The State of Technology at Universities in the UK

How technology initiatives affect student satisfaction

Performance Networks

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1.

Foreword by Performance Networks

The educational sector is in a time of radical change.

With universities across the UK embarking upon programmes worth millions of pounds to improve student experiences and support their ambitions of becoming one of the country's leading universities.

From student learning through chatbots to virtual learning environments, artificial intelligence, machine-learning, cloud computing and the Internet of Things; there is no doubt these things are enhancing the student experience.

But there are challenges that the sector faces which it needs to adapt to and conquer, such as the growing spotlight on network security. Preventing ever-growing sophisticated hacking techniques is non-negotiable with the bed of data universities sit on, and high-profile breaches show no sign of slowing down in the press.

The skills gap in the UK is also one of growing importance. As innovations accelerate, job roles evolve and the demand for advanced technology skills rise, universities must respond quickly and take a whole-campus approach to education that looks at the larger picture.

Expectations of WiFi and consumer technologies are also higher than they have ever been before. In a world fueled by digital, this is hardly surprising. There is increased complexity in the market, especially as universities compete with online learning institutions as the need for mobility is on the rise, and more people need VoiP and video conferencing to work seamlessly.

It's an exciting time, but we need the whole sector to be on-board with implementing new technologies to fully solve the challenges that the industry may face.

But what impact does technology have on student satisfaction rates? What do students expect from universities in 2020? And how can UK universities avoid falling victim to repeated hack attacks, of which 200 institutions have reported 1,000 attempts to have their data stolen?

This whitepaper seeks to shed some light on current attitudes towards digital transformation from the perspective of students and professionals, and discusses the factors that can contribute towards better student satisfaction.

Will Evans, Director
Performance Networks

About Performance Networks

Performance Networks is a highly specialised network and security company, providing peace of mind for the connected future.

Performance Networks combines technology and experience to solve the most demanding network challenges in an ever-changing and increasingly unstable world.

Once a network has been designed and installed, it is only the beginning. Any network will require monitoring and maintenance to ensure it performs for your business, both now and also in the future as new technologies need further bandwidth and resources, and security threats evolve.

Above all, it delivers real peace of mind when it's needed most, keeping business-critical systems connected with robust WiFi, security and expert consultancy services.

Executive summary

The purpose of this whitepaper is to explore attitudes towards digital transformation and technology advances in Further Education in the UK and the impact this has on student satisfaction.

In September 2019, more than half of young people went to university for the first time ever. 50.2 percent of 17 to 30-year-olds enrolled on undergraduate degrees at British institutions, according to the Department for Education (DfE).

There is a bigger demand for Further Education than ever before. Students once battled for a space which was limited at a university, and this is still true to some extent. But in 2014, the government lifted a cap on student numbers which had controlled government spending, and now there is more growing competition between universities to enrol scholars and edge out their rivals. This is causing new decision-making and more initiatives that are changing the nature of student life.

Better digital offerings and facilities are a boon and a selling factor to students. Well implemented digital transformation can help to significantly strengthen the growth of an institution.

A recent study found that the third highest factor for students selecting a university was its 'perceived ability to boost later career opportunities.' Universities must provide the courses and development opportunities for emerging careers in industries like machine learning and artificial intelligence.

Currently, only

42%

of those in Higher Education feel their courses prepare them for the workplace.

View study

IT and science facilities came fifth in the study for most important to potential students.

Couple this with the fact that technology is enhancing at an incredible rate, with systems and processes becoming increasingly digitised, it's not good enough to rely on legacy systems anymore.

Student accommodation is also undergoing a huge transformation. With the trend shifting away from broadcast TV, towards streaming services like Netflix, a super-fast internet connection is vital.

If educational institutions don't continue to adapt to changes and analyse what students want, they are at risk of being left behind.

2.

State of UK universities

Meeting students' digital and academic expectations is hard when demands are constantly changing, and new technology is being rolled out.

Having a stable, robust wireless network is not just important, but crucial, for the modern education system. New teaching methods are increasingly seeing a push on academics relying on better technology, and using educational software which has led to personalised learning techniques, depending on their abilities and learning style.

Are digital changes reflected in the leaderboards and university rankings?

University rankings

University rankings are important for attracting students.

