

*ICT Trends in Australian  
Non-Government Schools* | **2014**

Research conducted by



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## Purpose and Use of this Report

Our third annual survey of ICT in Australian non-government schools received complete responses from 204 schools, a sample representing:\*

- 17% of all Australian independent schools offering secondary education
- 14% of all Australian Catholic schools offering secondary education

As the third annual study, it is also designed to show trends and directions in school ICT management and usage – as well as providing a benchmark for school ICT teams, educators and administrators to compare with their own ICT function, policies and resources.

Statistical differences by type, size and location of schools are highlighted in a series of 'drill downs'. We trust these will enable readers of this report to compare their own school against similar institutions, as well as to observe differences by state, city versus regional, student population and Catholic versus independent.

In assessing these statistical differences, please have regard to the demographic information included at the beginning of the survey results.

## About the Methodology

During late 2013, Computelec invited non-government schools by email and telephone to complete an online questionnaire. School ICT Managers were directly invited, while other staff were asked to forward a link to the questionnaire to their school's head of ICT. After eliminating incomplete responses and multiple responses from the same schools, we have based the results in this report on unique insights from 204 independent and Catholic schools and the results from the past two years to identify ICT trends.

\* Based on figures from the Independent Schools Council of Australia (2012) and the Catholic Education Commission (2011)

# Section 1: Key Findings

## Overall, ICT resources are growing pages 7, 9, 12

Overall, ICT teams are growing going into 2014. Half of schools (49%) will have a team of 3-5 full-time equivalent employees, compared to just 42% in 2011. While 30% of the schools surveyed still only have two or less ICT staff, this is down from 41% in 2011. The median number of end-devices (staff plus internally managed student devices) is 335 per ICT team member. However, this can be complicated by schools having outsourced end-device management partially or entirely.

A third of schools have 5%-plus more ICT budget in 2014, with half maintaining within 5% either side of their 2013 funds. However, in a trend continuing from our last report, the largest schools are most likely to have a reduced ICT budget. The smallest schools are the most likely to have inadequate ICT budget, and NSW/ACT schools are more concerned about inadequate ICT budgets and the funding of new ICT projects.

## End device dilemma pages 10-11, 15, 17

Yet again this year, although student devices are seen as a relatively low priority, in reality they were one of the two top challenges in 2013. And the greatest issue of significant concern was the increased use of mobile or personal devices. Is this partly due to the end of DER funding, in that more schools are now planning for BYOD and allowing all devices?

While there is a slight year-on-year increase in the adoption of 1-to-1, more schools are basing their programs on student/parent-owned devices. This means that, instead of just one, it's potentially up to three devices, as each student may have a notebook, iPad and smartphone which all need to connect to the network.

The third-highest area of significant concern was establishing effective control/monitoring of student ICT abuse, which goes hand-in-hand with increasing numbers of mobile or personal devices. Many schools did not sufficiently plan for BYOD or understand the impact of BYOD in the classroom. Not surprisingly then, Mobile Device Management (MDM) is the fastest-growing infrastructure trend for 2014.

## Virtualised servers have overtaken physical page 13

As expected, virtualisation of school servers is growing apace. This year 90% of surveyed schools have virtualised servers, compared to just 79% in 2012. 78% in 2013 are now operating more virtual than physical servers.

## Cloud use is growing page 15

Benefits in using cloud computing were cited by 85% of respondents and of these, 57% listed three or more benefits. Surprisingly, one in five of regional schools surveyed see no benefits in cloud-based infrastructure for their schools. Is this due to the higher cost of internet access outside capital cities?

Overall, reducing risk by having offsite systems ready in case of disaster was seen as the greatest benefit at 60%. Schools with over 1,000 students are the most likely to see benefits from cloud computing (88%), citing access to SaaS (60%) as the greatest benefit. Catholic schools are significantly more likely to see cloud-based infrastructure as reducing the cost of ICT service delivery: 62% compared to 45% of independent schools. This may be because they are experiencing more collective value from cloud computing, as it is managed centrally on their behalf by the Catholic Education Office.

The largest growth is predicted for SaaS, with 33% of respondents planning to increase their use in 2014, and 5% intending to start. Small schools (up to 500 students) are the most likely to appreciate the benefits of rapid deployment of new core resources: 54%, followed by reduced risk (50%) and having their ICT infrastructure managed by experts (42%) – although around a quarter see no benefits for their school.



## Key Findings

### Top 3 Challenges in 2013

1. Networking/internet access
2. Student devices
3. Successful implementation of security & backup systems

### Top 3 ICT Concerns

1. Increased number of mobile & personal devices
2. Resourcing ICT projects
3. Establishing effective controls/monitoring student ICT abuse

