Connected Living

EPIC TOUR TESTS MOBILE HEALTH

Top health and mobile tech companies team up for 2015 mHealth Grand Tour from Brussels to Geneva

mHealth Grand Tour

Mobile at the heart of health

The 2015 mHealth Grand Tour from Brussels to Geneva was a field trial on an international cross-border scale. More than 23 cyclists with Type 1 diabetes were among over 100 riders from 22 nations to take part in the 1,500 kilometer route incorporating more than 22,000 meters of climbing. The ten-day Tour was designed to test how innovative new mobile health solutions can help both athletes and ordinary people better manage their diabetes.

Governments and healthcare providers are facing a diabetes epidemic: There are about 60 million people with diabetes in Europe, or about 10.3% of men and 9.6% of women aged 25 years and over. Worldwide, high blood glucose kills about 3.4 million people annually. The World Health Organisation predicts annual deaths from diabetes will double between 2005 and 2030.

Sponsored by the GSMA, the 2015 mHealth Grand Tour was designed to provide insights into how advanced monitoring technology, underpinned by mobile connectivity, could ultimately improve the lives of millions of people with chronic conditions. The latest mHealth solutions can help people with diabetes to self-manage the condition both when they are exercising and in daily life.

In addition to the GSMA, the International Diabetes Federation, Association Française des Diabétiques, JDRF and Etisalat supported the Tour, which was also the subject of a study by Société Francophone du Diabète.

Mobile Operator Orange, the Tour's main sponsor, brought together leading global technology companies Intel, Dexcom, Polar and Samsung, as well as innovative startups TAPcheck, Tellspec and Medwhat, to offer the riders a completely new monitoring and personalised mobile coaching service – a significantly more advanced solution than that tested in the inaugural mHealth Grand Tour in 2013.

CONTINUOUS MONITORING OF VITAL SIGNS

Riders with Type 1 diabetes were equipped with the Dexcom G4 device, which continually monitors blood glucose levels, together with devices developed by Tapcheck and Basis Intel to measure and record sleep, weight, blood pressure, calories burned and heart rate. Each of these devices was developed in accordance with Personal Connected Health Alliance's' Guidelines to ensure interoperability and the secure transmission of data.

> *harness the potential of mobile networks to enable people with chronic conditions to lead rich and fulfilling lives.*

The wearable devices used Bluetooth Low Energy to send data to the Orange mHealth GT Gateway app running on the rider's Samsung S5 handset. After analysing the data, the app enabled the riders to review their blood glucose levels, as well as other biometrics and how hard their body was working – all this data was relayed seamlessly to researchers for analysis. Medwhat and Tellspec also enabled the GT Gateway app to deliver personalised coaching and nutrition services to help the riders improve their performance and alert them to any health issues that may occur.

The Samsung handset used the cellular networks to feed the data captured by the mHealth GT Gateway app into the Orange Health Cloud, enabling health professionals to monitor the riders' vital signs via a dashboard. Through Orange's solution, riders could also track their position in real time.

"The Grand Tour provided a rigorous and rewarding testing ground for our mobile health solutions," said Ian Hay, Head of Emerging Ecosystems at Orange. "We are using the feedback we gained from both the riders and our partners to ensure we fully harness the potential of mobile networks to enable people with chronic conditions to lead rich and fulfilling lives."

NEW TECHNOLOGY ENERGISES TEAM GSMA

Made up of both professional athletes and amateur cyclists with Type 1 diabetes, the team the GSMA entered into the Tour found the monitoring and coaching solution to be incredibly liberating.

> *when he was diagnosed over 40 years ago he could never have envisaged accomplishing this epic ride.*

Having a continuous monitoring device that can alert the wearer when their blood glucose levels either fall or rise above pre-set thresholds, can be a game changer for competitors with diabetes during endurance events. "You don't have to stop each time you think you need to measure your blood glucose," noted Nenad Simunko, a professional athlete with diabetes, who joined Team GSMA for the Tour. "It saves time and for 24 hours you can see how your blood glucose fluctuates."

