The start of something big?

Can edtech startups solve the biggest challenges faced by UK universities?

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## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>5</td>
</tr>
<tr>
<td>Executive summary</td>
<td>6</td>
</tr>
<tr>
<td>Key takeaways for universities</td>
<td>10</td>
</tr>
<tr>
<td>Key takeaways for startups</td>
<td>10</td>
</tr>
<tr>
<td>Priority one: Delivering the best, most equitable student experience</td>
<td>12</td>
</tr>
<tr>
<td>Definition</td>
<td>12</td>
</tr>
<tr>
<td>Context</td>
<td>12</td>
</tr>
<tr>
<td>Sub-priorities</td>
<td>13</td>
</tr>
<tr>
<td>Barriers</td>
<td>14</td>
</tr>
<tr>
<td>Priority two: adapting to changing student expectations about employability and career outcomes</td>
<td>17</td>
</tr>
<tr>
<td>Definition</td>
<td>17</td>
</tr>
<tr>
<td>Context</td>
<td>17</td>
</tr>
<tr>
<td>Sub-priorities</td>
<td>18</td>
</tr>
<tr>
<td>Barriers</td>
<td>20</td>
</tr>
<tr>
<td>Priority three: expanding the university's reach by attracting more (and more diverse) students</td>
<td>23</td>
</tr>
<tr>
<td>Definition</td>
<td>23</td>
</tr>
<tr>
<td>Context</td>
<td>24</td>
</tr>
<tr>
<td>Sub-priorities</td>
<td>25</td>
</tr>
<tr>
<td>Barriers</td>
<td>26</td>
</tr>
<tr>
<td>Priority four: transforming digital and physical infrastructure</td>
<td>29</td>
</tr>
<tr>
<td>Definition</td>
<td>29</td>
</tr>
<tr>
<td>Context</td>
<td>30</td>
</tr>
<tr>
<td>Sub-priorities</td>
<td>31</td>
</tr>
<tr>
<td>Barriers</td>
<td>32</td>
</tr>
<tr>
<td>Priority five: recruiting, retaining and developing world-class staff</td>
<td>35</td>
</tr>
<tr>
<td>Definition</td>
<td>35</td>
</tr>
<tr>
<td>Context</td>
<td>35</td>
</tr>
<tr>
<td>Sub-priorities</td>
<td>36</td>
</tr>
<tr>
<td>Barriers</td>
<td>37</td>
</tr>
<tr>
<td>Next steps and getting involved</td>
<td>39</td>
</tr>
<tr>
<td>About step up</td>
<td>39</td>
</tr>
<tr>
<td>Glossary</td>
<td>40</td>
</tr>
<tr>
<td>Acknowledgements</td>
<td>42</td>
</tr>
<tr>
<td>Methodology</td>
<td>44</td>
</tr>
<tr>
<td>About Jisc</td>
<td>44</td>
</tr>
<tr>
<td>About Emerge</td>
<td>44</td>
</tr>
<tr>
<td>Q+A with Simon Martin, CEO Group GTI</td>
<td>45</td>
</tr>
</tbody>
</table>
At Jisc and Emerge Education, we believe that education technology (edtech) has rich potential to help UK universities solve their biggest challenges.

We have worked as close partners for several years and our collaboration brings together Jisc’s 30+ years of experience in providing digital solutions for UK education and research and Emerge’s in-depth knowledge of the edtech ecosystem based on investments in 55 startups in five years. Together, we’ve developed unique insights into the potential of edtech in higher education (HE).

To unlock that potential, we’re undertaking a programme of research. The first outcome is this report, which focuses on understanding each of the most urgent priorities that university senior leaders will face over the next three years. It’s the basis for further publications in which we’ll look at each priority in more detail, map the priorities to specific edtech solutions and highlight the startups that are best placed to work with institutions on developing innovative edtech solutions.

There are plenty of opportunities for startups to hear from each other but very few for them to hear from real customers and understand in-depth the priorities they have and the problems they are facing. This will allow them to shape their products to ensure they meet university needs.

For universities this is an opportunity to hear from colleagues the key priorities, they see, as fundamental to support growth and innovation.

The work on the reports was well underway when the COVID-19 pandemic hit, and we have seen the university sector adapt more rapidly than many thought possible to the challenges of digital delivery. But in the midst of crisis, it is important to draw a clear line between our immediate response and what it tells us about the future. This work is part of Learning and teaching reimagined, a sector-wide initiative focused on providing university leaders with inspiration on what the future might hold for higher education, and guidance on how to respond and thrive in those environments.

Ultimately, we want to build a vibrant, highly effective edtech ecosystem, with seamless collaboration between universities and leading startups, to ensure students get the educational experience they deserve.

Paul Feldman
Chief executive officer, Jisc

Nic Newman
Partner at Emerge Education
Executive summary
Main findings

In this report we identify the most pressing priorities and sub-priorities for the sector over the next one to three years.

We have specifically highlighted the unmet needs of universities and the areas where start-ups can add the most value. Universities have expressed a strong desire to innovate but have not always been able to execute this due to a range of persistent barriers.

The insights in this report have been designed to support start-ups and universities to work together more effectively to achieve the key priorities outlined below.

For this report we interviewed more than 50 senior decision-makers in HE and they told us that financial sustainability is the most common challenge facing universities. This aligns with recent news stories describing growing financial pressures within universities and with the findings from consultancy firm PwC’s April 2019 Higher Education Sector Risk Profile, which highlights ‘financial sustainability’ as the single biggest risk factor for the sector.

Figures 1-3 highlight some of the major trends relating to this challenge.

Declining financial sustainability is the most common existential threat facing universities across the sector.

Figure 1: The number of UK HE providers in deficit has almost doubled from 24 in 2015/2016 to 47 in 2017/2018

Figure 2: Total undergraduate enrolments decreased by 1.7% between 2013/2014 and 2017/2018

Figure 3: The UK has by far the slowest growth rate when it comes to international student recruitment

Source: hesa.ac.uk/data-and-analysis/finances/kfi

Source: hesa.ac.uk/data-and-analysis/sb252/figure-3

While financial stability is an important challenge, we’ve identified significant growth potential for universities that innovate to expand their reach, enhance the student experience and diversify their revenue streams. In this report, you’ll find examples of ways they can do this, including collaborating with employers, extending online learning and enhancing their use of data. Figures 4-6 highlight trends associated with these opportunities.

As outlined overleaf, we structured this report around universities’ five most pressing priorities based on our research with senior leaders. These five priorities are interlinked, so work on one priority will inevitably affect the others. We know research is also a priority for universities and we will include this in our future reports.

Innovative universities can unlock more growth through new models and markets than ever before.

Figure 4: Global HE enrolment is projected to double over the next decade and reach c380m by 2030

Figure 5: Between 2016/17 and 2017/18, growth in ‘other income’ significantly outstripped all core revenue streams

Figure 6: Record numbers of HE providers are now engaging in transnational education (TNE)
Based on interviews with 50+ key decision-makers in HE, we’ve identified the five most pressing priorities and associated sub-priorities for universities in the next one to three years.

