The IT Strategic Plan

for the University of Oxford, 2013-2018
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IT Strategic Plan: Vision

The implementation of this Strategic Plan will prepare the collegiate University to achieve the maximum benefit from information technology innovations, increasing research capability, enhancing teaching and learning, and delivering efficiencies in support of administrative functions. It will play an important role in supporting the recruitment and retention of world-class students, researchers, academics and IT staff, while providing the foundation for the global sharing of research and teaching resources.

It puts in place infrastructure to enable all staff and students to communicate effectively, share information securely, and collaborate locally and globally. Collaboration and partnership are central to the Strategic Plan, because they will enable the development of a stronger IT organisation that supports delivery of services end-to-end, and is able to respond effectively to the evolving technology landscape. They are also key to increasing engagement with staff and students to ensure that services meet their needs; and to partnering with third parties both in the delivery of services and in the integration of IT beyond the perimeters of the University.

Through an emphasis on IT service excellence, the Strategic Plan establishes a framework to drive improved project and service delivery. The recent past has seen new central information systems and the next five years focuses on getting the best value we can from those systems, increasing benefits through improving information quality and accessibility, which will enable better decision making.

With a continuing focus on training and best practice dissemination the Strategic Plan aims 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.

These features combine to result in an improved student and academic digital experience in an internationally leading University.

The IT Strategic Plan

This document presents the Information Technology (IT) Strategic Plan for the University for 2013/2014 – 2018/2019.

For each area within the Plan there is a set of objectives. Given the pace of change in information technologies, it is not possible to predict everything we might need to achieve within a five-year period and hence the objectives are purposely set at a high level. An annual review of this Plan should not change the objectives, but is likely to adapt and add to the activities that have been identified through consultation with the collegiate University. The activities are given in order of prioritisation; where there are several, a line is drawn to indicate those that are core and therefore the first tranche, and those that will follow thereafter.

We will monitor progress against our objectives using relevant performance indicators, benchmarks, and targets. This will ensure we maintain focus on the Strategic Plan so that it continues to meet academic needs, enables us to respond to the external environment, and is updated as appropriate. The IT Strategic Plan will be supported by a long-term University IT Capital Renewal Plan that identifies both capital investment needs and a timeframe for implementation over a period of ten years.
IT Strategic Plan: Principles and Assumptions

Subsidiarity is a guiding principle of the University and is respected within this IT Strategic Plan. The federated nature of the collegiate University offers advantages and strengths, and at the same time can introduce complexity and inefficiencies. In order to implement an IT Strategic Plan for the University, a set of principles is required that can support the right balance across the organisation and promote a common direction and alignment.

The following principles establish a shared approach to providing IT services to the collegiate University community. Delivery of the Plan assumes:

**Partnership and collaboration**

1. Teaching, research and administrative staff work in partnership with IT providers to ensure that IT delivery works as a strategic enabler for the University. This can only be achieved through a deep understanding of the University functions that might benefit from technology, and therefore it requires the close collaboration of staff and students, subject matter experts, and IT specialists.
2. Central and local IT work in collaboration and take shared responsibility to deliver IT services to the collegiate University, facilitated by a shared end-to-end support process.
3. Supporting the digital strategy of the University is a shared aspiration of all central services and this Strategic Plan is aligned with the Estates Strategy and the Bodleian Strategy to improve the overall user experience of IT-related services through integrating IT in building plans, delivering digital content and providing effective shared support for service users.
4. The IT Strategic Plan aligns with and supports the divisional needs to allow adoption of digital technologies in teaching and research.
5. Centrally required policies will be given central support to allow local implementation.
6. Partnership in IT goes beyond the boundaries of the University and includes external vendors, the NHS, regional HEIs and local authorities.

**Efficiency and effectiveness**

7. Benefits and savings of centrally supported infrastructure and services are made transparent to encourage adoption and value for money across the University.
8. IT services are delivered in a way that maximises value to the collegiate University, whether third-party or open-source solutions, taking into account total cost of ownership (development and service provision), fit within the current IT architecture, and benefits that can be realised.
9. IT services – whether created locally or centrally – that gain acceptance, have wide applicability and use, with clear benefits to staff and/or students, should be sustained.
10. Collaboration to consolidate the IT estate by, where appropriate, shared facilities and resources reflecting the existing University commitment of an 11% reduction in carbon emissions by 2016.
11. University information and data are treated as assets and governed appropriately; with the processes around them appropriately supported, including access, storage and curation. Data governance is not the function of any one group, but requires a joined-up approach throughout the University.
12. The collegiate University has clarity on process ownership and, where possible, adopts agreed and shared processes that can be supported by IT systems. There is a premium on the cost of many Oxford IT systems due to the complexity of the University and the way in which we do things.
IT Strategic Plan: Objectives and Activities

1. RESEARCH

Increasingly, research challenges are tackled by interdisciplinary teams, often distributed across institutions or countries. Simulation, frequently described as in-silico experimentation and data analysis are tools used increasingly by researchers. The data being analysed might be social information, ancient texts, or images or data from sensors; they might also be sensitive or involve intellectual property rights that make security and privacy important. Systems supporting research need to be intuitive to reduce the learning curve and allow easy adoption.

