Dear University member,

The University of Oxford’s IT Strategic Plan describes our aspirations for IT across the University over the next five years. It is closely linked to the University’s Strategic Plan and was developed following consultation with colleagues in colleges, departments, and divisions across Oxford. The Plan outlines our mission, vision, and key principles, as well as themes and priorities to focus on in the coming years.

Delivering the IT Strategic Plan will require collaboration. Working closely with colleagues around the University, we are developing an achievable and inclusive implementation plan. We will be consulting widely on the IT Implementation Plan and encourage you to get involved in this process.

Successful delivery of the IT Strategic Plan will significantly improve IT provision across the University, in terms of service, efficiency, and information and data security. We hope that you share the vision described in the plan, and to engage you in delivering it. The improvements will benefit everyone.

Please do not hesitate to get in touch with either of us if you have suggestions or questions about the University’s IT Strategic Plan 2019–2024, or its implementation.

With best wishes,
Prof Tim Coulson (Chair of IT Committee) and
Dr Seán Duffy (Chief Information Officer)
INTRODUCTION

This is the IT Strategic Plan for the University of Oxford for the period 2019 to 2024. It is aimed at the whole of the University – departments and faculties, divisions, and central teams – to be delivered in partnership with the colleges. It was created through extensive consultation involving representatives from across the University.

The plan will be accompanied by a more detailed implementation plan which will break down the priorities into specific measurable actions that are both timed and costed. Both the IT Strategic and Implementation Plans will be overseen by IT Committee and reviewed on a regular basis.

It is recognised that some of the priorities identified will fall mainly to central services to deliver, but this is not always the case. Many of the objectives are relevant to all IT providers across the University, and some may best be delivered by local teams within departments, faculties, and divisions.

The IT Strategic Plan forms part of a network of University strategies and policies and defers to those1. It takes its lead from the University Strategic Plan and throughout we have indicated where specific priorities enable those identified in the overall strategic plan through the use of icons (see the key on the following page).

1 Listed at: www.ox.ac.uk/staff/working_at_oxford/policies_procedures. The IT Strategic Plan also defers to other policies for key University-wide targets, e.g. on Energy and Carbon management (www.admin.ox.ac.uk/estates/ourservices/environment/services/energyandcarbonmanagement).
The University Strategic Plan is divided into five themes: Education, Research, People, Engagement and Partnership, and Resources. The University Strategic Plan also identifies the following key commitment (Resources, Commitment 3):

Commitment 3 – To continue to invest in our information technology capability to enhance the quality of our research and education and to streamline our administrative processes. We will invest in our information technology in order to increase research capability, enhance teaching and learning, and deliver efficiencies in support of administrative functions. We will deliver infrastructure which enables all staff and students to communicate effectively, share information securely, and collaborate locally and globally. With a continuing focus on training and best practice dissemination we aim to empower teachers and researchers to innovate, staff to use IT systems effectively, and students to improve their digital literacy for discovering, evaluating, and creating information using digital technologies.

The IT Strategic Plan enables many of these aims to be delivered and also offers additional opportunities to be considered. To assist correlation between the two plans each priority below indicates through use of icons the area of the University Plan that will be directly supported, as well as the commencement of activity associated with the priority (e.g. 2020).

**Extract from University Strategic Plan**

**Education:** 'Through a commitment to the personal education of each student, we will provide a quality of education and experience which equips students with the values, skills and intellectual discipline that will enable them to make a positive contribution to society.'

**Research:** 'The University of Oxford is world-famous for its research excellence and home to some of the most talented scientists and scholars from across the globe. Our work enhances the lives of millions, solving real-world problems through an extensive network of partnerships and collaborations. The breadth of our research and the connections between disciplines drive advancement in knowledge, understanding, innovation and creativity.'

**People:** 'People are the foundation of the University's success and the quality of our academic, research, professional and support staff is critical to our future. In order for Oxford to remain a world-leading institution for research and teaching we must continue to attract, recruit, and support talented individuals and provide a diverse, inclusive, fair and open environment that allows staff to grow and flourish.'

