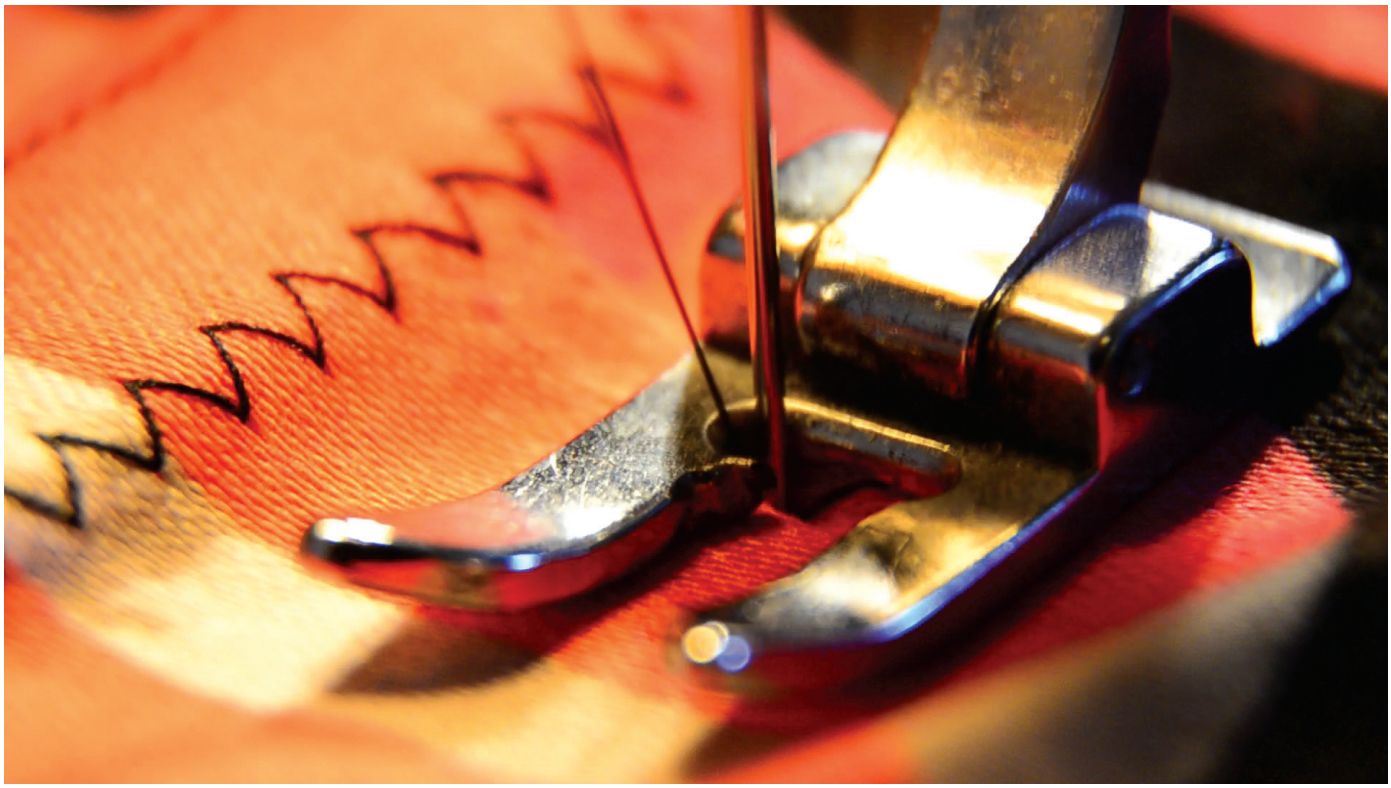
DISRUPTING YOUR CLOSET: HOW CUSTOMIZED CLOTHING CAN REMAKE THE APPAREL INDUSTRY

New tools like 3D knitting, body scanning, and augmented reality could make "custom" the new black



KEY TAKEAWAYS

- Custom clothing has been the domain of the wealthy since the early twentieth century. With technological innovation, though, customization is re-emerging as a viable option for mainstream consumers.
- Apparel, footwear, and accessories companies can benefit from offering customization as it enables greater customer data collection as well as better inventory management in the form of fewer returns and less wasted stock.
- Consumers benefit from customization as it offers an engaging shopping experience and delivers a product that better meets individual needs and tastes.
- Though cost remains a barrier to widespread adoption, new technologies including 3D knitting, body scanning, and augmented reality are beginning to make it cheaper and faster to produce customized apparel in high volumes and help consumers to envision themselves in their own designs.
- Early adopters of custom manufacturing technologies, textile technology companies, and small fashion labels should benefit from the customization trend, while brands that charge premium prices for undifferentiated products could lose share to competitors that offer customization.

