Digital at the core: A 2030 strategy framework for university leaders

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Foreword

The COVID-19 pandemic has heightened awareness of the central and strategic role that digital technologies play in underpinning the long-term success and sustainability of universities. While the ability to shift educational delivery online in a short period of time was impressive, this was done by necessity, not choice. The big – and as yet unanswered – question is the extent to which the benefits and opportunities we glimpsed in this period will lead to a more joined-up and holistic approach to the use of digital technologies in the future.

When the pandemic hit, some universities already had digital embedded throughout and were able to adapt quickly. Others found themselves casting around for ideas, skills and technologies. What it has shown is that developing a long-term strategy for digital is now more essential than ever, despite the evolving and uncertain circumstances we face.

Every university is different with different priorities, and with the current significant pace of change, university leadership teams will have to make conscious decisions on the role digital technologies will play in shaping their future. They will have many strategic questions to consider. This report explores these questions, not to provide simple answers, but to stimulate debate within executive teams and governing boards to help them reach the right decisions for individual universities.

The framework we present here is based on generous contributions of our peers in the sector, and it was thanks to them that we have been able to build a framework to address the strategic challenge of digital across a range of themes to support better outcomes for students, staff and the sector as a whole. We hope it will be useful in a wide variety of contexts. For some, it will help chart a future strategy based on a digitally enabled offering and give them a new unique selling point. For others, it will support enhancing existing approaches with step-change improvements in student experience and learning. Others yet will be thinking about revisiting their current strategies in the light of lessons learned in the pandemic. What is clear is that doing nothing will not be an option in an increasingly competitive higher education market, where student and staff needs are changing as are the expectations of stakeholders, including governments.

We hope that this document will stimulate the kinds of thought-provoking and sometimes difficult discussions that lead to informed strategic choices. It is time we recognise digital technologies can no longer be an afterthought, but need to be established as a core consideration within institutional strategies and financial planning.



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Background

Across the UK higher education sector, the need for longer-term strategic thinking about how digital technology is used in universities is clear.

The sector is facing increasing domestic and international competition, the challenges of supporting lifelong and more flexible learning, questions about the cost and efficiency of delivering higher education. In this context, digital as a strategic question is more important than ever. The Covid-19 pandemic has given senior leaders across the sector a new sense of urgency.

Not too long ago, if you asked most university leaders how long it would take to move their operations online, their answers would range from several years to decades. And yet, in March 2020, the sector moved mountains in a matter of just a few weeks. This rapid response showed that, faced with a clear and immediate need, university staff will work together effectively to adopt new technologies, tools, and ways of working, at real pace. Where previously leaders used to ask 'is this at all possible?' when faced with a decision about digital, they now know: 'it absolutely is'.

"The recent transition to online learning has been as rapid as it has been impressive. Things which would previously have taken years and years to plan and execute have been carried out in very short order. There has been a huge amount of digital acceleration in universities. But what has been achieved so far has mostly been about adding new tools to old pedagogy rather than general digitallyenabled education across the board. The next big challenge is to integrate digital into the core university strategy." David Maguire, interim principal and vicechancellor, University of Dundee Recent experiences have given senior leaders the confidence that their institutions can tackle the challenge of long-term digital transformation. The next hurdle to clear is the 'unknown unknowns' – a lack of knowledge and foresight around the barriers and benefits of the journey. To help address that gap, Universities UK, Jisc, and Emerge Education, together with technical partner Salesforce, have developed a long-term digital strategy framework. This work, started before the pandemic struck, was led by David Maguire (interim principal and vice-chancellor, University of Dundee) and Graham Galbraith (vice-chancellor, University of Portsmouth).

This framework is structured across four key themes of leadership, staff, business model, and investment. For each theme, our goal has been to identify some of the questions that senior leaders could fruitfully ask themselves and their teams to identify some of the opportunities and gaps in their thinking about digital technology and its role in achieving their university's long-term strategic goals. Rather than provide readymade answers, we looked at the implications of each question and suggested some resources, tools and techniques that can be used by each team to find their own answers. To identify the right questions, we interviewed more than two dozen vice-chancellors and senior university executives from across the sector.

Benefits of a long-term digital strategy

The COVID-19 crisis shone a harsh light on some of the biggest risks to the dominant model of higher education.

With financial sustainability a growing concern, the past decade has seen the expansion of the campus university. By contrast, investment in technology ('bricks vs clicks') has lagged. As one contributor put it, universities spend billions on buildings but millions on IT.

Risk aversion is often seen as the culprit. If IT is perceived as a source of risk — of data loss or security incidents, of system failure or sub-par user experience, indeed as a risk to the university model itself — there is little incentive to invest. However, a coherent strategic approach to digital can help address many of the major existential risks the sector faces, mitigating rather than creating them. To achieve this, university strategy must adopt a longer-term view on the role of digital technology. This framework adopts a ten-year planning horizon – a long enough time to realise the benefits of long-term strategic thinking, but not so far off that imagining the future becomes impossible. What are some of those benefits?

· Resilience in the face of uncertainty

With the acceleration of new technologies, changes in demography and the labour market, and a rapidly shifting policy landscape, universities are operating in what one contributor to the project described as the 'VUCA world' - volatile, uncertain, changing, and ambiguous. The COVID-19 crisis was just one example of the challenges the sector will face. Those with a long-term digital strategy in place have found that it helped them better cope with the pandemic, giving them a response roadmap and accelerating processes already underway. In the future, digital strategy will ensure that staff are prepared to move between modes of delivery as necessary, the business model can adapt to rapid shifts in the market, and the necessary infrastructure and support are there to deliver a high-quality experience for students.

- Flexibility and international competitiveness
 A digital strategy can underpin expansion into new markets for recruitment and for delivery, internationally and domestically (for example in lifelong learning); and can create new opportunities for revenue diversification approaches that go beyond a 'lift-and-shift' of existing activity online. It will enable universities to build on network aggregation effects of digital platforms to massively scale collaboration with employers to better meet changing student needs and policy priorities. There is now a genuine opportunity for the UK to become a world leader in the use of technology in higher education, augmenting existing strengths in the sector.
- Technology as an integral part of the student and staff experience, not an add-on

Thinking strategically about digital technology will allow universities to make the most of its potential to create a step change in the way students and staff interact with each other. Digital needs to be recognised as a strategic asset and as a way to help deliver the university's mission. It must be given the care and resources this implies. All too often, digital solutions within universities are seen just as tools or point systems and are introduced on an ad-hoc basis, with insufficient support, ending up at best a bonus and sometimes a source of frustration. A more strategic approach, which sees digital innovation as a core element of that experience, will lead to greater buy-in, open up new ways of working and learning, and ultimately produce a clear return on the investment.

