CeBIT AUSTRALIA

CeBIT Australia

Start-up Summary Report

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At CeBIT Australia we pride ourselves to be at the forefront of business technology. We go through great effort to foster an environment of innovation and bring together the next generation of technology innovators with new trends, seasoned business professionals and potential investors so they can take their ideas to the next level.

In this report, we've collated the ideas that got us the most excited at this year's conference so you can make sure you're abreast of all the current trends.

Emerging tech

CeBIT is always an excellent way to discover what exciting developments are happening in the world of science and technology, and this year was no exception. These are some of the advancements we think have the potential to change the world.

Wearable skin

Professor Wenlong Cheng and his team at Monash University are currently developing soft, skin-like electronics. E-skin, or e-material, challenges traditional thinking about material design, because 'soft biological systems' and 'hard electronics' have very different, incompatible rules. Professor Cheng has solved this apparent incompatibility by integrating ultra-thin gold nanowires into tissue paper to create an ultra-flexible sensor, which is sandwiched between thin layers of PDMS (a type of silicone) and attached to wiring. This creates a material that is flexible, stretchable, wearable and soft. It will have a number of applications, particularly in medicine, but potentially also in the areas of athletics and aged care.

Cognitive computing

According to Dr Joanna Batstone, Vice President and Lab Director at IBM Research Australia, a cognitive computing systems have three parts:

1. They can learn at scale (that is, interpret data)
2. They reason with purpose
3. They interact with humans naturally (e.g. by voice or text)

If you apply such a system to medicine, you would be able to train it to learn by experience, and recognise patterns. IBM have partnered with skin cancer clinics to look at how systems can differentiate between the different types of skin lesions. By building in abilities to determine shape and dimensions, you will eventually have a system that would have the same skills as a qualified dermatologist.

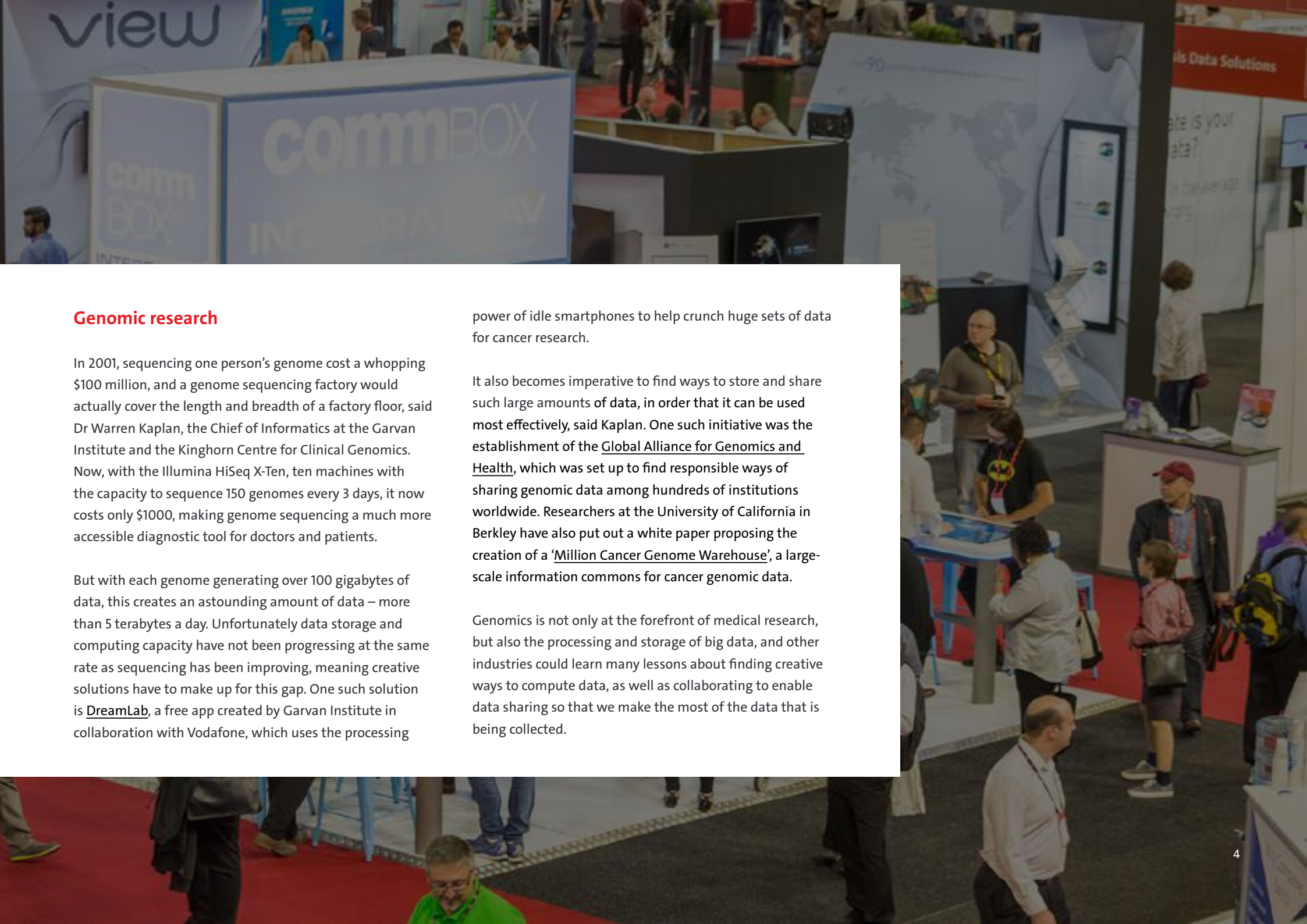
Dr Batstone argues that if they can bring together these values (deep-learning, discovery, large-scale mathematics and fact-checking) with that of humanity (compassion, intuition, design and value judgements) then there is the potential to truly transform the world.

