CommsWire

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NOW NOKIA, ERICSSON TRADE WAR CASUALITIES

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US 5G EQUIPMENT MOVE 'COULD HIT' NOKIA, ERICSSON OPERATIONS

Telecommunications equipment vendors Nokia and Ericsson may be forced to move large parts of operations out of China if a proposed move by the US, to make it mandatory that 5G equipment used within US be designed and made outside China, comes into force.

A report in ***The Wall Street Journal*** on Sunday cited "people familiar with the matter" as saying that the government was considering just such a move, following an executive order from US President Donald Trump to ban the use of networking equipment from China due to cyber security worries.

Trump's executive order was issued on 16 May and banned the the use of equipment from Chinese telecommunications vendors Huawei Technologies and ZTE Corporation.

The order gave the government the power to block companies from purchasing equipment from foreign firms who are deemed to be a national security risk. It also gave the secretary of commerce the authority to decide the transactions that include possible risk.

The ***WSJ*** report said a 150-day review of the telecommunications chain had begun on the same day the order was issued, asking equipment makers if they could design and deliver all components needed for a 5G network from facilities outside China.

The 150 days would end in October and since the order has asked for proposals on rules and regulations, it could take years to adopt, the same sources indicated.

There are no American companies that can manufacture the whole range of equipment needed for a 5G network. The one big company in this line, Lucent Technologies, was merged with France's Alcatel in 2006 to form Alcatel-Lucent which was absorbed by Nokia in 2016.

The US and China are involved in a tit-for-tat trade dispute and news of this move may well ratchet up tensions further. Trump and Chinese President Xi Jinping are expected to meet during the G-20 leaders' summit towards the end of this month, but there are no indications that it will lead to any lessening of tensions.

The US Government has also taken other steps that have got China riled up. On 16 May, the government placed Huawei and 68 of its affiliates on its Entity List, meaning that the company would have to seek permission to purchase any American components it needed to manufacture its products.

Four days later, Google announced it was cutting off Huawei's access to future updates of Google's Android and Google Play Store.

On 21 May, the US Commerce Department eased some of the restrictions until August, allowing Huawei to maintain and update existing networks and handsets.

Sam Varghese

AUSTRALIAN INTERNET PIONEER PESSIMISTIC ABOUT THE FUTURE

The first employee of Australia's Academic and Research Network, Geoff Huston, played a pivotal role in setting up the Internet in this country 30 years ago. He believes the Internet has become a toxic wasteland with inadequate security.

Huston has a very realistic view of what lies ahead, as evidenced by a talk he gave at a recent Telecommunications Society meeting in Melbourne.

The **slides** for that talk are well worth a look; towards the end, he posed a number of questions: "In a world of abundant content what do we choose to view? What do we choose to believe? Search becomes the arbiter of content selection and assumes a level of ultimate importance in this world. What's the social outcome of search being dominated by a single entity?"

Asked to look ahead, Huston (left), now **the chief scientist** at the Asia Pacific Network Information Centre, told ***CommsWire*** that 30 years ago there were no smartphones, laptops were luggables, and computers lived in large air-conditioned special rooms with heaps of worker bees tending to them.

"The telephone companies were the largest enterprises in almost every country and nothing looked like it would ever change," he said.

"Today – let's see, awesome compute power in my pocket, high-speed mobile communications, Wi-Fi in planes, driverless cars, cashless money, automated trading, death of newspapers, death of television networks, death of the telephone and telephone companies, death of the bricks and mortar shop, huge displacement of the labour force as we shift from primary and secondary production to a service-based economy, new forms of labour exploitation with the so-called gig economy, and an entire new economy based on surveillance capitalism.

"And you want to crystal ball gaze into the future about the changes to come? I'd be as wrong today as I would've been wrong 30 years ago had you asked me then!"

Huston said his personal view was that the world faced a a whole new set of challenges and it was unclear if people had the tools and capabilities to ensure a reasonable outcome.

Another of his slides which were used for his Melbourne talk, read, in part, "The Internet is now a toxic wasteland that glows in the dark!"

Regarding his role in bringing the Internet to Australia, Huston, the former technical manager of AARNet, said he had no particular personal anecdotes to offer around his experience.

