Olympics 2012

Special Feature

by Heather Hobbs

London 2012- Keeping the Legacy Alive


Image Credit London 2012

While the London 2012 Olympic and Paralympic games celebrated the phenomenal success and personal achievements of world class athletes during August and September, the staging of the event, from its announcement in 2005 and predictably carrying on into the future, has provided unprecedented opportunities for UK companies to compete on a world-wide stage for national and international business.

If managed carefully it was estimated by UKTI that the hosting of London 2012 could realise an international business legacy worth £13 billion to the UK economy. Events supporting business development included a programme of conferences and networking opportunities which were attended by around 3,000 business leaders and global figures, including over half of the FTSE 100 companies, hundreds of international buyers, investors and policy makers. The12 Global Business Summits were held at Lancaster House in London and ran into September.

While much of the business associated with games may not have directly involved a great number of scientific and monitoring companies, it can be said that the huge success of London 2012 has provided other avenues and possibilities particularly in relation to wider global issues.

One important investment decision announced by The Prime Minister David Cameron on 31st July for example, was for plans to develop the anti-doping laboratories commissioned by London 2012, into a permanent research centre dedicated to improving health and well-being world-wide.

"This is a once-in-a-lifetime opportunity to capitalise on the investments made in technology, knowledge and skills as part of the London 2012 drug-testing facility. It will bring significant benefits for the UK economy, by being a focus of collaboration with life sciences industry and making the UK a more attractive place to do research," the Prime Minister said.

An Advances in Assistive Medical Technologies Global Business Summit held on 3rd September showcased ground breaking approaches to rehabilitation and assistive technologies – from computer controlled artificial limbs to non-invasive blood pressure management techniques – for people living with injuries, disabilities or illnesses.

Speakers for the day included Professor Sir Bruce Keogh KBE FRCS, Medical Director of the NHS, Ian Stevens, Chief Executive of Touch Bionics and Geoff McGrath, Managing Director of McLaren Applied Technologies. The day included a visit to Stoke Mandeville Hospital, where international delegates were able to see state-of-the-art rehabilitation equipment and systems in practice.

Universities and Science Minister David Willetts said: "The UK's strong commitment to research and development, low taxes for business and world class higher education have nurtured one of the world's largest and most productive life science industries. British assistive medical technology firms exemplify how innovation and technology can be harnessed to boost prosperity and change lives – and today's event is a great opportunity to promote their extraordinary potential to an international audience."

Establishing a Legacy

During November 2009, The London Organising Committee of the Olympic Games and Paralympic Games (LOCOG) announced GlaxoSmithKline (GSK) as its Official Laboratory Services Provider in a Tier Three deal. GSK provided its facilities and equipment to enable Kings College London to operate an independently run, World Anti-Doping Agency (WADA) accredited satellite Drug Control Centre capable of handling up to 400 samples a day for analyses. The partnership was brokered by King's Business, the innovation arm of the University College.

Professor David Cowan, Head of the Department of Forensic Science & Drug Monitoring and Director of the Drug Control Centre at the University College Kings led the partnership development with GSK. With the thousands of samples predicted for analyses, it was estimated that laboratories would need to be in operation 24 hrs a day to cope with the estimated 400 samples per day from competing athletes

At the start of the Games this summer, further plans were announced. The Medical Research Council (MRC) and National Institute for Health Research (NIHR) have awarded £10 million to Imperial College and collaborators from King's to develop the lab into a high-throughput national facility for analysing the chemical components of biological samples, principally blood and urine.

The profile of metabolic products that can be measured in bodily fluids gives scientists a readout of a person's biology that isn't captured by their DNA alone. The metabolism is influenced by interactions between the genes and environmental factors, including lifestyle, and these interactions also influence the likelihood of getting a particular disease.

Professor Jeremy Nicholson, head of the Department of Surgery and Cancer at Imperial College London and Director of the MRC-NIHR Phenome Centre, said:


Dr Jeremy Nicolson

"The possibilities offered by the Centre are ground-breaking, as it will provide new ways of understanding the complex interactions between people's genes and their environment that determine their disease risks.