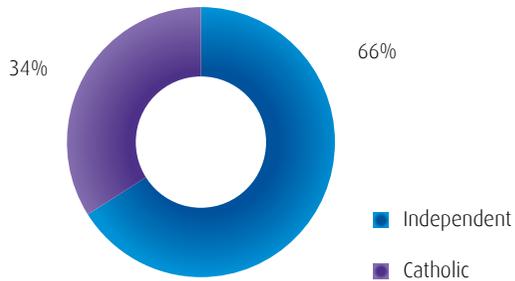
### Top 3 Infrastructure Trends in 2014

1. Mobile Device Management (MDM) systems
2. Server virtualisation
3. Cloud SaaS

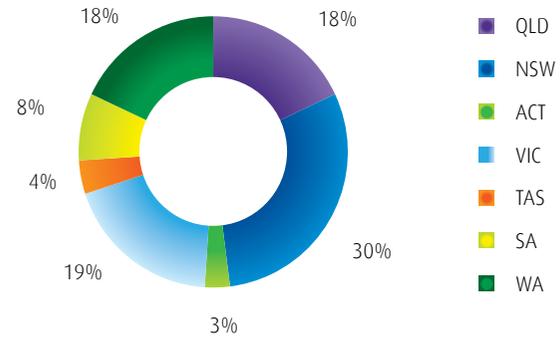
### Top 3 Educational Technology Trends

1. Learning Management Systems (LMS)
2. Web collaboration
3. Video/web conferencing

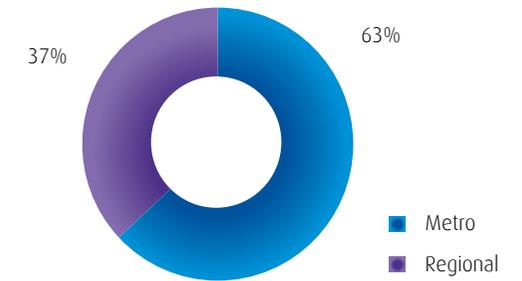
### School Type



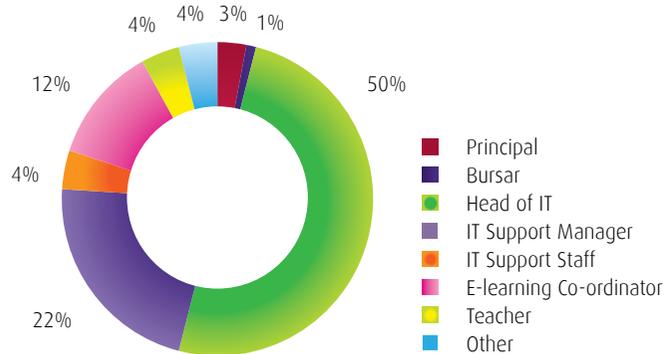
### State



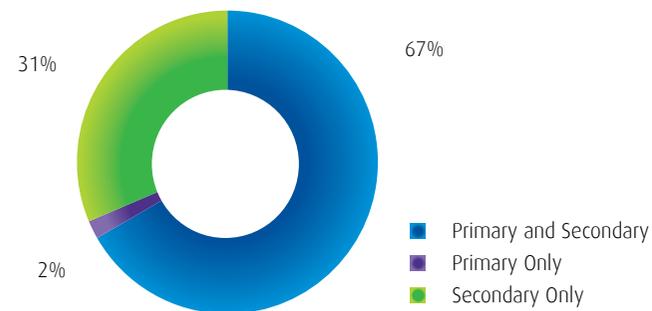
### Location



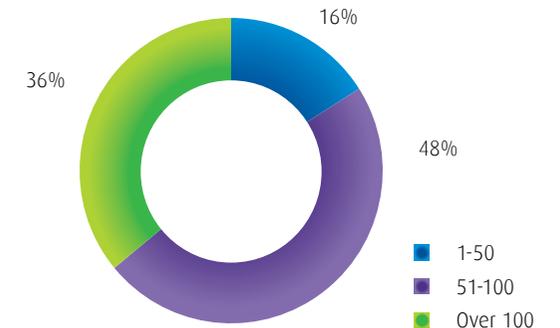
### Job Role of Respondents



### Years Taught



### Number of Teachers



## Number of Students

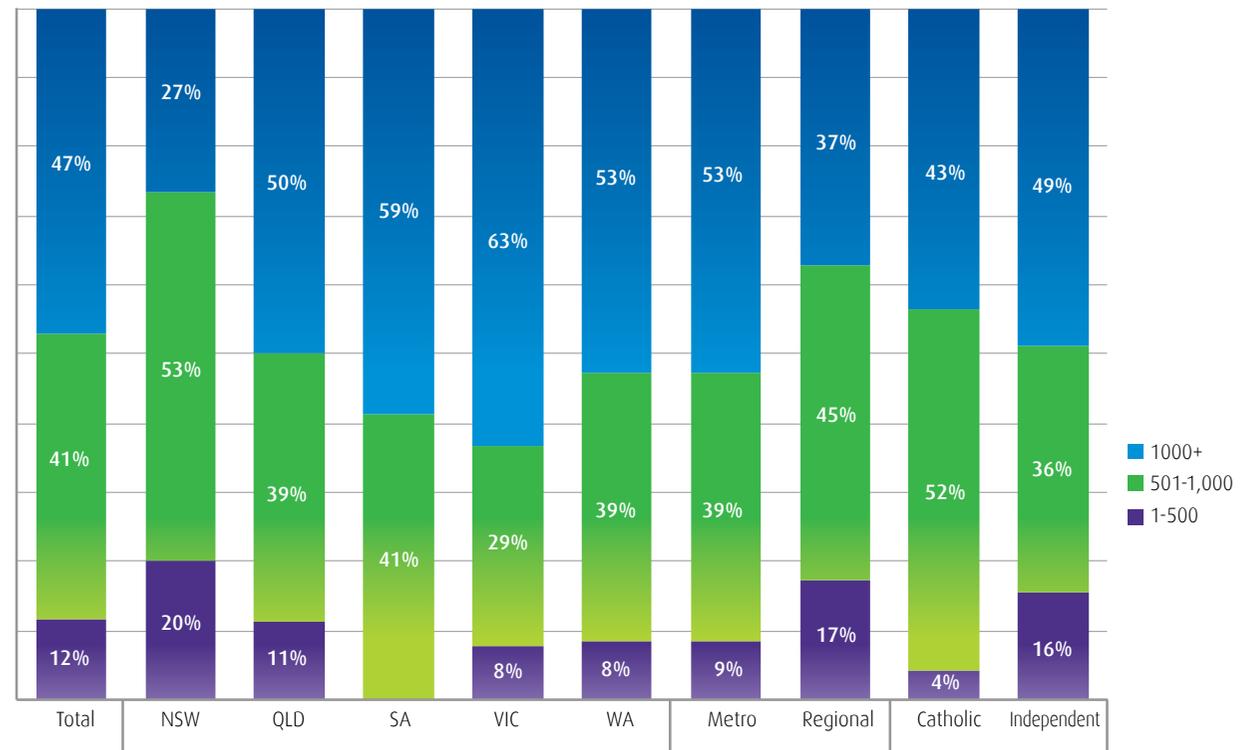
In order to get an understanding of the size of a school's ICT requirements, we asked respondents to indicate the number of students at their school. Overall, 88% of respondents were catering to over 500 students – up from 82% in our 2013 survey.



### Tip

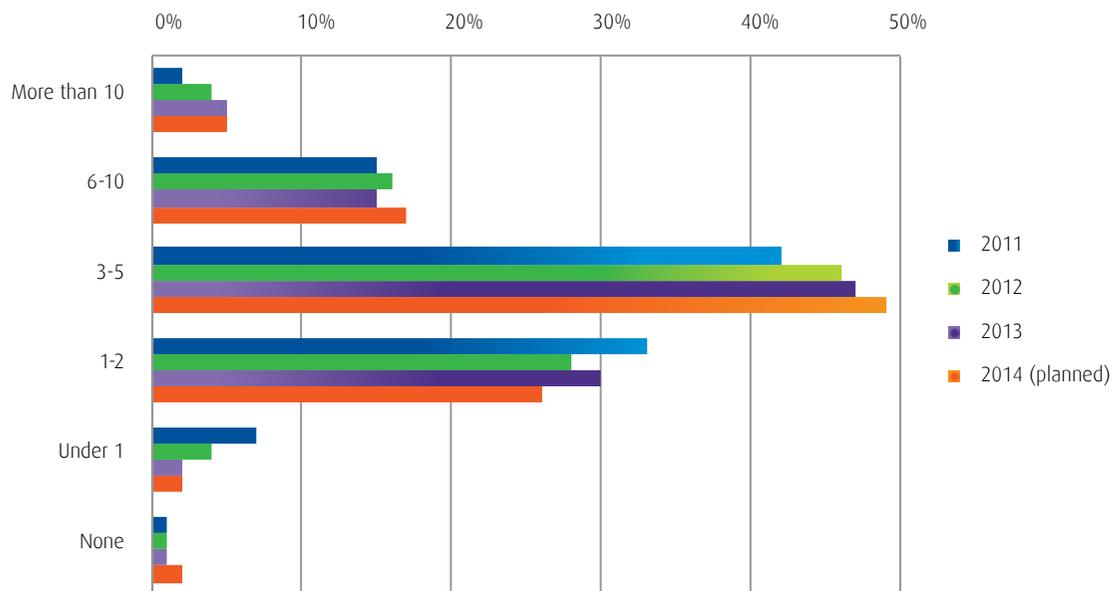
When interpreting detailed 'drill-down' statistics in this report, please bear school size by type and location of school in mind!

## How many students are there in your school?

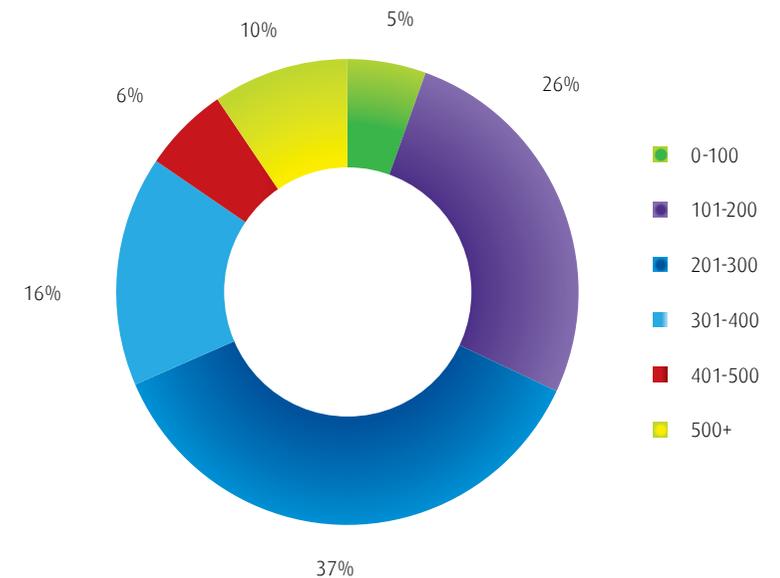


Please Note: ACT/Tasmania not included due to small sample size.

