



IT STRATEGY

2017–2020

INTRODUCTION

This IT Strategy has been developed in wide consultation with

staff and students through Shaping our Future, workshops and workstreams. In all, several hundred staff and students have contributed their ideas, enthusiasm and experience to the development of this strategy.

One of the key aims was to provide a direct, clearly-defined link between strategic objectives and operational activities. The IT Strategy has been informed by the University Strategy 2015–2020, the Education Strategy 2015–2020, the Research and Innovation Strategy 2015–2020, by technological opportunities and business requirements. The IT services provided at the University starts from a very high level. IT receives good feedback, it is appropriately funded and uses best-practice service management tools to ensure a high quality, reliable service is provided at all times. The main focus of IT support (and expenditure) in the previous strategy was targeted at improving the student experience primarily for undergraduate, on-campus, three to four-year 'traditional' degree programmes. The strategy was very successful and has seen NSS scores rise dramatically year-on-year, from 74 per cent satisfaction on 'access to IT' in 2011 to a 90 per cent rating on 'access to IT resources when I need them' in 2015.

IT has made a significant contribution to many key projects, particularly the Library ground floor redesign, where IT assisted in improving the student experience by blending IT with learning. This has proved extremely popular with our students with library access numbers reaching record levels.

Looking ahead, the University strategies set a new vision and direction in which IT will play a role as an enabler of change. The challenge set by the new University strategies is to provide the same high quality services for an increasing number of on-campus students while extending support on other areas including: distance-learning students, students studying overseas, new innovation opportunities and a significant increase in IT for research. Over the period of the strategy, we will take particular advantage of maturing cloud services to enable us to provide a flexible, agile and more responsive IT service to support new strategic areas in research and innovation, and in education. Cloud provision will enable us to improve efficiency when implementing new systems and move routine, time-consuming services to the supplier. Good progress has already been made when the University migrated both staff and students to Google Apps for Education, which has been very successful in providing unlimited storage, collaboration and access to emails and documents anytime, anyplace, anywhere.

There are challenges we need to address if we are going to be successful and achieve the maximum benefit from IT to support the University's Strategic Aims. The current systems integrations are hugely complex, difficult to maintain, prone to failure and inefficient. Implementing new systems is unnecessarily complicated with a desire to meet all of our requirements no matter what the ongoing impact. Ultimately a disproportionate amount of time is spent on maintaining existing systems and integrations, which prevents us using IT to make sufficient progress.

Finally, good governance will be key to the successful implementation of the strategy, ensuring that all significant IT projects and work packages are approved and prioritised based on the value they bring and alignment with University strategy.

Andrew Minter
Director of Information Services

STRATEGIC AIMS

Research and Innovation:

To provide an infrastructure that improves the capacity and capability of our researchers to seek competitive research and innovation grants and engage with end users of research, both nationally and internationally.

- Research and innovation are fundamental aspects of the University and our research strengths have been recognised in the most recent Research Excellence Framework (REF) 2014. The University aspires to deliver transformational research and innovation, and to deliver even better outcomes in the next REF. We will work to create a culture of IT support for researchers and to further improve the IT resources supporting research and innovation.
- At present, central IT support for researchers and research groups is very limited and often only consists of providing network storage, data centre space or ad hoc technical help. Frequently, other priorities prevent our highly skilled IT staff from being able to support and work alongside our research staff.
- During the period of this strategy, we plan to embed research and innovation support as part of the core IT service. By moving some existing workloads to cloud providers, this will free up onsite technical staff to become trained to help research staff, to invest in a central IT research capability and to provide a research-focused IT service. We will work alongside Research and Innovation Services to be involved in the complete research cycle right from the bid stage.

To develop a culture of support for research and innovation, we will:

- Identify IT staff to support the research community directly, to better understand the needs of research groups and inform central IT of the upcoming requirements.
- Provide researchers with IT systems, software, computers and cloud services to assist them in their research activities.
- Provide support and advice for common research and innovation challenges, e.g. establishing project websites and domain names, supporting online CPD platforms, online store, data management plans and archive storage of data in long-term preservation-suitable formats.

