers ) could be connected
Today Shirtsdotnet.com connects different players from the e-and retailer, work- and promowear apparel market.

The platform is thus interactive, collaborative, configurable, modular, scalable and generic.

5. The business models.

**Mass Customisation** and **Postponement** are business models and strategies based on these new e-solutions from Douëlou nv. e-Mass Customisation as a webbased business model offers the “individual-cut-to-fit” and Postponement as an adaptive supply chain strategy offers the “just-in-time” concept where continuously updated clothing offerings are presented online or in the selling-points based on rapid prototyping and lean manufacturing. e-Mass Customisation tend to offer custom-tailored products at ready-to-wear prices. Postponement allows variation and enables as late as possible part variety in the manufacturing process, thus reducing stocks. R- and e-Tailers have to evolve from a Supply-Chain to Demand-Chain management. Mass Customisation and his derived postponement concept is thus much more than a “Niche” market opportunity.

Douëlou can offer e-Tailers “online Zarafication + MC (Mass Customisation)”

Let’s Plug into the CUSTOM Era!

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