*What is your current ICT team for 2013 and your planned team for 2014?*



**End Devices Managed per ICT Staff Member**



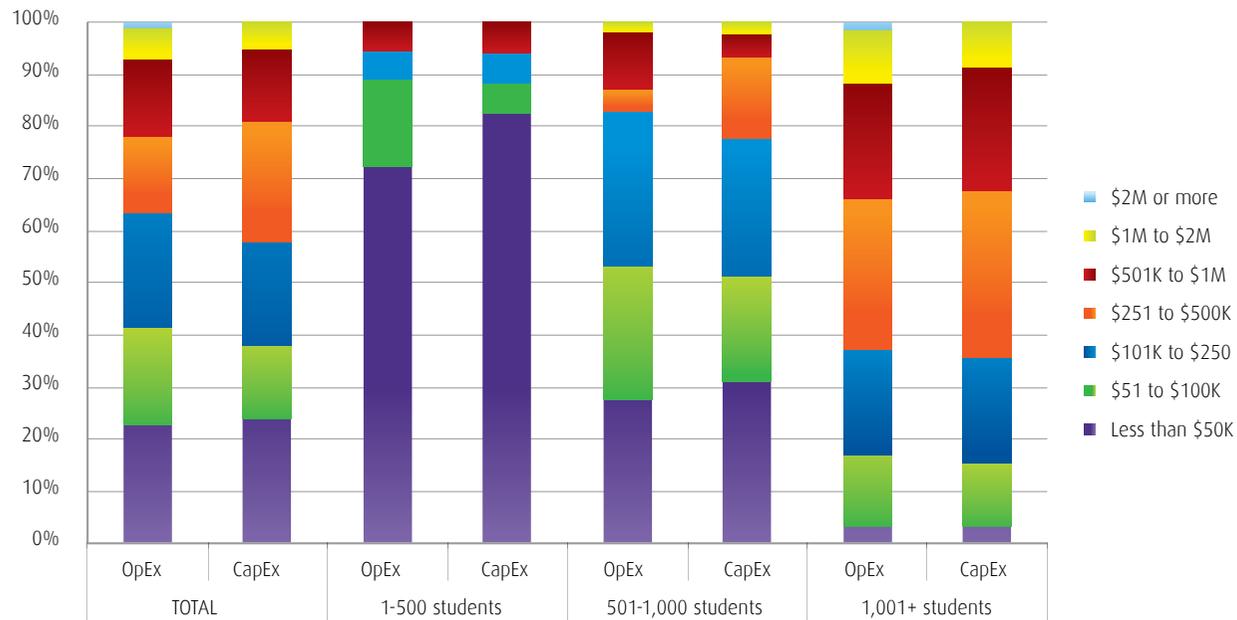
## Key Findings

Overall, ICT teams are growing going into 2014. Half of schools (49%) will have a team of 3-5 full-time equivalent employees, as compared to just 42% in 2011. While 30% of the schools surveyed still only have two or less ICT staff, this is down from 41% in 2011.

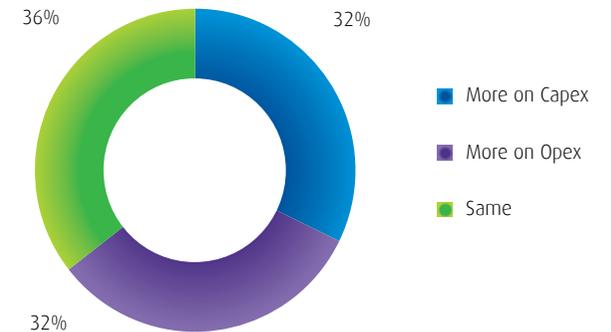
The median number of end-devices (staff plus relevant student devices) is 335 managed per ICT team member. However, this number is warped by a number of schools who have outsourced end-device management partially or entirely.

## What is your planned ICT budget for 2014 for all ICT projects and systems?

This year, we asked respondents to indicate the range of their budget for both Capital Expenditure (CapEx) and Operational Expenditure (OpEx). This question was optional, but 60% of respondents provided answers.



### CapEx vs OpEx



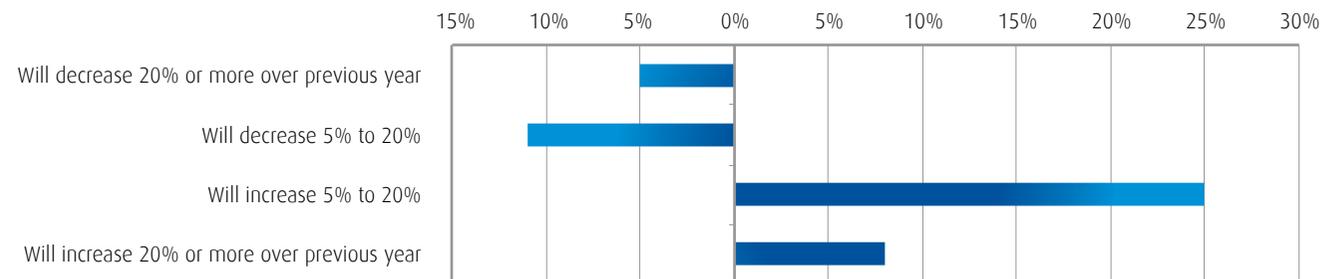
## Budget Comparison and Justification



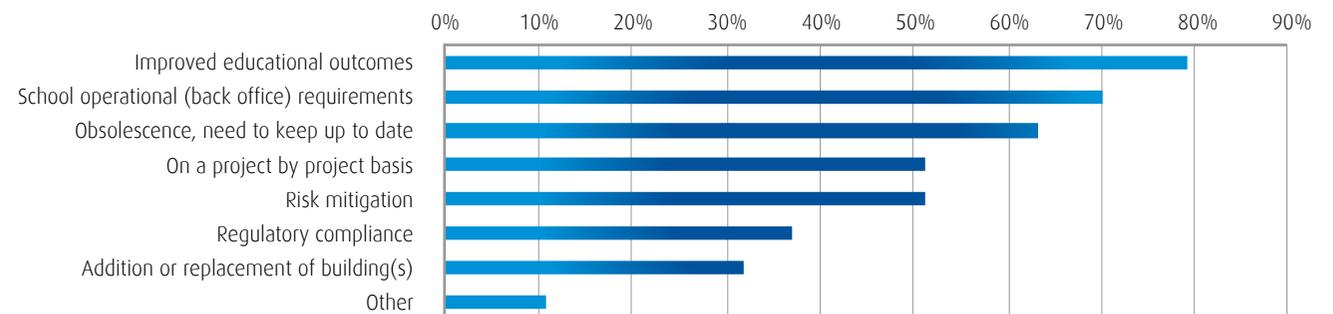
### Drilling Down

- In a trend continuing from our last report, the largest schools are most likely to have a reduced ICT budget – 20% compared to 12% of schools with under 1,000 students.
- Regional schools are most likely to be receiving an ICT budget rise of over 20% in 2014: 17% compared to just 2% of metropolitan schools.
- While 47% of WA schools have a higher ICT budget in 2014, only 16% of Queensland schools do, and 24% of SA schools are managing with a lower budget than in 2013.

### How does your 2014 budget compare to your 2013 budget?



### How did you justify your 2014 IT budget?



## ICT Objectives

It is interesting to compare mission-critical objectives in 2014 with principal challenges of 2013. Yet again, although student devices are seen as a low priority, in reality they were one of two top challenges in 2013.