Digital strategy success factors





Explicit alignment to university mission

Building and maintaining momentum

Dedicated, well-resourced strategy

How to use this framework

The goal of the framework is to help senior leaders realise the benefits of a long-term strategic approach to digital technology.

Vice-chancellors, deputy and pro-vice-chancellors, and chief executives (as well as members of governing bodies) need to develop greater clarity around the role of digital in the delivery of institutional strategy. To support them, we have produced examples of questions they can ask to identify strategic opportunities and mitigate key risks to making the most of them.

Our aim has been to develop a set of questions that are contextually agnostic. The variety of the UK HE sector is arguably one of its greatest strengths, and makes a 'one-size-fits-all' approach impractical. Instead, we have sought to provide useful prompts. The answers to each question will vary from one institution to another, but we hope that, in the process of exploring them, ideas and strategies will emerge that put digital at the forefront of thinking about how to deliver the overall long-term vision and strategy.

The themes and questions

We have interviewed dozens of senior leaders and experts in digital technology for higher education, leading us to four key themes that the framework is structured around. Across each of the four themes, the framework offers 'deep dive' explorations of three example questions, and a list of other suggested questions, offered with no further exploration as prompts for internal discussions.

For each deep dive, our goal is to provide guidance in tackling the question, not a specific answer (as the answers will differ by institution). Specifically, we look at:

- Why is this question important?
- What strategic considerations or constraints would influence the way you would approach it?

 Ideas and initiatives to tackle the question. The web version of the framework, published as part of the joint sector Learning and Teaching Re-imagined initiative, will be accompanied by a guide which describes relevant tools that could help answer the question, links to additional resources, and examples of universities addressing these questions well.

The example questions in this framework are informed by the interviews we carried out in the spring and summer of 2020. Given the challenges faced by the sector in rapidly shifting delivery online during that time, the resulting lens is one that is perhaps more focused on teaching and learning than other areas such as research. However, we believe that the questions explored here can also serve as a model for further interrogations at each individual institution.

Where do we start?

To get the most out of the questions suggested in the framework, the university needs to start with a long-term vision of its future and the role technology can be expected to play in it. The purpose of each of the four themes of leadership, staff, business model, and investment is ultimately to support the delivery of this vision for students, researchers, and all other staff in the university workplace. In turn, the success of strategic initiatives will depend on robust and appropriately resourced infrastructure, with different starting points for each institution determining the pace and scale of required digital transformation.

Institutional vision or mission statement

The specifics of this will depend on the unique mission, circumstances, and capabilities of each university. We have found 2030 to be a useful milestone to look forward to – far out enough to leave time for impactful changes

Four themes



to take place, not so distant as to be impossible to plan for. Within that time frame, some universities will maintain face-to-face teaching as the core of their proposition. They may focus on operational efficiencies, reinvesting cost savings into the student experience. Others may adopt a blended approach, moving lectures online but requiring physical presence for 'high-value' activities like seminars, tutorials, labs or fieldwork – initially as a 'socially distanced campus' (http://ji.sc/socially-distancedcampus), and later as a re-imagination of its role. Some will aim for a 'mode-free' approach that provides a parity of experience to online, on-campus, and commuter students and can shift between modes seamlessly.

Jisc has worked with leaders from across the sector to produce a collection of possible future scenarios or visions for higher education in 2030. University leaders and strategic planners may find these useful as a conversation starter when considering the future vision for their own institutions. You can find the latest visions on the Learning and Teaching Re-imagined (jisc.ac.uk/learningand-teaching-reimagined/visions) website.

Commitment to invest in strategic initiatives and required infrastructure

The success of digital strategic initiatives – and of the vision they are designed to deliver – will require the allocation of appropriate, and significant, resources, financial as well as human. Here, too, the specifics will vary – in particular, much will depend on the starting point in terms of infrastructure. Institutions will need to form a good idea of what to focus on and in what order.

Given the financial pressures the sector is experiencing, which are likely to continue, prioritisation will be crucial. One way to consider the options available is to use a matrix that places investment opportunities along two axes (see illustration, with example opportunities). The first axis maps whether a measure or initiative primarily helps cut costs or generate revenue. The second is whether it is transactional (making things faster, safer, more efficient) or transformational (enables new types of activities that cannot be done without it). There will be opportunities for universities in each quadrant of the matrix, and some will be more urgent than others. A judicious mix across all of them will help create a strategy that addresses the most pressing gaps and lays the foundations for the delivery of the long-term strategy, helping ensure the financial sustainability of the institution.

Another key consideration is the level of risk across different areas of operation that institutions are prepared to take on. Given current perceptions of IT as a source of risk, it is not uncommon for universities to take a cautious approach and, save a few examples, adopt solutions that have been tried and tested by others within the sector. The coming decade will likely require a change in mindset.

Senior leaders should adopt a more stratified approach to risk in IT. This will mean formulating a clear view on which areas they are prepared to experiment (and potentially fail) in, actively pursuing new initiatives, openly working with startup technology providers, and effectively taking the lead within the sector. In other areas, they may adopt a more cautious approach. There may also be opportunities for greater risk-sharing across both higher and further education in the UK, with certain functions increasingly shared between institutions or outsourced by a number of them to external partners. Experimentation is costly in terms of time, energy, and outcome, meaning that there is real scope for networks that experiment collectively across several subject areas. This can help the sector move towards joint services, shared services and joint investment into digital technology, as well as sharing of costs around software. In particular, those opportunities may lie at the transactional end of the axes in the matrix below, benefiting from scale and network effects without ceding control of the institution's unique selling proposition to students and staff.

Digital strategy prioritisation matrix

Examples of initiatives that could sit within each quadrant of the proposed digital strategy prioritisation matrix.



What is digital transformation?

'Digital transformation' may feel like the trending business buzzword of the moment, so we should pause along our journey for definitions and context.

Digital transformation is the **cultural**, **organisational** and **operational** change of an organisation, industry or ecosystem through a **smart integration of digital technologies**, processes and competencies across all levels and functions in a staged way.

Digital transformation leverages technologies to create **value for stakeholders**, and to enable greater agility and resilience in the face of changing circumstances. Digital transformation is not primarily about technology adoption. It is first and foremost about transforming the mindset and culture of an organisation to ensure that technology can be deployed as a multiplier of impact.

Similarly, digital transformation should not be conflated with prior technological shifts, which focused on digitisation (moving from analogue to digital formats, for example paper forms to webforms) and *digitalisation* (deploying technology to attain transactional operating efficiencies, or localised benefits).

The three D's of digital transformation



Source: Consider the Three Ds when talking about digital transformation - Betsy Reinitz, June 1, 2020 https://er.educause.edu/blogs/2020/6/consider-the-three-ds-when-talking-about-digital-transformation

There is no single path to digital transformation, as the strategy, methods, and technology deployed must be tailored to the unique vision and values of each organisation.

