



axians

# White Paper

Research and Education

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## STUDENTS AND RESEARCHERS EXPECT FOR RELIABLE, SECURE, AVAILABLE CONNECTIVITY AND UNIVERSITIES HAVE TO DELIVER

### EXECUTIVE SUMMARY

Recent changes in Government policy and market dynamics mean that the level of visible competition between universities is far more apparent than ever before. These historically individual organisations are now having to embrace commercial reality and adapt to new pressures in order to survive, let alone prosper.

First, the introduction of student fees has changed funding mechanisms and relationships completely. Students are now 'consumers' with very real purchasing power. Second, universities have to be self-funding and are diversifying as they search for ways to increase revenue and cut costs. Third, 'challenger universities' are growing in number and popularity, some specialising in professional qualifications, e.g. HR, accountancy; others with a broader scope run by global enterprises such as Google, Microsoft and Pearson.

This paper explores these trends in the context of key imperatives – value, market share, brand reputation – and the strategically important role of the communications network.

### TRENDS

Taking a broad look at some of the common drivers and actions we are seeing across the world of higher education:

#### AMBITIONS

- Have a place in the top 50 ranking
- Increase intake of students and researchers
- Deliver a better student experience
- Grow research and industry collaboration

## TRENDS cont'

### ACTIONS

- Bring in private sector expertise to challenge traditional attitudes and working practices
- Build a brand through expertise in a particular subject
- Create new revenue generating opportunities
- Greater use of technology in the learning experience

Underpinning all of this is a growing recognition of the need to deliver value, firstly to students through a better learning experience and, secondly, strong support for researchers who aim to produce world-class research, often in partnership with companies.

“The business of universities in an era of exponential change must shift from simply transferring knowledge to students to providing them with access to the latest knowledge via digital platforms, developing their skill sets through mentorship, and then immersing them in situations that encourage them to probe and push the boundaries of current knowledge and practice.”

John Seely Brown, co-author of *A New Culture of Learning: Cultivating the Imagination for a World of Constant Change*

#### As a result, we are seeing key areas for IT services:

- Campus Wi-Fi – along with an open BYOD policy is expected
- Internet-of-Things - safely, securely connecting multiple device types to the network
- CyberSecurity - protecting data and IP against DDoS, malware etc
- Automation – portal access to services and resources
- Scalability - meet growing content demand
- Collaboration - capability to engage effectively with research organisations and companies around the world
- Reduce costs - operational efficiencies
- Teaching and Learning – issuing tablets to students for interaction in lectures, learning via online labs and video

## VALUE

Being non-profit organisations, universities have a particular way of identifying the value they deliver to stakeholders based on quality of service – the student experience of learning, living and being in a strong position to quickly gain employment after qualification.

## VALUE cont'

So, it's less about generating profit and more about providing 'value'. Digital transformation is the force driving permanent change in the relationship and communication between universities and their customers. The Internet and the widespread use of mobile devices mean that students expect the same high service levels on campus as they would anywhere else. And they will rate a university accordingly.

In addition, with research contributing up to 25% of total revenue for some major universities, ensuring the university has a strong, clear proposition that offers researchers the best opportunities to fulfil their ambitions is essential.

Part of the challenge universities face in getting the balance between supporting students and researchers is highlighted by the increasing focus on teaching methods. A BBC article, 7th December 2016, highlights comments by Professor Dan Butin, founding Dean of the School of Education and Social Policy at Merrimack College in Massachusetts, USA who says the lecture has survived because research, not teaching, determines the success of a university and its academics. The latter are hired and promoted based on their research record, and research output plays a large role in universities' rankings in global league tables. So, there is little incentive for academics to spend time rethinking the lecture.

**"We put these brilliantly educated academics in charge of classrooms because of their tremendous research records, not because they have any idea how to teach, but in fact, research and teaching are very different skills, and creating a good course is just as difficult as writing a good book."**

*[Professor Butin]*

So, universities have a dilemma. They need to support researchers because of the revenue they can deliver, but if they ignore students their core purpose as places of learning starts to be undermined. Against these pressures, self-funding means that increasing revenue and reducing costs are critical for a university to be sustainable. This is where technology, in particular the network plays a major role. With the growth in data traffic being unstoppable, universities have no choice but to modernise their network infrastructure and create new capabilities that will meet the demands of their customers

## MARKET SHARE

With growing international competition, every university has to take continuous action to protect its position in the market place and, in doing so, try to build its 'share of voice' in a crowded environment.

## MARKET SHARE cont'

To protect market share it is vital to reduce churn, i.e. attract more students and researchers and ensure they have a good experience so they don't want to leave. To grow market share, a university has to increase the perceived value of its offering to potential students and researchers.