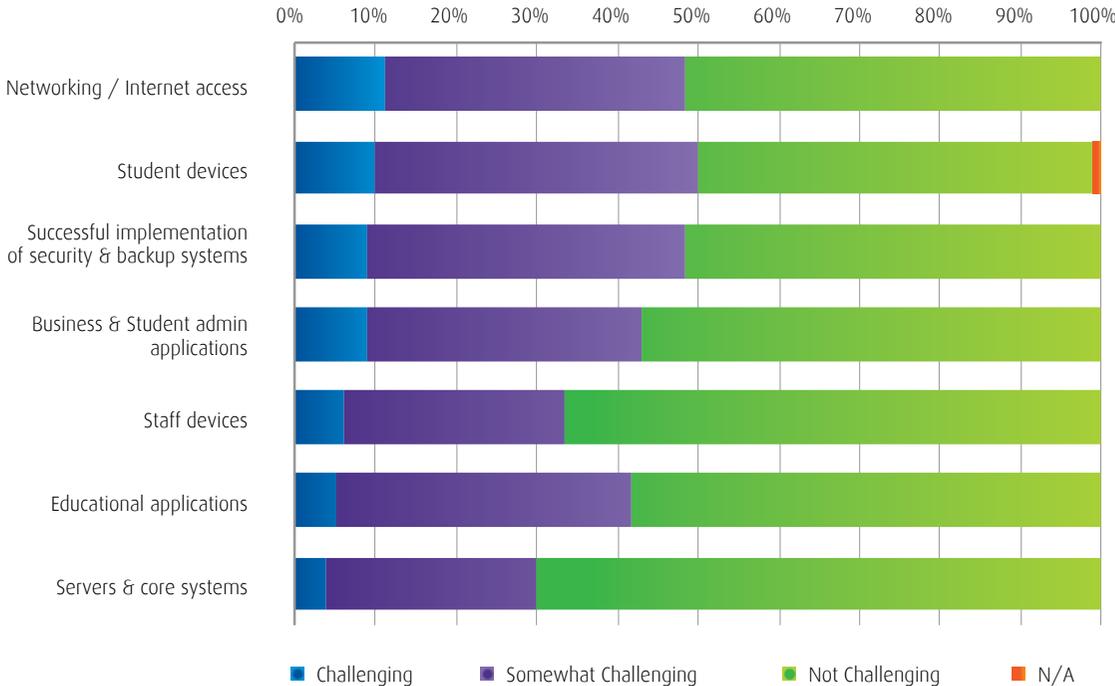


## Drilling Down

When we look further at schools that were challenged or somewhat challenged by different areas of their ICT infrastructure in 2013, there are some statistically significant differences by location, size and type of school.

- Mid-sized schools (501-1,000 students) were the least challenged by the performance and reliability of student devices: 43% compared to 67% of smaller schools and 53% of larger ones.
- 71% of the smallest schools were challenged/somewhat challenged by the performance and reliability of the school network, compared to only 39% of schools with over 1,000 students. They also found servers/core systems most challenging: 50% compared to 27% and 37% of mid- and large-sized schools respectively. This could be because small schools are less likely to have access to external support and feel more challenged by larger management tasks.
- Metropolitan schools were less likely to find the performance and reliability of their servers/core systems a challenge in 2013: 25% compared to 40% of regional schools.
- NSW/ACT schools were most challenged by their Business & Student Administration applications: 54% compared to Queensland (31%), Tasmania (33%) and Victoria (34%). They were also more likely to find their core server systems a challenge in 2013: 43% compared to just 19% of WA schools & 21% of Victorian schools.
- Queensland schools found staff devices least challenging: 14% challenged or somewhat challenged, compared to NSW/ACT (42%), WA (36%) and SA (35%).
- Independent schools were significantly more challenged by security and DR – 56% compared to only 35% of Catholic schools, which is likely due to the centralised security model managed by the Catholic Education Office.

## How challenging were the following objectives in 2013?



## Insight

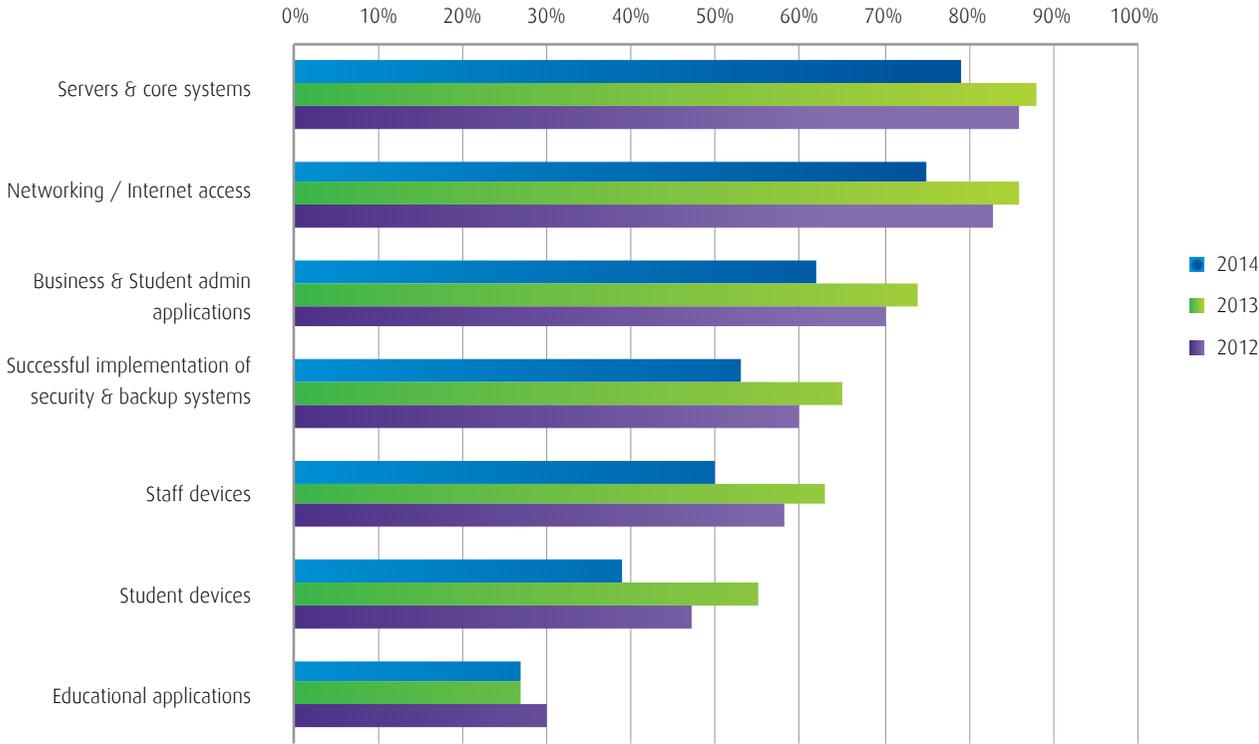
Reliable and secure internet still presents a challenge due to skill shortages in networking expertise. While there are more engineers that specialise in servers in the market, less specialise in networking and it's rare to find an engineer that specialises in both networking and servers. We also see networking challenges continuing to grow with increase in the use of web collaboration, audio visual and cloud computing – all of which have an impact on the school's network.



## Insight

Overall, the schools surveyed this time were less likely to cite components of their ICT infrastructure as 'mission critical' in the year ahead (as opposed to 'important' or just 'required') than they were in previous years. Could this be due to increased migration to cloud and managed services, taking the pressure off school-operated infrastructure? Or is it because there is greater focus on new objectives due to the growing responsibilities of school ICT teams – which extend further than servers/core systems, networking/internet access, business and student applications.