Helping them to select the best course and institution for them, but they also give universities a guideline for where they can improve. There are a number of different ranking factors that can affect the ratings undertaken by university boards and bodies.

Each league table sources data from specific agencies, with a minimum number of students taking part to ensure it's a reputable study. This white paper will reflect on some of the more prominent leaderboards in the country for the basis of analysis.

The Complete University Guide takes data from the public domain. Specifically, the Higher Education Statistics Agency (HESA) is the official agency for the collection, analysis and dissemination of quantitative information about universities.

It provides data for the guide on:

Entry standards

Academic services spending

Graduate prospects

International student enrolments

Student/staff ratio

Facilities spending

Course completion

But these rankings are not just for vanity purposes. University rankings have become hugely influential to the hundreds of thousands of people juggling prospect Higher Education entering forms. For some, belonging to the Russell Group has become its own status symbol, and research by University of Sheffield also found that rankings and league tables do matter in the UK, albeit they do have a relatively modest effect.

2.2.

Rankings, student experience and WiFi

In the Complete University Guide (CHG), the [University of Cambridge](#) ranks first, with an overall score of 1000.

It has been top of the board since 2012, with excellent research quality, graduate prospects and good honours, among other things.

However, when you look deeper, it's actually lower than St Andrews, Lancaster and Lincoln University in terms of student satisfaction. In fact, the prestigious university comes in 34th place overall for student satisfaction.

The [guide](#) does reflect that a high-ranked university expected to deliver really excellent teaching, such as Cambridge, could score lower than a lower-ranked university, "which, while offering lower quality teaching, nonetheless does better than students expect from it."

Similarly, [Aberystwyth University](#), a cosmopolitan town in Wales, comes in 71st place overall in the Complete University Guide. Yet, with a student satisfaction score of 4.24 (out of 5), it's second in the UK for student satisfaction. The institute has been praised for its widely available WiFi, and it's virtual learning environment. While student satisfaction is impacted by many things, such as quality of teaching, living environment and facilities, technology is becoming a much bigger influence than ever before. And on the site for the Welsh university, one of its core plans for the next few years is to **develop a virtual infrastructure and digital strategy.**

Incoming students will be largely Generation Z, who have grown up in the technology bubble and are digital natives. As such, they will expect real-time access to housing, library resources, schedules, finances and more. But with no current specific rankings based on technology, it is hard to measure if this is being reflected in leaderboard tables, or if it's reflected in student satisfaction. But by digging a little deeper and looking at online student reviews, we can start to see a pattern.

2.3.

State of the skills gap

The skills gap in the UK is widely reported on, as job roles evolve, skills change and the demand for automation rises.

As a result, universities are fast responding to the tech skills gap, and taking an approach to education that looks at the larger picture.

12 new institutes have opened in the UK due to a government-boost in addressing the tech skills gap. Of those institutes, universities include University of Exeter and University of Lincoln, the latter of which will form a team of academics and industry experts to align the teaching curriculum to tailor STEM subjects with current and future digital skills of specific industries. This particular Midlands university has been constantly rising in the leaderboards, potentially down to its increase in innovation.

Artificial Intelligence (AI) is poised to transform and create a new generation of businesses. The problem is, that there are only a select few who know how to develop the technology needed for sectors from healthcare to manufacturing, and computer science degrees often don't cover it in enough detail.

To combat this, the UK government is investing heavily. 1,000 students will receive funding to complete PhDs, and this research can help to make important discoveries within AI. A cohort of businesses - including BAE Systems, Cisco and Google DeepMind - have also pledged funding to help 200 new AI masters courses at UK universities.

Digital transformation investment

The University of Exeter is embarking upon a £2.5m programme of digital transformation to "support its ambitions of becoming one of the UK's top 10 universities".

It is currently ranked 11 in the Complete University Guide, rising considerably in the last ten years.

