

# Jabil Steps Up Its Wearables Game with Clothing+

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*Peak+ helps brands to design, develop, and deploy innovative smart textile solutions*

## Executive Summary

Advances in sensor capabilities, batteries, form factors, and fabrics are making it easier for clothing manufacturers to seamlessly integrate garments with monitoring and electronic devices. Fitness equipment manufacturers have been developing devices and solutions for many years that monitor heart rate, pulse, body temperature, etc. But, only recently has the cost to manufacture, integrate, and miniaturize electronic components been reduced enough to make the accelerated growth of this smart garment industry a reality. While the above dynamics have made it feasible to bring to market smart garments, there are many more challenges such as **integration, privacy, and data analysis** of collected information that increase the overall complexity of the solution (see our market segmentation of the Internet of Things (IoT), [here](#), and [here](#) for more context). Each of these factors is not a simple task on its own, but combining all three is a considerable barrier to entry for most brands. Further, the explosion of interest in intelligent and health data by predominantly younger and more affluent users has created a very compelling prospect that cannot be ignored. Brands can open a whole new world of data-driven revenue opportunities across the entire clothing supply chain. And, by improving value directly to their customers, these companies will enjoy deeper relationships, brand loyalty, and an increased share of wallet from the consumer. Additionally, insight gathered about their buyers from the sensors their customers wear can improve the way they bring solutions to market to support them over time.

One of the biggest challenges facing clothing manufacturers is understanding where to begin in the development of smart garments. Further, there is a cacophony of sensors, transmitters, devices, software analytic apps, and conductive fabrics available to choose from. This makes it difficult for textile manufacturers to understand the various technologies and / or components to leverage. Brands like adidas, Under Armour, Ralph Lauren, and Victoria's Secret Sport are releasing smart products for fitness apparel. Likewise, in the healthcare sector, companies like HealthWare and McLaren Applied Technologies have made considerable advances in developing e-textile solutions to help monitor the health and wellbeing of their patients.

To ensure success when developing a smart fitness portfolio, clothing manufacturers must look for proven partners they can trust and rely upon as an extension of their team, without the incurring the risk. That's why it is more important than ever to choose a provider has the depth and breadth to be an end-to-end resource for integrating products, industry best practices, technical innovation, and proven methodologies to help navigate these new realities.

Clothing+, along with parent company, Jabil, recognized the opportunity and need in this market and developed a total, end-to-end reference design called Peak+. The Peak+ solution includes integrated partnerships with the leading transmitter and

application company, Suunto, and research-based analytics firm, Firstbeat. This partnership helps brand clothing companies design, develop, and deploy innovative smart textile Heart Rate Monitoring solutions without the inherent challenges associated with starting from scratch. The Peak+ platform promises to accelerate the process of helping the top brands to bring smart textile solutions to market. Clothing brands can leverage this powerful partnership to introduce a shirt, strap, or banded Heart Rate Monitoring solution to their portfolio quickly and efficiently. Custom or one-off e-textile implementations are also available as needed which is one of the key value propositions for brands considering Clothing+.

## **Clothing+ Introduces the First Integrated Reference Design for Smart Textiles**

In June 2015, Jabil acquired Finland-based textile electronics manufacturer Clothing+. Developer of the first commercially available heart rate sensing shirt more than a decade ago, Clothing+ develops smart textile solutions for the sportswear, sports electronics, and the healthcare marketplace and brings a legacy of innovation that creates a considerable barrier to entry for competitors. The combination of Jabil and Clothing+ brings considerable economies-of-scale, extensive added manufacturing and electronics capabilities, and improved manufacturing supply chain capabilities. The Clothing+ solution offering includes support for smart textiles that measure everything from heart rate to bioimpedance (body mass), thermal, light, haptic (touch), and other requirements. Eventually, garments will go beyond just reading biometrics or environmental conditions, they will also be able to react to signals and changes in conditions. For example, clothing that can reduce body temperature or dispense medicine promise interesting new applications for smart textiles. We believe Clothing+ has a strong vision and competitive advantage brought to bear through the combination of functionality and capabilities into one scalable offering. Their approach gives textile manufacturers both supply chain experience and deep technology expertise in the complex e-textiles space. The Peak+ integrated solution will help brands go-to-market faster without the challenges of having to manage multiple vendor relationships and integrate disparate technologies.