In higher education, digital transformation may require leapfrogging an accumulation of many prior waves of models and IT systems that are now obsolete.

Placing the experience of students, staff and other stakeholders at the centre is an essential waypoint on the path to digital transformation.

Digital transformation is not a fixed destination with a static end state. Its objective is to help create a highly

dynamic organisation with institutional capacity for agility, resilience, rapid innovation, and growth. As institutions move toward this objective, all of their stakeholders reap the benefits of this newfound ability to overcome past barriers that, in some cases, have stood for decades.

"There is no single technology that will deliver "speed" or "innovation" as such. The best combination of tools for a given organisation will vary from one vision to another." Behnam Tabrizi, Consulting Professor, Stanford University

The mindset for digital transformation



Source: The transformation playbook - Bret Taylor salesforce.com/resources/guides/customer-transformation-playbook-changing-company-mindsets/

Final questions

Taken together, all of these elements (the long-term vision for students, research, and staff in the workplace; the four themes of leadership, staff, business model, and investment; and a clear view of the required infrastructure), should provide senior leaders with the building blocks for a robust and transformational longterm strategy that puts digital at its heart.

This framework also raises issues that are hugely relevant to every institution in the UK but do not fit neatly into any specific theme. As senior leaders explore the possibilities of how digital technology can support their institution's long-term vision, they may also find themselves asking:

- What do these changes mean for the university's relationship with the local community, its civic role, and its sense of place?
- How can universities work better in partnership with each other and third-parties, and what do these partnerships look like in a more digital world?

- What activities or processes would not work digitally, and why? What does this mean for any students, researchers or staff members unable to attend physically?
- How can we keep a finger on the pulse of the changes we are making, and understand where we are succeeding and where we are falling short?

Leadership

Culture change is key to the success of digital transformation, and this needs to come from the top.

The core questions concern their level of comfort with the landscape of digital technology where more professional development may be required; their ability to involve the governing board in shaping strategic thinking on digital; and the need for clear accountability for the digital strategy, which must rest with a member of the senior executive team – and may require changes to its structure.

There is a clear need for greater digital awareness and fluency among senior leaders, underscored by their experience during the COVID-19 pandemic. This need extends to the governing body, where there are opportunities to tap into a variety of experience, particularly if the university approaches the search for new members with a view to digital expertise and greater diversity. A number of universities are also exploring changes to the structure of the senior executive team, such as involving the chief information officer more closely in the decision-making process, creating dedicated digital vice-chancellor or chief digital officer roles, or creating internal advisory roles to help coordinate the delivery of digital strategy. "As a vice-chancellor, you have to envisage the future. Once you relinquish the idea that your future is all about the traditional model, you start to see behaviours and your operations in a completely new light." Anne Carlisle, vice-chancellor, Falmouth University

Questions

Is there sufficient digital awareness among the executive team for them to make informed decisions in core strategic areas?

Why is this question important?

To survive the current and future shocks, digital needs to be part of institution wide strategy rather than a bolt on or afterthought. The senior executive teams shape the university strategy and need to put technology on the strategy agenda. The decisions that this will require will be consequential for the delivery of the long term strategy of any higher education institution. Therefore, the senior team should not delegate development and consideration of the digital strategy to anyone else either within or outside their organisation.

The pace of change is very significant, and many senior university leaders would benefit from engaging actively in developing their own understanding of the landscape around digital technologies. Their own expertise and confidence will influence their ability to make informed decisions. This means that senior executive teams need to be aware of the gaps in their capability when it comes to digital strategy and need to be prepared to fill these gaps, either through training, experiencing first hand how leading institutions around the world are successfully adopting such technologies, or by bringing in specialist expertise from the wider professional community.

What strategic considerations or constraints need to be taken into account?

Structure of the executive team and the decision
 making process

The decisions around developing a digital strategy must remain with the senior executive team. Its structure varies significantly across universities, which will determine whether digital expertise already exists within the executive team, needs to be improved among current members, or can be brought in when key decisions are being considered. At most institutions, there will be a need for digital up-skilling of the senior executive teams to establish a common baseline of digital fluency.

· Prior experience of the executive team

Some members of the executive team may already be familiar with best digital practice in their area of responsibility. This may have been acquired through pedagogical or research experience or through exposure to relevant professional services functions. It is worth identifying the strengths of individual senior executives to know when to leverage them. However, this is a fast moving area of activity and continued development will be required.

Role of digital in the institutional USP

The level of digital fluency required from senior executives depends on how central the digital technology will be for delivering the institution's long-term strategy. For example, online teaching may be core to future provision, which would require significant in-house expertise. In other cases, the university may anticipate largely outsourcing this function to third parties like Online Programme Managers (OPMs), which would require a different digital skill set from the executives.

How can we tackle this question?

Continuing development in digital fluency
 In the aftermath of the pandemic a range of resources
 are becoming available to help senior executive teams
 to develop digital capability. The web version of this
 framework will maintain a list of the most relevant
 programmes and materials to consult.

Mini-consultancy (internal)

For many senior executives, developing in depth expertise in digital technology may not be an immediate priority, but the ability to answer questions about digital still needs to be developed as an institutional capability. Consider creating an internal unit that specialises in digital strategy and supports senior executives and others across the institution potentially structured as a Programme Management Office (PMO) or a transformation directorate.

Peer networks

There are significant opportunities to learn from the experience of senior peers at other institutions. Utilising best practice from across the sector, including internationally, would enable senior execs to identify and address blind spots in their own digital fluency.

Is our governing body supporting and guiding the executive team on our longterm digital outlook?

Why is this question important?

Some gaps in digital awareness can be addressed with insight from the governing body. However, many institutions will not have a good view of whether current members possess this knowledge and how to facilitate the right conversations around digital. It is important to avoid focusing on the detail of implementation but rather facilitate an open and honest discussion that provides check, challenge and inspiration to innovate.

A diverse governing body (http://ji.sc/value-diverse-

governing-body) ensures that university strategies are fit for all stakeholders. At the moment, boards rarely serve as a conduit for fresh thinking about the role of digital technology and how it can support all students, as in many cases few members have the relevant professional or life experience. Therefore, it is important to consider how that expertise can be expanded and what existing knowledge among members can be leveraged.

What strategic considerations or constraints need to be taken into account?

 Current make-up of the board
 Does the board include people with relevant expertise and experience, e.g. digital transformation? This may be outside HE, but depending on the level of digital fluency among the board themselves they may require different levels of support.

The role of the board today

What areas of institutional strategy does the governing body focus on the most and have they previously been involved in decisions on digital strategy outside or within HE? In some cases, it may be appropriate to recreate models of engagement used for other strategic questions (eg campus investment) for a session on digital strategy.

Relevant experience

What experience is most relevant? Is there a need to expand the board to include a wider range of voices and backgrounds? This may range from student representatives to IT professionals (with enterprise of start-up experience) to corporate executives with digital marketing or consumer-facing backgrounds.