League table performance
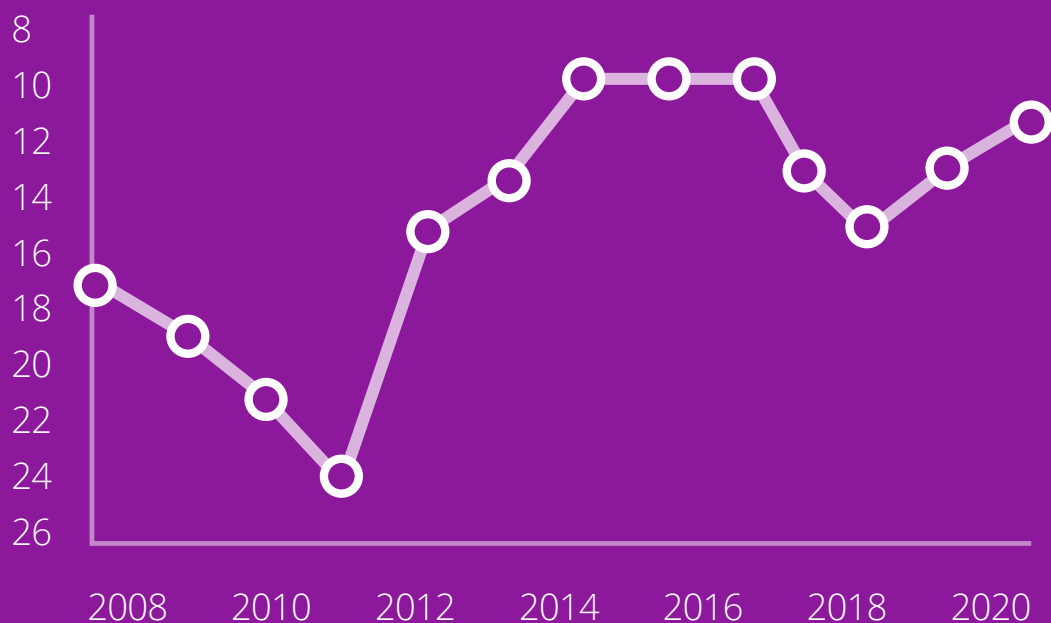
Some universities are seeing a digital-focused approach as one of the best ways to achieve higher rankings. Exeter's digital transformation drive will see it implement "cutting-edge digital products and solutions for students, teachers and researchers... and provide technology-enabled interactive spaces" among other things.

And it doesn't just affect the ways of learning. Well-implemented digital transformation is helping to strengthen the student experience and growth of student satisfaction in accommodation.

[CityBlock](#), a national student accommodation provider, provides virtual 360-degree tours for prospective students, allowing them to view the full room, and any other rooms such as gyms and communal areas before booking. Transitioning from the terrestrial age to the Netflix age is daunting, but CityBlock has made it far easier to do so. Their systems enable tenancy agreements to be made online or even on a smartphone, and residents can even check washing machine availability through an app.

Other digital transformation initiatives are underway which are also linked to improving and maintaining rankings.

Coventry University is one, which has been named the top modern university from the Guardian in its University Guide 2019 for the 7th year in a row. Its cloud-first strategy has seen an initiative across internal and external services to have strong security, better customer relationship management (CRM) and an innovation layer that looks at improving the student experience.

Alongside this is the [University of Manchester](#), which has a £1billion project to transform itself into a sustainable, urban university, with its ambition to be in the top 25 research institutions in the world. According to the Times World University Rankings, it's currently 55th in the world.

