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Tailored IT Solutions for Education

Every Cloud has a Silver Lining

by David La Bozzetta, CEO at Computelec

Innovation and constant change have been key features of ICT for decades but schools have not always been early adopters of trends that have emerged in other public and private sector enterprise environments. One of the fastest growing areas of ICT development and deployment at the moment is cloud computing, so here are some thoughts on how cloud computing concepts can be utilised in education technology environments.

Cloud computing is a generic term that fundamentally refers to the concept of accessing either software, IT infrastructure, applications or IT services that are hosted elsewhere. Cloud services come in many shapes and forms but essentially they give schools the opportunity to move an application off-premise or alternatively, infrastructure and the applications it runs to a remote location which is usually a data centre.

The fundamental value proposition that this introduces to school technology environments is that the infrastructure and/or applications are configured, maintained and supported by someone else. In addition, a school only has to pay for what it needs and uses as opposed to the whole cost of procuring and managing the environment.

Today, a large number of public and private organisations are embracing the cloud computing concept for the basic reason that it makes sense to use a trusted, specialist third party as an alternative to building, maintaining and securing complex IT solutions yourself. Schools are participating in this revolution with many now remotely accessing applications such as Office 365 and Google Apps.

These services are just the tip of the iceberg in terms of what can potentially be achieved by embracing the concept of cloud computing.

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The First Steps

The Office 365 suite and Google Apps are predominantly the best example of how schools are taking the first steps to using cloud to deliver what has become known as Software as a Service (or SaaS). Both contain the latest versions of e-mail applications, collaborative tools such as Lync / Google +, applications for creation and significant storage allocations. These applications are also updates to new versions automatically by the supplier of the service.

There are clear benefits being received from this sort of SaaS deployment, not the least of which are cost savings and stability of the environment. This successful use of Office 365 and Google Apps in the cloud has definitely progressed the thinking of schools in regards to how they might use other cloud services in their environment.

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Private Cloud

A next logical step would typically be to look at a private cloud solution for the critical task of managing back-up and disaster recovery.

Where in the past, effective back-up and disaster recovery would have involved an expensive exercise in replicating an environment at a fully redundant alternative site ready to kick-start at a moment's notice in the event of the primary site going down. Now having a third party service provider manage a largely automated secure back-up is a benchmark cloud application.

This sort of service can be managed very efficiently by professionals and billed as a monthly annuity cost without any of the complexities of managing that yourself. As schools' IT staff, strategic leadership teams and teachers become more comfortable with these entry level cloud computing services, they are starting to better understand the possibilities to replace large capital expenditures and complex on-site management regimes with a single monthly annuity to do the same thing.

Meanwhile, with many schools also embracing the concepts of 1:1 and/or bring-your-own device, there is starting to be serious consideration for technologies such as externally hosted virtual desktops which offer comparable benefits in terms of controlled costs, improved scalability, guaranteed service levels and not having to manage complex applications.

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Compelling Value Proposition

There are many factors aligning to make cloud computing a compelling model for schools to start moving beyond basic SaaS options. Technology improvements, commoditisation of cloud services and a competitive market place has served to reduce the costs of cloud solutions significantly. There are now many providers who can provide high quality cloud services that can be deployed very rapidly at an affordable price.

In addition, increasing complexity in the use of technology within school communities is placing pressure on internal IT teams to continue improving the quality and value of the services they deliver to the school. Developing and retaining the skills required to manage the complexity of school ICT environments is increasingly difficult in the face of industry skills shortages and the lure of perceived more exciting opportunities in the business and public services sectors.

As well as the challenge of skills shortages, schools also have difficulty managing their IT labour under the different demand loads during the cycle of a week, term or academic year. Sometimes schools have two or three people available when they need six while others at times will have 15 people on-hand to deal with peak demand when they only need six most of the time. Cloud computing offers the opportunity to stabilise the number of staff needed to effectively service the school's critical ICT needs.