**Engagement and Partnership:** 'By enhancing the public engagement, knowledge exchange and innovation culture of the University, we aim to ensure that our research and education benefit wider publics in the Oxford region, across the UK and globally. To this end we will work in partnership with public, private, voluntary and commercial organisations, and our alumni.'

**Resources:** 'Oxford University benefits from the careful stewardship of resources by previous generations; ensuring that the University remains both financially and environmentally sustainable into the future is critical. Enhancing the efficiency and effectiveness of our support services by simplifying systems and working together more collaboratively will be key to delivering a sustainable platform to underpin our education and research.'

**Administration:** 'To continue to invest in our information technology capability to ... streamline our administrative processes. We will invest in our information technology in order to ... deliver efficiencies in support of administrative functions.' (Resources: Commitment 3)

**Skills:** 'With a continuing focus on training and best practice dissemination we aim to empower ... staff to use IT systems effectively, and students to improve their digital literacy.' (Resources: Commitment 3)

**Innovation:** 'With a continuing focus on training and best practice dissemination we aim to empower teachers and researchers to innovate ... and students to improve their digital literacy for ... creating information using digital technologies.' (Resources: Commitment 3)
MISSION
To support and enhance the learning, teaching, and research of the University through reliable and efficient IT systems, services, and infrastructure.

VISION
IT providers at all levels of the University will collaborate with each other, stakeholders, and vendors to provide the digital services needed by our staff and students to support world-class teaching, learning, and research. We will have reliable services with appropriate levels of security and privacy, delivered by all the IT support facilities across the University. We will be efficient, joined-up, and present a seamless experience for the end-user. The University will have organised IT teams to ensure effective and flexible forms of delivery for services and projects. We will encourage and foster digital innovation.

By 2024 we will have achieved:
- an improved user experience across systems and facilities
- reliable service and project delivery
- an appropriately skilled workforce
- simplification of process, support, and infrastructure
- joined-up cross-University support
- security by design and privacy by default
- robust capacity development
- improved governance
- transparent planning, prioritisation, and reporting.

CONTEXT
IT is now recognised as a strategic partner in core University business and planning and not simply a responsive service-provider. The University values this and seeks to invest accordingly in IT to reflect its strategic importance. With this comes a responsibility on all IT providers to work together to improve service delivery and the user experience, as well as striving for efficiency and sustainability. The IT Strategic Plan for 2019–24, therefore, specifically targets:
- an improvement in the academic and student digital experience
- design and implementation of an IT security and data privacy improvement plan
- a drive for efficiency, simplification, the removal of duplication, and the concentration of resources on activities that will yield the most benefits
- a drive to improve the support for digital educational activities and facilities
- support for larger, interdisciplinary, more complex research activities driven by large datasets and the open scholarship agenda
- support for (inter)national collaboration with other Universities and third parties
- embracing the opportunities offered by new service delivery models within the University and with third-party suppliers
- the need to support the University in its planned expansion in numbers and estate
- increasing the availability of high-quality trusted data to inform decision-making and assist in monitoring performance against targets.

We recognise the need to support change in a flexible and agile manner. As well as witnessing rapidly growing levels of demand for IT, we have moved into a world where we depend on multiple suppliers of services and the University’s digital environment now extends beyond the confines of any single unit and the institution. Patterns of work are changing as we move to a more mobile workforce that requires increased round-the-clock support and flexible access to services. New technologies emerge at a faster rate, offering new innovation opportunities that we must be in a position to embrace. Conversely the threats posed to our digital security and compliance demands increase.

The IT Strategic Plan for 2019–24 sets out the priorities for improvement and investment for the University of Oxford to allow it to meet these challenges. It is set against a background of increased financial pressure across the University and therefore focuses strongly on the need to increase efficiency and value for money.
GUIDING PRINCIPLES

The following six guiding principles flow through the entire strategy and should be taken as read when considering the themed priorities.