Breakdown via year: Research

Score
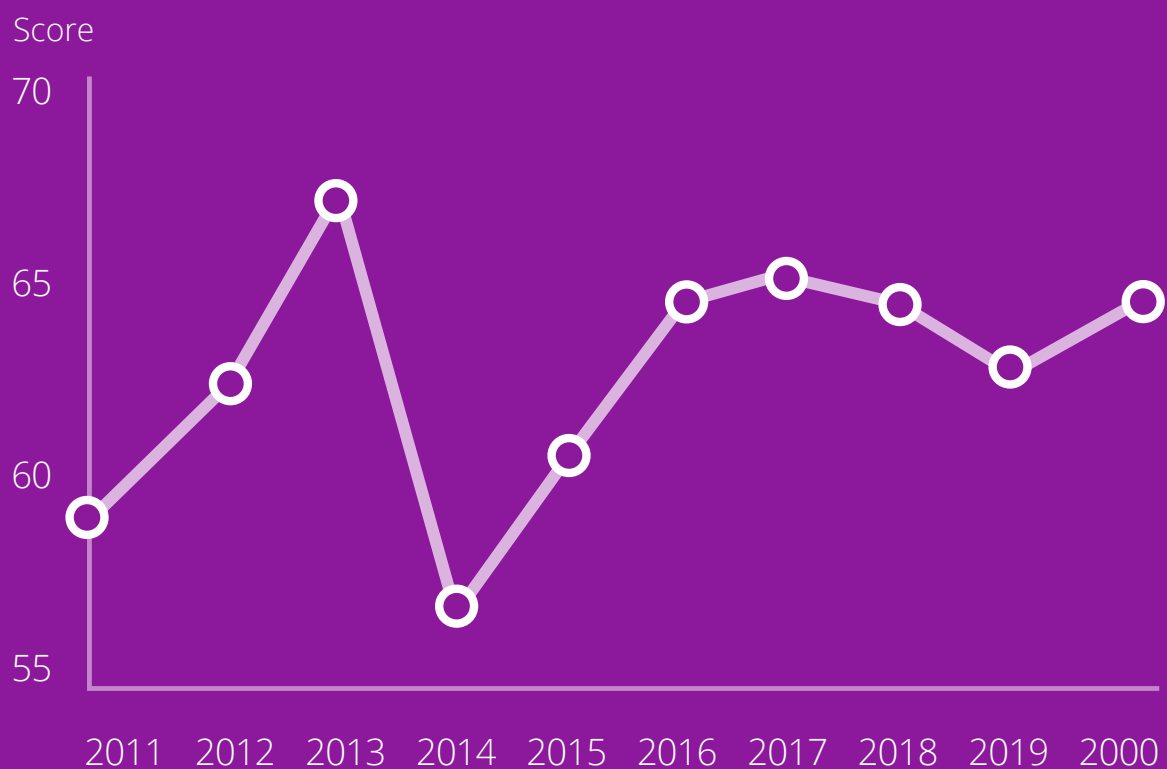
3.

Does technology affect student satisfaction?

In a world fueled by digital, it's hard to imagine technology **not** impacting student satisfaction.

While there have been many surveys on the matter, current leaderboards do not have a metric for broadband or digital at this point in time, so it can be hard to pinpoint a definitive correlation.

That said, the review community is rife, and students are quick to mention when there is poor WiFi, which is seen by many now as a commodity. But is lack of great WiFi and digital innovation just an inconvenience or does it signify something more serious?

StudentCrowd

StudentCrowd is the UK's online review community for students.

They are privy to the reviews of 750,000 students who use the site each year. They have previously conducted a survey on the universities which best meet student's digital needs. Its top results included:

Durham University
Came out **top** for on-campus WiFi, with one graduate saying they appreciated how "fast/reliable" the WiFi is at their university.

Durham is sixth best university according to CHG.

Loughborough University
Was rated overall best university this year, and came fourth in the WiFi survey, with one noting that there was WiFi access all over campus - even the shuttle buses. It is also worth noting that the University has invested £3 million into upgrading the WiFi network across campus.

Loughborough is eighth best university according to CHG.

Harper Adams
Came fourth, and its Union is expanding services with the aim of a new digital strategy.

Harper Adams is 27th best.

An analysis of the best ranked universities for WiFi and their student satisfaction rankings.

University	Ranking for WiFi by Student Crowd	Overall ranking on Complete University Guide	Ranking for student satisfaction (out of 5)
Durham University	1	6	4.01
Lancaster University	2	7	4.14
University of Sheffield	3	33	4.07
Loughborough	4	8	4.18
University of Leeds	5	14	4.09
Keele University	6	52	4.15
Newcastle University	7	22	4.03
Royal Holloway, University of London	8	23	4.02
University of Winchester	9	106	4.04
University of Leicester	10	44	3.97

3.2.

Jisc digital insights

The Jisc Digital Student Experience report took ideas from students and staff at the University of Winchester.

Key findings from the report found that **good** looks like:

- Free WiFi everywhere

- All teachers being digitally capable

- Students digital experience at university being well aligned with what is needed in the workplace

- Interactive lectures

- Course-specific apps

- Virtual classrooms and also **offline** community hubs

- Tech-enhanced learning to become the norm.

When asked what it looks like when an institution fails to respond, they said:

- Students not being involved in decisions about the digital environment

- Students will question the value of their courses relative to reputation and skills development

- Teaching staff regarded as **out of touch**

- Universities seen as either elitist or irrelevant

Digital experience insights survey

Another underline survey from students at 50 institutions and 29,531 students, found that only 42% of those in Higher Education feel their courses prepare them for the digital workplace, and around six in ten agreed that, when digital approaches are used, they enjoy learning more and understand things better.