## What are your mission-critical objectives in 2014?



## Drilling Down

- Over half (55%) of schools with 500-plus students saw the successful implementation of security, backup and DR systems as mission-critical, compared to 38% of smaller schools.
- Small schools are significantly less likely to consider student devices mission-critical in 2014: just 17% compared to over 40% of schools with over 500 students. They are also less likely to consider staff devices mission-critical: 25% compared to over half or more of larger schools.
- WA schools are most likely to see their Business & Student Admin applications mission critical in 2014: 77% compared 54% of NSW/ACT schools.



## Drilling Down

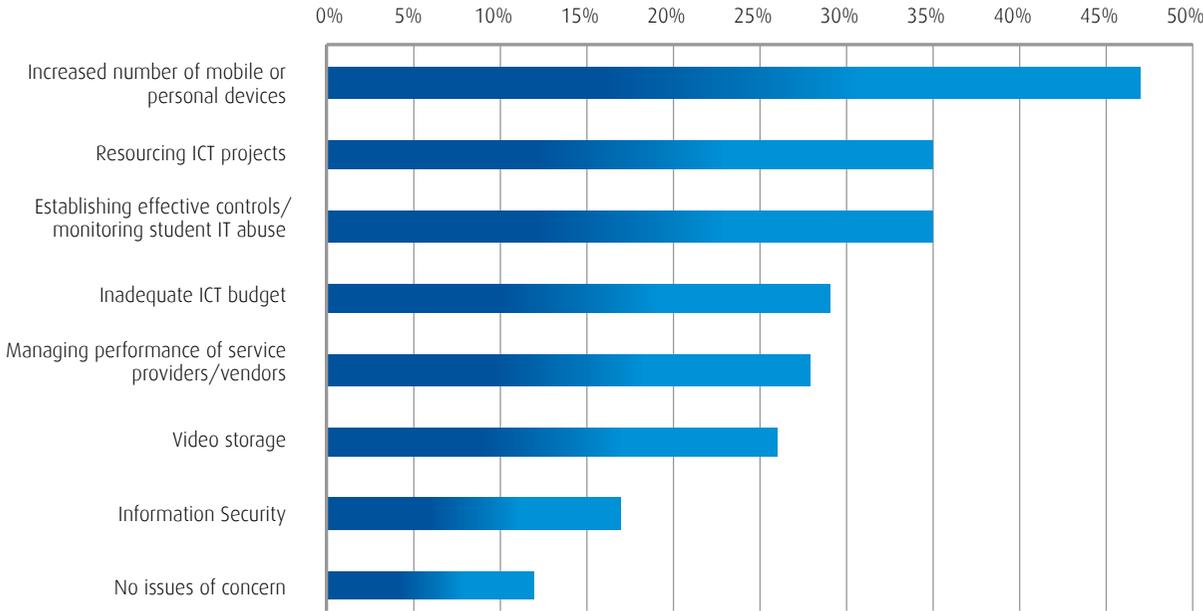
This year, we asked respondents to tell us about their chief ICT concerns during 2013. Again, there were variations according to location and type of school.

- Half (51%) of high schools were significantly concerned about establishing effective controls and monitoring student ICT abuse, compared to only 26% of those teaching K-12.
- NSW/ACT schools were statistically more concerned about inadequate ICT budgets: 41% compared to just 8% of Victorian and 19% of Queensland schools – which is to be expected, as NSW schools were more reliant on the DER funding which has now ended.
- WA schools were the most concerned about the increased use of mobile or personal devices (53%) and information security (25%).

In terms of school size:

- Small schools (up to 500 students) are the most likely to have inadequate ICT budget: 58% compared to just 22% of schools with over 1,000 students.
- Mid-sized schools are at least twice as likely to have concerns over information security.
- Schools with over 1,000 students are the most likely to have concerns over resourcing projects (38%) and video storage (29%).

*Which of the following ICT issues have been a significant cause for concern for your school in 2013?*

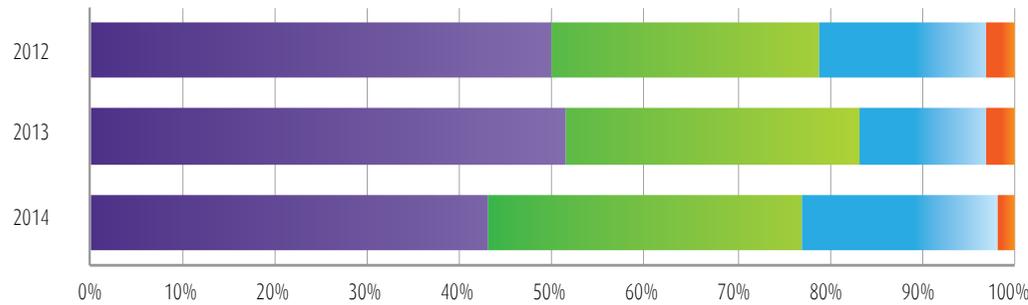


## Insight

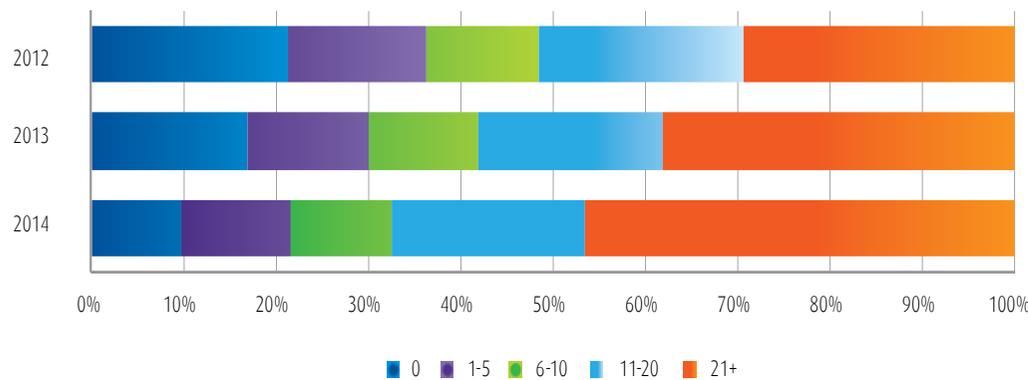
Resourcing ICT projects is the second-biggest challenge in 2013. Some of the reasons for this could be that internal school ICT teams are capped in terms of staff and skills. As a result, ICT projects are still typically carried out in 'spare time' or during school holidays, which can delay necessary upgrades. There is also the realisation that cloud and VDI projects can require significant start-up costs, even though they deliver ROI in the medium-to-longer term. Adding to the pressure, this year marked the end of DER funding which many schools used to fund resourcing for ICT projects.

*How many servers do you have?*

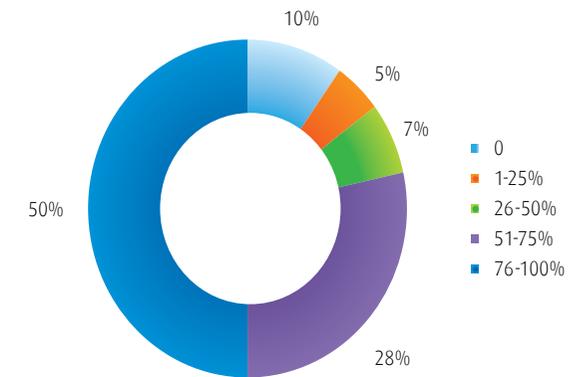
### Physical Servers



### Virtual Servers



### Percentage of Servers that are Virtual



## Key Finding

As expected, virtualisation of school servers is growing apace. This year 90% of surveyed schools have virtualised servers, compared to just 79% in 2012, and 78% are now operating more virtual than physical servers.