There is a saying in the fashion industry that "everything old is new again," typically referring to the sartorial nostalgia that resurfaces on fashion runways every few seasons. This saying may one day apply not only to style trends but also to how apparel is designed and made.

Custom clothing is not a new phenomenon. For most of the time that humans have been getting dressed, clothing was either hand-sewn in the home or made by seamstresses and tailors in small shops serving local communities. It was not until the early twentieth century, after the advent of the sewing machine and Henry Ford's assembly line, that affordable mass-produced clothing became the norm in the industrialized world. Major fashion brands offering standardized sizing and styles emerged, and they passed dramatic cost savings resulting from mass production on to the consumer. Before long, made-to-order clothing became an expensive luxury, almost exclusively the domain of the wealthy.

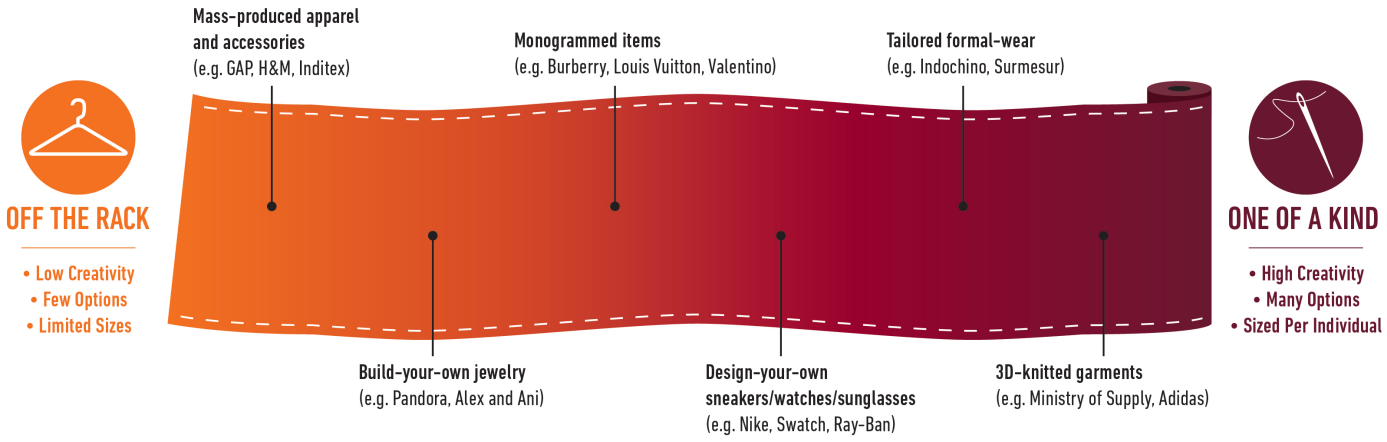
Today, manufacturing technology is evolving to handle small, made-to-order production batches quickly and cost-effectively, while new technologies like body scanning and augmented reality are making the ordering process easier and enjoyable for consumers. These advances are making customized clothing broadly accessible to mainstream consumers once again, potentially altering shopping as we know it and leading to large competitive shifts in the apparel, footwear, and accessories industry.

THE CUSTOM SPECTRUM

"Customized clothing" may call to mind bespoke suiting and handcrafted haute couture, but customization of apparel, footwear, and accessories exists on a spectrum. In its minimal form, customers add a limited number of design elements to ready-made apparel. Here, the construction of the item remains the same regardless of a customer's later choices in personalization. This straightforward customization is currently available for a range of items and at all price points, from t-shirt screen printing services at the low end to Burberry's monogram embroidery service for its plaid scarves at the high end.