The amateur riders also found the solution made a huge difference, enabling them to avoid the debilitating impact of a hypoglycaemia attack when their blood glucose is too low.

"I was really fortunate, for the whole stage I didn't have a single low (blood sugar level... which) for me are quite devastating in terms of energy levels," said Kate Ford, a former intern with the International Diabetes Foundation, who joined Team GSMA for the Tour.

"My most memorable, most inspiring moment from the entire Tour is when one of my fellow riders and diabetics broke down in tears at the summit of the final climb of the tour," added team member Gavin Griffiths. "It was brought on by the thought of how this was now possible – when he was diagnosed over 40 years ago he could never have envisaged accomplishing this epic ride."

RIDERS SEE THE COMPLETE PICTURE

The Orange GT Gateway app also proved to be a hit with the GSMA team, who liked the aggregation of data from multiple different sources, making it simple and convenient for a rider to get a complete picture of how their body is performing. "I found the app incredibly interesting, it monitors and reviews my weight, heart rate, blood pressure, sleep, blood glucose all in one place, giving me a really good insight into what was going on with my body," said Gavin.

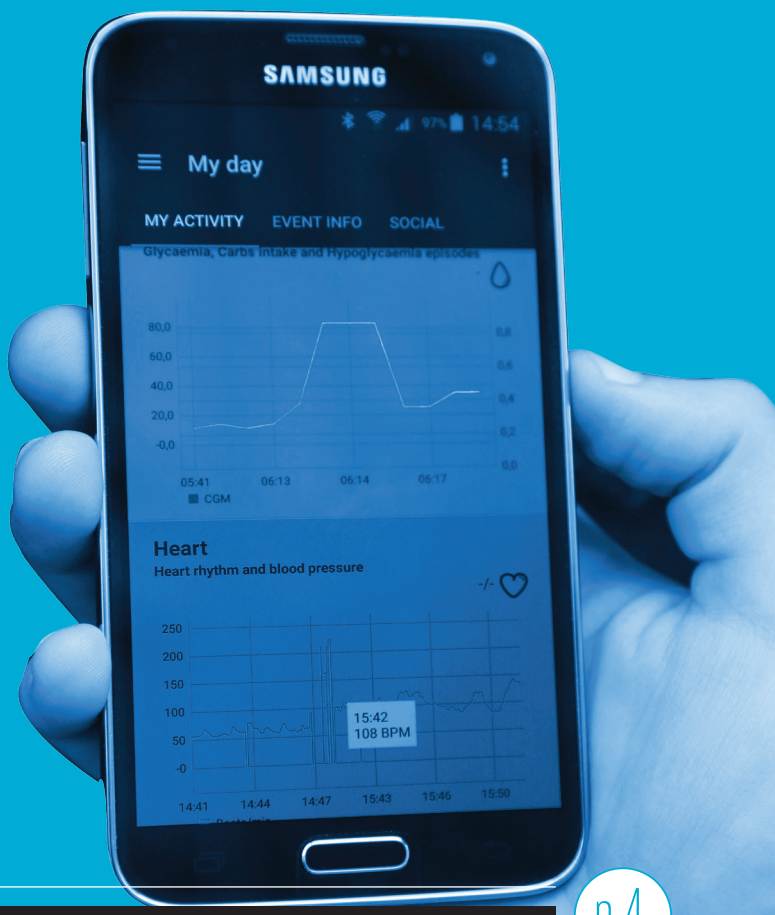
> *"Everybody gained something new through the study that will help them perform better, and manage their condition better"*

Simon Picking, another member of Team GSMA, described the latest iteration of the app as "a huge leap forward" from the 2013 version, noting that such an app is invaluable in bringing together data from the "many brands/solutions that are not interoperable."

Even those riders without diabetes, such as GSMA team captain Pete Montgomery, said the monitoring and coaching solution helped them through the gruelling ride.