82% of students use digital tools to access lecture notes or recorded lectures on a weekly basis, showing the importance for strong technology on and off campus. Having multiple devices is also becoming more common, with 30% having four or more.

Highlighting recent security attacks, just 54% said that their university protects their data privacy, and 43% say their university helps them to stay safe online. A student experience could be made or broken depending on privacy levels, so this is a clear factor which universities could improve upon.

Only 37% agree that they have regular opportunities to update their digital skills - which could prove a problem when combating the digital skills gap, and making sure people are equipped for working life.

3.4.

Student satisfaction impact

By looking at the leaderboards and surveys, it seems that there is no direct correlation officially between student satisfaction and digital accessibility.

But when you drill down into the reviews, surveys and feedback, it's clear that digital is non-negotiable, and does affect student satisfaction.

4.

Current and future technology in universities

Universities that don't offer cutting-edge technology are putting themselves at risk of losing future students.

As Tracy Dabbs of Collabco, an ed-tech provider stated:

"Since the introduction of student fees, students are now seen as customers."

Universities must work hard to justify their value, and show future students why they should choose to study at them, as opposed to an alternative institution. One of the ways they can set themselves apart is through technology.

View article

Artificial Intelligence (AI)

With UK [investment in AI increasing by 17%](#) (that's more than the whole of Europe combined).

It perhaps comes as no surprise that AI is being implemented in universities across the country, to enhance the student experience.

One example of AI integrating into student learning is through chatbots. In fact, this already exists at [Staffordshire University](#). Named Beacon, the chatbot can provide answers to 400 questions, which covers everything from support services, to on-campus queries.

However, chatbots could work even harder, helping students with their studies. For example, a student may be struggling with a specific thing, but doesn't know how to phrase it into a question for Google. Rather than waiting for a response from their professor, instead, they could access a 24/7 chatbot.

The learning algorithm would be able to group together differently worded questions that relate to each other, to provide similar answers; in turn, helping students.

This could also be turned on its head. [IBM introduced Watson Education](#), which engages with students to find out which areas of their learning they need help with. This is then communicated back to the teachers, so they can fill in any gaps and potentially amend their courses.

Internet of Things (IoT)

IoT relates to a network of desktop and mobile devices, machines, sensors, and any other internet-connected "thing".

Universities already use IoT for practical reasons such as lighting and HVAC systems, which correlate to the footfall into and out of university buildings.

IoT could be taken one step further, to track student behaviour and activity, to determine which students may need extra help.

However, there are two main issues with this. Firstly, a seamless IoT system requires significant bandwidth and wireless access to be able to cope. Students of today expect to have lightning-fast WiFi - and rightly so - but this isn't the case at all universities. If an IoT system were introduced and the WiFi was poor, this would further highlight the issue, which could have a negative impact on the university.

The other factor that must be considered is security, which will be discussed further on in this whitepaper.

4.3.

Cloud computing

Cloud systems can centralise CRM systems and learning management systems (LMS), to help enhance the student experience indirectly.

It's no surprise that universities hold a significant amount of data. By using the cloud management system, this data can be stored, to free up resources and help with inefficiencies.

Cloud computing is most commonly used by universities for student emails - something which 76% of universities are currently utilising.

However, there are opportunities to take this technology one step further, through a virtual learning environment. This would enable students to access all of the resources they need, if they've missed a lecture or it's outside of term time. Not only that, it will also be of benefit to professors, as they will be able to receive submissions when they're out of the office.

The University of Hertfordshire is currently using cloud computing to aid its students, using a platform called Canvas. The system enables them to provide meaningful and timely feedback on work; improving accessibility and accountability for staff and students.

Smart campuses

Ultimately, universities are having to up their games through the implementation of new technology, to continue attracting new students.

This can be referred to as a 'smart campus', where AI is combined with the Internet of Things and cloud computing to enhance the student experience.

Other technologies - including digital signage boards, to relay real-time information to large numbers of students - are being used in campuses across the UK; as are WiFi hotspot areas, and "huddle spaces" that offer real-time booking panels, so students can access rooms to work on group projects whenever they need to.