## Infrastructure Technologies

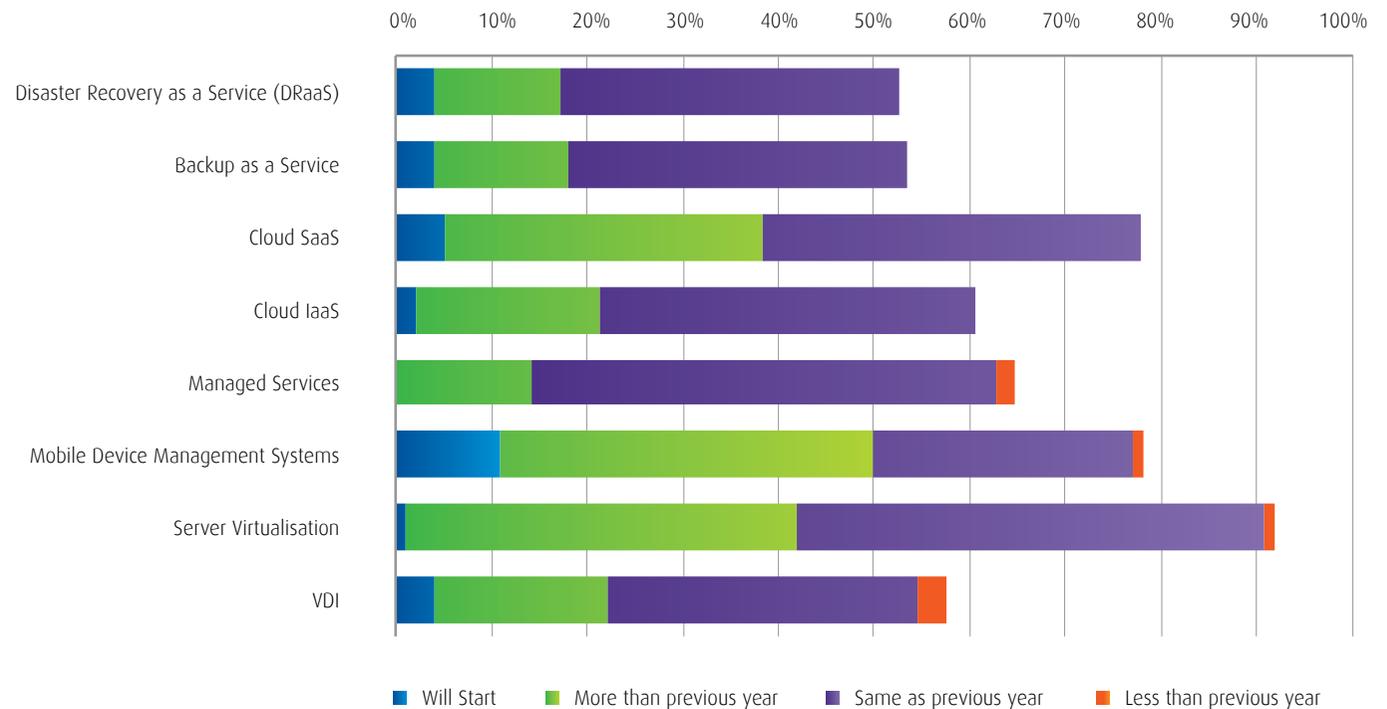


### Drilling Down

Not surprisingly, given the challenge of managing end devices and the proliferation of smartphones in schools, MDM systems are the fastest-growing infrastructure trend for 2014, with 50% planning to start using or increase their use.

- SA schools are least likely to be using MDM systems in 2014 – nearly half (47%) say they're not applicable or are unsure if they will deploy them, although 24% say they will start using them. In comparison, 84% of Queensland schools will use them the same, more or start using them this year.
- Almost two-thirds of schools are currently using Managed ICT Services, although schools with 501-1,000 students are less likely to use them in 2014 than smaller or larger schools.
- Around six in 10 schools surveyed are using Cloud IaaS, with Tasmanian schools (78%), NSW/ACT and Victorian schools (both 63%) the highest adopters.
- Schools with up to 1,000 students are most likely to use Backup as a Service in 2014, with 62% of schools with less than 500 students already using it. Meanwhile, half of the largest schools either have no intentions or don't know.
- Similarly, schools with under 1,000 students are most likely to use Disaster Recovery as a Service (57%) in 2014, perhaps because larger schools tend to have already invested in their own DRaaS solutions.

### How will your school use the following servers and infrastructure technologies in 2014?



### Insight

The huge uptake of Mobile Device Management Systems in 2014 may reflect that many schools were previously unaware that BYOD needs a platform and a strategy, and have now come to realise that it is more than simply teaching kids how to use devices in the classroom. Further, the large increase in Cloud SaaS usage is also going to drive the need for federated authentication, which will be a rocky road without the ability for single sign on.

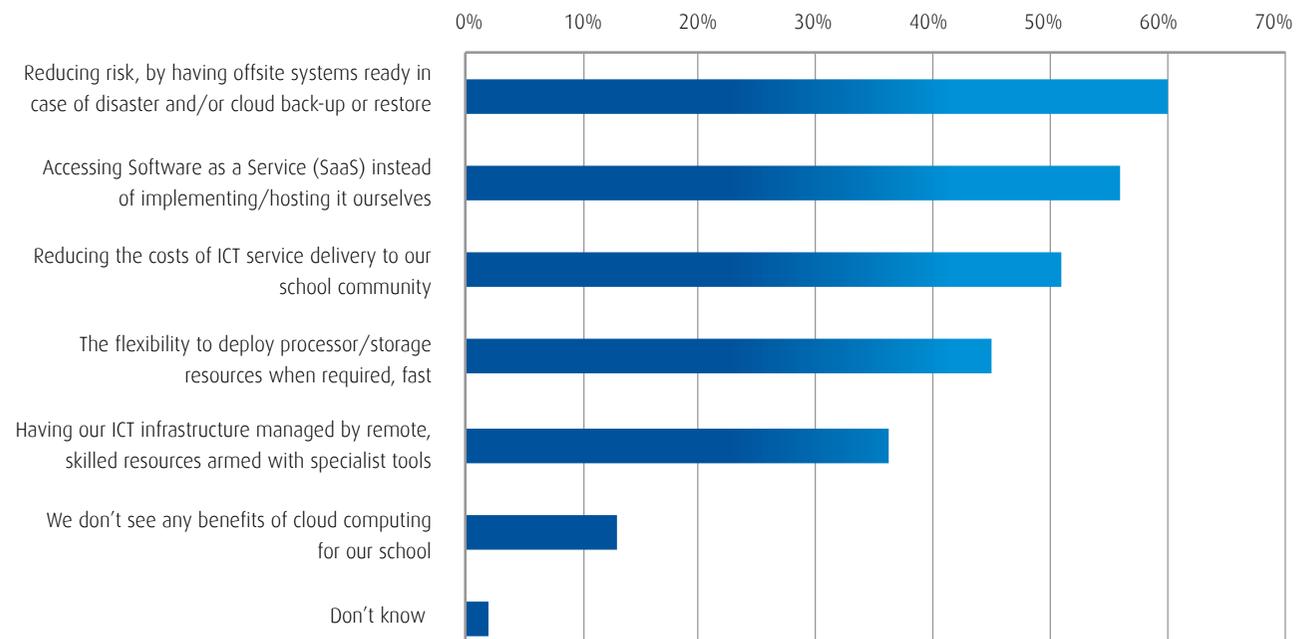
## Infrastructure



### Drilling Down

- Catholic schools are significantly more likely to see cloud-based infrastructure as reducing the cost of ICT service delivery: 62% compared to 45% of independent schools. This is probably because they are experiencing more collective value from cloud computing, as it is managed centrally on their behalf by the Catholic Education Office.
- Small schools (up to 500 students) are the most likely to appreciate the benefits of rapid deployment of new core resources: 54%, followed by reduced risk (50%) and having their ICT infrastructure managed by experts (42%) – although around a quarter see no benefits for their school.
- Mid-sized schools (500-1,000 students) are the most likely to see benefits in reduced risk (68%) and costs (63%).
- As noted above, larger schools budgets are decreasing, and cloud reduces costs. Schools with over 1,000 students are the most likely to see benefits from cloud computing (88%), citing access to SaaS (60%) as the greatest benefit.