"Everybody gained something new through the study that will help them perform better, and manage their condition better, in future endurance events," reported Pete.

"The technology trial and health study were hugely successful with riders expressing their support throughout and learning new things every-day."



WORKING TOGETHER TO BRING MOBILE HEALTH SOLUTIONS TO MARKET

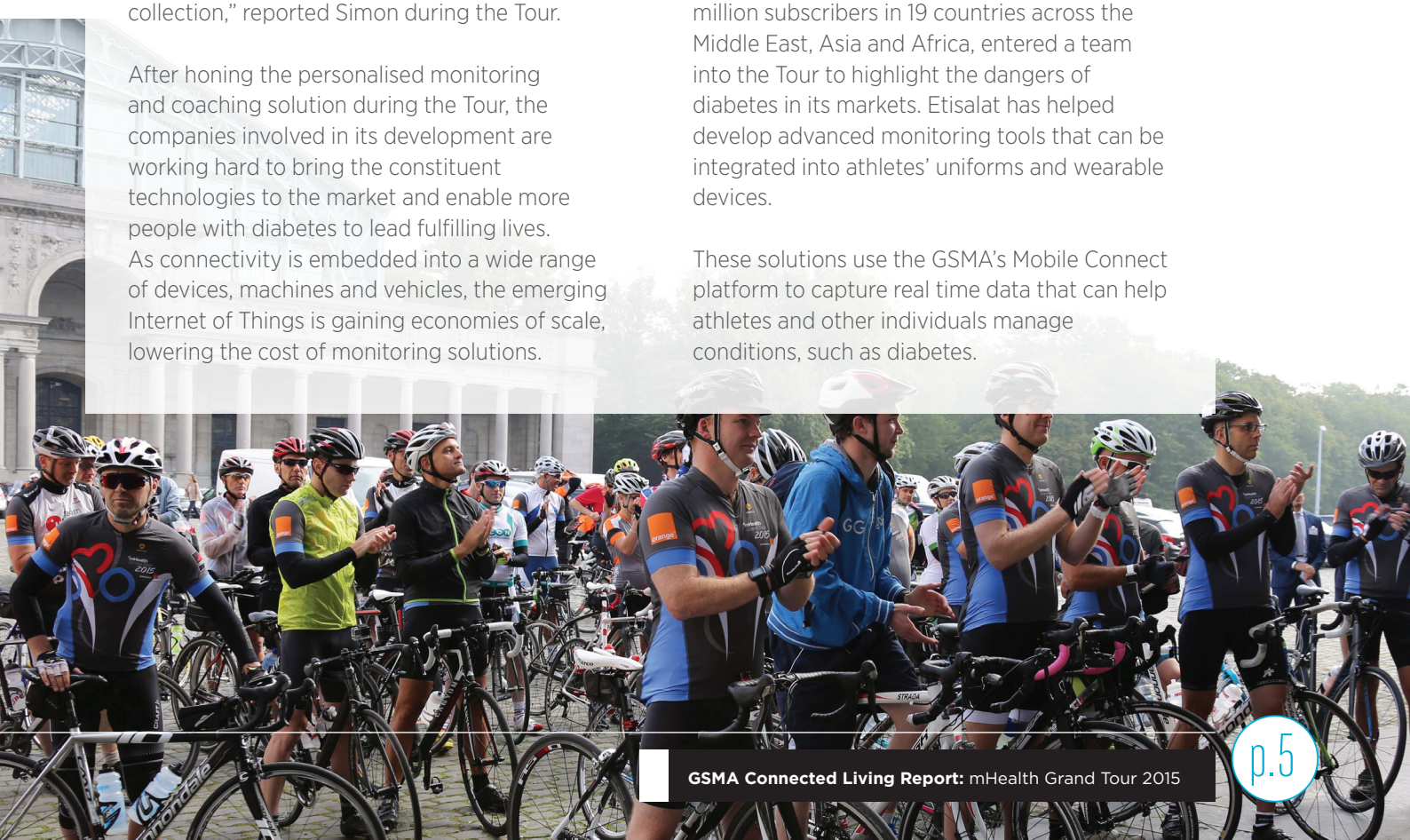
Like its predecessors, the mHealth Grand Tour 2015 enabled intense collaboration between various ecosystem players that will help accelerate the development of mobile health solutions. Through a partnership with IDF Europe, the Tour brought together experts in diabetes, exercise physiology, technology companies, healthcare professionals and patients to learn, share, educate, develop and deploy solutions and knowledge to help people manage their diabetes.