<table>
<thead>
<tr>
<th>Priority one: Delivering the best, most equitable student experience</th>
<th>Priority two: adapting to changing student expectations about employability and career outcomes</th>
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<tr>
<td>• Utilising learner analytics to personalise the student experience at scale</td>
<td>• Rolling out of employer mentoring at scale to boost employability for students while also improving the recruitment pipeline for employers</td>
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<td>• Developing alternative forms of assessment to meet diverse student needs and evolving employer requirements</td>
<td>• Co-designing the curriculum with employers to deliver up-to-date and relevant courses for students</td>
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<td>• Establishing a seamless digital learning environment to enable the implementation of pedagogical advancements and adapt in line with changing student preferences</td>
<td>• Increasing engagement with schools and colleges to provide more effective and consistent career support across the full lifecycle from school to employment</td>
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<td>• Improving student navigation and signposting, for example, through mobile apps for way-finding, chatbots for query handling, and voice-activated services for improved student engagement</td>
<td>• Increasing opportunities for student entrepreneurship to meet growing demand as more than 25% of university students run or plan to run their own business[^4]</td>
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<table>
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<tr>
<th>Priority three: expanding the university’s reach by attracting more (and more diverse) students</th>
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<td>• Scaling online learning and digital credentials to provide high-quality teaching for larger and more diverse groups of students</td>
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<td>• Growing partnerships with FE colleges and international universities to increase the accessibility of UK university courses (eg through the franchising of degrees)</td>
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<tr>
<td>• Enhancing brand reputation and league table rankings to build eminence in domestic and international markets</td>
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<tr>
<td>• Boosting the level of direct and real-time engagement with prospective students (eg through VR campus tours, query-handling chatbots, peer-to-peer connections)</td>
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[^4]: independent.co.uk/news/business/indyventure/university-students-business-more-than-quarter-santander-turnover-a8207161.html
Our conversations have shown that the relative importance of each priority depends on the university context, and startups should be aware of this:

We’ve explored each priority in turn, and this report looks at the associated macro trends, sub-priorities and barriers that startups should think about when working with universities.
Key takeaways for universities

The priorities and sub-priorities in this report are the issues that universities will expend most time, money and effort on in the next three years. Senior leaders need robust, data-driven strategies in line with the institution’s needs. Universities can use this report to cross-check and validate institutional priorities against those of peers in the sector.

At Jisc and Emerge, we support universities and startups to pursue these priorities through our step up programme.

Key takeaways for startups

In each section, there are insights to help startups initiate productive conversations with universities and begin to tailor effective solutions. At the end of each section we’ve highlighted some practical advice to help startups maximise the impact of their solutions for universities.

3 jisc.ac.uk/rd/get-involved/step-up-programme
Open Event
Friday 22 June
11:00am – 2:00pm

Main Entrance
**Priority one: Delivering the best, most equitable student experience**

**Definition**
Since the start of this century there’s been a significant shift in HE towards marketisation as universities operate in an increasingly competitive environment and students demand more value for their money. Now, ‘student experience’ is near the top of the agenda for most university senior leaders but it’s hard to pin down what the phrase really means. Every student’s experience at university is unique as they juggle learning with an increasingly wide variety of additional university services, from study skills workshops to mental health support. In response to increasing student demands universities are playing a bigger role in more aspects of their students’ lives.

Changing demographics in the student body are also adding complexities. For example, in 2018, 20.7% of 18 year olds from the most disadvantaged areas in England entered HE compared with 11.2% in 2006. Student populations within UK universities are more diverse than ever before.

To iron out the complexities and establish a common frame of reference we have defined this priority:

> To address this priority successfully, universities will have to optimise their services across each of these aspects in ways that meet the needs of every student.

Universities can measure their progress in relation to this priority through:

- **Teaching Excellence Framework (TEF) rating** – this measure focuses on performance around learning, teaching and student outcomes

- **National Student Survey (NSS) scores** – these enable universities to assess their students’ satisfaction across key points in the student journey

- **Student retention rates** – by analysing the proportion of student drop-outs across different demographics, universities can assess the quality and equity of student experiences

- **Attainment gaps** – similarly, analysing gaps in learning outcomes across different groups of students can identify differences in student experience as well as potential failure to bridge any gaps that existed before the students arrived at university

**Context**
What is university for? This is a question that’s been debated a lot, but it’s widely agreed that at least part of its purpose is to enable people – regardless of background – to pursue knowledge in their chosen field and access the career opportunities they want. To fulfil this purpose, universities have to give students a robust and equitable experience – so this is a priority for all university leaders. It is also related to several other key challenges. For example:

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**Definition:** This priority encompasses all the key aspects of a student’s life during university, including learning, teaching, support, assessment, administrative tasks (eg module selection) and extra-curricular activities.
Growing domestic and global competition – domestic competition between universities has reached an all-time high. At the same time, global competition has sky-rocketed and the UK looks set to lose its position as the second most popular destination for international students. The trend towards globalisation in HE is clear from the 2018 Times Higher Education (THE) university rankings, with Britain being surpassed for the first time as the second most represented country in the rankings. These trends are likely to continue as shown by Figure 3, which shows that out of the top ten host countries for international students, the UK has by far the slowest growth rate when it comes to international student recruitment.

UK universities must stand out and attract more applications by providing the best possible student experience.

Continuation and attainment gaps – as the student population becomes more diverse, universities must adapt. This is particularly important for students from under-represented and disadvantaged backgrounds, who are more likely to drop out of university and also tend to achieve worse results than their peers. Figures from the Office for Students (OfS) show that a number of these continuation and attainment gaps have got bigger. Universities will have to spend more and focus harder on delivering a more personalised and equitable experience for all students.

Student mental health issues – student need for mental health support is growing and this often means longer waiting times for existing services. A 2018 survey of 37,500 students in UK universities by Insight Network found that over half had thought about self-harming. Universities must implement preventive measures and provide more targeted support. To be effective, support services have to deliver a balanced, complete university experience for all students, especially the most vulnerable.

Sub-priorities

To improve the student experience holistically universities are exploring various options, including:

Learning analytics and personalisation – recent technological developments present opportunities to tailor services to individual needs at scale (eg through personalised learning platforms). Learning analytics is also playing an important role in improving universities’ preventive measures targeted towards at-risk students who need extra support. Through greater personalisation universities will deliver more consistent, better experiences for all students including distance learners, part-timers and ones from disadvantaged backgrounds.

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6 universitiesuk.ac.uk/facts-and-stats/Pages/higher-education-data.aspx
7 pearson.com/uk/educators/higher-education-educators/course-development-blog/2018/04/what-is-the-purpose-of-a-university
8 ucl.ac.uk/news/headlines/2018/jul/australia-beats-uk-overseas-students
9 independent.co.uk/news/education/education-news/times-higher-education-world-university-rankings-britain-uk-global-reputation-league-tables-a8555736
10 gov.uk/government/news/education-secretary-warns-universities-over-dropout-rates
12 theinsightnetwork.co.uk/uncategorized/university-student-mental-health-survey-2018
Alternative forms of assessments – traditional forms of assessments (eg dissertations and exams) don’t suit everyone. They’re also not the best way to evaluate soft skills, creativity and divergent thinking and they might not match up with assessments used by employers. Some universities are exploring alternatives such as audio and video, group submissions and machine-moderated online assessment.

A seamless digital learning environment – because students are digitally savvy, universities must adapt their learning and teaching offerings to become digital-first and mobile-friendly. Many are moving towards a blended learning model with more of the learning and teaching moving to online environments. As part of this strategy they’re testing augmented reality (AR) and virtual reality (VR) technologies to bring students immersive learning experiences and develop their digital skills. Some are also developing their use of digital learning environments such as online social learning platforms to give students more real-time engagement with their peers and with academics.

Better student navigation and signposting – now that there are more touchpoints between universities and their students, it’s important to signpost students so they can navigate their way through university life effectively. Universities are tackling this issue in several ways, with mobile apps for wayfinding, chatbots for query handling and voice-activated services for improved student engagement. And they’re progressively looking towards examples from commercial sectors (eg Amazon, Apple and Monzo) in their drive to provide students with consumer-grade experiences.

Barriers
Inevitably, there are obstacles on the road to success with this priority:

Problems collecting and maintaining accurate data – mismatched systems, inconsistent practices and constraints around data privacy are common challenges for universities. They make it harder to keep student data current, particularly given the fast-changing nature of the student body with drop-outs, course changes etc.