- Liaise with Research and Innovation Services, Library and research and innovation leads to maintain awareness of current issues in research and innovation, ensuring that future IT developments are in step.
- Utilise IT facilities and services to raise awareness of research within the University including continued support for Pure and the Portsmouth Research Portal.
- Develop innovative methods of utilising digital technologies and IT within the University in support of research and innovation, promote new/emerging IT to the research and innovation community.
- Recognise the University's recent and future significant increase in innovation activities and provide a tailored IT service which supports these activities. Initial investigations will be carried out in procuring a commercial internet connection, cloud hosted telephony services which will enable number transfer, training and responsive day-today IT support.

To improve the IT infrastructure supporting research and innovation, we will:

- Provide and maintain IT support to research and innovation to facilitate global partnerships, international networking and collaboration, including helping to develop improved IT connectivity with partners, and supporting software and communication systems required to allow engagement with external, and particularly commercial organisations, e.g. University online meetings account.
- Support the integration of systems containing research and innovation related information, e.g. Pure with other corporate systems and to lead on structured identity management.
- Provide postgraduate researchers (PGRs) with access to IT and software which is targeted to them and their research. Software will be available to use on their own devices, where licensing allows, to support a fully flexible IT service.
- Support high performance computing (HPC), large data storage/handling requirements, secure data storage, purchasing specialist software, software licensing, support for defining specifications of IT equipment for use in research and innovation.
- Investigate and produce costed proposals for implementing a central HPC capability for use by all researchers and research groups across the University. This would provide easy access to computing power for researchers, which they can use as and when required. Providing a central HPC capability will improve overall university efficiency.
- Investigate long-term options for the archiving, preservation and storage of research data, as required by research funders.
- Develop awareness and consideration of the anticipated future changes to big data and big data storage, extending beyond the three-year scope of the strategy. We will investigate options to provide a big data capability for use across the institution.

Education:

We will support the delivery of an excellent student experience through continuous investment in high quality learning resources, and flexible, adaptable and innovative spaces.

Investment in our physical estate, and in both equipment and software, will support the provision of a consistently high-quality educational experience to all our students.

We will promote the wider and more creative use of enhanced Virtual Learning Environments, simulation facilities and other learning technologies to provide efficient and effective support for an integrated, streamlined and dynamic learning experience, irrespective of whether students are on or

off campus. Our course portfolio will include extensive blended and distance learning provision underpinned by responsive, agile and user-friendly central systems. We will enhance and maintain excellent learning, teaching and social spaces to ensure they facilitate the delivery of diverse learning approaches and activities.

Extending and enhancing the use of digital learning resources, simulation facilities and other technologies and techniques to better support student learning and inclusivity.

- Currently IT provides a very good experience for students and staff with up-to-date computing facilities available in a variety of locations across the campus. The main IT focus is very much on providing a reliable and stable IT environment on which staff and students can rely.
- The main concentration of student-facing IT equipment is in the University Library with over 700 PCs, laptops and Macs available for student use. Over the period of the strategy it is expected that the trend towards laptops and mobile computing will continue with increased services for bring your own device (BYOD). We have already seen that the 350 laptops we have in the library for students are extremely popular.

We will further develop IT capabilities to fully support the Education Strategy:

- We will enable students and staff to have access to software applications and information easily from wherever they are. We will provide software to students on their own devices (BYOD), taking advantage of student licensing opportunities. This will support both on-campus students and will be of particular benefit to distance learners and CPD.
- All stakeholders will support the digital literacy of our staff and students to ensure all are able to make best use of the IT facilities and software which are available, e.g. Digital Literacy Programme. We will provide learning resources to assist staff and students in achieving the best from the technology which we provide.
- We will assist staff in making the best use of the facilities by providing full training and rapid support.