### What do you see as the benefits of utilising cloud-based ICT infrastructure services?



### Key Finding

85% of respondents saw benefits in using cloud computing and of these, 57% cited three or more benefits. Surprisingly, one in five of regional schools surveyed see no benefits in cloud-based infrastructure for their schools. Is this due to the higher cost of internet access outside capital cities?

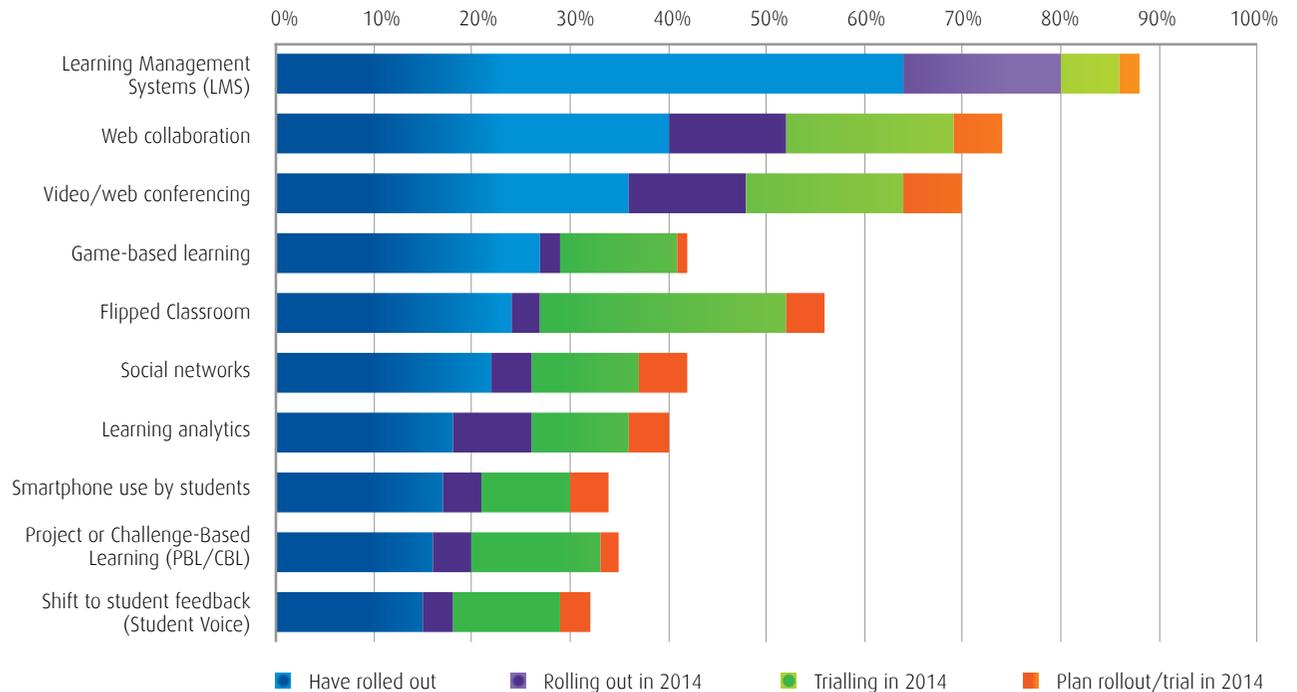
## Emerging Trends in Education



### Drilling Down

- By the end of 2014, 91% of Victorian and Queensland schools expect to have rolled out or at least trialled LMS, compared to just 77% of WA and Tasmanian schools.
- As of 2013, none of the schools surveyed with less than 500 students had adopted smartphone use for students, compared to 19% of those with over 500 students. By the end of 2014, just 12% of these smallest schools expect to have rolled out or at least trialled smartphone use, compared to 36% of schools with over 1,000 students.
- Regional schools are more likely to have rolled out video/web conferencing by the end of 2014 – 62% compared to 41% of metropolitan schools.
- Schools with 1,000 students are significantly more likely to have deployed web collaboration systems by the end of 2014 – 59% compared to just 23% of schools with under 500 students.
- Currently, Victorian schools lead in the use of web collaboration systems– 55% compared to just 26% of NSW/ACT schools.
- WA schools lead in the use of game-based learning – 44% compared to just 14% of Queensland schools.
- Victorian schools lead in the use of learning analytics – 32% compared to just 6% of NSW schools. By the end of 2014, Queensland is expected to take the lead, with 53% of schools having at least trialled analytics.
- Flipped classroom is easy to implement and is usually contingent on LMS. It has proven most popular in Victoria, with a current 42% adoption rate. With the lowest adoption rate so far (12%), SA schools plan to catch up fast, with 47% planning to trial it 2014.
- Schools with over 1,000 students lead in deploying Flipped Classroom (30% to date). But mid-sized schools (500-1,000 students) expect to catch up soon, with 55% of all schools of over 500 students using or at least trialling it in 2014.

*What is your school's approach to these widely discussed emerging trends in education ?*



### Key Finding

Metropolitan schools lead with LMS – 69% adoption compared with 55% of regional schools. However, regional schools plan to catch up, with 29% planning to roll out or at least trial LMS in 2014. Only a quarter of the smallest schools have rolled out LMS, compared to 72% of schools with over 1,000 students.

## 1-to-1 Programs and BYOD

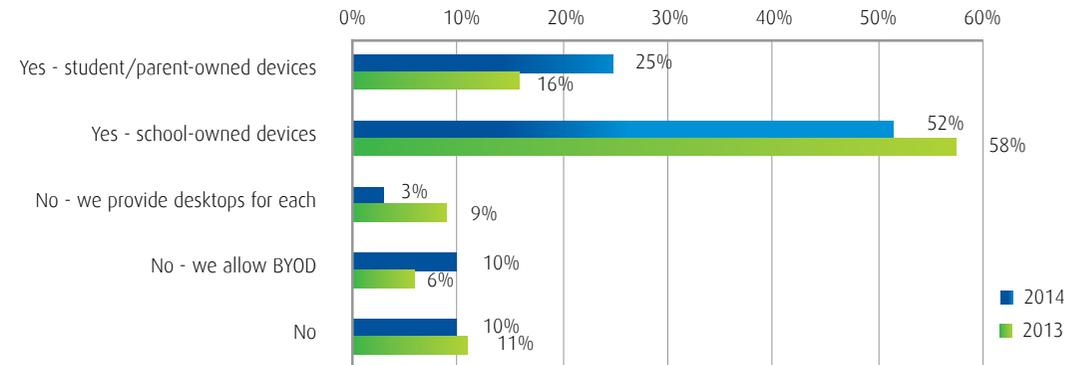
### Key Finding

While there is a slight year-on-year increase in the adoption of 1-to-1 (77% compared to 74% last year), more schools are basing their programs on student/parent-owned devices, and BYOD has overtaken individual desktops.