Quantum computing

Michael Bremner, who is currently at the Centre for Quantum Computation and Intelligent Systems at the University of Technology Sydney (UTS), predicts quantum supremacy – when quantum computers will overtake the capabilities of current computers – is only 2 to 7 years away. In fact, he says, we are currently living through a period of major development in the world of physics, which have come to a tipping point in just the last couple of years. With the advancements being made by Google and IBM in superconductors, and those being made by NIST and Innsbruck, and Maryland and Oxford universities in trapped ions, the development of intermediate-model quantum computers has recently become possible, and they are quickly improving.

The next leap will be in the development of fault-tolerant qubits, where quantum error-correcting code is introduced to qubits to cope with the noise they create, which can limit their processing capabilities. By cutting down and eventually eliminating this noise, scientists will be able to scale up the size of the quantum computers.

Quantum computers could potentially radicalise our world in terms of their applications. It has already been shown that quantum computation has applications in chemistry, materials science, precision measurement and cryptography. Emerging applications include optimisation, big data, machine learning and climate modelling.



Genomic research

In 2001, sequencing one person's genome cost a whopping $100 million, and a genome sequencing factory would actually cover the length and breadth of a factory floor, said Dr Warren Kaplan, the Chief of Informatics at the Garvan Institute and the Kinghorn Centre for Clinical Genomics. Now, with the Illumina HiSeq X-Ten, ten machines with the capacity to sequence 150 genomes every 3 days, it now costs only $1000, making genome sequencing a much more accessible diagnostic tool for doctors and patients.

But with each genome generating over 100 gigabytes of data, this creates an astounding amount of data – more than 5 terabytes a day. Unfortunately data storage and computing capacity have not been progressing at the same rate as sequencing has been improving, meaning creative solutions have to make up for this gap. One such solution is DreamLab, a free app created by Garvan Institute in collaboration with Vodafone, which uses the processing power of idle smartphones to help crunch huge sets of data for cancer research.

It also becomes imperative to find ways to store and share such large amounts of data, in order that it can be used most effectively, said Kaplan. One such initiative was the establishment of the Global Alliance for Genomics and Health, which was set up to find responsible ways of sharing genomic data among hundreds of institutions worldwide. Researchers at the University of California in Berkley have also put out a white paper proposing the creation of a 'Million Cancer Genome Warehouse', a large-scale information commons for cancer genomic data.

Genomics is not only at the forefront of medical research, but also the processing and storage of big data, and other industries could learn many lessons about finding creative ways to compute data, as well as collaborating to enable data sharing so that we make the most of the data that is being collected.

Key areas of growth

Throughout the conference, it became clear that there are particular areas that are set to explode in the next few years. To help you stay ahead of the trends, we've identified some of the key areas of growth.

Cyber security

With a new cyber strategy recently announced by the government, it feels as though a bold new path for Australia will be paved within the international community, particularly in regard to Asia-Pacific regions. According to Tobias Feakin, director of the International Cyber Policy Centre and senior analyst at the Strategic Policy Institute, the Asia-Pacific region has 1.4 billion internet users in a region of 4 billion people. This region is also the home of some very disparate connectivity, containing some of the most connected countries in the world (South Korea and Japan) to some of the least (Myanmar and Cambodia). From an economic perspective, this region is the place to be. As of 2015/16, the Asian economy was still growing by 6.7% and constitutes a third of total economic growth.These facts suggest that there are both enormous opportunities and risks for private business and government in the area of cyber security.

With this new strategy, Australia has sent a message to the world what it means to be a new cyber ambassador, and with this announcement we incur a large responsibility, not just for ourselves, but to the region as a whole. There are both tremendous opportunities and pitfalls that shape the cyber environment and Australia must carefully and skilfully navigate it if it is to achieve its aims.

