Changes to the business models for higher education can have a significant impact on IT infrastructures. While these institutions adopt important, new services and transform the way they do business, IT leaders have to rethink their infrastructure strategy to leverage existing investments, while making cost-effective, modernisation decisions.

Hybrid cloud should be the first consideration for solving these challenges because it helps future-proof infrastructures in the rapidly changing world of higher education.

As higher education continues to change its instructional and operating models, pressure is mounting on the IT departments of these institutions to ensure that their infrastructures are up to the task. Colleges and universities want to grow their enrollment numbers and their educational offerings to improve their competitive position, while promoting increased student engagement, and adhering to regional regulatory compliance requirements.

Most legacy IT infrastructures however, are hard pressed to deliver the performance, availability, and security necessary for the new workloads that these institutions demand.

Today, students and instructors bring high levels of technical skills to their university experience, and frequently demand new capabilities. Moreover, business officials at these institutions want to promote high-profile research efforts, an enhanced digital presence, and to be deemed as being at the cutting edge of technology.

This means that servers need more power and greater resiliency, storage needs to offer higher capacity and lower latency, networks need more bandwidth to carry rich media, and security needs to be more intelligent, automated, and responsive to the constant barrage of emerging threats.
‘In a perfect world, IT executives would have a large enough budget to modernise their infrastructures to meet not only today’s needs, but those of the future.’

Economic challenges

The question for these institutions is no longer whether to modernise their IT infrastructures to keep up with the changes happening in higher education, but how to do it. And increasingly, innovative IT leaders are turning to a hybrid cloud solution.

In a perfect world, IT executives would have a large enough budget to modernise their infrastructures to meet not only today's needs, but those of the future. But, capex budgets have always been under pressure in higher education, and many are now under pressure to reduce their capex spend on all projects.

The economics associated with IT infrastructure investments are a challenge for higher education institutions. IT spending in higher education was relatively flat in 2015, and only modest growth is expected for the next 12 months according to the Center for Digital Education. Such budget pressures often result in spending delays or deferrals for key infrastructure projects. In fact, 81% of higher education IT leaders cite budget constraints as a roadblock to the creation of a robust security defense.

Despite the economic challenges, higher education institutions still need to upgrade and modernise their IT infrastructures.

‘Solutions and strategies (such as tablet deployments, digital content, and massive open online courses) are pushing education institutions into the 21st century,’ states the Center for Digital Education. ‘However, unless attention is paid to IT infrastructure first, these new technologies can present more of a challenge than a solution.’

In order to overcome these budget constraints, institutions are doing several things. Firstly, they’re ensuring that they have a tight control on capex in the form of equipment purchases. While they continue to purchase core hardware components such as servers, storage, and network infrastructure, this is primarily done to improve availability and performance. Use cases such as high-performance computing, analytics, bring your own device (BYOD) schemes, social media, and the Internet of Things typically need a modernised infrastructure.

IT leaders then shift their attention to opex models such as virtualised infrastructures and, increasingly, cloud computing.

The move from a capex model to an opex-based approach offers important budget relief - it also helps extract the institutions from the expensive and manually intensive process of technology upgrade cycles.

The move away from capex in favour of opex is definitely a motivator for institutions to embrace cloud. Freeing up the capital previously allocated to IT infrastructure and using it for business transformation projects is a significant attraction of cloud for higher education leaders.

‘The move away from capex in favour of opex is definitely a motivator for institutions to embrace cloud.’
The need to prioritise

For IT and business leaders in higher education, there are more demands for new technology investments than ever before. Students require campus-wide Wi-Fi, and the capability to study courses anytime, anywhere - not only in a traditional campus environment. They also insist on using their tablets and smartphones to access resources, and for distance learning capabilities. Instructors require the ability to teach from remote locations and collaborate with university peers and the private sector (distance teaching capabilities). Moreover, executives within academic administration departments require sophisticated analytics to determine the most cost-effective and successful ways to grow enrollment numbers, and improve student engagement and retention.

So, exactly where is the IT infrastructure investment for colleges and universities being spent? Gartner cited mobile-learning smartphones; hosted, virtual desktops; and cloud-based, high-performance computing at the top of the list, followed by solutions such as next-generation wireless infrastructure and unified communications. Other strategic infrastructure investments frequently include wide-area networking and asynchronous file transfer to handle high-performance networking over wide distances - such as cloud computing environments.

Finally, as higher education institutions place more emphasis on both cybersecurity and physical, on-campus security, IT departments must increasingly implement more sophisticated, multilayered, security frameworks as well as IP-based video surveillance systems.

Because there are difficult decisions to make, university officials should prioritise the infrastructure investments that help boost enrollment figures, and enable the institution to differentiate itself in this highly competitive environment. However, the infrastructure still has to deliver core services as cost-effectively as possible.

The requirement for a more efficient service delivery model is another factor that pushes institutions towards cloud-based solutions. Cloud service providers (CSPs) have already made sizeable investments to the back-end infrastructures needed to support new, performance-centric initiatives. Moreover, cloud computing can help minimise the impact of traditional infrastructure challenges such as uneven availability, elastic demand, and disaster recovery.

Moving key workloads to the cloud provides numerous benefits that include accelerating the move to the digitalisation of higher education - from instruction and student support services to research, collaboration, and social engagement. Also, by enlisting an experienced and well-resourced partner, it helps control risks such as security, compliance, and technology obsolescence.