One thing is for sure: the adaption of new technology is non-negotiable, and it will be exciting to see just how digitised universities become in the future.

5.

Network vulnerabilities

Networks that aren't secure become increasingly vulnerable to hacks.

With those perpetrating the hacks learning more sophisticated techniques by the day. High-profile breaches in the NHS and banking sector have been well-publicised, but universities are often targeted too.

In fact, UK universities and research centres tend to fall victim to repeated hack attacks - over 200 institutions have reported more than 1,000 attempts to have their data stolen.

The UK Government states that the key cyber threats to UK universities are highly likely to be:

• Criminals seeking financial gain

• Nation states looking to steal personal data and intellectual property, for strategic advantage.

5.1.

Universities under attack

Research by BBC Radio 4 discovered that in the last four years, two-thirds of UK universities have been hacked.

With perpetrators gaining access to confidential data on staff and students, as well as access to university research.

Because of their extensive databases, containing the records of thousands of staff and students, universities are an attractive prospect for cyber attackers. Data stolen from them can be used in several ways, such as committing fraud, often resulting in demands for payouts.

Yet financial gain isn't the only motivation. Theft, manipulation and destruction of data all come into play - especially where cutting-edge research is concerned.

University of York

In July 2019, the University of York suffered a "malicious data breach", when 88 students had their administrative records accessed; and a further 4,400 students had their "very basic data" obtained.

While no access to financial information or other sensitive information was granted, the perpetrator of the cybercrime was still able to view some private information of its victims - and there was the potential for the hack to be much more serious.

88
students

had their administrative
records accessed

Lancaster University

A few months prior to the University of York's attack, Lancaster University was alerted about a breach. The phishing attack resulted in stolen personal data of "a very small number of students"; yet data accessed included student applicant information such as names, phone numbers, emails, and home addresses.

Director of Threat Hunting at Darktrace, Max Heinemeyer, stated: "We are seeing the early signs of attackers using artificial intelligence to 'supercharge' spoof emails - generating emails that are virtually indistinguishable from genuine ones from trusted contacts".

Data accessed included student applicant information such as names, phone numbers, emails, and home addresses.

5.2.

Common hacking methods for universities

According to the National Cyber Security Centre (NCSC), the majority of attacks on UK universities are either related to phishing, or attempts to gain entry for malware and ransomware.

However, often overseas states will target universities in order to steal intellectual property, or obtain "technological advantage" via the research that is stored on databases.

Phishing continues to work successfully due to hackers' abilities to manipulate people's trust, and get them to open spam emails. Yet ransomware is growing in popularity due to the ease with which kits can be purchased for a cheap price; meaning anyone can attempt to attack an institution, should they choose to.

DNS attacks

<u>EfficientIP stated that</u> the reason why UK universities - and the public sector in general - often fall victims to cyber attacks, is because they don't understand just how valuable the data held in their IT infrastructure is.

Lesser-known attacks on Domain Name Systems (DNS) have become increasingly commonplace amongst universities, and this is because it's one of the easiest parts of a network to hack, due to its open design.

EfficientIP found that a staggering 96% of public sector organisations have fallen victims to a DNS attack in the last year; and on average, 33% of these organisations were attacked 20 times. 24% of these organisations had their intellectual property stolen directly due to these attacks.

Why attacks are so successful

The <u>National Cyber Security Centre</u> (NCSC) explains why attacks against universities are often successful:

'In both culture and technology, universities are one of the most open and outward facing sectors. This enables and eases collaboration between academics across borders, and is likely a key component of their success. Unfortunately, this also eases the task of an attacker.'

The need for better training and education

In April 2019, <u>Jisc's ethical hackers</u> conducted a test, to determine the defences of over 50 universities against cyber attacks. In every single case, hackers gained access to "high value" data within just two hours.

Following this announcement, John Chapman, head of Jisc's security operations centre, warned of the risk of a "disastrous data breach or network outage." He also said, on the basis of the test results, "we are not confident that all UK universities are equipped with adequate cyber-security knowledge, skills and investment."

This highlights the fact that universities simply don't have the skills and knowledge to understand how to protect themselves against potential cyber attacks, and this needs to change.

Cyber Essentials and Government Advice

The UK Government created the Cyber Essentials Scheme back in 2014, helping companies to improve their cyber hygiene. Reportedly reducing an attack by up to 80%, this is a great starting point for university employees to build their knowledge.

