Digital Technology Strategy 2020-2025

Digital Technology Strategy

Vision: Tomorrow's Technology Today

Our vision is to facilitate the University's strategy through the provision of high-quality technology-based services, in the most cost-effective manner. We will deliver safe, reliable, accessible and bilingual ICT services to support teaching and learning, research, the student experience, and all the University's processes.

Introduction

IT Services is fundamental to the operational needs of the University and a strategic enabler to deliver the University's future strategy, priorities and aims.

IT Services at Bangor is a successful and valued department: service availability is approaching 100%, user surveys return over 90% satisfaction, the most recent NSS scores are higher and IT Services have assisted Halls to win best UK "halls wireless" service. The successful transition of core services such as Office 365, Panopto and Blackboard demonstrates transformational changes which deliver on numerous fronts. IT Services aims to build on this success with a view to continually improve services and support.

IT Services will capitalise on its cloud and mobile-first multi-channel approach to deliver maximum value from each piece of technology. We will use the technology to bring efficiencies to University processes and will continuously adapt to the rapidly changing technology landscape to provide a safe, secure and reliable IT service fit for today and for the future for both students and staff in schools, colleges and professional services. A demand-led cloud approach combined with internal and external resource and working with external entities will enable BU to deliver the strategy whilst allowing an agile response to changes in the academic or technology sector. Universities are in a very challenging period and those who chose to deliver an all-inclusive accessible digital experience will thrive leaving others to struggle. IT Services will support the University to drive efficiencies, improve University processes and create an institution which is fully digital.

Finally, good governance will be key to the successful implementation of the strategy, ensuring that all significant ICT projects and work packages are aligned with the University's strategy, are approved and prioritised by the appropriate groups, and are based on the value they deliver.

Simone Barbaresi
Director of IT Services

Strategic Principles

- **Demand-led**: consultation with students and staff (task and stakeholder groups) to develop new and/or improved services. The demand-led approach will ensure limited resources are targeted to maximise the return on investment and to prioritise improvements. The alignment of technology, people and finance is critical for success and will provide positive outcomes for transforming complex traditional problems into simple digital solutions.
- **Customer focused**: the service will be customer focused; safe, secure, accessible, reliable and intuitive, delivering high performance and responding to customer needs with excellent support structures.
- **Accessible**: all the aims are committed to providing a service that is accessible to the widest possible audience, regardless of technology or ability. IT Services are actively working to increase the accessibility and usability of IT Services and in doing so adhere to the UK's standards and guidelines.
- **Cloud-first**: continue a "cloud-first" approach with a long-term view to move to a cloud-only strategy with a preference for SaaS (software as a service).
- **Mobile-first**: digital services will be fit for purpose and embrace new technologies that add value. All new services, applications and systems will have a "mobile-first" multi-channel approach.
- **Data analytics**: this strategic asset will be used to add value to projects with the aim to better equip the University to predict its future. A holistic analytical single view of data is required to combat the multiple silo product-oriented approach which has created silos of different technologies, standards and practices.
- **Bilingual**: IT Services will seek to ensure customer facing systems and services are available bilingually and will continue to provide support through the medium of Welsh and English
- **Digital literacy**: it is recognised this fully digital world requires digital literacy to keep pace with technological development, and there is a need to work with other University departments to provide appropriate training to ensure the adoption of new services is as fully inclusive as possible.
- **Efficiency**: teaching, research and administration are all core activities and a holistic view of their IT needs and inter-relationships will avoid duplication, overlap and exceptions; this will improve the service to reduce costs and achieve financial benefits.
- **Value**: the best value for money will always be sought. Goods and services will be purchased through framework agreements where possible. Services will be as cost-effective as possible – costs will represent the 'total cost of ownership', and will be kept under review.
- **Sustainable**: ensure that sustainability is built into any solution – proactively minimising life-time carbon footprint and energy utilisation. Re-use software components to reduce development time.
- **Smart campus**: the digitally connected intelligent campus will benefit staff, students and the environment by using the wealth of data from people and buildings to dynamically deliver the most efficient, appropriate and cost effective service to all concerned.
- **Working together**: systems will be introduced to make collaboration between the University and strategic partners easier by creating an environment which encourages secure and safe data sharing; automated data flows will be introduced to avoid data inconsistency and to ease the free flow of appropriate data and knowledge.

