



**Islander January 2015**

**Technology Update**

**New Technologies to watch for in 2015**

We've had an exciting 2014 with the sweeping introduction of new technologies such as 4G LTE, wearable devices, 4K curved Ultra High Definition TVs etc. At e3 we have introduced a number of new technologies that are in development such as the Kymeta flat panel satellite antenna and others that will be introduced in 2015 such as Inmarsat Global Xpress that will be called Fleet Xpress for the maritime market.

In 2015 we will see further developments on new technologies. I have selected a range of technologies to look out for in 2015:

**Thumb Print Scanners to replace passwords.**

We have seen fingerprint sensors introduced to the consumer market on the latest cell phones. I have used them this year at US, UK, Dutch, German and Spanish airports. So they are starting to be widely used. We will see the technology proliferate. A fingerprint sensor is an electronic device used to capture a digital image of the fingerprint pattern. The captured image is called a live scan. This live scan is digitally processed to create a biometric template (a collection of extracted features) which is stored and used for matching thus to replace passwords.

**Large Data Storage in your smart phones.**

My new iPhone has 64GB of on-board memory. I could have had 128GB but couldn't quite work out what I would use it for. However it's because it's there you use it.

Storage capacities as large as 2TB terabytes (2,000 Gigabytes, which is equivalent to storing 250,000 HD movies) are planned. We can expect a steady improvement in size and price.

**Fuel cells with battery life exceeding 3-10 days for cell phones.**

Researchers in the renewable energy sector are working hard in this respect. In this context, researchers are exploring possible solutions to improve the efficiency of mobile devices like, for example, mobile phones, laptop computers and vehicles. In other words, they are designing new ways of obtaining energy in a cleaner, safer and more affordable way.

Fuel cells are totally appropriate systems for substituting the batteries of mobile phones, laptop computers and vehicles. They turn the energy resulting from the combining of hydrogen and

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oxygen into electrical power, with water vapour being the only waste product. In other words, they generate energy in the same way that batteries do, but they do not contaminate.

Initially it sounds a bit like a steam driven phone!

### **IPv6 has a larger address book.**

Internet Protocol version 6 (IPv6) is the latest version of the Internet Protocol (IP), the communications protocol that provides an identification and location system for computers on networks and routes traffic across the Internet. With the rapid growth of the Internet after commercialisation in the 1990s, it became evident that far more addresses than the current IPv4 address space has available were necessary to connect new devices in the future.

IPv6 addresses this problem!!!

### **200 Mbps broadband speed for consumers.**

We need this bandwidth performance now. Add together your needs at home on an average evening. Factor in your Sky-on Demand or Netflix set-top box downloading on-demand content in the background; you watching streaming videos in one room; your two children watching a streaming movie upstairs; and your partner having an online three-way Skype, Facetime or Hangouts call in the other room and it quickly adds up.

We are launching in early 2015 our own product and service called e3.Unite. This device together with our service will aggregate together your ADSL/fibre and as many 3G/4G LTE connections that you want into one connection providing up to a maximum of 200Mbps.

### **Autonomic computing**

Put simply it is biomimicry or copying the human actions. In more complex speak it is a type of computing model in which the system is self-healing, self-configured, self-protected and self-managed. Designed to mimic the human body's nervous system. The autonomic nervous system acts and reacts to stimuli independent of the individual conscious input. An autonomic computing environment functions with a high level of artificial intelligence while remaining invisible to the users. Just as the human body acts and responds without the individual controlling functions (e.g., internal temperature rises and falls, breathing rate fluctuates, glands secrete hormones in response to stimulus), the autonomic computing environment operates organically in response to the input it collects.

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Whilst IBM have been away from the mainstream computer news in recent years they have been developing autonomic computer design and are the leader in this field for launch starting in 2015.

Who remembers the computer called “HAL” in the 1968 movie “2001 a Space Odyssey”? HAL was an Autonomic Computer who tried to take over the space ship. Are you aware that the letters in his name are the subsequent letters to IBM? Is that a coincidence?

### **Quantum computing**

Quantum computing is basically even more phenomenal processing power than we have ever had before, but much, much smaller. It will help in all types of industries such as security, surgery, speech-to-speech translation in real-time and mainly autonomic computing for spaceship robotics!

As Moore's Law states, the number of transistors on a [microprocessor](#) continues to double every 18 months. The year 2020 or 2030 will find the circuits on a microprocessor are measured on an atomic scale. The logical next step is to create quantum computers, which harness the power of atoms and molecules to perform [memory](#) and processing tasks. Quantum computers have the potential to perform certain calculations significantly faster than any silicon-based computer.

Quantum computers, also referred to as “nano computers,” are one hundredth the size of current PCs and one thousandth the weight of the smallest Laptop and PC in the world so can be implanted in the body.

### **Green technology**

Green technology will finally become real and affordable for consumers and businesses to use, which will lower oil dependency and create jobs beyond what we have ever seen in the past 100 years

### **Growth of wireless and connectivity networks**

It is predicted that there will ten wireless devices to every cable-connected device in 2015.

LED lighting could provide a source of internet access with wider bandwidth and quicker response times than current Wi-Fi connections, according to research published by the IEEE (Institute of Electrical Engineers). The system, dubbed Li-Fi, could be used to supplement existing Wi-Fi systems or in some cases replace traditional Wi-Fi provision.

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On a final note I predict that the years between 2020-25 will be dominated by machines. These machines will read our biometrics and biomimic the best features of man and animals.

We need to prepare to live in a robotic world!

Happy 2015 for the e3 team.

Roger Horner of e3 Systems

For further information on any of the above, please contact us.  
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