Lack of diversity in the university workforce – as the student body becomes more diverse the university workforce should reflect this but it is often challenging, particularly at senior management level. This lack of diversity can make it tougher to meet the needs of all students.

Limited student engagement and motivation – research shows that the number of disengaged students is increasing\(^\text{13}\). It’s hard for universities to offer effective support for these students because they often don’t attend even core lectures and classes. And, as universities start to offer different kinds of courses with less time spent on campus, it becomes trickier to support engagement and provide a consistent, high quality experience.

\(^{13}\) researchgate.net/publication/331181094_Exploring_Student_Engagement_and_Disengagement_in_University_Education_Can_Vocational_ActivitiesPractice-Based_Learning_Help
When talking to university senior leaders about the student experience, startups should remember:

<table>
<thead>
<tr>
<th>Observation</th>
<th>Implication</th>
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<tr>
<td>Rising levels of domestic and global competition have led many universities to invest more in the student experience as a key differentiator.</td>
<td>Startups in this space can meet university senior leaders’ needs by tailoring their solutions to improve the brand perception of current and prospective students.</td>
</tr>
<tr>
<td>Although the student body is becoming more diverse, university services have seen only limited change.</td>
<td>Startups can help plug this gap through learning analytics and artificial intelligence (AI) to deliver more personalised services for students.</td>
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<tr>
<td>Disparate datasets and inconsistent student information are a problem for many university senior leaders.</td>
<td>Startups offering solutions that can collect, analyse and visualise student data and also integrate with existing university systems will be able to stand out.</td>
</tr>
<tr>
<td>Increasing numbers of students with mental health issues and declining student retention rates are putting more pressure on student support services.</td>
<td>Startups can help to ease the pressure and align their solutions more closely with university needs by removing the admin burden for staff and enabling more targeted interventions.</td>
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The average tenure of a job has fallen to 4.5 years and today’s workers will probably have ten to 15 different jobs in their lifetime.
Priority two: adapting to changing student expectations about employability and career outcomes

Definition
A ‘job for life’ is a thing of the past. Figures from Deloitte show the average tenure of a job has fallen to 4.5 years\(^\text{14}\) and today’s workers will probably have ten to 15 different jobs in their lifetime, so the word ‘career’ is changing its meaning. People now define their own career paths with various steps ranging from sabbaticals and secondments through to continuous online learning and technical bootcamps. The fluid nature of modern careers must be reflected in the definition of our second priority, because universities will have to prepare their students for the very many opportunities that await them when they graduate.

The huge rise in the number of students graduating each year has led employers to develop new recruitment practices to differentiate more effectively. To stand out, graduates need more than the signalling benefits of a university degree; they need to demonstrate a range of skills and attributes including emotional intelligence, adaptability and creativity. To summarise what we mean by employability in these contexts we have defined this priority below:

Specifically, progress in relation to this priority can currently be measured by universities through:

- **Graduate Outcomes**\(^\text{15}\) – administered as a survey by HESA to all graduates 15 months after they finish their studies, Graduate Outcomes provides insights into the current status and perspectives of recent graduates

- **Longitudinal Education Outcomes**\(^\text{16}\) (LEO) – LEO data provides information on how much UK graduates of different courses at different universities are earning one, three and five years after graduating

- **Student work experience** – the length and quality of work experience gained by students over the course of their degree can indicate their future employability

- **Career surveys** – surveys to assess awareness of career opportunities and analyse sentiments around entering the workplace (eg confidence levels) can highlight intangible factors that also impact employability

Context
The world of work is changing and labour deficits are growing at an alarming rate, with the OECD predicting the global labour deficit will reach £6.5 trillion by 2030\(^\text{17}\).

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\(^{14}\) deloitte.com/uk/en/pages/consulting/articles/putting-meaning-back-into-work.html

\(^{15}\) graduateoutcomes.ac.uk/

\(^{16}\) universitiesuk.ac.uk/our-work-in-parliament/Documents/Universities

\(^{17}\) oecd.org/employment/outlook/
These macro trends have had significant implications for universities and questions are being asked about their ability to prepare students for employment\textsuperscript{18}.

At a micro level, career considerations have become increasingly important for UK students following huge increases in tuition fees in 2012. Student debt has reached record levels and recent government figures show that only about 17% of students will fully repay their student loans\textsuperscript{19}. It’s a significant debt burden (on average, £50,000 for a UK student) and it is leading students to ask more questions about the value for money provided by university degrees. In summary, these issues are causing universities to prioritise student employability and career outcomes:

**Growing student focus on career outcomes** – because prospective students now think more about future careers when they choose a university, institutions must focus on improving student employability. It’s important for domestic and international students – in a recent survey international students highlighted the three most important outcomes when graduating from university\textsuperscript{20}: high graduate employment rates, a high rate of students going into their preferred industry and how quickly students find employment after graduating. The combination of rising tuition fees and increasing graduate numbers have resulted in greater career-consciousness across the student body.

**Rapidly changing employer needs** – university courses often haven’t adapted in line with employers’ changing requirements and employers are responding in a number of ways, including removing degree requirements from entry-level roles, adopting more apprenticeships and providing more in-house learning and development opportunities. To stay relevant and support their students in the jobs market universities must incorporate industry requirements within their course offerings.

**Government pressure to tackle the skills gap** – universities are producing graduates in record numbers but job vacancies are being left unfilled, and the OU Business Barometer found that UK businesses spent £4.4bn on addressing skills shortages in 2019\textsuperscript{21}. These shortages are particularly acute in the case of digital skills and more than two-thirds of employers are struggling to fill vacancies for digital roles. This is a critical challenge for the economy and the government wants universities and other education providers to find a solution. The government’s 2019 Review of Post-18 Education and Funding\textsuperscript{22} suggests several skills-focused proposals, including strengthening technical education and encouraging universities to bear down on ‘low value degrees’ and to provide more courses that align better with the economy’s needs.

**Sub-priorities**

Traditionally, universities have improved career outcomes for students by supporting them to gain work experience (through internships and

\textsuperscript{18} theguardian.com/education/2018/dec/20/how-do-universities-prepare-for-jobs-that-dont-yet-exist
\textsuperscript{19} https://fullfact.org/education/about-17-students-are-forecast-fully-pay-back-their-loans
\textsuperscript{20} qs.com/graduate-employability-matters-more-than-ever
\textsuperscript{21} open.ac.uk/business/Business-Barometer-2019
placements) and improving their job applications (typically, through CV workshops and networking events with employers). Now they are also exploring new sub-priorities including:

**Rolling out employer mentoring at scale** – creating opportunities for employers to mentor students gives students first-hand insight into the workplace, develops their soft skills and improves their understanding of professional behaviours and attitudes. And the mentoring relationship works for employers too, giving them opportunities to improve their graduate recruitment pipeline by better understanding and supporting prospective candidates. This model is increasingly being scaled across a number of UK universities, often initially through alumni networks.

**Working with employers to co-design the curriculum** – universities are showing more appetite for incorporating employer input within curriculum design. One important example is the Institute of Coding (IoC) a consortium of 150+ organisations to bring industry, government, higher education and outreach partners together to create new courses, develop existing skills and provide support to attract fresh talent into digital careers. Launched as a £20 million government initiative in 2018, the IoC now has more than 32,000 learners enrolled on over 100 digital skills courses created with industry input.

**Boosting engagement with schools and colleges** – universities and employers can play a significant role in determining career outcomes but a student’s background, their schools and colleges also pay a part. Research by the Institute for Fiscal Studies (IFS) shows that independent school students earn 8% more than state school students, five years after graduation. These gaps already exist when students enter university and universities are working harder to collaborate with schools and colleges and provide more effective, consistent careers support. Guidance from the Office for Students (OfS), the HE sector’s regulatory body, strongly encourages this approach to raising prior attainment in support of its access and participation plans.