"I was hired by the university peak body to set up a national network to link all universities and CSIRO at the start of 1989 and that's pretty much what I did," he said, breaking down something very complex into what sounds like something very simple.

"I got sucked into all kinds of fights with all kinds of people – some were won, some lost.

"But the objective was simple – get a national IP network up and running quickly, and that's exactly what I did.

"Started the job in January '89, first connection up in June '89, fully functioning national network connecting all universities and Colleges up and running by May 1990."

One of the slides from Geoff Huston's talk at the Telecommunications Society in Melbourne recently.

But in the years after that, what happened was that it became evident that the matter did not end there.

"What emerged in the ensuing years was that this was far larger than just the universities and far larger than just a network to link up academics and researchers," Huston said. "We found ourselves as a university-based activity (it seems like any other term would be a little too grand for a two-person outfit!) running a very large wholesale ISP, growing every month.

"We became a victim of our own success, I guess, and it was logical for the universities to sell the network off to Telstra in 1995 to try and get out of a situation that the universities found to be somewhat uncomfortable and unmanageable."

Sam Varghese

FIRST INTERNET PACKETS TRANSMITTED IN AUSTRALIA 30 YEARS AGO

Sunday marked 30 years since the first packets were transmitted on the Internet in Australia. The network came to Australia because of recognition by the then Australian Vice Chancellors' Committee that the country was suffering a serious brain drain.

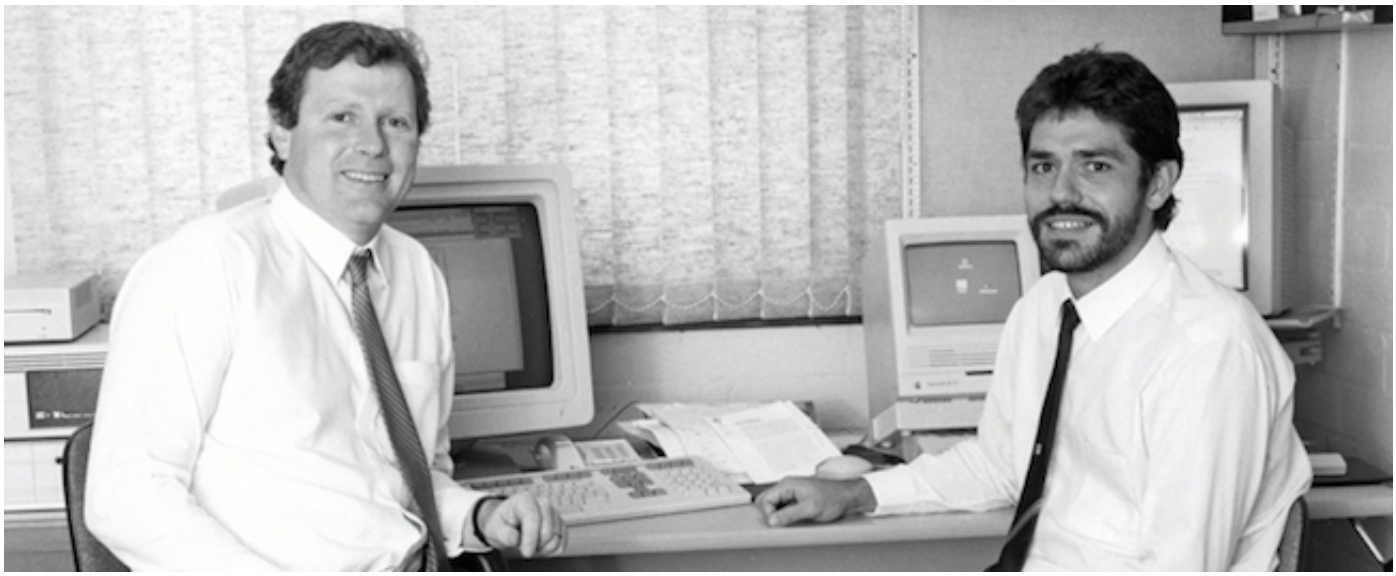
Peter Elford, director of Government Relations at Australia's Academic and Research Network, and the second employee of the academic network, detailed some of the initial history to Angus Griffin, director, customer relations at AARNet, recently.