**Principle 1: Research and education**

IT will be used to support, enhance, and transform research and education at the University. The primary role for IT is to support the core functions of the University – teaching, learning, and research – and the administrative functions that underpin those. IT providers will have the goals, success measures, and working preferences of the research and teaching communities at the forefront of all decisions. IT will constantly seek to improve the user experience for students and academics and must also facilitate effective administrative functions which are required to enable the University to retain its world-class standing.

**Principle 2: Planned, predictable and flexible delivery**

IT providers will aim for the continuous improvement, compliance, and predictable delivery of services and projects. They will take opportunities offered to transform our service offering. IT providers will ensure services are reliable and available to users, and will adhere to best practice in service delivery. This will include roadmaps that consider the future demands of the University, the external market, trends, and compliance requirements. We are open to new ways of sourcing solutions in order to meet user demands, value for money, flexibility, sustainability, and legal and security requirements. We will plan more effectively, prepare for tomorrow, and integrate equality assessments and environmental impact into all our service delivery decisions.

**Principle 3: Security and privacy**

Users will enjoy services with appropriate levels of confidentiality, integrity, and availability built-in from the start (i.e. ‘security by design’ and ‘privacy by default’). A correct balance will be taken between user needs and security and privacy needs to deliver cost effective controls. As threats and technology continue to develop, the design of these controls will be linked to an international framework that also evolves. The demands of departments and divisions will be determined to allow the certifications required to secure future research awards. This will be complemented by a general increase in the protection, monitoring, and response baseline across the university. This will serve to anticipate the needs of future research applications whilst also reducing the ever present and continually evolving information security risks experienced by the University.

**Principle 4: Appropriate delivery**

IT delivery will be based on a concept of ‘fit for purpose’ in most areas with providers offering appropriate solutions at reasonable cost. High specification or custom solutions will be reserved for areas that enhance the University’s competitive standing. Not all of the IT delivered needs to be world-class, and projects and new initiatives will use the principle of the minimum viable product as their starting point, seeking to grow the service thereafter through continual improvement. However, where the provision of IT directly affects our ability to compete with our peers (e.g. research, student experience), the University will invest appropriately to allow us to provide world-class facilities and services and add value to our activities.

**Principle 5: Common solutions and simplification**

IT providers will adhere to agreed overarching architectural principles and standards and will by default seek common solutions. There will be a drive to simplify processes, and reduce inefficiency and duplication. Common solutions will be more widely adopted, rather than acquiring a wider range of solutions to provide the same or similar functionality. We will always seek to simplify, rationalize, and consolidate where possible. Development will only occur if it offers competitive advantage or fills a capability gap for the University. More solutions, especially bespoke ones, increase the cost of support and maintenance, licence costs, infrastructure costs, and increases demands on staff. Duplication, rework, bureaucracy and overly complex processes and systems all contribute to increased costs. Requirements will be vigorously challenged, encouraging compromise, and business processes will be simplified first, where possible, prior to procurement or development.

**Principle 6: Collaboration is key**

IT providers across the University and beyond will collaborate to provide effective solutions, and will work with stakeholders to ensure their needs are accommodated. Successful IT delivery depends on strong collaborations between local and central IT, and increasingly with third-party providers. Teams will work together, take collective responsibility, and adopt common practices where possible. We are open to exploring new organisational models, and the needs of stakeholders will be constantly reviewed.
PRIORITISATION

Each theme presents a list of priorities needed to meet the aspirations of the University. These, in turn, will be broken down into a series of costed, measurable, and prioritised actions in the accompanying Implementation Plan.

At a strategic level investment in IT will be targeted at running, maintaining, and ensuring compliance for our existing services (Run), discretionary development of their functionality and capacity (Grow), but will also build on the opportunities offered by new technologies to substantially change our current offering (Transform).

With this in mind then the University will seek to prioritise IT initiatives that:

1. focus initially on keeping existing services running, reliable, and stable (Run) but allow for increasing investment in Grow and Transform activities
2. improve the user experience of staff and students and progress our service offering in areas of competitive advantage (e.g. teaching, learning, and research)
3. make use of, or seek to develop a common solution; lead to a consolidation of services; or yield resource efficiencies
4. improve awareness and skill level of staff and students in critical areas
5. minimise the burden on recurrent costs and users
6. are essential to directly enable a key objective in the University Strategic Plan.
THEMES

The Plan is divided into seven themes. Each theme begins with a brief description and is then followed by a prioritised list of activities.