**Developing opportunities for student entrepreneurship** – today’s students have grown up in an economy transformed by the astronomical rise of technology start-ups. More than 25% of university students run, or plan to run, their own businesses and the estimated total turnover of graduate-founded businesses and social enterprises has risen from £669 million in 2014/15 to £821 million in 2017/2018. To support students and address employers’ growing needs for students with an entrepreneurial mindset, universities are investing more resources in fostering student entrepreneurship.

*“In our 2030 strategy, we have outlined a clear commitment to turn the university into a full incubator”*

Professor Anne Carlisle OBE, vice chancellor and chief executive at Falmouth University

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24 [ifs.org.uk/publications/13035](https://ifs.org.uk/publications/13035)
26 [independent.co.uk/news/business/indyventure/university-students-business-more-than-quarter-santander-turnover-a8207161.html](https://independent.co.uk/news/business/indyventure/university-students-business-more-than-quarter-santander-turnover-a8207161.html)
Barriers
Universities have identified a number of obstacles that they’ll need to address:

**Organisational silos** – effective career support requires a consistent approach that brings academics together with careers services staff but often these staff groups operate in silos, with limited alignment between the services they each provide for their students. University senior leaders say there must be a fundamental shift in mindsets to overcome this barrier.

**Social stigma towards vocational education** – universities need to develop more vocational courses with a stronger focus on skills development to address the labour deficit. It may be hard to recruit students to these courses in sufficient numbers because vocational qualifications have typically been stigmatised in the UK. Higher Technical Qualifications are a case in point – the DfE’s report on higher technical education[^27] says only 10% of UK adults hold these, compared with around 20% in Germany and as much as 34% in Canada. Universities will have to overcome this stigma to ensure the success of new vocational and skills-based courses.

**Lack of career readiness** – when students start at university they often don’t know much about the world of work or their potential career opportunities. In 2019, a survey conducted for Universities UK (UUK)[^28] identified better career information and the career experiences of past graduates as the two things that students and recent graduates had wanted to know about before applying to university. This is problematic for universities, particularly in the case of disadvantaged students who have more limited access to careers advice at school, are less likely to have completed professional work experience, and lack useful social networks to learn about careers or access work experience opportunities, according to research published by upReach in July 2019[^29].

Practical advice for startups

When talking to university senior leaders about student employability and career outcomes startups should remember these key takeaways:

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<tr>
<th>Observation</th>
<th>Implication</th>
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<tr>
<td>Universities face growing pressure from students, employers and the government to provide more courses that meet employers’ needs better.</td>
<td>Startups can help to plug the gap between universities and employers by using technology platforms to enable collaboration at scale (e.g. course co-creation, work-based learning, career navigation).</td>
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<tr>
<td>Universities and employers both have strong reasons to improve student employability but universities face tougher budget constraints.</td>
<td>Startups can build better relationships with universities by setting their pricing model to reflect both relative budget size and the direct recruitment benefits that employers will realise.</td>
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<tr>
<td>Students from different backgrounds have very different levels of exposure to the world of work as well as differing confidence levels and awareness of career opportunities.</td>
<td>Startups can address this challenge by providing equal access to opportunities for all students via technology-enabled, high quality careers support (e.g. employer mentoring).</td>
</tr>
<tr>
<td>University senior leaders place strong emphasis on the need for ongoing support to improve student employability and career outcomes.</td>
<td>Startups can add real value for senior leaders by providing an up-to-date view of student profiles alongside evidence-based recommendations about how to support each student’s career journey.</td>
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</table>
139 universities now have students studying through TNE\textsuperscript{30}. 
Priority three: expanding the university’s reach by attracting more (and more diverse) students

Definition
Until quite recently the delivery of teaching at a university rarely extended beyond the physical campus so student numbers were constrained by the size of a university’s real estate and physical infrastructure. Online learning is one development that universities are taking advantage of to overcome these limitations.

They’re also working on franchising their degrees so students can gain accreditations from one university by attending a partner institution, whether that’s in the UK or overseas. Transnational education (TNE) – the provision of education from institutions in one country to students in another – is developing fast and UUK’s report on the scale of UK HE TNE shows that a record 139 UK universities now have students studying through TNE30.

Developments such as this, alongside policy reforms that have led to a doubling of student numbers between 1994 and 201831, mean that UK universities have access to diverse groups of students all around the world.

“‘There is often a narrative that certain groups of students are ‘hard to reach’, when the reality is that it is the university that is hard to reach for these students. The narrative needs to be flipped and there should be a greater focus on making universities more accessible for students”

Dave Hall, COO at the University of Leicester

Universities can measure their progress in relation to this priority through:

• Student application figures – the number of applications received by a university reflects its ability to compete locally, nationally and internationally

• Student enrolment – the make-up of the student body across different forms of provision (eg physical vs. online) can demonstrate the accessibility of a university’s courses

• University course offerings – diversity in the course portfolio can act as a leading metric for future shifts in university student demographics

• Access and participation plan targets – universities can measure their progress against these OfS targets to assess their ability to attract and enrol UK students from under-represented backgrounds

31 https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7857#fullreport
Context

For UK universities, tuition fees are by far the single highest revenue stream, representing almost 50% of total income in 2017/18\(^32\) according to HESA figures. As a result, the HE sector’s financial health is fundamentally reliant on student numbers. Universities feel this reliance acutely given the strict cap on the fees they can charge for UK undergraduate degrees. Following the government’s review of post-18 education and funding\(^33\) in 2019, official recommendations have been made to reduce this price cap from £9,250 to £7,500, leading to fresh concerns about financial sustainability for large numbers of universities. Their concerns are exacerbated by the effects of rising global competition and ongoing uncertainties about Brexit’s impact on international student recruitment. It’s against this backdrop that student recruitment has moved up the priority list.

But universities also have cause for optimism because total HE enrolment worldwide is expected to more than triple over the next two decades to reach c. 600 million in 2040\(^34\). The growth will be driven by rising demand for HE in emerging economies, and also the need for adults to upskill and reskill throughout their careers. These trends offer universities huge potential to diversify and expand their reach to different kinds of learners. Overall, university senior leaders cite two main reasons for the critical importance of expanding university reach:

Financial sustainability – as universities continue to operate in an environment where cost increases outstrip revenue growth, financial sustainability is an existential threat. This challenge is depicted in Figure 7 below, which shows the almost 50% reduction in operating surpluses that universities have experienced between 2014/15 and 2017/18. Alongside falling surpluses, universities have seen a 31% increase in debt levels between 2016/17 and 2017/18 according to a report on financial sustainability produced by the OfS\(^35\).

The OfS forecasts that university borrowing will

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\(^32\) [hesa.ac.uk/data-and-analysis/finances/income](https://hesa.ac.uk/data-and-analysis/finances/income)


\(^34\) [academia.edu/36975860/Massification_of_higher_education_revisited?auto=download](https://academia.edu/36975860/Massification_of_higher_education_revisited?auto=download)

rise by 11% over the next four years, resulting in higher debt servicing costs. Add to this the ongoing restructuring of staff pension schemes and there’s an urgent imperative for universities to generate more revenue. This challenge is already affecting the US, where more than 350 colleges closed during 2017 and 2018\(^36\).

Growing demand for tertiary and life-long education – more than half of young people in the UK now go to university\(^37\) and demand for places will rise in the coming years. What’s more, individuals will need to upskill and reskill regularly, making the 25+ age category an exciting growth opportunity. Growing demand for HE in international markets also presents a range of possibilities for universities; for example, a recent study by the Royal Melbourne Institute of Technology (RMIT) suggests that countries in sub-Saharan Africa are likely to become sunrise markets\(^38\) for HE by 2035.