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Access to ICT resources and the internet has become critical while the volume of storage required for each student continues to increase exponentially. As a result student- and teacher-facing support services have become equally as important as the technical-focused back-end functions. This has been the catalyst for cultural change within many schools' ICT operations to be more customer-centric and focused on innovation to make better use of technology for positive education outcomes.

Prepare Students for a 21st Century Life

In my humble opinion, it all boils down to asking the question; 'what is the primary reason for schools to exist'? I would argue that achieving the best possible teaching and learning outcomes and personal well-being for the school community is their core business not building and managing ICT infrastructure and applications. Therefore, one of the main benefits of engaging with a trusted third party services provider is providing additional energy and resources for onsite school staff to look after students and make sure they are prepared as well as possible for life in the 21st century.

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Change in ICT roles

You no longer need staff spending large amounts of their time on the mundane, repetitive tasks and that are part and parcel of managing a large complex ICT solution while there is no longer the constant fire-fighting of minor incidents and issues that plague every ICT environment. All of that is looked after by the services provider.

Stabilised Costs

In addition, the fact that these services are delivered to agreed service levels at a pre-defined annuity cost, technology costs become far more stable and predictable. Performance levels of ICT infrastructure are improved because managing environments well is the core competency of service providers. They have all of the skills and experience required to ensure that systems and applications run smoothly, are updated in a timely manner without disruption and that all data is secure and safe from any disasters.

With ICT now so intrinsically embedded into the fabric of school communities, the concept of access and availability anywhere, anytime is increasingly in demand. Microsoft's active engagement with schools offering free access to Office 365 and individual student storage is great start and the benefits of no longer having to pay license fees for that suite of tools that are based in the cloud is compelling reason on its own to start embracing cloud computing.

Taking that a step further, with other forms of cloud computing – while not free – reducing the expenditure on ICT infrastructure to a monthly annuity means that schools only pay for what they use instead of having to manage a complex environment 24/7/365 for a peak demand that only occurs during a fraction of that year.

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Safe and Secure

One of the old chestnuts that always seems to emerge in discussion about cloud computing is security. It is important to understand that any security issues pertaining to cloud computing have been and continue to be addressed very seriously by large and small service providers. Online security is a moving target that exists in every environment. I would argue that third party organisations offering hosted services of all kinds are focused on real or perceived security threats with far more intensity than any school will ever be. The bottom line is that you have to work with people that you trust and do your homework as to how secure things are.

A trusted third party IT services provider with experience in the education sector will ensure that security is managed in accordance with new Federal privacy regulations including secure data being held in on-shore data centres. Third party cloud service providers are constantly testing their environments for flaws while proactively addressing new threats and potential issues which is something schools rarely have the skills and capability to undertake themselves. I hate to say it but any decent hacker could get into any school environment with considerable ease – probably in minutes.

You would be more likely to have a secure environment with a trusted partner than you would if you tried to manage it yourself. There is far greater potential for breaches to occur within your own environment than there is working with a cloud computing services provider which has made a far greater investment in ensuring its environment is secure.

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Transition in Organisational Structure

As I said before, cloud computing solutions can cover all or part of your core infrastructure, network and applications management responsibilities to deliver just storage, mail and desktop tools or to house all of your major servers, applications and support services. Every task taken out of your on-site environment is one less function that the IT have to undertake which gives more time for the critical roles of setting strategic direction, improving customer support and encouraging innovation to align technology with curriculum.

It doesn't necessarily mean that you have less staff but it does afford you to eliminate many of the mundane, repetitive tasks they have to perform which allows for those people to be re-allocated to strategic and customer-facing roles and responsibilities. Effectively, you are freeing up highly capable staff and engaging them in more proactive tasks which also leads to higher levels of job satisfaction and improved staff retention.

Another feature of some cloud-based offerings such as managed services could see representatives of the service providers supplementing full time staff by coming in periodically to undertake some of the routine maintenance and to proactively seek out problems before they cause interruptions to service. This allows for schools to access the vast experience and unique skills of cloud computing specialists.

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