I. DELIVERY AND PEOPLE

The delivery of IT will contribute to the University’s aim to work collaboratively to provide world-class research and education. There is now more confidence within higher education that services critical to the work of the University can benefit from being hosted by external providers as well as in University data centres. It is recognised that delivering IT to staff and students, whatever its source, requires a service and partnership model common across providers. The effective delivery of IT requires understanding and agreement on IT service management standards and interoperability, intra- and inter-organisational roles, and the need to sustain not only the services delivered but also the professional IT community within the University. Services must also be designed so as not to exclude any cohort of users.

PRIORITIES

1. 2020
   Review, with the aim of improving, IT delivery models in the University; providing clarity on what is provided to each user and ensuring support is focussed on what is most efficient, effective, and reliable at the organisational level at which it is offered (college, department, division, central, combining both internal and external providers).

2. 2021
   Agree and apply a consistent standard of IT service management for all who provide IT to the University, together with a consolidated catalogue of applications approved for use within the University.

3. 2021
   Provide a better IT experience for staff and students by developing an expert IT support community willing to work with colleagues across the University to develop and deliver services; and sustain successful IT delivery through the development of cross-University career progression paths that encompass the changing models of IT delivery.

4. 2021
   Support changing patterns in how our staff and students work by providing seamless access to, and sharing knowledge about the effective use of, IT facilities that enable remote and flexible working patterns, and international collaboration.

5. 2021
   Improve the working environment by joining-up Estates and IT functions for the provision and support of audio-visual facilities in teaching and research spaces, together with developing, and keeping current, standards for IT systems integral to the use and management of University buildings.

6. 2022
   Increase the availability and reliability of services through defined ownership and operational responsibility, together with prioritising the consolidation, virtualisation, and automation of the University IT estate.

7. 2021
   Build confidence and increase capability within the University IT community to understand, assess, and share the impact of both new directions in research and education on IT requirements, and advances in technology on the delivery of IT (whether by internal or external providers).
II. ENGAGEMENT AND PARTNERSHIP

In a complex and evolving environment, it is vital that all IT service providers (local and central) work in partnership with each other and actively engage with the people using their services to ensure they meet current and future needs. This must be a continued and sustained activity, not only to review current services but also to highlight gaps in provision or additional opportunities from new or existing technologies. This engagement and partnership will extend beyond the University to other higher education institutions, national bodies, the Oxford Health NHS Foundation Trust, the city and county councils, local businesses, and key vendors.

PRIORITIES

8. 2020
Strengthen the partnerships between University IT providers by implementing frameworks which make best use of specialist local IT knowledge, and the resilience and economies of scale offered by IT providers at a divisional or central level; and enable local IT staff to make better use of shared service management tools.

9. 2021
Identify opportunities and build trust between specific user areas and central IT providers by implementing a formal framework of business partners.

10. 2021
Develop processes to regularly review IT service provision at all levels to ensure those services continue to satisfy the needs of users, with a particular focus on teaching and research.

11. 2020
Build on existing links with external groups to understand industry trends and good practice and share this internally through interest groups, conferences, workshops, and other means.

12. 2022
Put in place tools and processes to allow users to highlight and, where appropriate take forward new initiatives or service improvements.
III. INFORMATION SECURITY

The threats to the University’s infrastructure, systems, and information are increasing along with more demanding external security requirements from partners, funders, and data providers. We need to be able to respond effectively to these challenges.

The University requires a high-quality security model that enables an effective and proportionate approach to be taken in a constantly changing landscape. Success will be achieved through a risk-based approach to information security that is integrated with University governance and management arrangements, and delivered through adaptable and responsive information security services.

This approach will embrace the complexity of University IT delivery (i.e. third-party, central, division, department, and college). It must also provide a service which enhances visibility across the IT estate. The independence of IT provision remains a strength, augmenting defence in depth, but the fragmentation of the information security view will be reduced.