To prevent further attacks, the NCSC has given insight into the most likely attack vendors. While cyber crimes are constantly evolving, they suggest that spear-phishing and social engineering are highly likely to remain the main attack vendors, with ransomware the greatest single cause of disruption to staff.

80%
less likely to be attacked

6.

Student accommodation: then and now

Save the Student's National Accommodation Survey revealed that 54% of students live in accommodation with a private landlord, whereas 17% reside in university accommodation, and 10% in private halls - the rest are at their parental home.

Accommodation was revealed as the most important factor in influencing student wellbeing, and expectations for student housing has certainly changed over the years.

What do students expect in 2020?

According to UCAS research, the most important thing students rate about student accommodation is value for money (97%).

But that doesn't mean accommodation has to be cheap. In contrast, that same survey found that students found high-quality accommodation to be preferable, and they would be prepared to pay extra for certain amenities such as 24-hour security, and a gym.

Ultimately, students have expectations for high-quality accommodation that is safe, and gives them the freedom to socialise.

With the average student living 20 minutes away from campus, the proximity to university is perhaps not as important as some might think. Instead, there is a shift towards distance to other amenities, including bars, clubs, shops, and gyms.

In fact, it's the small touches that students of today have come to expect. Right at the top of this list is fast WiFi. Students aren't going to the library to do their work anymore - they're doing it in the comfort of their rooms. Plus, with the trend shifting away from broadcast TV, towards streaming services like Netflix, a super-fast internet connection is vital. If your accommodation doesn't offer that, then residents will leave.

Other must-haves for students in 2020 include double beds, private bathrooms, and high-security systems such as CCTV, a reception area, and key fob entry systems.

With student mental health a key factor, students are looking for accommodation that enables them to interact with others. For student halls, this includes large communal areas, and extra touches such as a games room, a gym, or a cinema.

International students' expectations

If we delve further, it's clear to see that there are some differences in the preferences amongst home and international students when it comes to accommodation. Making up 14% of acceptances through UCAS, the UK welcomes approximately 86,000 international students every year.

Private halls tend to be more popular amongst international students - especially those in second and third years, with 68% residing in them.

While international students - like home students - will pay a premium for super-fast internet, 24-hour security and on-site gyms, only 9% are prepared to pay extra for in-house social events.

For international students, convenience is key when it comes to accommodation, whereas for home students, there is much more of an emphasis on the social side.

14%
of UCAS acceptances are
international students

Student accommodation 25 years ago

Student accommodation of years past have a reputation for cramped living conditions, and shared bathrooms.

With an emphasis on living the student life as cheaply as possible, times certainly have changed.

The Times Higher Education carried out some research, where they surveyed current students, and people who were students 25 years ago.

While both sets of generations agreed that accommodation and the library were the two most highly valued facilities; current students placed more emphasis on the need for facilities to be accessible 24 hours a day.

In addition to this, 73% of current students claimed to experience a good level of digital connectivity at university, compared to 59% who studied 25 years ago.

6.3.

The future of student accommodation

While the student accommodation of the future will continue to offer spaces to socialise, it will become increasingly service-led.

Predictions include the ability for students to use their phones to book study rooms, receive alerts when their laundry has finished, and even be reminded to turn off the lights when they leave their rooms.

It's also been predicted that technology like charging coils can be embedded in desks and tables, enabling students to charge their electronic devices by simply placing them on top of a surface.

Student halls will become increasingly eco-friendly, managing their own temperature, air quality and energy consumption based on room occupancy rates.

There are many things for the student accommodation sector to look forward to in the future; but what we can take away from this, is that while the element of socialisation is just as important as ever before; convenience is key, both physically and digitally.

7.

Final thoughts

It's clear to see that British universities are on the path to embarking on digital transformation programmes to gain a competitive edge.

Students want to be involved in decisions about their digital environment, and for those that have begun rolling out digital initiatives, this is a chance to gain invaluable feedback and input.

One important lesson learned in this whitepaper is that teaching and course offering cannot be out of touch. If students value the quality of value of their courses relative to career and skills development, it can signal not only bad reviews but be detrimental to reputation too.