Aim 1
Supporting Learning, Teaching & the Student Experience

"Supporting our students to make the best possible use of ICT at Bangor. Make our learning environments state of the art"

- Provide accessible facilities that support Bangor's excellent teaching – working closely with Property & Campus Services to create spaces that people enjoy working in.
- Allow students to use their mobile devices wherever they wish to work on campus.
- Exploit new developments in classroom technology.
- Develop learning spaces so that collaborative and social learning opportunities can be exploited.
- Ensure that online services are available through mobile and other channels, are accessible and bilingual.
- Continue Bangor's excellent IT scoring in student feedback including the annual NSS.

What does this mean?

Students expect to learn everywhere not just within the traditional teaching spaces. IT will ensure that this is possible by continued development of services to support students and learning.

- Upgrade the remaining WiFi infrastructure to the new award-winning system. This will provide fast WiFi access across all student-facing areas including rooms in Halls, social and learning spaces. IT Services recognises that students will wish to use WiFi for a range of applications including those not directly related to their studies.
- Continue to work with colleagues across the University to develop and modernise the learning spaces, classrooms and lecture theatres. Investigate emerging technologies for wireless connection of AV devices and AV transmission over networks.
- Create and develop social and collaborative learning spaces providing appropriate. infrastructure to support students own devices. This will include power and WiFi provision.
- Ensure our teaching space IT/AV systems are regularly updated and meet the expectations of teaching staff/students. Ensure common control system design so that presenters feel comfortable in using the technology in any space. Provide rapid response to users in need of assistance in teaching situations. Proactively remotely monitor our teaching systems to detect faults before they are noticed by the user.
- Continue to develop online learning and e-assessment support.
- Students will be exposed to industry standard software applications and gain experience in their use to assist in future employment opportunities.
- Migrate Blackboard content to the Ultra Interface to provide a modern, mobile-friendly virtual learning environment.
- Work closely with the student body to ensure our services reflect and support their needs.

Aim 2

Supporting Research

"We will facilitate strengthening BU's position as a renowned research institution"

- IT Services will continue to provide all researchers with a standard level of support but will seek to develop a more specialist service which is able to support researchers with more advanced technical requirements including both specific software and hardware.
- The University's Research, Innovation and Impact strategy seeks to focus its research into key areas where there is research excellence in depth. IT Services will mirror this focus and concentrate its specialist research IT support into those areas best placed to deliver high quality publication outputs, increased grant capture from blue chip funders, demonstrable societal and economic Impact and successful REF outcomes.
- This focus should ensure that IT Services maximises value in supporting research from its limited resources.

What this means

We will provide secure, robust and appropriate access to ICT platforms to support research.

- Provide advanced research computing support and continue to offer HPC (High Performance Computing) support at Bangor.
- Capitalise and concentrate existing IT research staff into a single team who will provide support and training for the core research themes identified in the Research, Innovation and Impact Strategy.
- Have the flexibility to support shifts and changes in the requirements of researchers as they in turn respond to developments in their research fields.
- Offer adequate and well managed research data storage ensuring investment matches developing demand.
- Build on the success of the Pure research information system to create a service to facilitate, manage and administer research activities.
- Ensure that early-career researchers and postgraduate students have access to a high standard of core IT support and access to the hardware, software and training required to underpin their research and develop their research skills.

Aim 3
Supporting the University's Processes

"Introducing digital systems that increase the University's efficiency"

- Seek opportunities to improve processes which can be enhanced by digital solutions which benefit the wider University. Empower colleagues who market the University to enhance the Digital Marketing Strategy by adopting new and emerging technology to maximise recruitment potential.
- Deliver IT systems which service the legal and mandatory requirements.
- Capitalising on the cloud-first policy will replace legacy systems with cloud services and adopt cloud design principles for locally developed systems.

What does this mean?

Working with the reformed Business Applications and Student Applications Project Boards to identify and prioritise development projects of benefit to the wider University.