How can we tackle this question?

- Identify strengths and gaps Analyse where the current board can contribute the most with a view to digital strategy and where some of the potential gaps are.
- Review the composition of the board with digital in mind Consider expanding the board to bring on new members with a diverse range of experiences, as there is strong evidence that greater board diversity is a positive influence on decision-making.(http:// ji.sc/diversity-governors-he) If this is not possible in the short term, consider bringing in external consultants or experts for brainstorming sessions, who can provide provocative insights.

Set clear expectations

It is important to ensure that the level of input expected from board members is clear to them and contributes to the development of strategy (eg focus the broader vision vs recommendations for particular workflows to be digitised or specific products to adopt).

What structure of the senior executive team is required to deliver the strategy, and is there a need for dedicated roles with a focus on digital?

Why is this question important?

In addition to digital fluency, which is required across the executive team, accountability for digital strategy at the senior level is a must. To deliver strategic benefits, digital needs to span across a whole range of functions such as teaching, professional services, and research rather than be siloed to one functional area. This suggests the need for a balance of deep expertise such as possessed by CIO-type roles with general oversight and strategic direction.

In the long term, significant coordination across the senior executive team will also be required as well as across a range of functions within the university. Avoiding silos and establishing trust in decisions around long-term investments may require the appointment of a pointperson among the existing team, provided they have the capacity and digital awareness, or creation of a dedicated digital strategy role. This need can also be met with new types of roles appearing within the sector, sometimes modelled on enterprise chief digital officer/chief technology officer roles (CDO/CTO).

What strategic considerations or constraints need to be taken into account?

- Existing structure of the senior executive team CIO-type roles are often focused on operational efficiencies as opposed to transformation across functions. Universities can consider expanding the CIO's remit, or, depending on the reporting lines from the IT directorate, accountability could end up with the COO, especially if they have specific digital expertise. In any case, careful review of who currently holds the responsibility and whether they have the authority and ability to drive change across functional areas is required.
- Scope and desire to introduce new senior level roles In the corporate world there is a growing trend towards C level roles focused on digital (CDO, CTO, or Chief Product Officer), which may present a model to emulate. In some cases, we have seen the emergence of dedicated DVC level roles with responsibility for digital within universities, but there may not always be scope for major changes and introducing new roles.

• Ability and desire to attract people with non-HE experience

To find the blend of digital expertise and strategic thinking that is required to succeed in this type of coordinating role, universities may have to look outside HE in their hiring practices. However, their ability to attract the right talent may vary depending on location, brand name recognition, and financial position.

How can we tackle this question?

Decide between creating new roles or expanding responsibilities.

This will depend on the financial position, ability to attract talent, and existing levels of expertise within the executive team. Map which functions are likely to see the greatest impact from changes related to digital

This could be in teaching, research, marketing, or elsewhere. If a particular function is likely to be affected more strongly, the senior executive responsible for it may be best placed to serve as the point person.

• Consider the need for a sub-DVC coordinating role This could be similar to a policy or strategy adviser, with a specific focus on digital, or a director of transformation. Such roles are likely to report directly to the VC and would help align the different stakeholders involved.

Other questions to consider when it comes to leadership

- 1. What are the strategic areas in which we want to lead the sector digitally and where are we prepared to be a late adopter?
- 2. What is our attitude to digital: is our main priority operational resilience and business continuity; enhancement of learning; or major changes to our business model?
- 3. How can we shorten the feedback loop so senior leaders become aware of issues sooner and can act quickly to correct course?
- 4. How can we create a data-rich environment for decision-making, while putting in place policies to ensure strong data protection?
- 5. What examples of digital excellence are we aware of among peers in the HE sector, domestically and internationally?

"We have done a lot of things setting out our stall to put digital at the forefront of what we do. We have focused on the power of technology, both in terms of what it brings to the student learning and how we deliver our services. We have a Pro Vice-Chancellor (Digital) and, before COVID, appointed a director of transformation. This role had no rules – the job was to go into any part of the university and identify what needed to change and how we might do that. It is not about tinkering around the edges – this is about total redesign. That is the journey we are on." Liz Barnes, Vice-Chancellor, Staffordshire University

Staff

Many members of staff have the necessary skills and creativity but aren't always empowered to apply them or recognised for it; others may lack the confidence or the incentives to adopt new practices.

At the end of the day, the success of the digital components of your long-term strategy will largely come down to the willingness and ability of staff to implement it.

The COVID-19 response has clearly demonstrated that, with no other choice, university staff are capable of moving mountains when it comes to the adoption of digital technology (although some groups will need more support than others). To build on this momentum, universities need to begin by strategically assessing the maturity and robustness of their approach to staff capability, skills, incentives, and behaviours. With a baseline in place, success will require articulating and unpacking a view of the institution as a people business and the relationship between the long-term vision and the current culture. "Part of what we really do have to ask is, as we look out ahead, what is the real business that we're in as an organisation? What is our culture? Our people? Our organisational structure? Are we set up to handle the wave of change that is coming for us? What are the skills that are needed?" Brian Fleming, Vice President, Innovation and Strategy, Southern New Hampshire University (USA)

Questions

Are there examples of digital excellence among current staff, and how can we support more consistent sharing of digital expertise with colleagues?

Why is this question important?

Addressing a lack of digital confidence among staff is among the highest priorities in mitigating risks in the delivery of digital strategy. As a first step it's important to understand what good looks like when it comes to staff digital skills and establishing an institutional benchmark. From there a coherent institutionalised approach that recognises and builds on existing examples of excellence is required. This means implementing visible and exciting initiatives that are aligned to the core mission of the university, providing visibility to departments that are already doing things well, both internally and externally. Within every institution there will be a subset of staff with high levels of digital skills. Learning from them is likely to be among the most effective routes to address the lack of confidence.

What strategic considerations or constraints need to be taken into account?

Benchmarking

A key first step is understanding at what level your staff are operating currently and what the most pressing gaps are. With a high-quality benchmark, it will be much easier to plan a system that provides the right level of support and incentive for staff across all functions. An excellent set of resources for benchmarking is available from Jisc's digital capability framework (https://digitalcapability.jisc.ac.uk/)

Hiring requirements (now and future)

To what extent are digital skills required from new hires and does it need to be taken into consideration when recruiting new staff? Do hiring committees themselves have the expertise to assess those skills?

Pockets of excellence

A commonly quoted figure for the proportion of staff who can serve as models for peer learning is 20% but the specifics of where they work will vary. This may be because of a particular department with strong digital leadership or because a community of practice has formed around a particular pedagogical technique. It's important to be able to locate and leverage this expertise.

How can we tackle this question?