## **Integrated Reference Design Accelerates Go-to-Market for Fitness & Healthcare Smart Textiles**

One of the challenges garment manufacturers have when pursuing a smart textile strategy is designing clothes that are wearable, washable, safe, waterproof, and most of all comfortable. A new breed of sensors and circuitry has emerged that can disappear into the fabric and provide the wearer a more natural and practical experience. Improving the user experience has significant implications within the fitness and healthcare markets. For example:

- When applied in a fitness and sports setting, consumers can measure their effort, track their progress, and make adjustments to their exercise routines to optimize their performance. For sports teams, the value is also quite profound. They can reduce injuries by monitoring how athletes (and teams together) are performing

in certain situations and also explore such things as the impact of collisions and biometric data. By integrating sensors into fabrics, teams can eliminate the discomfort of wearing a sensor while improving durability, especially within contact sports.

- In healthcare, smart textile manufacturers are rolling out solutions that will enhance the doctor-patient relationship, as well as improve treatment options and compliance. Data collected from the sensors integrated into wearable solutions collect heart rate variables, body temperature and mass, hydration, and even anomalies such as fluid accumulation. By collecting health information in the patient's natural environment, the use of comfortable smart clothing delivers a more reliable profile that will assist in generating dynamic and individualized treatment plans. Clothing+ will need to ensure they address security and privacy in meaningful ways within their healthcare solutions. That said, Jabil's Nypro division has extensive experience in manufacturing medical solutions from devices to diagnostic equipment, and this helps to alleviate many of these privacy and healthcare-related compliance concerns.

## A Holistic Approach to Smart Garments

What brands choose to do with collected information has the potential to make or break the relationship they build with their customers. Consumer defection is a critical challenge for most companies, as consumers are becoming more and more fickle with the growing number of alternative choices. For brands leveraging smart textiles, the relationship with the customer comes down to trust, comfort, quality, value, and value-add. To establish the basis for trust, value, and value-add, companies must ensure their users are in control of what data they choose to share and with whom. Designers pursuing this path must ensure they combine integrated data transmission capabilities that drive greater usability and seamless interaction with powerful, contextually relevant data. They must ensure accurate analytics that users can track, adjust, and optimize from the sensor information collected. Finally, they must have an easy-to-use application interface that is supported and optimized for how consumers choose to collaborate with the solution, whether it is from a smartphone, watch, tablet, or desktop display. There are two main areas where Clothing+ is focusing to drive value through Peak+.

### **Integrated data transmission to drive greater usability and seamless interaction**

- To address the data transmission challenge, Clothing+ has partnered with Suunto to deliver the transmitter and application technology in its Peak+ solution. By transmitting data to an intelligent endpoint, Suunto can also coalesce data from outside of the sensors and integrate location based services like distance, pace, GPS navigation, *etc.*
- Research-based advanced analytics from Firstbeat will help brands to deliver state-of-the art analysis that will drive further intelligence and relevant insight to its customers regarding stress, recovery, and the effects of physical training. Collecting contextually-relevant analytics from sensors and transmitters is the key to generating value from connected garments.

- Customers want to gain visibility and insights into their performance over time so they can track progress against their goals. Firstbeat provides data on heart function and heart rate variability (HRV) within the sports, fitness, and healthcare markets. Their platform leverages modeling and analysis to build digital profiles of the user's physiology.