Elford said it was a genuine brain drain because many facilities in Australia were not up to world standards.

"In particular, there was this new thing called the Internet in America which was centred around what was then called the National Science Foundation network or the NSF.net and it was clear that it was changing the way people did science, the way they accessed big resources like supercomputers, Elford said.

The Commission asked an academic, Professor Brian Carr, an Englishman based at the University of Queensland, to look into the problem and and suggest a course of action. This investigation happened mostly through 1988.

"And the important thing of the Carr report is, it said yes, Australia needs to do something to remain connected to the rest of the world. And so that was the good news. The bad news it recommended a technology that was pretty rubbish," Elford said, referring to a protocol known as X.25.



Geoff Huston and Peter Elford, employees one and two at AARNet

Intervention by Geoff Huston, now the chief scientist at APNIC, who ran the first network shop in Sydney, ended with routers being used.

Elford said AARNet had a pretty simple delegation of duties at the time: "it was, is Jeff doing it, no, well then I guess I must be doing it, right, so and a lot of things were like that. He (Huston) was terrific to work for and he really was the intellectual brains from a technical point of view."

The political side of things was driven by the AVCC.

"The Australian Vice Chancellors' Committee funded the University of Melbourne to get a link in, which they did in on the night of June 23-24," Elford recalled, adding that between the three brands of networking equipment available, they chose Cisco, at that time a start-up.

There was no security of any kind on the network that was set up at the time. It grew pretty rapidly and over the next three years something like 40,000 computers were attached to it.

Elford recalled using HyperCard, a now forgotten program which was available for the Apple Macintosh, to write scripts to generate the configurations which they then copies and pasted it into the routers.

"We put them in boxes and we shipped them out to all the university sites and said one of Jeff or I will come and visit you and connect the router.

“Jeff went to Queensland and Western Australia and South Australia, all the places that had sunshine," Elford said, adding that he went to all the colder places like Tasmania, NSW and Victoria.

Asked to take a look into the future, Elford told ***CommsWire*** that the Internet - at the network layer - was an open platform for innovation – that’s why it had been so successful.

"So I don’t think there is any doubt that in the future more things will be interconnected, more sources of data will be assimilated, and an impossible-to-imagine number of new applications and services will be developed," he added.

"The earliest applications that were used on the Internet now seem incredibly crude with little on no integration.

“We now expect slick interfaces, joined up applications and data. And in the future these networked experiences will become increasingly sophisticated with the underlying technology becoming less and less visible (possibly a good thing!)."

Asked about the possibility of balkanisation of the network, given the current political situation, Elford said the Internet had enabled change in all aspects of the lives of humans and communities much faster than people had been able to develop the “cultural norms" that were typically the basis for the laws that are passed to regulate society.

"As a result, the power and control of the 'over the top' global service providers, particularly those active in the search, digital advertising and social media sectors, is far greater than what we would have allowed in any other market, particularly regarding the collection and use of personal data," he said.

"Establishing and reclaiming the digital rights of citizens from these providers is a far greater challenge than (say) balkanisation of connectivity."

In response to a query about the security of the Internet, Elford said a great deal of the terrifying state of security was underpinned by failings in the awareness, behaviours and expectations of "us" – the citizens/the users.

"For example, the digital, or Internet, version of 'stranger danger' is very poorly developed, and the importance and value of a digital identity is largely unknown.

“The willingness of providers to allow, and for users to accept weak or non-existent identities to be established, and for services to be used anonymously, only exacerbates this situation.

"The clumsy and 'knee jerk' interventions by governments to create a regulatory framework around all this really are treating the disease not the symptoms."

AARNet has compiled a history of the Internet in Australia **here**.

Sam Varghese

EMERGING MARKETS LEAD WORLD IN CELL DATA TRAFFIC GROWTH

There is much greater scope for further cellular data traffic increases in emerging markets than in developed markets due to the absence of high fixed wireline broadband penetration, according to a new global report.

According to the report — **Wireless Network Data Traffic: Worldwide Trends and Forecasts 2019-2024** — from research firm Research and Markets, increased usage at home is likely to be the biggest driver of cellular data traffic growth in the long term – with 5G fixed–wireless, cloud gaming, AR and VR all areas that could drive data traffic growth, but the impact of 5G fixed–wireless is more certain.