Digitalization has driven a shift in customer behavior with expectations rising and changing more frequently. The many and varied ways to obtain digital access and information enable students to find out what they want to know more quickly and more independently. In this age of Digital Transformation, efficiency and customer self-services are key to loyalty and this means making it easy for students to access all online facilities to help them in their studies and research. They expect the University to facilitate this and if the experience is poor, then it can quickly turn into negative opinions on social media.

**If we then turn to changes in teaching, especially lectures and the role of technology, then the role of the network comes once again to the fore.**

A leading campaigner against traditional lectures is Professor Carl Wieman, a winner of the Nobel Prize for physics. He realised that talking at students and expecting them to absorb knowledge was not helping them to learn. He replaced traditional lectures with "active learning", where he sets out a problem at the beginning of a lecture, divides students into small groups who can use mobile devices to access information, and walks between them to listen to and guide their discussions. Academic results are up and student feedback is positive.

Once again, these trends - the university online presence, changes in teaching methods - steer us back to the importance of ensuring the network has the capability to support each university's teaching and research ambitions whilst securely managing growing network data traffic.

## BRAND REPUTATION

Universities are discovering that, just as for any organisation or business, building and maintaining a positive Brand Reputation is vital to its future success. Therefore, customer satisfaction and loyalty are top priorities for universities simply because students and researchers that have good experience will tell their friends and colleagues. Human nature being what it is, poor experiences will be communicated rapidly via social media and generate negative publicity that will impact the brand.

In an IDC Educational Establishments IT Survey 2016 of IT decision-makers from 151 public or private schools in the UK, 26% identified their second biggest concern was to 'ensure a secure data and overall IT environment'. We would suggest similar levels of concern sits amongst universities.

## BRAND REPUTATION cont'

Hence, protecting the brand means defending confidential information - student and staff personal data, and research IP - all of which has a market value. The reality is that every organisations' online security will go wrong or be breached at some point. It is therefore vital to put in place the right technology, processes and training to mitigate the impact as quickly as possible.

## KEY AREAS TO BE CONSIDERED

Universities are having to improve their use of technology in order to meet user expectations, cut costs and give themselves a platform for future growth in a highly competitive market.

The following are key areas that we look at with our university customers:

<p><b>SERVICE AGILITY</b></p>	<p><b>Flexibility</b></p> <p>Offer a flexible model with configurable end-user specific services that can be tailored to their individual requirements. Services tailored to the needs of a research unit and supporting top researchers, e.g. high bandwidth for Medical Imaging transfer or for High Performance Compute projects</p> <p><b>Availability</b></p> <p>Improving network scale and performance (with high bandwidth) to remove congestion and provide innovative services on demand will maintain high satisfaction levels across students, researchers and partners</p> <p><b>Analytics</b></p> <p>Monitor assets and resources by providing visibility into day-to-day online usage by students and researchers aids security and identifies quality of service opportunities</p>
<p><b>SECURITY</b></p>	<p><b>Confidence</b></p> <p>Reassure students and researchers that their data is secure and that if something does go wrong, the University has the expertise to quickly address the issue</p> <p><b>Compliance</b></p> <p>Meeting industry, country and international compliance standards enables Universities to ensure they are up-to-date with the latest security policy and procedures and demonstrates commitment to security</p>
<p><b>SPEED TO MARKET</b></p>	<p><b>Innovation</b></p> <p>Capability to offer new services in short timescales, with flexible payment and delivery across multiple device types. Being seen as a dynamic research focused organisation enhances the university brand within the global research community</p>
<p><b>REDUCE OPEX/CAPEX</b></p>	<p><b>Simplification</b></p> <p>Automated customer self-service portals</p> <p>Templates to accelerate the development and refinement of designs, processes, systems etc with an audit trail of changes</p> <p>Reducing complexity and focusing on a number of building blocks to scale out a network and make it easier to diagnose and resolve issues</p>

## SUMMARY and CONCLUSIONS

The network is at the heart of each university's capability to deliver a world-class student and researcher experience. Everything springs from it – value, market share and brand reputation. Through years of experience working with universities around the UK, we understand this mix of pressures. That's why, when working with a university, we naturally start by building an understanding of their objectives and challenges. Then we apply our specialist knowledge and expertise to ensure the network can help the university team can meet their ambitions.

[If you're looking for a fresh approach, let's talk.](#)

## ABOUT AXIANS

In today's connected digital world, we help organisations to meet growing customer expectations for immediate access to the information and services that can make their lives easier and better.

We specialise in helping organisations to develop secure carrier-grade network connectivity that successfully delivers a better end-user experience. We take a pragmatic approach and use incremental changes to optimise network performance and deliver measurable operational and customer benefits.

Axians Network Lifecycle Services bring together teams of experts with business, technical and market knowledge to design, integrate, optimise and support digital

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