- Data analytics should be used to take advantage of the wealth of data which is available to Bangor to provide information and knowledge to others to improve business processes and the experience, engagement, retention and recruitment of students. It is recognised the quality of data will need to be improved in certain areas.
- The student records, enterprise accounting, CRM and other core systems are seeing major changes in their market which include cloud offerings. Bangor will take advantage of this, to offer cloud-based solutions as they become available.
- By working closely with colleagues in schools, colleges, central services and external partners, Bangor can move towards its goal of reducing paper by exploiting opportunities for further digitalisation.
- Modern development practices will be used to ensure rapid delivery of future solutions which will be sustainable, offer standard functionality with simplified process logic. Standardisation of processes across the institution will be maintained, and exceptions will be avoided.
- Continuous improvement will lead to improvements in the efficiency of major process, such as curriculum management, web publishing and various legacy financial process.
- In-house software development will only be done when there are no viable commercial solutions. Bespoke software will be designed to be mobile friendly, usable anywhere, based on modern cloud design patterns and will feature increasing use of artificial intelligence and chatbot services. Moving towards more continuous integration and following a more agile development method will allow regular application updates.
- Deploy the latest in printing technology to print on demand only what is required. Create personalised and focused output in our marketing materials e.g., personal prospectus. Focused, personalised materials will reduce overall print volume but provide relevant materials of the highest quality with maximum impact. Lessing our use of paper and chemicals in production will provide a more sustainable service.

Aim 4
Cloud-First

"IT Services will continue to adopt a cloud-first approach"

- Any new service will be required to be cloud-enabled.
- Any major upgrade to an existing service will take the opportunity to become a cloud service.
- The preferred cloud service will be SaaS (software as a service).
- BU should take full advantage of cloud storage and services to achieve greater value
- The "cloud first" aim will share parts of BU's estate strategy for sustainability and a reduced University footprint.
- We will take the first steps towards a cloud-only strategy.

What does this mean?
Cloud services refer to IT facilities hosted off site by a third party and accessed via the Internet. Often the fact that these services are hosted off site is not apparent to the user – Bangor's email system has been cloud based since 2013, with Panopto following in 2016 and Blackboard becoming cloud based in 2018.

- These transformational cloud technology changes will be followed by opportunities in other areas such as digital marketing, finance and estate management.
- BU will continue to follow the UK government's 2013 cloud policy: "When procuring new or existing services, public sector organisations should consider and fully evaluate potential cloud solutions first before considering any other option. This approach is mandatory for central government and strongly recommended to the wider public sector".
- The cloud approach will allow users to securely access their data from anywhere from any device allowing for flexible mobile working.
- This new flexible working environment will make it even easier for collaboration and cooperation.
- Many IT software suppliers are providing their products in the cloud and where this is financially and technically viable then this is the preferred delivery method.
- A core aim in the Estates Strategy is to reduce BU's estate footprint. IT Services will work with PaCS to deliver further savings by introducing technology to encourage hotdesking, collaboration and remote working. Reducing the need for multiple data centres will reduce BU's carbon footprint, service costs and space.

Aim 5

Digital security

"IT Services is committed to ensure online systems are protected and are in compliance with all legislative requirements as well as the requirements of the University's governance"

- Ensuring online assets are protected from unauthorised access.
- Integrity ensures the modification of data assets is handled in a specified and authorised manner.
- Our systems availability needs to ensure that authorised users have continuous access to the data assets.

What does this mean?

Protecting the University's digital assets against data corruption, loss, leak or attack, regardless of location, is vital for business continuity. By their very nature universities are a very difficult environment to secure and the balance between security and usability is a careful line to tread so as to maintain a satisfactory user experience.

- IT Services will maintain this balance to enhance the user experience whilst continuing to work to protect the digital environment from malicious attacks from both internal and external sources and to utilise technology to protect data.
- Where appropriate relevant external certification will be sought to formalise procedures and processes to demonstrate adherence to relevant legislation, best practices and industry standards.
- Software and hardware will be scanned for vulnerabilities, any vulnerability marked as critical will be addressed and any item found to be out of support will be removed from the network.
- Criminals see the university sector as easy prey for electronic scamming (email, SMS and mobile) because of the millions of potential targets. IT Services will continue to educate, protect and notify individuals to criminal digital activity.
- The growing use of cloud services generates new IT risks, IT Services will develop a Cloud Assessment Framework for Bangor to ensure cloud providers are able to meet or exceed the same standards that would have been achieved by on-premises solutions.