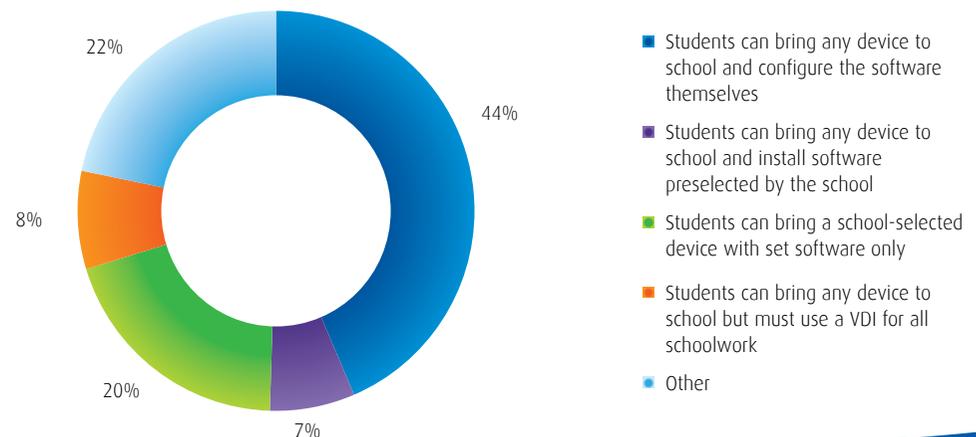
### Drilling Down

- NSW/ACT schools are the least likely to have a 1-to-1 program: 65% compared to 100% of the Tasmanian schools surveyed.
- The 84% of Victorian schools with a 1-1 program are equally likely to base it on student/parent-owned devices (42%, same as school-owned devices), while Queensland schools are most likely to own the devices used (72%).
- Nine out of 10 Catholic schools have established a 1-to-1 program (compared to seven in 10 independent schools) with around two-thirds of these providing the devices.
- Around half (51%) of independent schools surveyed interpret BYOD as allowing students to bring any device and configure the software themselves. The same ratio of schools with over 1,000 students agree, but mid-sized schools are the most likely to mandate the type of BYOD devices and software used on them (26%).
- SA schools are the most likely to consider BYOD as students bringing any device and configuring their own software: 82%, compared to just 25% of Queensland schools.
- Queensland schools also place more control over BYOD, with 47% requiring students to either bring a school-selected device or use VDI for all schoolwork, compared to only 24% of Victorian schools.

### Do you have a 1-to-1 program?



### What does BYOD mean to you and your school?



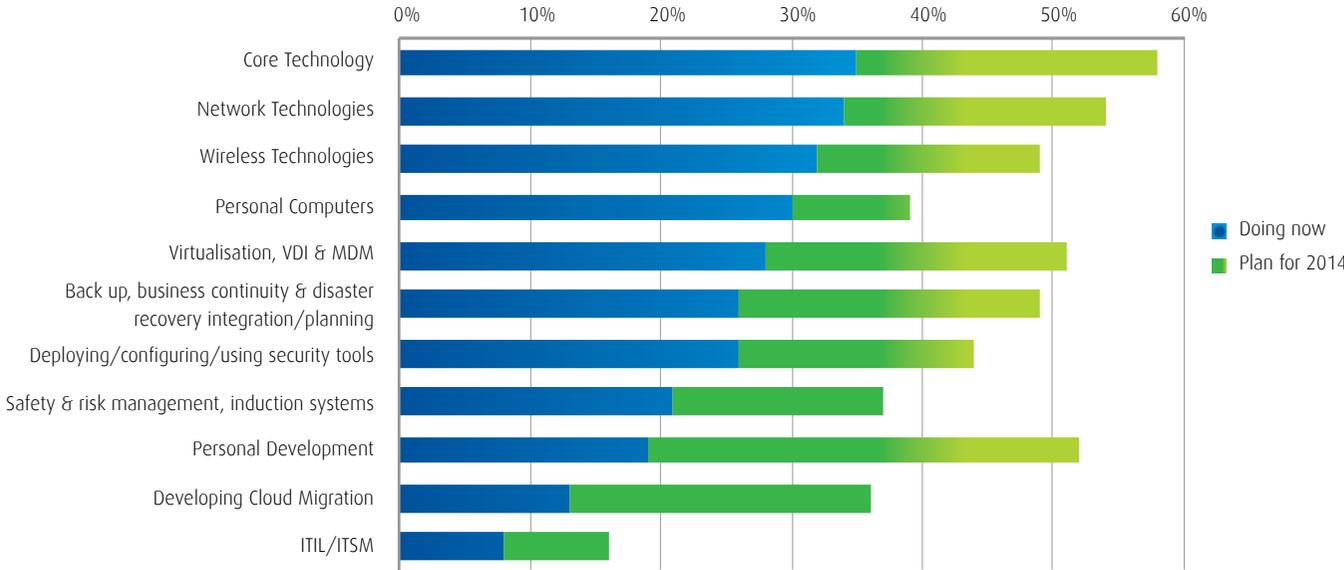
## ICT Professional Development

### Drilling Down

For the first time this year, we asked respondents about the type of professional development opportunities are offered to the ICT team and the size of their 2014 budget for training. Of the three-quarters of respondents who could put a figure on their professional development budget, the median is around \$1,875 per ICT staff member for 2014.

- Large schools (1,000-plus students) are most likely to be providing or planning professional learning for their ICT team in core technologies (66%) and network technologies (63%). They are also significantly more likely to be providing training in virtualisation, VDI and MDM: 38% compared to just 8% of schools with under 500 students, although a quarter of small-to-medium schools plan to offer this training in 2014.
- The larger the school, the more likely it is to provide professional learning opportunities in the use of security tools – with a third of schools over 1,000 students offering it now, compared with just 8% of schools under 500 students. WA schools are also the most likely to be providing training in security tools: 42% compared to only 18% of SA schools.
- Catholic schools are twice as likely to be planning professional training in cloud migration in 2014 (34%, compared to just 17% of independent schools).

*What professional learning opportunities are available to your school ICT Team?*



### Professional Development Budget by Size of ICT Team

*Respondents with an ICT team of 2+, who know their PD budget*



## About the Authors

### Bruce Dixon

Co-founder, President  
Anytime Anywhere Learning Foundation

Bruce's primary role has been in the development of programs that assist governments to make effective use of technology across their education sector. His strategic work has enabled governments to better manage large scale personal technology deployments, and ensure outcomes that drive both school improvement and ultimately transformation.

His experience across more than 40 countries has led much of the current thinking around personal technology use in school, reflective of his role as a pioneer of 1 to 1 in the early 90s. He has received commendations from the Smithsonian Institute, the National Schools Boards of America and others for his work. His background across software development and school leadership combined with several start-ups, both commercial and social, means he draws on a unique breadth of knowledge and experience in his advisory work. Bruce also has continued his work as an advisor to Computelec.

### Dr Jill Abell EdD, AALIA(CP), MACE, MACEL, MAICD

Director of Information Services & IT  
The Hutchins School, Hobart

Jill has a background in teaching, systems and software project management. She has worked in government schools, colleges and in central curriculum and ICT consultancies at resource manager and assistant principalship levels prior to her current appointment. Interested in the affordances of IT for the effective management of educational change, Jill's strategic ICT planning goal has been to enable a high performance learning organisation with highly reliable communications and systems. In order to facilitate innovation in teaching and student engagement in blended learning models, Jill places high value on providing personalised learning opportunities and fostering K-12 open education, AARNet membership and broadband futures for leveraging curriculum change. She is a national ASLA Board member, a member of the peak national educational organisations of ALIA, ACE and ACEL, and takes an equally active role in both the local and national professional learning communities of IT managers.

### Richard Jones

ICT Manager  
Shore School, Sydney

Richard joined Shore as ICT Manager in late 2008 after spending many years implementing and supporting ICT infrastructure in commercial organisations. Richard is passionate about the application of technology where it can make a real difference and believes that ICT teams must deeply embed themselves in the day to day of the organisation they support to be successful. Richard has a Bachelor of Mathematical Science and is a Senior Member of the ACS.



## About Computelec

For more than 28 years, Computelec has been successfully supporting schools to get more out of the technology they use. With specialist staff including engineers and former educators, Computelec is made up of over 90 people who are committed to enhancing learning through the integration of technology in the curriculum.

Computelec services include:

- ICT infrastructure support services
- Hardware and software
- Designing, planning and implementing specialised ICT projects
- 1-to-1 program management
- Cloud services
- Professional learning programs for teachers



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