Objectives

1. To enhance the IT infrastructure to support research at the highest level, including collaborative tools and training in information systems research methods.¹
2. To provide the infrastructure and tools to allow researchers to be compliant with regulatory requirements to preserve and share electronic research outputs.

Activities

1.1. Develop a coordinated approach in order to provide infrastructure support that addresses the requirements of large-scale research data storage and analysis.
1.2. Engage with researchers through mechanisms such as special interest groups and user forums.
1.3. Provide appropriate infrastructure, tools and training to underpin the full cycle of research data, including discovery, computation, and curation.
1.4. Provide high-quality IT training that supports researchers in the use of new technologies, software systems and digital assets, and communication methods. Continue and encourage activities such as the Digital Humanities summer school.
1.5. Continue to collaborate with local and regional partners to further develop research computing facilities and e-Infrastructure capability.
1.6. Improve administrative systems to support researchers in efficient and effective management of research grants and related resources.
1.7. Provide robust security services and related training to support research projects.
1.8. Provide advice and support for the open agenda, including publishing of research outputs, and issues relating to open source software.
1.9. Develop and support collaborative tools that enhance global and interdisciplinary research, public engagement and knowledge exchange.

¹ This objective reflects Commitment 1, paragraph 20, of the University Strategic Plan.
2. EDUCATION

Teaching and Learning

Technology to support teaching and learning is now well embedded in the higher education landscape. Within Oxford, digital technologies play an important role in the planning and communication of teaching materials for lectures and tutorials, in supporting learning activities (for example, through simulations) and in detecting plagiarism. In addition, open educational resources and open platforms are providing a way to share digital materials that can be used, reused, and repurposed for teaching, learning, and research.

Objectives

3. To develop the infrastructure and capabilities to support the digital education strategy.
4. To facilitate the exploration, development, and adoption of new teaching tools and technologies that enhance Oxford’s teaching practices.
5. To support the development of globally available teaching resources and collections.

Activities

2.1. Engage with teaching staff, students and other stakeholder groups in order to base services on their practice and needs.
2.2. Provide support for improvements of IT/AV resources at a local level in order to ensure that teaching facilities remain competitive and state-of-the-art.
2.3. Disseminate and share effective and innovative digital technologies in teaching and learning to help staff and students optimise their use.
2.4. Continue to provide appropriate IT learning for teaching and administrative staff to support continual professional development.
2.5. Develop and support tailored learning technology tools and a virtual learning environment that incorporates forward-looking learning systems and encourages the use of best of breed.
2.6. Provide services that support the growth in access to open educational resources.
2.7. Invest in provision of high-quality digital media production infrastructure (technology, tools and know-how) to provide lecture capture and streaming as required.
2.8. Develop flexible, technology-enhanced spaces to support teaching, assessment, and student collaboration that facilitate the effective delivery of digital resources.

The University Digital Strategy, including the digital education strategy is under development at this time.

This objective reflects Priority 1 of the University Strategic Plan.
Student Experience

IT plays an important role throughout a student’s interaction with the University. This starts with their initial contact – which might be through podcasts or other media created at the University and available through iTunesU, Facebook or YouTube – and develops through the provision of learning materials; use of computing facilities, including IT training; management of examinations/results/graduation; and right through to engagement as an alumnus. Improving the student experience relies on every element of IT provision – from infrastructure through student-facing administration systems – as well support for the student’s own digital literacy.

There is also a growing cohort of remote students who are not based in Oxford – including life-long or distance learners – for whom IT can be important in their administration and welfare, as well as playing a crucial role in their educational experience.

Objectives

6. To ensure that – in all their IT-related activities – the best Oxford experience is the typical experience for all undergraduate and postgraduate students. Through access to the latest IT tools and effective IT training, graduates will be fully equipped to compete for the best of the diverse range of opportunities for study and employment available to them.4

7. To ensure that the University adopts best practice in interacting and communicating with its students in the digital medium throughout the entire academic lifecycle: i.e. from prospective applicants through to alumni.

Activities

2.9. Improve wifi provision to support student experience.
2.10. Provide skills courses for students that will be key for learning, research and future careers.
2.11. Engage with students, teaching staff, and other stakeholder groups in order to discover students’ needs and preferences, and to address these appropriately.
2.12. Engage with other service providers, and students and staff, to support the development of students’ digital literacy.
2.13. Improve IT support for student-facing administrative processes.
2.14. Provide a comprehensive map of IT support for students.
2.15. Develop and support device-independent secure services based on responsive web design principles that create the same standard of experience seamlessly across the University.