Sub-priorities
To expand reach and adapt to these trends universities are exploring a number of different sub-priorities including:

Scaling online learning and digital credentials – online learning has significant growth potential, both for existing course materials delivered on-campus to wider audiences and for development of new courses exclusively for online provision. This approach widens university reach and tackles the needs of more diverse groups of individuals; it also enables universities to convert more students to on-campus degrees and to enhance pedagogical methods.

> “Across all our traditional courses, we have 18,000 students on campus. Now, just on our mathematics for machine-learning module alone, we are reaching 180,000 learners through the internet – contributing to tackling the immense skills gap in this domain”

Gideon Shimshon, director of digital learning and innovation at Imperial College London

Growing partnerships with other education providers – partnerships with FE colleges and international universities offer effective ways to make a university’s courses more accessible for different and diverse groups of students, as TNE programmes have shown. Recent changes in government policy have also led universities and colleges to collaborate more in delivering technical education. For example, the £170 million roll-out of Institutes of Technology (IoTs) in 2019 has created new university-college partnerships and enabled university foundation degrees to be delivered at FE colleges. This is part of a wider call from the government for more choice and availability of courses for learners\(^39\) and for more universities to expand their technical education offerings, particularly through partnerships with colleges and the development of new qualifications at levels 4 and 5.

Enhancing university reputation and rankings – brand reputation and league table rankings influence a university’s ability to attract new students and partners.

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\(^{35}\) officeforstudents.org.uk/media/cf54b6ee-714e-45c3-ade9-566bc68b861d/report-on-financial-sustainability-of-higher-education-providers-in-england.pdf

\(^{36}\) https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7857

\(^{37}\) independent.co.uk/news/education/education-news/university-students-young-people-over-half-first-time-a9122321.html

\(^{38}\) academia.edu/37036613/The_higher_education_landscape_is_changing_fast?email_work_card=title

\(^{39}\) universitiesuk.ac.uk/blog/Pages/seizing-opportunity-higher-technical-education.aspx
students. Frameworks such as the Teaching Excellence Framework (TEF), and university league tables such as the QS World University Rankings and Times Higher Education (THE) University World Rankings use proprietary calculations with weighted indices to evaluate HE providers. And although the specific methodology varies, categories such as research quality and student satisfaction will usually have significant weighting in each one.

To enhance brand value, universities may target their investments towards areas that give the best return in terms of their brand value.

**Boosting direct engagement with prospective students** – increasing the level of direct and real-time engagement between the university and prospective students is particularly significant given the importance of word-of-mouth in attracting new students and the ease with which universities can engage directly with prospective students via technology. Universities have been exploring new solutions including VR campus tours, query-handling chatbots and peer-to-peer connections between prospective and current students. New physical campuses in international regions are also a good way to boost direct engagement with prospective students and other education providers outside of the UK.

“*Our physical campuses in Malaysia and China provide us with the opportunity to engage better with students in the region and build stronger partnerships with local education providers and employers in a way that would otherwise never be possible*”

Dr Paul Greatrix, registrar at the University of Nottingham

**Barriers**

Universities have identified a number of obstacles that they’ll need to address:

**Lengthy lead-time for course development** – although university senior leaders often want to develop their course offerings, the lead-time from concept to launch of a new course can be two or more years. Why? Approval and procurement processes are often lengthy and quality assurance frameworks are stringent; timeframes are often longest for innovative courses such as stackable credentials. This makes it difficult to maintain an up-to-date course portfolio that meets students’ and employers’ needs.

**Balancing quality and consistency with scale** – quality and consistency can suffer when universities try to widen their offer and attract bigger, more diverse student groups. Differing needs in different disciplines can also make it hard to roll out changes at scale. For example, it’s relatively easy to adapt online learning for business courses but more complicated for subjects such as art and architecture. These challenges are particularly pertinent in the context of international university partnerships, where international providers will be subject to quality assurance processes that are very different to those in the UK.

**Relying on agents to reach international students** – universities often rely on locally-based third party agents to help them recruit overseas students. Agents take care of key parts of the process but they also bring challenges of their own. Fundamentally profit-driven, they focus on increasing student application and enrolment numbers rather than on connecting individual students with the universities that are the best fit. This mismatch of priorities is hard to overcome, as there is limited regulation and no global standard on how an agency should operate.
Practical advice for startups

When talking to university senior leaders about expanding the university’s reach by attracting more (and more diverse) students, startups should remember:

<table>
<thead>
<tr>
<th>Observation</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>International student recruitment is a leading priority for many universities but these students can be hard to reach and universities often rely on third party agents.</td>
<td>Startups can enable universities to access prospective students directly in international regions (eg via VR campus tours, chatbots and peer-to-peer connections).</td>
</tr>
<tr>
<td>University leaders face challenges and long delays in adapting courses to changing market demands.</td>
<td>Startups can help to cut course development time, particularly for new online and short courses, by making use of templates and introducing best practice from other institutions.</td>
</tr>
<tr>
<td>UK universities want to develop partnerships with other education providers, both domestically and internationally, to gain access to more diverse groups of students.</td>
<td>Startups can enable more seamless collaborations through shared databases and integrated systems (eg to deliver stackable credentials).</td>
</tr>
<tr>
<td>As UK undergraduate tuition fees flatline, universities are putting more emphasis on attracting different kinds of students (such as adult learners who need to upskill).</td>
<td>Startups can help universities reach untapped markets by opening up new channels and providing specialist capability to target new groups of learners.</td>
</tr>
</tbody>
</table>
The rapid pace of technological change offers opportunities for universities to make big changes fast.
Priority four: transforming digital and physical infrastructure

**Definition**
As digital has become a core component for all HE providers, a university’s technology architecture has become at least as important as its physical infrastructure. Over time, universities have developed intricate technology ecosystems comprised of hundreds of different tools and platforms. These intricacies have made it difficult to summarise the term ‘digital infrastructure’ and so university senior leaders have identified Gartner’s Pace-layered Application Strategy\(^40\) as a framework to help in understanding what is meant by digital infrastructure. In summary, a university’s digital infrastructure can be segmented across the three layers of this framework as outlined below in Figure 8.

The university’s physical infrastructure is its land, buildings and physical facilities. With these two definitions in mind, we have defined our fourth priority below.

Universities can measure their progress in relation to this priority through:

- **Staff productivity** – although measures will vary, longitudinal data can be used to evaluate how new systems and processes affect staff productivity
- **Use of space** – tracking how buildings and facilities are used, particularly outside term time, makes it possible to assess how efficiently the university’s physical infrastructure is used
- **User feedback** – staff and student feedback can be used to understand the qualitative impact of changes to digital and physical infrastructure
- **Data quality** – measures of data quality (e.g. completeness and consistency) are a useful proxy to evaluate digital infrastructure and systems integration

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**Figure 8**

<table>
<thead>
<tr>
<th>Systems of innovation</th>
<th>Next competitive advantage</th>
</tr>
</thead>
</table>
| Systems of differentiation | Unique processes  
|                        | Current competitive advantage |
| Systems of record | Standardisation  
|                    | Operational efficiency  
|                     | Compliance |
**Context**

University senior leaders often say that university operations and services depend on the underpinning digital and physical infrastructure. In line with Gartner’s Pace-layered Application Strategy universities must make sure they have the right systems of record because these are the foundation for all other systems. Universities may want to innovate and adopt new technologies such as learning analytics and chatbots but they can’t do so without robust systems of record and effective data management practices. Similarly, the physical spaces in a university affect every interaction that takes place on campus. As universities grow their digital and physical presence, the integration between digital and physical infrastructure becomes ever more important.