"Metabolic profiling will give us a new dimension of understanding about the factors that contribute to disease, as well as crucial information for predicting how individual patients are likely to respond to treatment. The Centre will build on the critical mass of world-class phenotyping research expertise we have established at Imperial, and we look forward to strengthening this by working with public and private partners on the MRC-NIHR Phenome Centre."

Additionally, industrial partners Bruker and Waters, who are supplying equipment for the Centre, are investing heavily in the next generation of analytical technology, which may have wider applications in areas such as environment and food science. This investment will further strengthen the UK's position as a world leader in analytical science.

Dr Rohit Khanna, Vice President of Worldwide Marketing for Waters: ***"Discovering and mapping the human genome was one of modern science's greatest achievements, revolutionising how we think about the human body and its evolution. Phenotyping is about taking that wealth of knowledge and trying to understand how the things we do and the way we live coupled with our genetic make-up affects our disease risk factors and responses to therapy. There are no limits to the health-related breakthroughs we might see as a result of research carried out at the Phenome Centre. In future generations, perhaps diabetes, cancer or heart disease will be consigned to history. Alternatively, we might learn to more fully understand and eradicate obesity or other social health problems. Research on the scale that will take place at the centre will, we hope, mean fast, comprehensive results over the coming years."***

Dr Manfred Spraul, Director of NMR Business Development, Bruker Corporation, said: ***"Based on long-lasting and very successful collaborations with Professor Jeremy Nicholson at Imperial, Bruker is pleased to actively contribute to the new MRC-NIHR Phenome Centre and help revolutionise the understanding of the causes and mechanisms of disease. Nuclear magnetic resonance and hyphenated technologies, together with improved biofluids and tissue data analysis, will enable personalised phenotyping using top-down system biology tools combined with conventional clinical diagnostics and patient information. We consider the centre to be the crystallisation point for a future network of phenome centres around the world."***

The Centre will begin operating in early 2013.

Checking Water Quality at Eton Manor

A series of Lovibond® CheckITDirect 6in1's was selected to monitor the purity of the water at Eton Manor throughout this summer. The photometers were selected and put to good use over the summer, analysing the cleanliness of the water and ensuring pristine venues of the Synchronised Swimming Pool, the Water Polo Pool and 3 Training Pools,. The Lovibond® photometers, measuring Chlorine, pH, Total Alkalinity, Calcium Hardness, Bromine and Cyanuric Acid were chosen for their ease of use and accuracy in results, keeping the athletes safe and healthy throughout the events.

LGC Supports Equestrian Events in the London 2012 Olympic and Paralympic Games

LGC Group's HFL Sport Science (HFL) faced an exciting challenge during the London Olympic and Paralympic Games, as it prepared for its role testing the horses competing in each of the equestrian events. Generally used to test horses in the racing industry, the Fordham Cambridge–based laboratory undertook the testing of blood and urine samples of every equine competitor taking part at the Greenwich Park Arena for steroids, stimulants, masking agents, painkillers and other preparations. The horses' feed was also tested for banned substances, which made it all the more challenging from an extraction point of view with each sample undergoing a series of clean-up and purification steps.

Dr Catherine Judkins, Business Development Manager said that with responsibility for carrying out the anti doping tests for dressage, show jumping and three-day eventing, the team from HFL were extremely busy, especially during the last few days. "It's not just about the drugs... it's a welfare issue as well. We need to know the horse is being treated well and isn't being propped up by any medications."

With nearly half a century's continuous experience in the science of sports doping control, including experience testing within the framework of the World Anti-Doping Agency (WADA), HFL screen for around 2,000 different prohibited substances in each urine or blood sample taken from competing animals and testing human and animal food supplements for substances prohibited in sport.