A more complex form of customization allows consumers to build a product from a limited number of pre-determined options. In this case, there is no standard item per se; rather, the construction of the final product is based on a customer's own design decisions. Footwear companies in particular have begun to offer this level of customization, Nike being a prominent example. The company's NIKEiD service, launched in 1999, today features an interactive web platform that allows customers to mix and match shoe styles, color schemes, embroidery, and "performance" elements such as cleat spikes engineered for different turf conditions. Some sunglasses and watch brands, such as Ray-Ban and Swatch, also offer this form of "mix and match" customization. While consumers have more control over design with such services, sizes remain standardized.

THE SPECTRUM OF CUSTOMIZED APPAREL



At the maximal end of the customization spectrum are bespoke garments created from scratch according to the customer's exact specifications, including both design preferences and physical measurements. This high degree of customization—the territory of bespoke tailors and luxury design houses—has hitherto been restricted to top price tiers due to the high amount of skilled labor required to produce such specialty items.

BENEFITS OF CUSTOMIZATION

The success of NIKEiD and similar customization services has demonstrated that some consumers are receptive to the idea of custom apparel and, perhaps more importantly, willing to pay extra for it. In addition to the opportunity to charge higher prices, there are further benefits for companies that offer customized apparel.

Customization allows apparel companies to collect a large volume of customer data, which they can use to optimize their own products. In creating a customized product, shoppers' sequence of clicks and ultimate purchasing decisions communicate exactly what they are looking for in a product. Retailers already track online shopping habits, and companies can use the richer data generated from customization services as additional inputs in refining their product offerings. If many customers personalize their custom orders with a specific feature or design, a company can update both its standard product range and customization options to include more items with that feature or design.

"Bespoke-suit company Indochino has reported a return rate of less than 1% from its customer-designed, made-to-fit orders."

Second, customization reduces the costs associated with excess inventory as items are produced only in direct response to consumer demand. Large quantities of unsold clothing are destroyed each year, as many companies do not want to dilute their brands by selling excess inventory at a discount. Restricting production to items specifically ordered by customers reduces such waste. As customers increasingly seek out environmentally responsible products, customization could carry a reputational benefit for companies as well.

Third, customized clothing could significantly reduce the estimated 30–40% of online apparel orders that are returned as a result of items not matching customer expectations or because the customer has ordered multiple items in varying sizes with the intent of returning those that do not fit. In contrast, bespoke-suit company Indochino has reported a return rate of less than 1% from its customer-designed, made-to-fit orders. By producing apparel made to a person's exact specifications and measurements, apparel companies can both instill higher customer satisfaction and minimize the flow of costly returns.

FASHION GOES HIGH TECH

Despite the potential benefits arising from more customer data, less waste, and fewer returns, obstacles to the widespread adoption of customized clothing remain. For one, customized clothing is considerably more expensive to produce and therefore more expensive for the consumer. As customers shopping at lower price points are more concerned with cost than tailoring a product to their exact preferences—especially when it comes at a premium—it is unlikely that these consumers will utilize customization services until prices drop significantly. Other consumers may be less price-sensitive but unwilling to spend the extra time to customize or to endure long waits to receive customized items. Another obstacle is the abundant choice possible with customization; even creative customers may not know where to start, become paralyzed with indecision, and ultimately give up, returning to the standardized items to which they are accustomed.

New technologies are the key to overcoming these obstacles, allowing affordable custom manufacturing for apparel, footwear, and accessories companies and an easier, more enjoyable ordering process for consumers. In manufacturing, greater automation in the form of robotics and 3D printing are two promising developments. 3D printing is already being used for small batch production of non-textile-based products such as footwear.

Automation has reached other areas of custom garment construction as well. For example, business-wear brand Ministry of Supply has generated buzz with its "3D-knitting" machine, which can produce a blazer to custom specifications in just 90 minutes. The blazer is knitted in one seamless piece, resulting in less wasted material than the traditional process that utilizes cutting patterns. Locating the knitting machine in the store shifts the supply chain closer to the customer, saving time, lowering shipping costs, and increasing customer engagement. The company has also announced plans to offer in-store customization that uses heat to shrink a sweater to an individual's specifications. While still in its early stages, the brand's innovative textile technologies present a compelling proof of concept for tech-enabled custom manufacturing.

For consumers, digital body scanning and augmented-reality technology should reduce hurdles to design and ordering. Accurate, detailed measurements are vital in creating customized apparel that fits, but obtaining them can be a nuisance: either customers must visit a store to be measured by a salesperson, or they must self-measure and report.