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4 This objective reflects Commitment 5 of University Strategic Plan
3. WIDENING ENGAGEMENT

Widening Engagement is the third priority area within the University Strategic Plan. A major aspect of the strategy is delivered through a stronger digital presence, collaborative working with local authorities, industry and charities, including the Oxford University Hospital Trusts, Harwell Oxford, Begbroke Science Park and Isis Innovation. Similarly, through such partnerships, the IT Strategic Plan delivers the infrastructure and common toolset to facilitate widening engagement of the global research and teaching community, the public and local community.

Objectives

8. To share the fruits of research and open educational resources as widely as possible.5
9. To provide infrastructure and tools to support curation, discovery and access to the Bodleian, the museums and other digital collections.
10. To support the collegiate University in the provision of a stronger digital presence.

Activities

3.1 Provide a central web publishing support service.
3.2 Take forward a strategic review of University web provision.
3.3 Provide web design and information-governance guidance and training.
3.4 Implement digital content management systems for central collections.
3.5 Support community engagement tools to enable citizen science.
3.6 Collaborate with Oxford City and County Councils, Oxford Brookes University, and the Oxford University Hospitals NHS Trust to deliver a city-wide wireless network capability and investigate the sharing of other infrastructure services where appropriate.
3.7 Develop high-bandwidth connectivity between the central University campus, Old Road Campus, Harwell Oxford, Begbroke Science Park and other regional knowledge centres.

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5 This objective reflects Commitment 8 of the University Strategic Plan
4. ENTERPRISE ADMINISTRATIVE INFORMATION SYSTEMS

The University administrative enterprise information systems provide a technology platform that enables administrative support for the functions of the University – research, support of students and staff, fund raising, procurement and financial administration.

Effective enterprise systems can increase operational efficiency and cost savings. They allow information to be shared across functional levels and provide the capability to use that information to support management decisions. Information systems are only as good as the business processes they support. Complex, diverse, ill-defined processes result in inefficient and difficult-to-support systems.

Within the University we have a number of siloed information systems that support finance, personnel, student administration, and research funding. To improve the quality of information available to researchers, heads of departments and others, there needs to be an integrated and trusted view of the data from each system; this can only be achieved through a shared data architecture, clear data governance and streamlined administrative processes. Together with the deployment of appropriate reporting and business intelligence tools, the use of this integrated data can improve the quality of decision-making across the University.

More effective supplier management through clearly stated deliverables, cost management and contractual safeguards would lead to value-for-money procurement and system delivery. Appropriate business analysis and change management would lead to more efficient and usable systems.

Objectives

11. To provide secure, effective information systems that support efficient, streamlined and consistent business processes and provide high-quality information.
12. To increase the business value of administrative systems through improved usability, integration of independent information streams, and reporting tools.

Activities

4.1 Develop a data governance framework and architecture to support the integration of information systems and information quality improvement.
4.2 Review business information requirements as well as business intelligence and reporting tools in order to provide high-quality management information.
4.3 Review system integration tools and platforms to ensure a sustainable model is in place.
4.4 Create an Administrative Information Systems renewal roadmap to inform replacement and enhancement decisions.
4.5 Review business processes as appropriate in the IT service development and enhancement cycles to improve not just the efficiency of processes, but also the quality of the data captured.
5. INFRASTRUCTURE

To ensure that IT services are comparable to utility services in their predictability requires resilient and secure IT infrastructure. Communications networks need to be both high-bandwidth to allow the high levels of traffic generated by the University and sufficiently resilient to enable services to run 24 hours a day. The University has central data centre provision to ensure resilient services; this includes the University Shared Data Centre that supports both the hosting of departmental systems and virtual services for departmental use.

Objectives

13. To provide resilient end-to-end, high-performing network infrastructure and to create an efficient, shared and consolidated IT estate.
14. To integrate with and leverage regional, national and international infrastructure.

Activities

5.1 Deliver a modern, high-performance network for the collegiate University, including the campus backbone, improved wireless connectivity, and a managed network service for departments and colleges.
5.2 Deliver an integrated communications service, replacing the existing telecommunications service with a platform that integrates email, instant messaging, video and voice data.
5.3 Implement a hybrid, tiered storage platform to support backup, active storage and long-term preservation services.
5.4 Develop a coherent technology architecture to act as a roadmap for future system renewal.
5.5 Review provision of infrastructure services through a cost–benefit and risk analysis of in-house, shared and out-sourced offerings.
5.6 Develop infrastructure and tools to manage mobile devices effectively.
5.7 Move towards a coordinated and consolidated estate of University IT infrastructure.
5.8 Develop a standards framework to use in negotiation with suppliers for the procurement of interoperable systems and services.
6. CYBERSECURITY

Cybersecurity in this context refers to policies and practices relating to the protection of information, data, systems and networks from attacks and unauthorised access. Cyber attacks and intrusions have increased dramatically; these have the potential to expose sensitive personal or research information, to disrupt the operations of the University and to lead to reputational or other damage. In order to reduce the threat of cyber attacks and intrusions, members of the University must comply with the University Information Security Policy, IT services must operate securely, and underpinning infrastructure must be secure, resilient and reliable.