Artificial Intelligence is being taken seriously, and we can expect students to be using technology which drives efficiency, personalisation and streamlines generic, admin tasks. One task that may need addressing is appealing to potential students to choose AI subjects, but as the potential that this career can drive becomes even more apparent, the benefits may achieve this with little input needed from marketing departments.

One thing is for certain - prevention is better than a cure, and universities must learn from past cyber security failures. And while UK universities continue to conduct high-end research and possess huge volumes of highly confidential data, they will continue to remain a target for hackers. This can only have a negative effect on student perception.

Digital transformation is key to the future successes of institutions, and embracing and responding to it can change the entire dynamics of education. It's an exciting time, but it is not without its challenges. Done well, it will be paramount to how universities thrive across the country and could change what students look for in universities forever.

8.

Appendix

- 50.2 percent of 17 to 30-year-olds enrolled on undergraduate degrees at British institutions, according to the Department for Education. assets.publishing.service.gov.uk/government/uploads/system/uploads/attach-ment_data/file/843542/Publication_HEIPR1718.pdf

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- Currently, only 42% of those in Higher Education feel their courses prepare them for the workplace. www.jisc.ac.uk/reports/digital-experience-insights-survey-2019-students-uk

- The Complete University Guide. www.thecompleteuniversityguide.co.uk

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- For some, belonging to the Russell Group has become its own status symbol, and research by University of Sheffield also found that rankings and league tables do matter in the UK, albeit they do have a relatively modest effect. www.sheffield.ac.uk/polopoly_fs/1.680701!/file/F2_3_Broecke.pdf

- University of Cambridge. www.cam.ac.uk

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- University of Lincoln will form a team of academics and industry experts to align the teaching curriculum to tailor STEM subjects with current and future digital skills of specific industries. www.lincoln.ac.uk/news/2018/01/1429.asp

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- The University of Exeter is embarking upon a £2.5m programme of digital transformation to "support its ambitions of becoming one of the UK's top 10 universities". www.publictechnology.net/articles/news/university-exeter-kicks-%C2%A325m-digital-transformation-drive

- CityBlock. www.cityblockgroup.co.uk/

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www.manchester.ac.uk/discover/magazine/features/a-vision-of-transformation

- StudentCrowd is the UK's online review community for students. They are privy to the reviews of 750,000 students who use the site each year.
www.studentcrowd.com

- The Jisc Digital Student Experience Report
www.jisc.ac.uk/reports/digital-experience-insights-survey-2019-students-uk

- UK investment in AI is increasing by 17%.
www.computerworld.com/article/3412205/top-uk-universities-working-on-ai.html

- IBM introduced Watson Education. www.ibm.com/watson/education

- Cloud computing is most commonly used by universities for student emails - something which 76% of universities are currently utilising.
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- Over 200 UK institutions have reported more than 1,000 attempts to have their data stolen. www.bbc.co.uk/news/education-47805451

- Research by BBC Radio 4 discovered that in the last four years, two-thirds of UK universities have been hacked. www.techradar.com/uk/news/bbc-investigation-reveals-uk-universities-under-cyberattack

- The University of York suggers "malicious data breach" www.bbc.co.uk/news/uk-england-york-north-yorkshire-49182179

- Majority of attacks on UK universities are either related to phishing, or attempts to gain entry for malware and ransomware. www.bbc.co.uk/news/education-47805451

- The National Cyber Security Centre (NCSC) explains why attacks against universities are often successful. www.ncsc.gov.uk/report/the-cyber-threat-to-universities

- Jisc's ethical hackers conducted a test, to determine the defences of over 50 universities against cyber attacks.to determine the defences of over 50 universities against cyber attacks. www.bbc.co.uk/news/education-47805451

- Save the Student's National Accommodation Survey. www.savethestudent.org/accommodation/national-student-accommodation-survey-2019.html

- The most important thing students rate about student accommodation is value for money (97%). www.ucasmedia.com/sites/default/files/Student%20Accommodation%20Survey%202018%20FINAL_WEB.PDF

- The average student lives 20 minutes away from campus. www.ucasmedia.com/sites/default/files/Student%20Accommodation%20Survey%202018%20FINAL_WEB.PDF

- The Times Higher Education carried out some research, where they surveyed current students, and people who were students 25 years ago. www.timeshighereducation.com/student/news/how-have-student-requirements-changed-past-25-years

Performance
Networks