To provide continued investment in our physical IT estate:

- We will provide additional laptops for students to use at popular locations around the campus. This will enable students to have access to IT from most major buildings around the campus. This will ensure that we maintain our NSS position on access to IT, the target is to score above sector average.
- We will provide IT for student and staff use keeping abreast of technological developments and demand for additional computers and computing power. The current trend of using laptops provided from our locker system will continue as it supports flexible and group working. New buildings such as the Future Technology Centre will embrace this flexibility and ensure it is included in building designs.
- We will provide high quality, up-to-date, reliable, audio visual facilities in our teaching spaces which are intuitive, easy to use, are fully supported and keep pace with changing teaching requirements. This will include providing lecture capture capabilities in selected lecture theatres and seminar rooms.
- We expect to see the trend for more and more access to our systems to originate from mobile devices. We will ensure that personalised information is available to students and staff, which is fully accessible from a mobile device.

- Students will be inspired to learn and are able to identify their learning gain using technology. We will track student learning and identify what interventions would help them develop while, at the same time, ensuring student privacy is maintained.
- Staff will be provided with up-to-date, relevant information derived from our central systems to enhance student support. We will provide learner analytics by unlocking information stored in previously siloed systems to provide a holistic view. All future IT systems will enable full information integration.
- The IT systems will enable students to easily record their extracurricular activities which will contribute towards their Higher Education Achievement Report and the hallmarks of a Portsmouth Graduate to give them the evidence to take with them when they graduate.
- We will be bold and try out new technologies e.g. investigate whether an Innovation Lab would help to showcase new technology, which was the most popular idea in the digital theme of Shaping our Future. The Innovation Lab would be available to staff and students and it would provide hands-on demonstrations of new technologies and cutting edge digital equipment for staff and students to try out to see if they are appropriate for wider adoption.

Effectiveness and efficiency:

Invest strategically in our IT, digital infrastructure and systems to ensure support for our ambitions effectively and efficiently.

To provide the most effective and efficient IT service we will:

- Ensure that all new systems are implemented as part of the overall IT and University strategies. New systems implementations will be expected to have more defined requirements particularly concerning how they fit the strategic aims and align to the IT architecture. We will overhaul any poorly performing process as part of new systems implementation rather than automate existing processes. When implementing new systems close attention will be given to scope creep, to avoid situations where the purchased system becomes highly customised to meet ever increasing requirements.
- Provide an effective, efficient and flexible IT service providing cost savings where possible. We will use cloud providers to reduce the demand on in house support for business systems, which in turn will lead to a more agile IT service.
- Provide PCs as the default standard equipment for staff and students – Apple Macs will only be used where there is a clear requirement, e.g. where students are required to use Macs as they are the de facto standard used in industry. It is expected that the number of Apple Macs in use will reduce over the term of the IT Strategy. The Governance Board will keep this under review, authorising updates in the range of computer equipment available as appropriate.
- Investigate and produce costed proposals for moving more of our business and eLearning systems to cloud hosting. Cloud hosting will enable IT resources to be freed up to work on key strategic priorities. Cloud hosting can provide other advantages such as enabling upgrades to happen outside of the working hours removing downtime on system and saving staff time across the University.
- Implement Single Sign-On (SSO) across all key University systems, which will enable students and staff to access all systems using one secure username and password. This will improve effectiveness and efficiency across the institution, while at the same time, improving security and dramatically reducing support calls.

- Ensure that the latest software that is delivered to students and staff is compatible with our corporate systems and that any incompatibilities are removed.
- Implement a University-wide Identity Management (IDM) solution to greatly reduce inefficiency providing information automatically across systems rather than manual rekeying. IDM will provide identity and security management; Central control and management of individual's private data (all Applications/Services use a single 'source of truth'); enable seamless access to all applications and services and enable automated recovery procedures for forgotten passwords.
- Provide the technology to enable mobile working whether using flexible spaces on campus or working away from the University. Mobile workers will have access to the services they need wherever they are, this includes: software, their University extension number and a virtual private network, which will enable them to work securely as if they were on campus.
- When procuring new IT systems, aim to keep them as 'vanilla' as possible, use them as they are designed only allowing modification where there is clear, long-term value.
- Aim to reduce duplication of service provision across the IT estate. Over time we will aim to have one system for each activity across the University and that this system should have a standard package of capabilities for all faculties and departments.
- Provide energy efficient sustainable IT systems taking advantage of energy saving technology where available.
- Aim to reduce the amount of printing which is needed across the University and work towards paperless meetings by implementing technologies and practices which will support this.