FinTech

According to Danny Gilligan of Reinventure, Australia is still in the early phases in FinTech adoption, but that adoption is happening at an extremely fast rate, and at a much sharper curve compared to the rest of the world. Currently it ranks 5th in FinTech ecosystems globally – a significant jump from 6 to 8 months ago when Australia wasn't even on the map.

So what does Australia need to do to become one of the top three FinTech ecosystems?

- **Policy innovation:** Initiatives such as the Treasury FinTech Advisory Committee, the recent Backing Australian FinTech publication, and the ASIC Innovation hub are a good start, but we need to go further.
  - *Possible initiatives*: prioritise action on key recommendations from FinTech Australia including comprehensive credit reporting mandate, open data standards and a regulatory sandbox for innovation.
  - *Benchmark:* UK and Singapore

- **Ecosystem infrastructure:** FinTech hubs like Tyron and Stone & Clark have started to build the local ecosystem but we need to grow bigger and faster, and need a central FinTech location to do so.
  - *Possible initiative:* Develop the Martin Place precinct as a consolidated FinTech/start-up destination to further co-locate and strengthen the ecosystem.
  - *Benchmark:* UK

- **Talent attraction:** More needs to be done to foster and retain local tech and entrepreneurial talent, as well as attract global talent to Australian start-ups.

- *Possible initiative:* More flexible entrepreneurial via program attracting global talent to Australia
- *Benchmark:* Singapore and Hong Kong

Australia has made massive gains in the FinTech industry in the last year alone, and if we seize the opportunities available to us, and take lessons from other markets, there is nothing to prevent us from being one of the world leaders in this area in the near future.

Healthcare

Dr Stefan Hajkowicz of CSIRO spoke at the conference of the global megatrend 'Forever young', which relates to Australia's aging population. And this is a global issue: predictions say 40% of Japan's population will be over the age of 60 by 2050. This means rising healthcare bills; already healthcare spend accounts for 25% of taxpayers' money, and this is predicted to increase to 40% by 2050. Currently there are no solutions – this is an area desperately in need of innovation. We'll also have to look at ways to lighten the cost burden in other areas of healthcare, such as reducing chronic illnesses through changes in diet and lifestyle.

Food production

Dr Stefan Hajkowicz also spoke of the global megatrend 'More from less' – as the population increases, and incomes rise, this creates a huge pressure on food, mineral, water and energy production. In terms of food supply and demand, the world needs to produce 70% more food to feed this growing population, resulting in a loss of 12 million hectares of land every year. But there are enough resources, Hajkowicz said – if we use them smartly. Again, innovation is needed in order to keep up with demand.

CeBIT 2016 Start-up Pitchfest

This year's pitchfest truly was a formidable arena as start-ups went head to head to compete for the top prizes. Here's who came out on top:

3rd prize: Shippit

Did you know that one in two parcels in Australia fail to meet their recipient in the first delivery? Shippit aims to eliminate the need for 'Sorry we missed you' slips that are so frustrating to customers. It is the web's simplest shipping platform, and connects retailers to several different carriers so that the best carrier can be allocated to a parcel. All carriers are consolidated into a single, simple view. Customers get regular notifications about their delivery, and can even livetrack where it is. There are flexible delivery options, and customers can rate their delivery to help improve algorithms. Shippit has shown that their platform saves retailers 40% in costs, and reduces customer complaints by 90%. Shippit boasts an approval rating of 99.1%.

2nd prize: Blrt

How many times have you wasted time playing phone tag with a work colleague or client? Or spent several minutes trying to explain a difficult visual problem over the phone? Blrt is a collaboration app that aims to solve these issues, and more. You can easily send an image, website or document and talk, point and draw over what you're sending to make your point crystal clear. Communications can be asynchronous, so you can reply at whatever time most suits you. The 'blrts' are like videos, but better, and 50 times smaller, which allows them to be recorded and stored in the cloud, so you can access them later should you need to refer back to them. It has been rolled out over several platforms including iOS and Android.

And the winner is... NetHealth

Chronic diseases have been called Australia's largest healthcare issue (and we've already noted that healthcare is an area with a lot of potential for start-ups). NetHealth is an app that aggregates your health data to help you manage your chronic condition. You can input these details manually or the app can sync seamlessly with any wireless devices you might be using, like FitBit. The data can also be sent directly to your GP, to help your doctor diagnose and monitor your condition.

Can’t wait to find out what’s on the CeBIT agenda?

CeBIT is the largest gathering of technology-minded business people in the APAC region. If you want to discover the latest solutions and software at an enterprise, SME and start-up level, you need to be at CeBIT Australia!

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