This priority is also very important because of digital technologies’ transformative potential. The rapid pace of technological change offers opportunities for universities to make big changes fast. In summary, university senior leaders highlight these main reasons to invest time, effort and money in this priority:

**The critical and growing importance of data** – since the introduction of the OfS in 2018 universities have faced increasingly stringent regulation; they have to produce new reports and provide accurate and up-to-date datasets to meet OfS requirements. They also want to make more data-driven decisions so they can, for example, allocate resources effectively and initiate effective support for students who are vulnerable or at risk of falling behind. All key decision-making is critically reliant on robust datasets and therefore on the university’s digital infrastructure.

**Rising university costs** – as outlined in the HESA data cited earlier, university costs are growing faster than income, creating greater pressure on universities to streamline costs and operate more efficiently. The bulk (54%) of university expenditure consists of staff costs and this figure may rise in the face of ongoing strikes over pay and pensions. University spending is now also carefully scrutinised by students and the government because of rising student contributions and growing levels of debt. Universities have responded by providing greater transparency on costs, for example through UUK’s recently published guide to presenting institutional financial information to students. To mitigate the twin challenges of rising costs and growing demands for value for money, university senior leaders have focused on transforming their digital and physical infrastructure.

**Increasing need for organisational agility** – today’s economy is more fluid than ever before. As universities have an obligation to prepare students for the dynamic modern workplace, they need to be agile to stay relevant. There’s a fundamental need for universities to establish organisational agility and to develop flexible digital and physical infrastructure.

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41 bbc.co.uk/news/education-50459152
42 universitiesuk.ac.uk/policy-and-analysis/reports/Pages/value-for-money-guide.aspx
Sub-priorities
University senior leaders break down this overarching priority into several sub-priorities including:

Establishing seamless systems integration – many universities have complex technology architecture in place and more than 200 systems across their campuses. This creates a critical need for seamless systems integration to enable effective tracking of the millions of interactions that take place between the university’s systems and its users each year. Establishing a ‘single source of truth’ – that is, a single master dataset which can be triangulated across all systems – is a key outcome of this sub-priority. Reliability, integration and interoperability are the three key principles for any new technology solutions.

“Integration between new and existing technology solutions is a key priority for us, and so we’ve introduced a new policy whereby third-party providers who want to work with the university must provide us with access to all raw and processed data”

Ian Dunn, provost at Coventry University

Adopting enterprise-wide cloud technology – cloud technology is the enabler for most university services from solutions for students such as email and automated query-handling to staff-centred services like payroll processing and knowledge sharing. Adopting cloud technologies has brought universities many benefits, notably freeing up staff time for more creative tasks and also cost savings.

Optimising use of space – property constraints have potential to limit university growth so senior leaders are taking a fresh look at how spaces are constructed and used. They’re exploring how to unbundle the student experience and evaluating which steps in the student journey could be delivered digitally. Space optimisation initiatives are leading universities to create flexible spaces on campus, replacing fixed hardware and wired devices with mobile devices and wireless technology. Another focus area within this sub-priority is commercialisation of a university’s physical assets, for example by using existing buildings as event spaces and summer schools.

Co-creation of solutions with key stakeholders – any change in a university’s physical or digital infrastructure will only succeed if it’s accepted by the staff, academics and students who are affected. Often, this depends on how well the change meets their needs and how much they have been involved in creating the change. Senior leaders know this and they are taking a co-creation approach when they need to implement changes or develop new technology solutions.
Barriers

Time and cost aren’t the only barriers. University senior leaders have also identified these:

Resistance to change – staff resistance to change can break a plan to transform digital and physical infrastructure. For instance, it can be difficult to incentivise risk-averse staff and academics to use a new technology solution, particularly if they see no clear benefits in changing. They might also suffer from change fatigue as a result of bad experiences with previous university change programmes.

A complex and rapidly evolving ecosystem of solutions – new providers and technologies often appear in the market and this can create problems for universities around maintaining an effective and up-to-date technology stack. Just keeping up to date with innovation and startups is time consuming. Jisc and Emerge developed Step Up[^43] to support members to identify robust startups to work with. We produced *Championing the untapped potential of startups*[^44] to help institutions and startups build stronger partnerships. The situation gets more complex when senior leaders have to consider the practicalities of integration, as enterprise systems may integrate with some tools but not others. This also often leads to confusion for staff members, given that there may be no consensus on what is the best tool to use in which scenario.

[^43]: jisc.ac.uk/rd/get-involved/step-up-programme
[^44]: jisc.ac.uk/guides/championing-the-untapped-potential-of-edtech-startups
Practical advice for startups

When talking to university senior leaders about transforming digital and physical infrastructure, startups should remember:

<table>
<thead>
<tr>
<th>Observation</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data and integration often present universities with challenges, because they have many disparate systems across different teams and facilities.</td>
<td>Startups that can integrate their solution seamlessly with existing university systems will have a significant advantage.</td>
</tr>
<tr>
<td>Universities want tailored solutions that suit the particular needs and nuances of their own institution.</td>
<td>Startups can set themselves apart by demonstrating detailed knowledge of specific university needs (e.g., based on student demographics) and by working closely with institutions to co-create solutions.</td>
</tr>
<tr>
<td>Physical space can constrain growth, particularly for city-based universities faced with the high cost of buying land and buildings.</td>
<td>Startups will help universities deal with this difficulty if they can reduce the need for more space by digitising processes and optimising space allocation.</td>
</tr>
<tr>
<td>Universities are concerned about how to maintain an up-to-date technology stack that's adaptable to new and emerging technologies.</td>
<td>Startup solutions – and the constant refinement and iteration that go with them – can offer advantages over traditional enterprise systems for universities.</td>
</tr>
</tbody>
</table>
430,000 people are employed by the 164 HE institutions in the UK, with just over half on non-academic contracts.\textsuperscript{45, 46}
Priority five: recruiting, retaining and developing world-class staff

**Definition**

According to the latest HESA Higher Education Staff Statistics 45 430,000 people are employed by the 164 HE institutions 46 in the UK. Just over half are on non-academic contracts while the rest deliver teaching and/or research.

University HR functions face the same challenges and complications that you’d find in most large organisations – staff recruitment targets, handling employee queries, managing learning and development (L&D) requirements. We have defined this priority below:

Here’s how universities can measure their progress towards this goal:

- **Time to hire** – looking at how much time elapses between when a candidate is first engaged and when they accept the offer can reveal the recruitment team’s efficiency

- **Staff turnover rates** – looking at the percentage of the workforce that leaves over a certain period of time; often this is influenced by the quality of the university’s staff experience

- **Staff feedback and job satisfaction** – this information shows the qualitative impact of changes to the university’s staff experience

- **Training effectiveness** – pre-training and post-training assessments can be used to evaluate the impact of L&D

**Context**

Universities’ various student experience initiatives have increased pressures on staff. For example, the growth in online courses and delivery and pedagogical advances like gamification and immersive learning have meant academics and professional services staff need to upskill.

University staff play a vital role in delivering a university’s services and day-to-day operations. For this reason, as well as those below, university senior leaders are making staff recruitment, retention and development a top priority:

- **Accelerating pace of change** – it’s a common theme throughout this report. To adapt and benefit from technological advances and to meet changing student requirements universities must develop staff skills and establish an agile working culture.

- **Political and regulatory uncertainty** – the political and regulatory landscape is shifting constantly. As we’ve seen, the introduction of the OfS in 2018 as HE’s regulatory body brought a number of significant changes to the sector and more changes are in the pipeline. These, along with the political uncertainty presented by Brexit, create significant difficulties for universities and their staff members.