Identify current level and gaps

You can use tools such as the **Jisc's digital capability framework (https://digitalcapability.jisc.ac.uk/)** to assess staff skill levels to establish a benchmark for your institution's digital skills and identify examples of best practice and any gaps in skills. Jisc research shows that peer-to-peer is seen as the most effective method of support to help lecturers deliver teaching online (67%), followed by online webinars or training courses (56%), and how-to guides (45%). Clearly signpost high-quality resources on an ongoing basis and create opportunities for peers to support each other.

Look for champions

Identify the people or departments within the university who are excited about using digital technology and support them to share their experience with peers. By giving those who do things well already greater visibility (for example, through staff awards or funding opportunities), universities can secure the enthusiastic support of these experts who can spearhead relevant initiatives.

Review hiring practices

Consider whether a baseline level of digital capability is required for new joiners in some roles (including among teaching staff as well as among managers), and whether the current process of shortlisting and selecting candidates allows to identify their digital skills "In any organisation, you are always going to have fifteen to twenty percent of pioneers, who are already out there at the forefront of practice. Mobilising these individuals, who can and have done it all before, through peer to peer learning is really important. That way you can connect those who are less confident with their peers who can support them to achieve the digital goals and outcomes that we want." Nick Petford, Vice-Chancellor, University of Northampton

Is there a route to career progression through excellence in teaching that emphasises the effective use of digital tools, and is it held in the same regard as research?

Why is this question important?

University staff will want to understand how the use of digital tools (and associated professional development) contributes to their career prospects. This will be particularly relevant in teaching roles, where there is a genuine strategic need to go beyond a 'lift-and-shift' approach to pedagogy. This requires significant investment of time and effort from staff, so it is important they know how it can help their career.

In some places, research activities are seen as more valuable or staff may believe that existing approaches to teaching are 'good enough'. In these cases, motivation for teaching innovation will be low, which will present a major barrier to the delivery of digital strategy. On the other hand, where digital excellence has a clear and explicit link to professional recognition, staff in teaching as well as supporting roles (for example, learning technologists) will perform at their best. Changes to career frameworks and the structure of Professional Development Review (PDR) meetings will demonstrate the university's commitment to its digital strategy and provide a longterm incentive for its adoption.

What strategic considerations or constraints need to be taken into account?

Current career progression routes

Most universities have introduced teaching-based promotion opportunities, but only a few (as yet) explicitly recognise digital skills as a necessary component. Depending on the institution, there may be combined or separate research and teaching tracks, and in the latter case both may need to be updated to emphasise digital excellence.

Current staff perception

Over the past decade, significant progress has been made in improving the standing of teaching careers within HE, but evidence suggests (http:// ji.sc/evaluate-teaching-achievement) that at many institutions research still takes priority (although this is changing). This perception among staff may sometimes be at odds with leadership's stated priorities, and significant effort may be required to create a greater sense of parity.

Current and future mix of online and blended learning
Universities that expect full-time staff to focus on
face-to-face delivery whenever possible (for example,
by partnering with third parties such as Online
Programme Managers (OPM) for online courses) are
likely to put less emphasis on digital skills in teaching.
Instead, digital capabilities may play a bigger role in
the career prospects of professional services staff
such as international recruitment officers.

How can we tackle this question?

Establish a baseline

Review the current career frameworks as well as sector best practice (for example, the Advance HE UK Professional Standards Framework (http://ji.sc/ ukpsf) and the Royal Society of Engineering Career Framework for University Teaching (http://ji.sc/ **career-framework**) and identify opportunities to introduce criteria around digital skills.

Know your staff's views

Understand current perceptions of the prestige of research vs teaching career paths among your staff and whether staff believe digital skills play a role in their career progression. Over time, you can track how these perceptions shift to understand the impact of any changes you make.

Give people time and guidance

Ensure that professional development initiatives have appropriate budgets and make time for staff to improve their skills and learn from each other. Implementing these changes can't just come on top of existing responsibilities, therefore staff will need time and support from teaching fellows and assistants. Establishing and clearly signposting opportunities for staff to develop their digital skills should go hand-inhand with emphasising digital excellence as a contributor to career progression.

How can we encourage and embed a culture of experimentation and continuous improvement that lets staff make the most of digital tools in their work?

Why is this question important?

Technology tools and the workflows they enable are developing at a pace that exceeds the usual speed of change within university settings. In order to work with digital tools effectively staff need to be able to adapt to new tools as they evolve rather than follow a fixed set of instructions. This will become increasingly important now that the COVID-19 crisis has impressed the importance of digital workflows for institutional resilience within teaching, research, and professional services.

However, this widespread use of digital technology is new and establishing best practice will take time, leading to a prolonged period of uncertainty. To cope with this uncertainty, a culture of continuous improvement and an openness to experimentation is required. In the best case scenario, the same feedback-based culture will permeate beyond the use of digital tools specifically and will have a positive effect on teaching practice and operational efficiency more broadly. In any case, carefully phased communication will be necessary to achieve strategic objectives.

What strategic considerations or constraints need to be taken into account?

Scale of change required

There is a need to consider how far from existing working practices you anticipate moving. Are the changes only affecting the mode of delivery, do they extend to curriculum design as well, or are they even more fundamental, causing a complete re-think of education and teaching? Do the changes affect individual roles and the structure of departments?

• Pace of change and upfront investment required There will be different trade-offs to consider in implementing changes to ways of working. With significant upfront investment changes can be made quicker but are likely to require greater iteration down the line, making the culture of continuous improvement even more important.

Regulatory barriers

Particularly within teaching and learning, some subject areas are more difficult to introduce rapid feedback loops into due to Professional, Statutory and Regulatory Bodies (PSRB) requirements, which tend to emphasise stability of qualifications. If the changes affect the curriculum, universities need to consider whether their current course validation timelines make it possible to respond to feedback in a timely manner, and what changes to those timelines they are in a position to make.

How can we tackle this question?

• Set out a clear values statement A useful technique is to align all staff around a unifying vision or a set of principles so that while individual practices change, the overarching aspirations remain true.

- Recognise the growing importance of design thinking A focus on solving the problem at hand with whatever method works best as opposed to a predetermined process should become a key competency among staff and its development should be encouraged. This will help instil the culture of improvement and reduce the fear of failure.
- Introduce or shorten student feedback loops Ideally, this should affect every module, so that changes can be made quickly and their impact tracked for further iteration. The key is to be transparent about the feedback that is received, and to act on the feedback in a timely manner.
- Communicate the long-term plan and break it down into stages

Ensure that you are taking staff on a journey with you by breaking down the long term vision into manageable phases and communicating them clearly. Connect the changes that are being introduced to existing norms and values for staff and make clear how that helps deliver an institutional mission.