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Enter scanning technology that can take a person's measurements in seconds. Amazon's Echo Look wardrobe assistant can already analyze photos taken with its voice-activated camera to suggest items of clothing for purchase. The e-commerce behemoth's 2017 acquisition of Body Labs—a 3D body scanning and modeling startup—and its recent patent for an on-demand, custom-apparel manufacturing system, makes Amazon a company to watch in the customized clothing space.

Some brands are beginning to explore pairing scanning technology with augmented reality. In 2016, Adidas showcased an in-store device that scans a shopper to determine their measurements and then projects product designs onto their body via light sensors. Using hand gestures, the shopper can manipulate the projection and finalize the design before it is 3D-knitted in-store.

Perhaps the most promising aspect of these technologies is their integration into smartphones. As Harding Loevner Information Technology Analyst Chris Mack, CFA explains, "scanning and augmented reality technologies are essentially

being miniaturized via cameras and more-powerful processors in smartphones, meaning people won't have to purchase specialized scanning hardware or go to a store with scanning equipment. It's a more versatile, flexible experience in everyone's pocket."

BEST DRESSED

The widespread adoption of customized clothing will create corporate winners and losers. Though it is too early to identify specific winners, early adopters of customization technologies should be well-positioned. According to Harding Loevner Retail Analyst Maria Lernerman, CFA, "there is a learning curve for companies adopting customization technology as well as an upfront investment in research and development and capital expenditure. Firms that make investments early and can master customization processes should gain market share from competitors who are slower to adapt, and that competitive advantage could persist." Companies such as Nordstrom and Eileen Fisher have made early moves in this area—Nordstrom through its investment in custom-footwear company Shoes of Prey and Eileen Fisher through its experimentation with Intel-powered 3D-knitting machines.

Small apparel brands are another potential winner. Currently, if a brand is unfamiliar, shoppers may be hesitant to buy its products online as it can be difficult for them to know how an item will fit. When shopping by measurements or with the assistance of augmented reality, customers can be more confident of a product's fit and appearance, potentially making them more willing to try new brands.

Textile technology companies could also benefit as manufacturers increasingly look for new production methods that offer the speed and flexibility required for large-scale customized apparel production. For example, Kornit Digital's direct-to-garment digital textile printers offer the ability to print personalized designs with an ultra-fast turnaround using its proprietary NeoPigment printing process. Kornit signed an agreement with Amazon in 2017 to supply its flagship "Avalanche 1000" textile printing systems to the e-commerce giant's "Merch by Amazon" program.

Companies put at risk by customization include brands that charge premium prices for undifferentiated products, as they could lose share to competitors that offer premium-priced customized options. As Lernerman points out, "if you are willing to pay $100 for a sweater, but could instead have a custom-made sweater for $150, you might go with the customized option instead." Many brands have already been battered by the expanded choice made possible by online shopping, and a shift towards customization would only exacerbate their problems.

Consumers are perhaps the biggest beneficiaries of the customization trend. At a time when many consumers are willing to pay for experiences, not just "stuff," personal involvement in design creates a unique shopping experience and one-of-a-kind clothing with a story. Moreover, customized apparel promises products suited to consumers' tastes and bodies—no compromises necessary. This could prove especially important for those who do not see their needs currently met in mainstream fashion, such as plus-size women or people with disabilities. The ability to create affordable clothing that addresses specific sizing requirements and reflects personal tastes could eventually lead to a more democratic fashion industry.

Is customized clothing a significant trend, or just a lot of hype? Lernerman believes it is a bit of both. "Brands are beginning to realize the potential of customized clothing, and some are adding customization services," she says. "But it's still not cheap, and it remains a small portion of consumers' overall spending."

Custom apparel is in the early stages of its twenty-first century reincarnation, but it could one day lead to the return of clothing manufacturing in the home. This time around, consumers might pay brands for customizable design templates and fabricate their creations themselves using a 3D printer. Whether or not this ultimate form of customization is reached, the apparel industry is well on its way to bringing customized clothing back into the lives of mainstream consumers—no sewing machine required.

CONTRIBUTORS

Harding Loevner Analysts Maria Lernerman and Chris Mack contributed research and viewpoints to this article.

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