Objectives

15. To support the collegiate University in managing the risks related to information technology through increased user awareness, appropriate security practice and the implementation of the University's Information Security Policy.

16. To provide secure and easily used IT infrastructure and services to allow the secure management and sharing of information across the University.

Activities

6.1 Improve information security awareness across the collegiate University.

6.2 Promote and support local implementation of the University Information Security Policy, identification of sensitive information assets, and mitigation of associated risks.

6.3 Provide tools to enable information to be managed securely when accessed by mobile devices and when shared with colleagues within and without the University.

6.4 Improve detection of, response to, and reporting of information security incidents across the collegiate University.

6.5 Ensure that IT services delivered to the collegiate University are secure, resilient and reliable.

6.6 Implement consistent identity and access management, including single sign-on, across the portfolio of University systems.

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http://www.it.ox.ac.uk/infosec/ispolicy/
7. IT SERVICE EXCELLENCE

The University deserves and should demand excellence in its IT systems which should be reliable, efficient, robust, secure and fit for purpose. User requirements should be at the core of programme planning and service provision, and quality processes are needed to ensure continuous service improvement. At Oxford we have the advantage that there are research groups in the University who are advancing knowledge in IT, programme delivery, cybersecurity and related areas. If effective engagement is enabled, the proximity of such activities should benefit IT delivery at the University.

Objectives

17. To be responsive to the requirements of the University through increased agility and innovation.
18. To embed quality management throughout the life-cycle of IT services and projects.
19. To improve IT services and their development through engagement with staff, students, other service providers and Oxford research groups.
20. To reduce replication of services by providing central services of sufficient quality and cost effectiveness that departments and colleges choose to opt in.

Activities

7.1 Review the existing service catalogue through engagement with University staff and students to ensure alignment with present needs, streamline where possible, and provide the best that can be achieved for the resources available.
7.2 Develop user-facing service descriptions to improve communication with staff and students, and increase visibility and clarity of information about services on offer and their costs.
7.3 Develop and publish a transparent service cost model that can be applied to core and cost-recovery services alike.
7.4 Provide a standard framework for IT project delivery and service management in order to ensure reliability, consistency and effectiveness.
7.5 Develop an IT governance framework to provide appropriate oversight of project and service delivery.
7.6 Put in place clear prioritisation and allocation mechanisms for projects and services to ensure appropriate levels of service support.
7.7 Establish improved channels for better consultation and increased dialogue regarding IT development across the collegiate University; encourage ways for colleges and departments to engage with the central development roadmap and initiate ideas about future IT programmes.
7.8 Develop an end-to-end support process underpinned by a central service desk that builds on the present IT support staff services (ITS3), thereby increasing engagement with departmental and college IT officers.
7.9 Develop protocols for the resilience, business continuity and disaster recovery of central services and provide guidance for their local implementation.
7.10 Develop a consolidated service point approach across IT Services, Bodleian Libraries, departments and colleges to provide a more effective support service for students and staff.
8. IT STAFF AND SKILLS

IT services and support are as good as the people providing them. The University is competing with the private and public sectors, as well as with other HE organisations for skilled IT staff. We need to ensure that we have strong managerial and technical career development paths for staff, appropriate mechanisms for recruitment, development, succession, retention and reward.

Objectives

21. To develop an IT organisation fit to deliver IT service excellence.
22. To develop a culture in IT that is professional and friendly, recognises leadership, cultivates collaboration, fosters continuous learning and promotes innovation.

Activities

8.1 Continue to focus on recruitment, development and retention of high-calibre staff. Build and develop management and leadership capacity within IT through training, mentoring and secondments.
8.2 Develop staff to enhance their effectiveness and contribution to the University’s goals by ensuring they understand Oxford’s purpose, structures and culture.
8.3 Take a proactive approach to collegiate University IT staff development to enhance skills, including IT leadership, IT service management, project management, system integration and software skills.
8.4 Build stronger mechanisms to provide support for divisional, departmental and college administrators and Heads of Departments through local IT recruitment and the support and development of existing local IT staff.

7 The IT organisation of the University comprises an ecosystem of information technology staff: people in IT roles in departments, administrative units, and colleges, and the central IT Services.