Other questions to consider when it comes to staff

- 1. Which processes can't be digital by default, and why?
- 2. Is digital capability embedded in learning outcomes for the courses we deliver, and assessed at regular intervals?
- What percentage of curriculum resources do we expect to be digital in two, five and ten years' time? Will digital be the primary way of accessing resources or serve as a backup to print?
- 4. When implementing changes, in what cases would we take a wholesale approach vs starting with proofof-concept for specific strands of work?
- 5. How can we make the exams process more resilient and less dependent on physical presence, and what opportunities to improve the quality and validity of assessments does this offer?

Business model

With demand for tertiary education projected to far outstrip current supply by 2030, both in the UK and globally, it is clear that the business model of the university is likely to go through significant changes that affect its every aspect – from the way courses are marketed to students, to the target audience that universities need to reach, to the models of delivery and the unique selling point of HE.

These challenges are compounded by changes in policy and in the makeup of the student body, which create financial pressures and the need to meet rapidly changing expectations.

To prepare for this increasingly uncertain future, universities need a more resilient business model that makes the most of the strengths of each individual institution. The role of digital technologies in this will vary by institution, but the overarching theme is one of greater flexibility and effectiveness. Digital technologies will create opportunities to more closely engage students from a wide variety of backgrounds, create genuine choice of pace and place of learning, improve financial sustainability by unlocking new revenue streams, and better meet the expectations of graduates, parents, and policy-makers through mass collaboration with employers. "There is a growing business imperative driven by the rapid changes in expectations of students and governments. There is a need to think differently about how we most efficiently and effectively educate our students, providing an exceptional student experience that meets their needs, within ever more constrained budgets. Thinking about how the business model for HE will develop, the key question for all of us is whether digitally supported education is here to stay or just a transient phase that we can ignore.

For me, it is inevitable that even 'traditional' establishments will need to move towards using blended learning and fully digital models. Those that do not plan for this will ultimately lose out. If UK HE does not embrace this reality, then I fear that our international reputation as the best in the world could well be compromised." Graham Galbraith, Vice-Chancellor, University of Portsmouth

Questions

How will our students' needs and expectations change over the next decade and how can we provide a digital experience that will meet or exceed them?

Why is this question important?

The expansion of higher education in the UK and the growing diversity of the student body has been one of the big successes of the past decade. This more heterogeneous student population comes into universities with a different set of expectations. The tuition fees also contribute to a consumer mind-set among students who expect universities to better address their individual needs. This applies not only to teaching and learning but to every touchpoint between the student (prospective, current, or past) and the institution.

One of the most significant differences in expectations between past and future cohorts is the digital component. In the past, students often came to universities with very little prior experience of IT and encountered new technologies for the first time. While this is unlikely to now be the case, universities will nonetheless need to at least match the everyday digital experience of their learners, including expectations set at school. This will be particularly important in a context where the traditional university model of face-to-face teaching has been disrupted and students are anxious about how this would affect the quality of their experience.

What strategic considerations or constraints need to be taken into account?

 Student population and level of comfort with digital Research shows that assumptions about the digital native generations can be misleading and doubly so with universities with high proportions of students from traditionally under-represented backgrounds. Student expectations will vary by population and universities need to develop an understanding of their student body and their level of digital capability

International student expectations

For universities with significant exposure to international markets awareness of cultural differences in the perceptions of digital technology will be key as overseas students may value particular elements of the experience more highly than others.

One platform vs many partners

One of the key trade-offs involved in redesigning the digital experience for students is choosing between the use of generalist vs specialist tools. The former often provides greater consistency and simplicity of implementation, whereas the latter may better meet individual needs while creating a fragmented IT environment.

Accessibility and reasonable adjustments

The experience of students with disabilities and those with additional needs is, thankfully, moving up the sector's agenda. A greater role for digital has the potential to have massive positive impact, as the student experience can be designed from the ground up to be accessible by default (one example of this is the use of electronic textbooks via platforms designed to meet accessibility requirements). However, this is an area that requires attention – otherwise the risk is that interactions are designed with 'regular' students in mind, making the experience more hostile and inaccessible to the rest of the student population.

How can we tackle this question?

Set clear expectations for what must be in place As a first step, understand what components of the digital experience within universities will become non-negotiable over the next few years and prepare to put them in place quickly. Communicate the importance of these changes both from a regulatory and from a competitive perspective, and prepare to benchmark your institution against peers in the sector.

Heed the student voice

While you can't predict what future generations of students will expect you can closely involve current

students in designing courses and identifying learning outcomes to meet their expectations. Some universities have also run taster course sessions with school leavers to inform future curriculum design.

Remember that students don't make decisions alone Engage with parents of current and prospective students to understand their decision making process because they are often a significant influence on student choice of university. School outreach was one of the activities most disrupted by the COVID-19 crisis – consider what engagement with schools and teachers will look like in a more digital environment.

What is the role of the campus in our students' experience and how can we approximate it with digital delivery?

Why is this question important?

The digital campus will be as central to student experience in the next decade as the physical campus has been up until now. Universities have tended to rely on physical proximity afforded by the campus to ensure a basic level of engagement. For many, the traditional campus experience has been a massive selling point. This point of view risks downplaying the experience of marginalised groups such as commuter students, carers, online learners, etc. This challenge has become particularly evident in the light of the COVID-19 crisis.

When a campus model cannot be taken for granted, many universities may need to re-evaluate how they deliver value to domestic and international students if they spend little to no time physically present. The real opportunity here is to leverage digital technology in ways that recreate and build on the campus experience while affording students' a full choice of pace and place of learning. Decisions made around the use of campus facilities will have significant implications on the university cost base as well as its sense of place and connection to the local community.

What strategic considerations or constraints need to be taken into account?

Type of campus

Different decisions will be required based on the current role of the campus as well as their number (single vs satellite), location (city-centre vs standalone) and student accommodation arrangements. Many universities will consider converting teaching spaces into other uses and will need to identify opportunities for providing hands-on experience of practical subjects, even if a course is delivered largely online.

• Financial position and scale of investment required Capital spend and maintenance are among the largest outlays and the university's ability to make changes will be constrained by the strength of their financial position. However, there may be opportunities to significantly reduce costs or generate additional revenue through different uses of available space.

• Ways of working and staff experience

While most conversations about the campus focus on the student experience, the shift to remote working in professional services as well as teaching and learning is likely to have an effect on future plans. Universities will need to consider how they utilise existing space to create the best staff experience and enable new ways of working. Another important consideration is the ability of staff to build rapport with students if opportunities for face-to-face interaction are limited.

Role of research

Research intensive universities will also need to consider to what extent physical laboratory spaces as well as archives can and should be moved into the digital space. Universities will be aware that research spaces are also key to many teaching and learning activities and making the best out of the research based university to improve the student experience.

How can we tackle this question?