An attractive element of cloud computing is that it can be deployed and managed in a variety of architectural models. Institutions can have dedicated private clouds, either on-premise or hosted remotely, and accessed over secure Internet connections. Or, they can utilise the increasingly popular hybrid cloud model. Hybrid cloud combines on-premise infrastructures and services with cloud resources for smaller-scale solutions such as university research programs, or wide-ranging workloads such as distance learning, cybersecurity, financial administration, and collaboration.

The benefits of cloud to higher education institutions

Because few institutions have the necessary resources to increase their capex spend to rip out and replace servers, storage, networking switches, and other infrastructure devices, cloud computing is an attractive alternative to upgrading and modernising. Utilising cloud to extend the infrastructure, and to support a wide range of IT services, is a strategy that promotes agility, scalability, and cost-effectiveness.

Moving key workloads to the cloud provides numerous benefits that include accelerating the move to the digitalisation of higher education - from instruction and student support services to research, collaboration, and social engagement. Also, by enlisting an experienced and well-resourced partner, it helps control risks such as security, compliance, and technology obsolescence.

An attractive element of cloud computing is that it can be deployed and managed in a variety of architectural models. Institutions can have dedicated private clouds, either on-premise or hosted remotely, and accessed over secure Internet connections. Or, they can utilise the increasingly popular hybrid cloud model. Hybrid cloud combines on-premise infrastructures and services with cloud resources for smaller-scale solutions such as university research programs, or wide-ranging workloads such as distance learning, cybersecurity, financial administration, and collaboration.

‘Hybrid cloud combines on-premise infrastructures and services with cloud resources...’
The attraction of hybrid cloud for these institutions is that it preserves what’s working efficiently in legacy, on-premise infrastructures, while allowing cost-effective IT infrastructure modernisation. IT and business leaders don’t necessarily have to decommission their in-house data centres or build additional ones. Instead, they can partner with cloud service providers to make available additional IT infrastructure resources in a more agile and cost-effective manner.

‘Education’s driving need for flexible, scalable consumption of platform in support of extended reach teaching and learning platforms, research enablement, student engagement and regulatory compliance can only be supported by consumption-based private, public and hybrid cloud solutions with advanced networking, storage and security services,’ says David Heyns, Education Vertical Specialist for Dimension Data. ‘Strategic partnerships around consulting and collaboration provide for functional delivery on global best practice across the institutional enterprise. Managed security and global data centre distribution further support regional regulations pertaining to information privacy, data sovereignty and risk management. Dimension Data’s solutions, and service delivery empowers institutions to strike the right balance between agility, functionality, and security, and enables them to develop a sustainable strategy and framework for future-proofed IT infrastructures.’

### Dimension Data’s cloud portfolio for higher education

With IT workforces and budgets under pressure, many institutions want experienced partners to help them create more efficient ways to upgrade their infrastructures, and deliver more services. One organisation with extensive experience in the provision of a hybrid cloud model that’s well suited to the evolving needs of education is Dimension Data. The company’s experience in modernising infrastructures across all business sectors is combined with a unique concept for the implementation and support of ‘community clouds’. These ‘community clouds’ provide flexible, cost-efficient platform solutions, and are focused on industries where collaboration is vital.

Dimension Data offers a wide range of cloud-based infrastructure solutions and services designed to support clients’ desires to upgrade performance and security. The organisation also has experience in supporting technologies that extend the university enterprise such as mobility, distance learning solutions, and collaboration tools.

Dimension Data’s cloud is a flexible, secure, resilient, full-service infrastructure for production workloads and enterprise applications. The company has centres of excellence in networking, storage, and security, across six continents and offers a globally consistent service for multinational organisations.

It can provide both public, shared resources and private clouds either in the client’s data centre or in a Dimension Data data centre. Together, these models provide hybrid cloud environments that address the time-to-value expectations required by enterprise workloads and critical applications, and there’s an opex consumption model at every price point.

Today, many IT organisations are emerging as service brokers, leveraging cloud where they can and surrounding it with other delivery models as required. However, Dimension Data is able to surround the cloud with service delivery options to simplify the management of core systems and custom enterprise applications.

Another important element of Dimension Data’s higher-education solution is its community cloud for education. Dimension Data has created and deployed cloud environments for like-minded organisations and individuals looking to share experiences and learn from each other.

‘Strategic partnerships around consulting and collaboration provide for functional delivery on global best practice across the institutional enterprise.’

‘An attractive element of cloud computing is that it can be deployed and managed in a variety of architectural models.’
Conclusion

Higher education institutions can’t afford to ignore the need to make smart, strategic investments in their IT infrastructures. Their stakeholders’ increasing demands for performance, agility, and scalability mean that systems must be upgraded.

Additionally, a broader cyberthreat profile, and greater regulatory burdens put even more pressure on an infrastructure even if it’s resilient and highly available.

IT leaders in higher education must give serious consideration to accelerating their adoption of hybrid cloud solutions that combine sophisticated infrastructures with an opex-based financial model, which provides maximum value. Technology and business officials need the support of experienced CSPs with a track record for helping institutions upgrade their services through flexible and scalable cloud infrastructures.

For more information about Dimension Data’s hybrid cloud solutions for higher education, please go to dimensiondata.com/us-Education

References:

‘Dimension Data’s solutions, and service delivery empowers institutions to strike the right balance between agility, functionality, and security, and enables them to develop a sustainable strategy and framework for future-proofed IT infrastructures.’