

FREEDOM AT THE CLOUD'S EDGE

Weather systems seem an unlikely topic with which to begin a discussion on technological change. But, much like a thunderstorm at the meeting of two banks of cloud, sparks are beginning to fly at the edges of two convergent megatrends in the higher education industry. The dual technological movements of consumerisation and mobility are increasingly being seen as the catalyst toward a new normal in education: IT freedom.

The statistics around mobility are staggering. Last year, the total amount of data consumed on mobile devices was eight times the size that the internet was in 2000. By the end of this year, the number of mobile devices will outstrip the amount of people inhabiting the planet. Finally, it's currently estimated that the equivalent of 1 billion DVDs worth of data – 1,700 terabytes – is created every minute.

Moving as quickly as a storm cell, it's unthinkable that such a dramatic change in consumer behaviour would not impact on how the world of education works.

Ally that with the way that study work is becoming more consumerised and you have a perfect storm. Recent Citrix research found that the workplace of the future will need to provide access to the IT network for each user from an average of six different computing devices. This is because the majority of organisations will use bring-your-own-device (BYOD) initiatives to manage the growing number of devices that people use to access the corporate network. People will generally choose and purchase their own computing devices, meaning that 96 per cent of both ANZ and global organisations then have to invest in redesigning their working environments to create a more inspiring, collaborative and flexible areas equipped with the latest technology.

Students now demand access to materials on iPhones and iPads, Android smartphones and tablets, Blackberries and Windows smartphones, as well as traditional desktop PCs and laptops. Education technology must be device agnostic, while supporting the similarly vast range of education applications available for each subject.

However, despite the attendant challenges, there are some companies both globally and locally investing in innovative solutions for IT freedom.

One example is the University of Sydney. The recent introduction of virtual desktop infrastructure at the University has allowed students to access their required course

software without being tied to the use of physical machines in specified buildings. However, the University's real goal is to get such access on students' own devices so they can use university software wherever they are, whenever they want. As the effects of the NBN rollout are felt, students are expected to work increasingly on university projects from anywhere.

Meanwhile, international best practice is being seen at RMIT. The University is in the midst of a "very large" virtual desktop infrastructure investment, allowing the school to take advantage of the fact that most students bring their own laptops and other devices. The University's BYO project has enabled a virtual lab experience on each user's chosen device, expanding the numbers of people that teachers can reach with each application. The virtual desktop implementation has also had to reflect the sheer volume of devices in use, with the IT infrastructure forecasting that each student will have three devices each – providing reliable, secure access for a smartphone, tablet and laptop per student.

While consumerisation is impacting mobility by necessitating IT agnosticism, globalisation is positively changing the way in which academics are conducting their research.

For example, Citrix is supporting the NeCTAR project, an Australian Government to build new infrastructure specifically for the needs of Australian researchers. By building new virtual laboratories, a research cloud, new e-research tools and a robust, secure hosting service, the NeCTAR initiative is using "existing and new information and communications technologies to create new digital efficiencies specifically for the needs of Australian researchers."

At the forefront of this change is the National Servers Program, providing a reliable national network of virtual servers and platforms to support online research services such as the operations for the Research Cloud, virtual laboratories, tools and data.

Similarly, the use of virtualisation and cloud technologies are connecting researchers with existing and new research facilities, data repositories and computational tools, and streamlining research workflows, creating new opportunities for innovation. NeCTAR's Virtual Laboratories are creating a unique opportunity to improve researchers' access to national and institutional research infrastructure, adding value to existing investments in

research infrastructure, and new abilities to harness those capabilities to suit the researcher's own way of working.

At Citrix, we believe the edge of the perfect technological storm has yet to be found. But, through the use of innovative, cutting edge technologies like virtualisation and cloud computing, education organisations across Australia and New Zealand, and across the globe, are moving closer to the goal of IT freedom.

That is freedom from mandated devices, locations or times to research or study; freedom to collaborate quickly, simply and securely with the best minds the world has to offer; and freedom from the constraints of the PC Era as we move confidently to the cloud.

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