Focus on the opportunities

Increased attention on the digital campus has a number of advantages compared to the traditional model. For example, spaces previously used by lecture theatres and physical means of scaling delivery can potentially be re-purposed for high value activities linked to the university mission such as employer hubs or shared curriculum spaces where online and campus based students can work together.

Start at the drawing board

Running workshops that encourage staff, students, and other stakeholders to articulate what is important to them about the physical campus and inspire blue sky thinking on how this can be moved into the digital space.

What opportunities does better use of digital technology offer to improve our brand differentiation?

Why is this question important?

Universities face an increasingly competitive landscape in the international as well as domestic market. In order to maintain their advantage or improve their position they need to clearly articulate what if any role digital technology plays in brand differentiation. Effective use of digital technology, particularly in marketing functions, can open up new markets, whether international students, online learners, or corporate employees looking to improve their skills. Furthermore, for some universities, particularly those established more recently, a superior digital experience may become a new area for differentiation against competitors establishing a reputation for being innovative and forward thinking. This will be particularly valuable if coupled with strong data insights into student outcomes, employability and student satisfaction, with annual student experience surveys such as SAES (http://ji.sc/student-survey-report), UKES (http://ji.sc/ ukes), and PTES (http://ji.sc/ptes) providing a valuable benchmark.

What strategic considerations or constraints need to be taken into account?

Unique selling proposition

Traditional, established brands will see less benefit from digital as a differentiator – and in fact in some cases their USP may be explicitly focused on face to face interaction, and this liable . The benefits for them are likely to be around operational efficiency and a less frustrating digital experience for students and staff. For up and coming universities there is a potential opportunity to position themselves as digitally savvy which may appeal to particular student populations.

• Differentiation from other online offerings Universities considering offering online degrees should explore which subject areas offer the most opportunities for growth and align well with the institution's strengths. For example, there are fewer degrees being offered in practice-based STEM subjects as opposed to MBA degrees.

Non-academic experiences

The potential brand upsides of effective use of digital are not limited to teaching and learning. There are significant opportunities to stand out within the sector by embracing transformational online experiences for students and staff: participation in global networks, engagement with authentic professional communities, contributing to massive open research projects.

How can we tackle this question?

Carry out marketing analysis To identify the greatest opportunities, open and honest conversations with current and prospective students and staff are key. By understanding their requirements and aspirations, universities can adapt the digital experience to meet the needs of their service users.

Collect data, not anecdotes

There is a lack of robust data on how digitization affects student outcomes, research outputs, staff well-being and so on. Having a clear understanding of the specific benefits of digital will help craft a more convincing narrative to support brand differentiation

 Consider both opportunities and risks of digital For some institutions, a greater role for digital (for example, in the delivery of courses) may present a risk rather than an opportunity, either internally, by undermining the existing USP, or by creating greater competition. In all likelihood, a great digital experience will be required in some areas even if it is not in teaching – for example, by making the application process seamless, pleasant, and personalised.

Other questions to consider when it comes to the business model

- 1. How are student recruitment practices likely to change over the next decade and do we have the digital marketing capabilities to keep up with best practice?
- 2. Can long-term savings from scaling online operations enable us to charge lower tuition fees without an adverse impact on university finances?
- 3. How would we maintain the sense of our civic mission and connection to the local community if more functions shifted online?

- 4. How can we improve employability outcomes by giving students the chance to meaningfully interact with hundreds of local and international employers as part of their learning, and what role would digital platforms play in this?
- 5. How will we engage alumni to continue participating in the life of the university after they graduate?

Investment

One of the first steps in developing a digital strategy is accurately assessing investment required to deliver its goals.

A consistent baseline experience needs to be balanced against a fragmented IT environment that is much harder to control than in enterprise settings. This involves both financial and human resources, and needs to draw on an in-depth understanding of processes as well as buy-in from a wide range of stakeholders across the university.

"I suspect that the technology will be very different – a much more coherent system. It's the difference between a master-plan campus and a shanty town, where every building has been built to meet an immediate requirement. We spend way more capital on bricks and mortar than we do on systems, so it's definitely affordable.

The cost issue is more about the internal resources that will be required, because to build these systems properly, we're going to have significant project teams and draw on a lot of internal knowledge about processes and the way things work. Direct cost is less of an issue than the need for key resources in the universities to be involved in these project teams, the disruption that will be incurred in switching from system to system, and the time that it will take." Alec Cameron, Vice-Chancellor, Aston University

Questions

Is our ratio of investment in digital technology vs campus estates sufficient for us to achieve our 2030 vision?

Why is this question important?

There is a significant mismatch in the amount of investment going into physical infrastructure vs digital technology, anecdotally 10:1. Given the increasing importance of digital to achieving university missions this ratio will need to shift. Improving the digital technology capabilities in the university will require substantial investment and universities need to have a clear vision of what this investment should focus on in the short-, medium- and long term.

What strategic considerations or constraints need to be taken into account?

 The state of the university's IT infrastructure today Not every university has been strategic with their digital investment over the past decade and many struggle with significant legacy issues and costs.
 Senior executive teams will need to identify where this presents barriers to the long term vision and what areas will require upfront investment early on in the process of implementing the strategy.

Accounting and procurement rules

The scale of investment required to support the strategy is likely to exceed what the universities normally spend on new IT systems which may lead to push back from governing bodies and other stakeholders. For large projects, this is being tackled by changing accounting rules so that investment in IT systems is treated as capital spend and depreciated over decades. Similar principles could be to software spend in aggregate, for example total annual Software-as-a-Service costs (to account for subscription-like pricing models, which are more common among start-ups). Universities could also review how they procure software from SMEs, so that large tenders are not prohibitive for start-ups to participate in.

How can we tackle this question?

- Carry out financial analysis to understand current spend on IT and benchmark against the sector Having a clear view on how much the university is investing in IT and what proportion of it goes into maintenance vs new systems would allow you to establish a benchmark of IT spend.
- Establish clear success criteria for digital investment Introducing the same level of planning around IT infrastructure as currently happens in physical estates is required in order to persuade stakeholders of the lasting value of those investments. Clear ROI indicators would support the business case for continued investment into digital technology.

What would our IT systems look like if we started fresh today?

Why is this question important?

Many universities name legacy IT as a significant barrier that diverts time and money away from innovation opportunities. By considering this question you can encourage the blue sky thinking required to re-imagine the capability model for the next decade, so it is fully aligned with your long term vision and meets the needs of students and staff.

A number of challenger universities not hampered by the legacy issues have the opportunity to start fresh with systems that are fit for purpose. In particular, they pursue an 'ecosystem' approach that encourages the use of dedicated software systems for specific purposes (as opposed to a single large system trying to meet a broad set of needs). By addressing this question you can identify opportunities to match their pace of innovation and quality of experience. "Having platforms and tools that are very straightforward to use really lowers the barrier and enables colleagues to be more experimental. Prioritising the user experience will become an explicit requirement as a result of engagement from a broader set of users, who will help make that the reality, not just an aim."