BUSINESS SYSTEMS

- In the previous IT Strategy, the aim was to take advantage of 'best of breed' systems for core business activities, e.g. finance, payroll, HR. While this has provided good point solutions, it has not led to a fully integrated IT environment. The lack of integration has in turn led to a set of systems with which it is difficult and complex to produce good quality management information across them. Interfaces, where they exist, are typically complex, difficult to maintain and do not provide real-time updates.
- There are systems now available on the market called Enterprise Resource Planning (ERP) which provide an integrated view of core single business processes, often in real-time, using common databases maintained by a database management system. During this strategy period an evaluation will be conducted to consider the potential of a University-wide ERP and determine whether this is a viable option for implementation.
- We will implement 'fit for purpose' reviews of all key IT systems, including our business systems, at least once every five years to ensure they are still meeting the University's current and future requirements, evaluating whether the supplier is still providing the services needed.
- IS will own corporate systems, working with business owners as their clients. IS will be responsible for ensuring systems are implemented as vanilla as possible, systems are procured which are fully integrated with each other. It is accepted that, in the pursuit of overall University benefits, all of the business owner requirements may not be able to be met.

UNDERPINNING IT

The services which form the bedrock of the IT infrastructure will continue to be upgraded to provide up-to-date, fit for purpose infrastructure including: high speed data network, high capacity Wi-Fi network and network storage. It is envisaged that investment will continue to enable the underpinning IT to keep up with the increasing demands placed on it.

- The integration of systems and the sharing of data between them is of crucial importance to achieving high levels of efficiency and effectiveness. IS will implement a standardised data model that will establish clear processes for the sharing of data between systems. We will also enable management of data to ensure that for each data set there is a single source of truth.
- We will implement an Enterprise Service Bus (ESB), this will require that each system has a standard interface. An ESB provides secure real-time communication between applications, cloud and web services. It also provides the technology required to adopt a Service Oriented Architecture (SOA).
- We will migrate standard operational services to cloud hosted provision with the supplier where appropriate. This will reduce University resource requirement and potentially lower overall costs.
- We will take advantage of new technologies which will drive improvements in the service, improve efficiency and reduce complexity.

GOVERNANCE

- The use of IT as an enabler has significant potential to improve services provided for students and staff across the University. Given this potential there are many and increasing demands on IT services within the University. There are choices to be made about how we direct our IT staff and spend the IT budget to ensure we achieve best value while keeping alignment with University Strategies and with IT architecture.
- There is a need for an overarching IT Governance Board, which will include representatives from across the University, to act as the gatekeeper for IT enabled projects and significant work packages across the University. The purpose of the board is to ensure that IT activity is aligned to the strategic aims of the University, encourages collaboration with other potential users, approve or reject work requests and provide relative priorities for the successful proposals. Without appropriate governance it will be very difficult for IT to contribute the full benefit to the University strategic aims as it will continually be diverted onto other activities.

The aims of the IT Governance Board are:

- to be the single source to review, approve/reject and prioritise projects and significant IT work packages
- to ensure that IT work is appropriately aligned with University Strategy
- to encourage collaboration with other potential users to ensure that there is more standardisation and increased efficiency
- to ensure that expenditure on IT is value for money
- to review all IT-related investment proposals prior to a decision being made on funding, to ensure IT related IPs are in line with strategic aims, deliverable, coordinated and best value is being achieved
- to ensure integration with other systems is achieved and that new initiatives are coordinated with the University's approved IT architecture

- to ensure common standards are maintained across systems

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