### **Easy-to-use interface to allow consumers to interact on their own terms**

- The Peak+ solution also features an integrated software app from Suunto that sits on a smart phone, mobile device, or desktop. The Suunto SportsTracker application provides a standardized user interface to view tracked HRM data. One of the often overlooked factors in consumer mobile applications is a solution that is easy to use, is customizable, protects and respects the user's privacy, and allows them to interact with the solution on their own terms. The Suunto app is one of the industry standards for sports and fitness monitoring applications. It may be leveraged as is or it can be fully or partially customized to meet the unique needs of its brand customers.
- Moor Insights & Strategy views the combined expertise of Suunto and Firstbeat as a powerful compliment to the value of Clothing+. The end-to-end solution approach puts Clothing+ and its partners Suunto and Firstbeat in the position to accelerate the growth of the e-textile market as top clothing brands turn to them for ongoing insight and leadership on which technologies to adopt and how to build the best solution for their unique customer set.
- In addition, Clothing+ should continue to identify and integrate additional software functionality such as location-based services, for example. This will ensure that their customers will have a flexible and customizable platform on which to build and enhance their smart textile offering.

Clothing+ further differentiates itself through its industry leading inspection, testing, and integration process. This process alone will separate Clothing+ from a data accuracy perspective as their tried-and-true processes strive to eliminate conflicts that interfere with data collection and the sensors' ability to receive information of high integrity. As Clothing+ extends its footprint into healthcare, data accuracy is not enough. Guaranteeing the pedigree of data that comes from sensors, while ensuring its integrity at the endpoint, will create a considerable barrier to entry for Clothing+ and its customers.

### **Experience and Expertise Matter**

Over the past couple of years, Moor Insights & Strategy has been involved with several launches, projects and initiatives from the Clothing+ parent company, Jabil. We have also met face to face with the senior leadership team. One of the core principles we see the company continually demonstrating is its commitment to quality and proactive customer experiences.

Clothing+ is no exception. We believe Clothing+ brings broad and deep understanding of both technology and marketplace dynamics. Clothing+ brings deep domain expertise in the sensor and textile manufacturing marketplaces while providing the flexibility and

scalability to deliver tailored smart textile solutions to their customers. Everything from aesthetics to proper sensor placement and electronics integration and integrity are fully covered by Clothing+. Doing so is no small feat given the complexity inherent in textile-integrated electronics and the difficulty of supporting the requirements of top brands looking for variety, customized value, and first-to-market speed.

Because of its depth and breadth, Clothing+ offers the ability to move away from the transactional focus of smaller contract manufacturers. Clothing+ has the ability to test-run a small number of products or scale to mass quantities depending upon the needs of the brand.

Further, Clothing+ provides customized quality and Service Level Agreements (SLA) for each of its customers. Each customer has its own team that acts as a Business Unit (BU) with Profit & Loss (P / L) responsibility. This effort allows Clothing+ to correct problems and quality issues more efficiently with less escalation and more ground-level conflict resolution. We believe this is a significant differentiator that many of its competitors do not recognize.

Clothing+ is poised to take advantage Jabil's substantial electronics manufacturing and supply chain expertise. Especially when it comes to responding to market, sector, and technology shifts and advancements, we believe Clothing+ will continue to set itself apart with a focus on the customer, textile-integrated electronics innovation, and distinct time-to-market advantages. These will be considerable benefits to both the existing and new customers of Clothing+.

## Call to Action

Over the next few years, the smart textile market will become more and more connected and interactive. Brands must develop more meaningful, information-based relationships with their customers. Consumers and businesses alike are leveraging data to make informed decisions. As these markets change, businesses must become more agile and responsive to real-time consumer demands and customization. The numbers of devices and technology solutions have exploded, and for many companies it is difficult to choose the right solutions to align with their customers' needs. Companies like Clothing+ support customers in important ways to help navigate these markets and bring innovative new solutions to their customers. The end-to-end platform called Peak+ is a significant step in the e-textile market. It will accelerate the growth of this hot space by enabling the brands to design, develop, and deploy smart textile solutions quickly and without the inherent challenges that come with starting from scratch.

Clothing+ will enable brands get to market faster, reduce manufacturing costs, and improve profit and margin potential. We believe the customer-centered approach of Clothing+, combined with its deep textile-integrated electronics expertise—and the ability to garner economies of scale through its new Jabil alignment—will provide brands the confidence they need to lead in current markets and open new markets for information-hungry consumers. Clothing+ is a viable choice when considering a smart textile and manufacturing partner.

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