Anne Trefethen, Pro Vice-Chancellor (People & Gardens, Library and Museums), University of Oxford

What strategic considerations or constraints need to be taken into account?

Where to innovate and where to follow
 Different universities should have different levels of
 risk tolerance for different components of their overall
 digital landscape. They will identify different opportunities
 for all out innovation vs areas where they will take a
 more traditional approach and avoid products that
 have not been validated by the majority of the market.
 This will depend on institutional priorities and
 financial position.

Single vs multiple tools

In re-imagining the capability model universities need to consider whether functions should be covered by a small number of large systems, or a larger variety of dedicated tools. This will involve trade-offs around cost, implementation complexity, user experience, and security and data privacy.

Barriers to implementation

Universities should consider what factors would make implementation of re-imagining the capability model difficult or impossible as a way to identify future challenges in integrating new systems into an existing environment.

How can we tackle this question?

Create a capability map and identify gaps
 Adapt and simplify your existing map or start from
 scratch using examples from UCISA (http://ji.sc/
 UK-HE-capability-model) and HolonIQ
 (digitalcapability.org/) as prompts. Involve students
 and staff in the exercise to understand what
 challenges they face with IT systems today and
 particular areas of inefficiency.

Adopt a differentiated risk approach Decide in which IT areas you want to lead the sector in digital innovation and therefore are prepared to accept higher levels of risk and which areas require a more traditional, low risk approach. This will depend on institutional strengths and priorities.

How do we unlock the data insights sitting within different IT systems to improve decision-making and provide better support for students and staff?

Why is this question important?

By one popular analogy, data is the new oil. Like oil, data has little value until it can be extracted, refined and distributed to consumers – in this case, decision-makers – at the right time, right place, and in the right form to power their missions. Successful digital transformation is fuelled by the effective use of data, yet the higher education sector has on the whole been slow to unlock the value of institutional data as a strategic asset.

The technology now exists to connect the variety of applications used within the university, where the IT landscape tends to be more fragmented than in the enterprise. Replacing these siloed 'information systems' with intelligent information networks will enable highly personalised engagement with students and staff, individualised experiences, and actionable strategic intelligence.

What strategic considerations or constraints need to be taken into account?

- Rate of data proliferation and related regulations The amount of data in the world now doubles within just two years. Lower storage costs, faster networks, and better tools to extract value from data will continue this upward trajectory. At the same time, regulations such as GDPR require rethinking how some data is stored, used, presented, and (in some cases) redacted. Forming an overarching institutional strategy around data acquisition, management, and governance is a key way-point along the path to digital transformation.
- The spectrum from situational awareness to actionable intelligence

Gathering organisational intelligence was once largely about running reports to describe what had happened in hindsight. The advent of business intelligence tools in the 2000s delivered discoverable insights. Now, advanced analytics with augmented intelligence have the capacity to predict what will happen and prescribe actions which can be taken to cause an outcome – for example, increasing international student enrolment.

Becoming a data-empowered organisation requires purposeful investment in both talent and tools, though shifting to a data-driven culture and mindset is the larger transformational challenge. While the underlying analytics technology is complex, there is a growing emphasis on the tools' usability for decision makers, enabling a new age for actionable strategic intelligence.

Interoperability

Increasingly, the specific information systems used by the university matter less than whether a system can be made interoperable, so that it may easily contribute its unique value (capabilities and data) to an intelligent 'information network'. Combining systems together with 'intelligent plumbing' – unlocking the flow of data between them – creates entirely new value streams.



Annual size of global datashpere

Source: The Digitization of the World: From Edge to Core - David Reinsel, John Gantz, John Rydning, Novermber 2018 seagate.com/files/www-content/our-story/trends/files/idc-seagate-dataage-whitepaper.pdf

For example, a highly personalised digital front-end experience provided to a prospective student may be underpinned by dozens of back-end systems working together without exposing the seams between those systems. Such an interoperable systems approach is inherently more agile and adaptable to support future strategy changes and business models, but does require significant upfront planning.

"The academy used to layer technology on top of historical functions and built those systems vertically, too. Now, we're building them horizontally across campus, giving us a view of the entire constituent experience. It's totally a different mindset." Brad Wheeler, CIO, Indiana University (USA)



Insight types

Source: Top 10 Moments from Gartner's Supply Chain Executive Conference - Matt Davis, May 28, 2015 https://blogs.gartner.com/matthew-davis/top-10-moments-from-gartners-supply-chain-executive-conference/

How can we tackle this question?

• Consider investing in institutional intelligence first While digital transformation is a long journey, targeted early investments in analytics can provide shorter paths to high value insights, and the intelligence gained can be used as an accelerant for transformation.

Start with the imperative

Many data projects get stuck by attacking challenges too broadly. Modern analytics tools can be deployed relatively quickly, with minimal cost relative to value. Determine the key facts and insights that would be required to know if key strategies are proving effective.

By narrowing the problem set, the scope of the technical challenge is reduced and time to value accelerates. Leaders will quickly know how success is being measured, which is a great start towards forming a data-driven culture.

Place stakeholders at the centre

Universities serve many stakeholders and a wealth of missions. Although they are human-centric enterprises, the sector's IT systems have traditionally been designed and built from the "inside-out", serving the institution's operational needs first, and only then creating transactional touch-points for stakeholders to participate in those processes. Human-centric design works 'outside-in', starting with a vision of the optimal experience, then designing the technology to enable that experience with data. Critically, humancentric design must include greater transparency and agency for individuals, especially students, around how their data will be used as data privacy concerns multiply alongside data proliferation.

Going further, technology has advanced to the point where highly personalised experiences can be delivered at scale. Increasingly, enterprises view the digital experiences they provide as their primary differentiator. Consumer market leaders such as Netflix, Apple, or Uber apply data-driven decisions and provide dynamic experiences based on an individual consumer's information. Applying these same design principles to higher education can transform that way that our stakeholders experience learning, teaching, research, and professional services.

Other questions to consider when it comes to investment

- 1. What current internal processes would need to change for newly introduced technology systems to work effectively?
- 2. What are the internal resources required for largescale changes in IT systems, in terms of both delivery and knowledge of internal processes?
- 3. Are we confident in our network and systems' capacity to deal with mass-scale digital delivery, especially multimedia? At what scale do issues appear?
- 4. What minimum requirements are we setting for tools to be used by the university, and do they strike the right balance between security and convenience?
- 5. How can we consistently involve students in decisions about investment in the digital environment and infrastructure? (For example, as digital champions, developers, co-researchers, interns, and are trained and supported to engage fully in these roles).

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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.

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.

About UUK

Universities UK is the voice of universities, helping to maintain the world-leading strength of the UK university sector and supporting our members to achieve their aims and objectives.

Emerge Education

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