<table>
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<tr>
<th>PRIORITIES</th>
<th>2020</th>
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<tr>
<td>13. 🧑‍💻 🔍</td>
<td>Raise awareness, educate users, and share good working practice through readily available and understandable guidance and advice.</td>
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<td>14. 🏡袤</td>
<td>Adopt a risk-based approach that recognises the benefits of security, and which integrates security governance, risk, and compliance into the University’s existing structures to improve visibility and commitment.</td>
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<tr>
<td>15. 🌟🔍</td>
<td>Increase the maturity and automation of key processes; drive toward holistic monitoring, develop knowledge banks, and introduce regular reporting of metrics across the security portfolio.</td>
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<tr>
<td>16. ⬆💡</td>
<td>Instil ‘security by design’ and ‘privacy by default’ into all IT projects, ensuring core principles are adopted at the start of new initiatives.</td>
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<tr>
<td>17. 📝🎓</td>
<td>Advance information security preparedness to streamline application for research opportunities, identifying appropriate frameworks and certifications to assist.</td>
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<td>18. 🏡🔍</td>
<td>Review information assets and ensure an appropriate security policy framework exists. This should include proportionate controls designed for people, processes, and technology to reduce the risk against those assets to a determined level (based on damage to confidentiality, integrity, or availability).</td>
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### IV. GOVERNANCE AND FINANCE

Governance of IT within the University works at all levels starting with department and divisional IT Committees. At the University level there are a series of IT Boards sitting under the IT Committee, which oversee central University projects and services. The reality though, especially at a local level, is varied whilst at a central level some stakeholders see IT governance as burdensome and slow-moving. It is felt that governance is not ‘joined-up’ between the departmental, divisional, and central levels. In addition there is a disjoint between the way central service funding is governed through the service charge mechanism and the way the central IT development funds are administered.

These disconnects make it difficult to prioritise investment and manage the transition of projects into services. They also inhibit our ability to bring together initiatives with similar objectives. The lack of transparency around IT spend across the University also means it is not possible to ensure efficient approaches to procurement.

As financial constraints on IT increase, the need to gain maximum benefit from all investment increases and this must be supported by fully-functioning governance structures. The University must also ensure funding allocation and business models support initiatives that match divisional objectives and allow smaller units to engage with common solutions.

### PRIORITIES

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<th>Number</th>
<th>Year</th>
<th>Description</th>
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<tbody>
<tr>
<td>19.</td>
<td>2019</td>
<td>Review IT governance at all levels ensuring processes and structures support timely and transparent decision-making, and effective prioritisation of IT initiatives in support of the University strategy.</td>
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<td>20.</td>
<td>2019</td>
<td>Launch a new simplified methodology for central projects, that allows for approval of investment only after sign-off on capacity to deliver, sustainability, cost impact across the University, and realisation of benefits.</td>
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<td>21.</td>
<td>2020</td>
<td>Review allocation of central service funding and charging models to allow all units to engage with University-wide solutions.</td>
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<td>22.</td>
<td>2020</td>
<td>Review capital investment levels in IT and allocation methods to ensure the University can achieve its strategic objectives, match offerings by its peers, and that divisional-led activities can be supported.</td>
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<td>23.</td>
<td>2020</td>
<td>Across all levels of the University monitor the benefits of investment in IT, report on service performance, customer satisfaction, and return on investment, and in so doing increase the general understanding of the value of IT.</td>
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<td>24.</td>
<td>2020</td>
<td>Develop mechanisms to ensure alignment between central project spend and operational budgets to ensure service sustainability.</td>
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<tr>
<td>25.</td>
<td>2020</td>
<td>Increase benefits from suppliers by improving cross-University vendor management and purchasing processes to improve value for money, informed spending decisions, and visibility of supplier engagement.</td>
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V. TECHNOLOGY

Technology in this context applies to both applications and infrastructure. The complexity of the current landscape is a product of duplication, organic growth, and support for legacy investments. This complexity presents challenges in meeting user expectations, managing operations, accommodating change, delivering reliable services, supporting compliance, and managing costs. The future landscape will be more harmonised moving away from isolated and discrete service provision. This will take place between different levels (college, department, division, central, and third-party) but also across levels (e.g. central services such as UAS and GLAM).