Maintaining Anonymity Vital for Athletes

During the London 2012 Games anonymity was key to accurate and secure drug testing, a daunting task when considering over 6000, blood and urine samples need to be tested. This year, athletes were identified by barcode meaning couriers and scientists carrying out tests would have been unaware of who was being tested. With samples taken on an hourly basis to the Doping Control Centre at Harlow, maintaining samples securely, it was vital to preserve integrity of the samples, half of which would be frozen for later testing if necessary.

Leon Edwards who runs Versapak Doping Control, a tamper-proof equipment maker said: "Being found guilty of being a dope cheat in sport carries an enormous stigma, so it is only fair to the athletes that systems for testing are flawless. Modern procedures have every step covered, from incorruptible sample-gathering, tamper-evident methods of transportation and robust lab tests."

Versapak Doping Control manufactures tamper evident bags and pouches; with close links to the International Rugby Board in the 1980s, Versapak was called upon to make a tamper evident container for the doping control process during the 1987 Rugby World Cup. This was made out of a coated PVC material with a button sealed system that allows the containers to be reused. A more solid plastic product was developed in the early 1990s and Versapak Doping Control Ltd was born.

Since that time the company products have been used for collecting and securely transporting urine samples from athlete to laboratory in major national and international events, including Olympic Games, Commonwealth Games, athletics and cycling, as well as for out-of-competition testing. In recent years the requirements have been changing and there is now a growing dependence on blood testing. Meeting the requirements the company has developed a new Blood Transport Kit and a new Urine Transport Kit. "With these new products we will be able to offer a complete package to anti-doping customers worldwide who we have previously only been able to supply our urine product to. We believe we can grow our product sales by 75% in 2 years," Mr Edwards said.

Versapak has also carried out a survey on the question of drugs cheats which overall sums up a unsympathetic response of public opinion. For further information contact www.versapak-anti-doping.com

Tracking Air Pollution

A Lidar used for tracking air pollution. *(Credit: David Hooper, RAL Space)*

Not only did the Olympics providing stunning sporting results for the UK, they are also providing scientific data which will help improve air quality forecasting in the years ahead. Increasing visitors, transport and travel re-routing within the capital, as a result of the Olympics, offered a unique opportunity for scientists to monitor how these changes affected our atmosphere.

Clean Air for London (Clearflo), a project funded by the Natural Environment Research Council, is a collaborative project involving 11 UK institutions and Universities. The project monitors air pollutants at several sites in the capital and in the surrounding areas. Measurements were being collated throughout July and August, coinciding with the Olympics, and were used to provide data to investigate boundary layer pollution across London and its environs.

As part of the campaign, RAL Space at the Rutherford Appleton Laboratory hosted ozone and aerosol lidar, designed to look at aerosol backscatter and ozone concentrations in the lowest few kilometres of the atmosphere. The site on the Rutherford Appleton Laboratory was chosen due to its proximity to an air quality monitoring station at Harwell and being due west of London, provided an upwind profile of the atmosphere before it reached London.

Scientists reproted from initial results that the wet summer may have provided cleaner air than we would otherwise have experienced during the Olympics.

The instruments at RAL are managed by the Facility for Ground-based Atmospheric Measurement (FGAM) which is part of the National Centre for Atmospheric Science (NCAS).

London 2012 Paralympic Games Technical Service Provider Team

Throughout the London 2012 Paralympic Games, Otto Bock Healthcare provided a team of 80 technicians that played a pivotal role in ensuring the Paralympic athletes are able to perform to their fullest potential. The Technical Service Team provided athletes with immediate repairs for prosthetics, orthoses and wheelchairs, operating out of three repair centres in the Athletes' village; nine workshops across the venues and one mobile unit. The team was led by a group of highly experienced logistical and operational managers with many years of Games' experience, who oversaw the delivery of technical services to the approximate 4200 athletes expected to compete.

The 12th Paralympic Games for the company, Otto Bock predicted that the team would oversee as many as 2,000 repairs for athletes from over 120 countries; co-ordinate 15,000 spare parts; and replace 2000 wheelchair tyres.

Did your company play a role in connection with the Olympics?
Do you have any news arising from the British Business Club Meetings?

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