Crucially, the Tour also enabled the app developers to get direct feedback from users. "Over the past few days I've been able to speak with the app developers allowing them to tweak the app for better performance and data collection," reported Simon during the Tour.

After honing the personalised monitoring and coaching solution during the Tour, the companies involved in its development are working hard to bring the constituent technologies to the market and enable more people with diabetes to lead fulfilling lives. As connectivity is embedded into a wide range of devices, machines and vehicles, the emerging Internet of Things is gaining economies of scale, lowering the cost of monitoring solutions.

As well as testing new technologies, the Tour raised awareness about diabetes and the potential of mHealth to improve patients' lives both inside and outside Europe. For example, mobile operator group Etisalat, which has 169 million subscribers in 19 countries across the Middle East, Asia and Africa, entered a team into the Tour to highlight the dangers of diabetes in its markets. Etisalat has helped develop advanced monitoring tools that can be integrated into athletes' uniforms and wearable devices.

These solutions use the GSMA's Mobile Connect platform to capture real time data that can help athletes and other individuals manage conditions, such as diabetes.



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BRITISH
CYCLING
British
Triathlon

POLICYMAKERS ENGAGE ON mHEALTH

To enable society to fully harness the advances in mobile health technologies and services, the growing mHealth sector needs the support of policy makers. Given the sometimes sensitive and personal nature of health data, clear and proportionate regulatory frameworks are required to build trust in mHealth. The revision of the current EU Medical Device Directives, for example, is an important opportunity to create clarity with respect to the application of EU medical device regulation through the adoption of clear definitions and other measures.

The GSMA is actively engaging with policymakers to develop a clear and proportionate regulatory framework. At the start of the 2015 Tour, the GSMA hosted a breakfast for policymakers in Brussels featuring speeches by Afke Schaart, Vice President, GSMA Europe, Lambert van Nistelrooij, MEP, and Thierry Zylberberg, EVP Orange Healthcare, as well as a discussion among a panel of experts. The breakfast was followed by a networking event in the Autoworld Museum, which featured demonstrations exhibited by partners in the Tour. Afke Schaart called on "more governments and organisations to commit to mobile health solutions after seeing how effective they can be in the field."

Sponsoring the 2015 Tour is part of a broader mHealth programme run by the GSMA to further the use of mobile technologies and services to reduce the healthcare burden on individuals and society. The ultimate impact could be huge: A study by PwC found that the Internet of Things could save 99 billion euros in healthcare costs in the EU, and add 93 billion euros to the region's GDP.

Mobile operators – the GSMA's members - are playing a major role in the deployment of the Internet of Things in healthcare and other sectors of the economy.

According to Jeanine Vos, Executive Director, Connected Living, GSMA "The IoT is comprised of different types of wireless and cellular devices. These devices sense, monitor, measure, and transfer repetitive or unique data at different rates and with different requirements for storing, processing and timing. The GSMA works with operators and the wider mobile ecosystem to add value and accelerate the delivery of new connected devices and services in the M2M market. This will be achieved by industry collaboration, appropriate regulation, optimising networks as well as developing key enablers to support the growth of M2M in the immediate future and the IoT in the longer term."

The mHealth Grand Tour 2015 demonstrated that significant progress has been made in developing connected healthcare solutions since the inaugural Tour in 2013. But this exciting new sector is only at the start of long and rewarding journey.

To find out more visit
http://www.gsma.com/connectedliving