On the emerging Asia-Pacific market, the report says traffic growth continued to be very strong in 2018, but the growth rate was less than that in 2017 – and the rate of traffic growth will decrease from the exceedingly high levels that were seen in 2017 and 2018.

And, on the "developed" Asia-Pacific market, the report notes that traffic growth is generally slowing, but is set to remain strong in 2019 – while cellular data traffic growth rates are not expected to accelerate significantly.

Worldwide trends identified in the report are:

- Cellular data traffic in emerging markets grew strongly in 2018 and it is forecasted that 79% of all cellular data traffic will come from these markets in 2024;
- The substitution of wireline broadband is a very important driver of cellular data traffic growth in emerging markets;
- Cellular data traffic growth rates in most developed markets are continuing to decline;
- 5G will only have a limited impact on prevailing cellular data traffic trends;
- 5G fixed–wireless, cloud gaming, AR and VR are all areas that could drive data traffic growth, but the impact of 5G fixed–wireless is more certain;
- New device form factors such as foldable phones are not expected to significantly affect cellular data traffic trends;
- The data-only device share of total cellular data traffic is dominated by local factors and there is no clear single global trend; and
- The relevance of public Wi-Fi will be limited in many countries during the forecast period, but in-home Wi-Fi appears to be more secure against cellular inroads.

As well as the Asia Pacific region, the report also reveals trends in other markets:

Western Europe

- The overall data traffic growth rate in Western Europe decreased in 2018, but not dramatically.
- There is a continued forecast ofa downward trend in overall cellular data traffic growth.

Central and Eastern Europe

- The cellular data traffic growth rate slowed down in 2018.
- There is little prospect of widespread wireline substitution during the forecast period.

Middle East and North Africa

- Data usage is far higher in Saudi Arabia than in the other Gulf Co-operation Council (GCC) countries that was forecast individually.
- The cellular data share of the total data traffic will decline in some countries.

Sub-Saharan Africa

- Traffic growth remained strong in 2018 and similar to that in 2017.
- Increases in smartphone penetration and the total number of data users will help to drive traffic growth.

North America

- The reported cellular data traffic growth was extremely low in the US in 2017.
- 5G will play a significant role in the cellular data traffic trends in the USA during the forecast period.

Latin America

- Cellular data traffic growth rate continues to be high
- There is still potential for strong cellular data traffic growth.

Peter Dinham

WHEN ONE MAN RAN THE AUSTRALIAN DOMAIN NAME SYSTEM

A lone academic individual, Robert Elz, managed the domain name system for the .au domain from the time Australia hooked up to the Internet until by late 1995 he was forced to pass it over to a the current organisation, auDA, in 2001.

Elz, then an academic at Melbourne University, did not look kindly on attempts by the National Office of the Information Economy to take control of the .au domain namespace, and, according to **a report** in Fairfax Media in 2001, flatly ignored repeated requests to do so.

In 1995, Elz (left) had signed a five-year licence with the university to allow its own commercial unit, Melbourne IT, to sell .com.au domains for a fee. But he never made any money out of it.

The NOIE and auDA, which was endorsed by then Federal Communications Minister Richard Alston to take control, then elevated the fight to ICANN, the international organisation that governs Internet domains.

By September, Elz had been **forced** to relinquish his control and auDA took over running the .au namespace. He moved to Thailand later and has been become something of a recluse.

Geoff Huston, the chief scientist at the Asia Pacific Network Information Centre and one of **the pioneers** in establishing the Internet in Australia, told ***CommsWire*** that the seizure of control of the .au namespace was one of the "least creditable acts", largely driven by then prime minister John Howard and the head of the NOIE, Paul Twomey.

He said that for a long time, the Internet was a private network, with even naming conventions being "our thing".

When Twomey placed the network in public hands, Huston said, there should have been compensation for seizure of a private asset. It was "a dark and despicable act in my book", he added.

He said the trust systems that underpinned the Internet in the past were more a matter of faith these days, describing the current state of things as "deeply worrying".

"We are sacrificing everything, including security, for a fast network. It is all built on short-term expediency, he added.

Sam Varghese