

Munich, January 16, 2018

ISPO Trend report: Wearables

These digital fitness gadgets thrill the sports industry in 2018

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From fitness tracker wristbands to smart sports shirts and smart respiratory masks, innovative wearables are continuing on the rise and are becoming more and more popular with top athletes as well sports and fitness enthusiasts. And there's good reason: smart devices are revolutionizing many sports and opening up new opportunities for groundbreaking approaches to training. ISPO has its finger firmly on the pulse and is therefore the perfect platform for presenting the latest developments and trends in high-tech wearables. They will all be presented from January 28 to 31 at the sports trade show ISPO Munich.

It would be almost impossible to imagine life without the digital assistants that so many of us have become accustomed to. Even in the sports and fitness industry, people are relying more and more on smart technology. Micro computers, which are worn as wristbands and glasses or can be incorporated into items of clothing, are practical training companions. They can track users' progress in an effort to improve performance, measure the number of calories they burn and monitor their heart rate and quality of sleep. In 2016, more than 150 million fitness wearables were sold worldwide and that figure has been rising ever since. The fact is, the wearables market is growing and new innovative products are taking the industry by storm – and wowed the ISPO Brandew 2018 jury too.

Take a deep breath with the Microsfere respiratory mask

Every year, ISPO recognizes the top 50 new start-ups in the sports industry with the ISPO Brandnew competition, which this year celebrates its 30th edition. The 2018 anniversary year winners include Microsfere with its innovative respiratory mask in the Wearables category. The "Athlete's Mask" was developed for use in regions with heavily polluted air. The intelligent airflow system enables natural breathing and excellent ventilation during longer physical activities. In combination with a mobile device, the mask provides detailed performance data based on the athlete's breathing, something which used to only be possible in a lab. As such, this data can now also be recorded under real conditions.

ISPO finalist goTele from China and its off-grid tracking device with built-in GPS module and long-range radio technology also received high praise. This device could even save

lives in areas with weak signal strength such as mountains as it functions without cell service or WiFi and enables real-time geolocation tracking.

iinMotion, the smart training system that can be integrated into shirts and bras, developed by finalist Teiimo also provides accurate data and is comfortable to wear. Thin, flexible electrodes are located on the upper back of the garment and record the user's heart rate and motion data at professional quality levels. The data can then be used to plan and manage training sessions in the iinMotion online portal. ISPO Brandnew finalist Velocate also designed a digital bike alarm which provides information on the bike's whereabouts in real time. The anti-theft GPS tracker for bikes and e-bikes shows their exact location so you can see precisely where they are being hidden if they have been stolen. The GPS tracker's energy supply is provided by the hub dynamo or the pedelec's or e-bike's battery.

Smart data processing is now in vogue

Highly efficient data tracking for footballers and tennis players: Swiss firm [Vexatec](#) has launched the world's first smart "Agility Shirt", which in addition to strength and endurance training also specifically integrates agility into the mix. Agility is all about training in making fast, abrupt movements and sudden changes in direction and hence minimizing the risk of injury. Tennis ace Tommy Haas and former German national footballer Torsten Frings have already put the shirt to the test in action. The real-time data that it captures not only optimizes players' training sessions but, on account of the optimum contact pressure of the textile sensors used in the multifunctional shirt, wearing the shirt has a direct effect on the user's performance and wellbeing such as improved blood circulation and oxygen supply.

Printed electronics make high-tech gadgets fit for sports

On account of their versatility, being small, lightweight and flexible, printed technologies can combine textiles and state-of-the-art technology to monitor physical functions: ammonia sensors built into sports clothing, for example, can ascertain whether the body is being overexerted by measuring sweat levels. The company Sensoria® uses textile pressure sensors which are embedded in running shoes near the soles of the feet. A removable electronic element on the back of the shoe, the Sensoria® Core, transmits all the relevant real-time data as well as practical training tips to the runner via the app on their smartphone. Once the running shoes have been worn out and need to be replaced, the Sensoria® Core can simply be removed and attached to a new pair of shoes.

Optical sensors improve fitness trackers and smartwatches

Optical sensors are really making waves with trackers, allowing even more accurate data analyses to be carried out. Developments in this field are not far off making it possible for

blood pressure readings or even pulse oximetry readings to be taken directly from users wrists. It is even conceivable that smart patches or earphones could complement or even replace fitness bands, heart rate monitor watches or smartwatches in the long term.

Trainables ensure long-term training results

Capturing data is the first step, but post-training follow-up work is becoming increasingly important and popular as well: this is where so-called “trainables” come into their own. These gadgets automatically alert wearers to certain behavioral patterns and make them acutely aware of the need to make changes and improvements. The future therefore belongs to products which work in the background and remind wearers to make behavioral changes.

About ISPO

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