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45 hesa.ac.uk/news/24-01-2019/sb253-higher-education-staff-statistics
46 universitiesuk.ac.uk/facts-and-stats/Pages/higher-education-data.aspx
For example, the possibility of new visa regimes and complex immigration processes cause staff to worry about job security and place talent pressures on universities because 31% of UK academic staff have a non-UK nationality.

Disparities in the student experience – with more courses and an increasingly diverse student body it is becoming harder for academics and staff to maintain consistency in the student experience. Some universities are trying to diversify their workforce to foster a more inclusive environment on campus. Ultimately, the ability to keep standards consistent across widely varied courses depends on the quality of the staff.

"Equality, diversity and inclusion (EDI) is an enormous priority for us, especially given our position as one of the most diverse universities in the country. We are constantly working to increase the diversity in our staff and leadership to ensure that our staff body best represents and supports the needs of our student body"

Mark Anderson, chair at London Metropolitan University

Sub-priorities

Providing continuous and on-demand training – up-to-date training needs analysis enables senior leaders to identify and address existing capability gaps. These gaps are widest in the case of digital skills and senior leaders are keen to address that. For example, the Jisc digital experience insights survey 2019 found that only 34% of university teaching staff have regular opportunities to develop their digital skills, often through the development of robust, continuous and on-demand training opportunities such as e-learning platforms. The strength of the learning and development opportunities on offer can also play a significant role in attracting new talent.

"We've now gone out to recruitment for the third time for someone who can manage a SQL Server environment. It has been a challenge to find someone with the right skillset, but this seems to be the case for many digital roles. I think we need to really focus on developing and 'growing our own' people, and perhaps bring more young people through the apprenticeship scheme"

Rob Blagden, director of libraries, technology and information at the University of Gloucestershire

Embedding a collaborative culture and agile ways of working – universities want to embed agility and collaboration within their culture and working methods. Senior leaders are working on breaking down organisational silos, for example by expanding co-working spaces and using more online collaboration tools. They’re also developing better ways to communicate university strategy to staff, so it’s easier to align objectives and improve strategic thinking at all levels.

Improving signposting for academics and staff – often, university staff find it hard to navigate around the institution’s complex systems, services and resources. Managers are responding with a range of solutions including intranet optimisation and staff-facing chatbots. Some are also establishing

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clearer roles and responsibilities for their staff to avoid duplicated work, provide adequate support and help people to identify the relevant points of contact for different support services.

**Automating time-intensive tasks** – staff and academics at university often have large workloads and experience large peaks, for example during end of year assessments. In the case of high volume, repetitive and rules-based tasks like assessment marking, automation can play a pivotal role in increasing both efficiency and accuracy. Some universities are now using automation to reduce staff workload, reduce costs and improve student and staff experience.

> “Over the lifetime of a piece of curriculum, assessment marking and feedback is the single most resource intensive task and has the most significant impact on student success. Automation of some aspects of assignment handling can play a significant role in freeing up staff time from more administrative aspects of the task to focus on students”
> 
> Rebecca Galley, director of learning experience and technology at the Open University

**Barriers**

Universities have identified a number of obstacles that they’ll need to address:

**Time constraints** – in a very time-constrained environment it’s hard for people to take up learning and development opportunities. Very heavy workloads can also affect staff retention.

> “The real problem which HE has is that, to quote one of my old bosses, ‘we’re trying to change the engine of the car while doing 80 miles an hour down the fast lane’. That is the biggest problem, as staff may find it difficult to manage change because they’re up against it trying to keep their head above water with what they’re currently doing”
> 
> Andy Beggan, dean of digital education at the University of Lincoln

**Significant diversity and complexity in contract structures** – university employment contracts are complex and varied. This makes it hard to deliver this priority and provide consistent benefits for all members of staff.

**Ongoing controversies about pay and pensions** – in recent years, universities have faced many issues about remuneration, especially vice-chancellor pay and rising pension contributions. These trends have often created divides between leadership and staff that need to be resolved.
## Practical advice for startups

When talking to university senior leaders about recruiting, retaining and developing world-class staff, startups should remember:

<table>
<thead>
<tr>
<th>Observation</th>
<th>Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff are time poor and this prevents them from adopting new technologies and other changes on campus.</td>
<td>Startups can overcome this barrier by offering evidence of the impact their solutions will have, automating time-intensive tasks and integrating their solutions as part of existing workflows where possible.</td>
</tr>
<tr>
<td>Lack of digital literacy and resistance to change hinder adoption of new and innovative technology solutions.</td>
<td>Developing simple and intuitive user interfaces, and providing training if it's needed, can make it easier to adopt startup solutions.</td>
</tr>
<tr>
<td>As universities get bigger and more complex it gets harder for staff to navigate a way through the organisation.</td>
<td>Successful startup solutions will feature clear signposting so staff can identify the systems, services and resources they need.</td>
</tr>
<tr>
<td>University senior leaders want to develop more collaborative, agile teams.</td>
<td>Startups can support this ambition by providing online tools that enable sharing of best practice and more real-time interactions between staff.</td>
</tr>
</tbody>
</table>
Next steps and getting involved

We want to turn the findings in this report into action. The next phase of our research focuses on identifying edtech startups that can help universities succeed as they pursue these five priorities.

The next publication will focus on two student-centric priorities:

1. Delivering the best and most equitable student experience

2. Adapting to evolving student expectations for employability and career outcomes

Over the coming weeks, we will be working with universities who are pursuing innovative solutions in this space and talking to startups who have created (or are developing) the game-changing offerings they’ll need.

If you would like to know more about how we support universities and startups to collaborate on digital solutions for these priorities, please do get in touch at edtech@jisc.ac.uk

You can also join our ecosystem of universities and startups by taking part in our step up programme.

About step up
Our programme for helping institutions and edtech startups work together with confidence.

Working together, Jisc and Emerge Education have developed step up. It’s a healthcheck for startups to help universities engage confidently with startups, knowing that some due diligence has been carried out and that the startup’s solution is procurement ready. For startups who meet the criteria, step up offers a range of benefits including:

- Speeding up procurement processes with a simple healthcheck assessment

- Improving visibility to decision-makers with an ‘assessed by Jisc’ badge and comprehensive report

- Providing relationship building opportunities with senior leaders in the sector through exclusive networking events

Find out more: jisc.ac.uk/rd/get-involved/step-up-programme
Access and participation plans (OfS): access and participation plans set out how higher education providers plan to improve equality of opportunity for under-represented groups to access, succeed in and progress from higher education. The OfS monitors access and participation plans to make sure education providers honour the commitments they make in the plans and take action if they don’t.

Digital experience insights survey (Jisc): a study that institutions can carry out annually to get an accurate picture of how their students and staff are experiencing their digital environment. The findings can inform decisions about how universities and colleges should plan and invest in improvements that will enhance the student experience.

Foundation degree: equivalent to two-thirds of an honours bachelor’s degree, FDs combine academic and vocational learning. Widely offered in England, Wales and Northern Ireland, foundation degrees are now increasingly being offered by Scottish institutions too.

Gartner Pace-layered Application Strategy: a methodology for categorising, selecting, managing and governing applications to support business change, differentiation and innovation.

Graduate Outcomes: a survey to capture the perspectives and current status of graduates. All graduates who completed a higher education course in the UK are asked to take part in the survey 15 months after they finish their studies. It gives current and future students insights into career destinations and development, helps universities and colleges evaluate and promote themselves and helps the government and other interested organisations to understand the higher education sector and the graduate labour market.

Government Review of Post-18 Education and Funding: launched by the UK government in response to growing concerns about the cost and value of higher education, the review’s purpose is to create a system of post-18 education that is effective and offers value for money for students and taxpayers.