We will take advantage of new technical capabilities, enhance existing components, and remove complexity in order to meet the needs of the University. It should do all of this within an acceptable risk and cost profile.

PRIORITIES

26. 📝👥🕰 2023
   Improve the end user experience by ensuring that staff and students are supported in their day-to-day activities by making new/current services accessible, seamless, usable, flexible, and appropriately feature rich.

27. 🏠 2019
   Establish an efficient and transparent method of determining whether the University is best served by in house or third-party provision.

28. 🎓_house💡 2020
   Create strategic roadmaps and decision frameworks for key elements of the technology architecture to derive greater value from existing technologies, reduce our environmental impact, and exploit new opportunities.

29. 🎯_house💡 2020
   Develop the capability to integrate standard applications through well-defined and published application interfaces in an efficient, secure, compliant, and reliable way.

30. 🎯_house💡 2019
   Target the removal of legacy components and the adoption of technical guidelines, architectural principles, reference architectures, and application catalogues.
VI. DATA

Data is held by a variety of parties from individuals, through to research teams, GLAM units, and administrative services. Data therefore can be highly structured (e.g. administrative institutional data) or more unstructured (e.g. research data).

With administrative systems there is a clear need for well-defined, highly accurate, trusted, and readily available data that can facilitate effective exchange and processing of data between groups and systems – supporting a better and a more efficient decision-making process. We need to move away from siloes of data ownership and the resultant data duplication that has led to inefficiencies and inaccuracies in manipulating and preparing data for reporting and analysis. Information also must be consistent across different functional areas.

With research data we must provide academics and research groups with secure and appropriate storage facilities that support the entire research data management lifecycle from live data, through to open scholarship and long-term archiving and preservation.

For both areas we must accommodate increasing requirements from legislation and IT cybersecurity balancing these with ease of collaboration and open access.

PRIORITIES

31. For administrative data ensure clarity, accuracy, completeness, compliance, and availability of data by identifying and supporting data stewards to take responsibility for their respective datasets.

32. Enable all relevant parties to know what administrative data we have, and how to retrieve and use it, by ensuring that clear data governance, easy to use tools and technology, and appropriate levels of support are in place.

33. Provide researchers with secure, compliant, affordable and easy to use data storage facilities that integrate across the entire research data management lifecycle.

34. Enable Bodleian Libraries to support open scholarship to facilitate the sharing and publication of datasets and outputs from research.

35. Facilitate data interoperability across administrative IT systems irrespective of technology or location by creating clear data models and data maps for shared data.

36. Improve decision making through providing intuitive tools, as well as training and consultancy where required, for the creation and sharing of operational, management, and business intelligence reports.
VII. INNOVATION

The need to promote and support innovation is a constant requirement if IT is to meet user demands and take advantage of new opportunities. Barriers to digital innovation include the lack of time and formal support for Oxford staff (academic and non-academic) and students to consider new initiatives and solutions. New ideas from across the University need to be surfaced, supported, and resourced. Digital innovation at Oxford covers invention (of something new), but also exploiting an existing tool, and improving processes and services to drive efficiencies. Innovation should take place once a problem or opportunity has been identified. It should embrace the complete lifecycle of innovation from seed-funding, through incubation, to University services or spin-out opportunities; thus ensuring sustainability, and avoiding increasing the future support burden.

Digital innovation should form part of the wider activities going on throughout the University, and all of the priorities identified here would be in partnership with those. It should also seek collaborative partnerships with major vendors where of benefit to the University.

PRIORITIES

37. Integrate digital innovation with other entrepreneurial support schemes across the University.

38. Develop a resourcing model to support and sustain IT innovation across the University.

39. Facilitate staff and students to generate and share new ideas through a University-wide community of digital innovators.

40. Create a ‘digital innovation space’ to allow users to explore and showcase emerging technologies.

41. Review emerging technologies to shape future development, training opportunities, and funding allocation.