HESA: works with providers of HE in England, Scotland, Wales and Northern Ireland to collect, assure and share data about HE, and to support and improve competitive strength in the sector.

Higher Technical Qualifications: level 4 and level 5 qualifications (those between A-levels and bachelor’s degrees) have been rebranded by the UK government as Higher Technical Qualifications and are being quality assured to boost the perceived value of the vocational and technical qualifications that employers are looking for, and encourage students to choose to study them.

Institute of Coding (IoC): funded by the Department for Education (DfE) via the OfS, the IoC is a collaboration between 33 universities and 100 employers in England and Wales to give learners the digital skills that will help them get jobs in digital sectors. It offers a range of courses that learners (including members of the workforce who need to upskill and people who want to get back into work) can study flexibly.

Institute for Fiscal Studies (IFS): a leading independent research institute analysing public policy in areas such as tax, benefits, education policy and labour supply.
Institutes of Technology (IoT): collaborations between further education (FE, HE and employers, IoTs will provide technical education in STEM subjects. The government announced the first 12 IoTs, all in England, in April 2019.

Learning analytics: learning analytics helps education organisations to use the data they collect about students to tackle big strategic issues like improving student experience, retention, wellbeing and attainment, and to make business processes more efficient.

Longitudinal Education Outcomes (LEO): LEO uses matched data from education, tax and benefits records to understand how much graduates from UK universities are earning one, three and five years after graduation.

National Student Survey (NSS): an annual opportunity for students to comment anonymously on what they think about their course. The results are published and used by prospective students to help them choose where and what to study, and by universities and their students’ unions to improve the student experience.

Organisation for Economic Co-operation and Development (OECD): a body representing 36 member countries and aiming to stimulate economic development and world trade.

Office for Students (OfS): set up by the DfE to regulate higher education, making sure that prospective students have quality information to help them choose the right course and provider, and to ensure that all students have a fulfilling experience in HE and can achieve good outcomes.

OU Business Barometer: an annual survey of nearly 1,000 business leaders monitoring the skills landscape and looking at how businesses are responding to skills shortages. It focuses on recruitment, salaries, training and temporary staffing.

Research Excellence Framework (REF): the system used by the UK’s four HE funding bodies to assess the quality of publicly-funded research and provide evidence of its value, to provide benchmarking information and inform how research funds are allocated.

Transnational education (TNE): education that is provided by an institution in one country to students in another, through distance learning, local delivery partnerships or facilities set up by the institution in the students’ own country – or a combination of these.

Teaching Excellence and Student Outcomes Framework (TEF): assesses excellence in teaching in England’s universities and colleges and looks at how well they ensure good outcomes for students. The TEF is managed by the OfS.

UK Research and Innovation (UKRI): works in partnership with universities, research organisations, businesses, charities, and government, aiming to create an environment for research and innovation to flourish in the UK.

Universities UK (UUK): the collective voice of 136 universities in each of the UK’s four nations. UUK’s members are vice-chancellors and university principals and the organisation helps its members to maintain the HE sector’s strength and supports them to achieve their aims and objectives.
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Methodology

We developed this report with a focus on primary research by conducting interviews with 50+ key decision-makers across the sector. This group comprised university senior leaders including vice-chancellors, PVCs, CIOs and COOs, as well as HE sector experts. We have supplemented and contextualised the findings from these interviews through detailed secondary research, including a thorough review of existing literature.

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About Jisc

Jisc is a not-for-profit providing the UK’s national research and education network (NREN) Janet, and technology solutions for its members – colleges, universities and research organisations. It is funded by the UK higher and further education and research funding bodies and member institutions

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About Emerge

Emerge Education is a European edtech seed fund investing in world-class founders who are solving the $8.5tn skills gap. Emerge is backed by strategics such as Cambridge University Press, Cambridge Assessment and Jisc, as well as the founders of globally renowned Edtech companies. Together, we are building the future of learning.

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Group GTI provides TARGETconnect to 80 universities across UK, Ireland and Europe to help students realise their potential and support employability and student services, including counselling. TARGETjobs and gradireland are leading careers and jobs sites.

Thinking about the five priorities identified in this report, where do you see the biggest opportunities and challenges for HE?

A major opportunity to transform the student experience lies in joining up delivery and services around the student as the customer – in fact, a transformation much like successful disrupters in the consumer-facing private sector. The utopia is open platforms linking together specialist add-ons with a single sign-on. It would learn and personalise around each student using permissioned student behavioural data.

Take careers outcomes, which is GTI's particular area of focus. The opportunities lie in a joined-up platform that enables careers services to help students develop skills and competencies for the rapidly changing workplace, which requires collaboration across academia and career services. And, in turn, join-up with wider student services, such as counselling, to help support the full student experience and alert to support needs and risks.

However, the challenges are also the same as those faced by large private sector organisations: a multitude of existing systems that need to be joined up. Large CRM providers claim to be able to do everything but these projects in the private sector, as well as public sector, tend to fail through lack of specialist features and domain knowledge of the different areas.

As a tech provider working with universities, what new ways of collaborating have you seen?

Firstly, we’ve seen some great examples of universities taking a data-driven approach to the platforms they invest in. They dig into the detail to understand how rich and open the data is and how they might put it to good use for their students. That involves looking at what data points and insights the platform or product can provide about where a student is in their learning and careers journey, as well as softer aspects such as wellbeing.

Do we know how many times the student has engaged with the platform in the last time period? Do we know how they have engaged with each area, with what content? How can that data be used to drive actions and personalisation? We’re seeing an increased awareness of the importance of those questions.

Then there’s agile methodology, which is much discussed but underused as, I think, it can feel to universities as if a project is not sufficiently planned. However, where university teams have a mindset of short sprints, iteration and test and learn, we’ve been able to implement our platform quickly and efficiently. Agile tends to be driven from the top.

For example, we worked with the University of East London on an implementation of our career discovery platform with a six-week go-live deadline. The head of careers drives the project within a wider project led by the
vice-chancellor and COO. The leadership encouraged iteration rather than have everything planned from the beginning. That resulted in a very quick, efficient project that is meeting requirements and student needs without wasting any time, in a way that a more traditional waterfall or linear approach would have had difficulty achieving in the same timescale. There is an exciting roadmap ahead too.

Finally, co-designing and cooperating across the sector. The university sector has a level of cooperation built into the model because if the higher education system is strong, everyone benefits. Over the last few years, we’ve developed concepts with universities that are then shared across other universities. That kind of collaboration means that contributing universities get what they want first and others benefit later but with the principle that if everyone does a bit of that, the whole sector improves over time. That level of cooperation between competing organisations is quite unusual – and very helpful.

What advice would you offer startups in the space?
This is a space where values and focus really matter. Tackle a clear problem with a narrow focus and do it really well. Reputation is critical and spreads quickly because there are relatively few players and customers in the field. You need to have shared values, centred around being student focused: make sure you’re genuinely interested in helping young people develop and learn.

Given the need to integrate around the student, it is important to design with single sign-on and a philosophy of open data and APIs from the start. As more universities join more platforms together, you’ll be able to interoperate more easily to deliver on a good student experience. No single provider is going to be able to do everything so play nicely with other providers, integrate the platform experience around the student, and you will make the buying decision much easier for universities.

What is your vision for career tech in 2030?
We’ll continue to see the rise of digital connections between students, employers and universities including virtual events and careers fairs rise. By 2030 we’ll see a significant, personalised blend of skills and competency development. With the huge demand for work experience, internships or projects, new models are emerging that try to bring more meaningful placements in a virtual or remote way. I think we’ll see many more new forms of experiential learning, where there’s a shortage of real-world work experience, as well as bringing relevant and personalised role opportunities to students at scale.