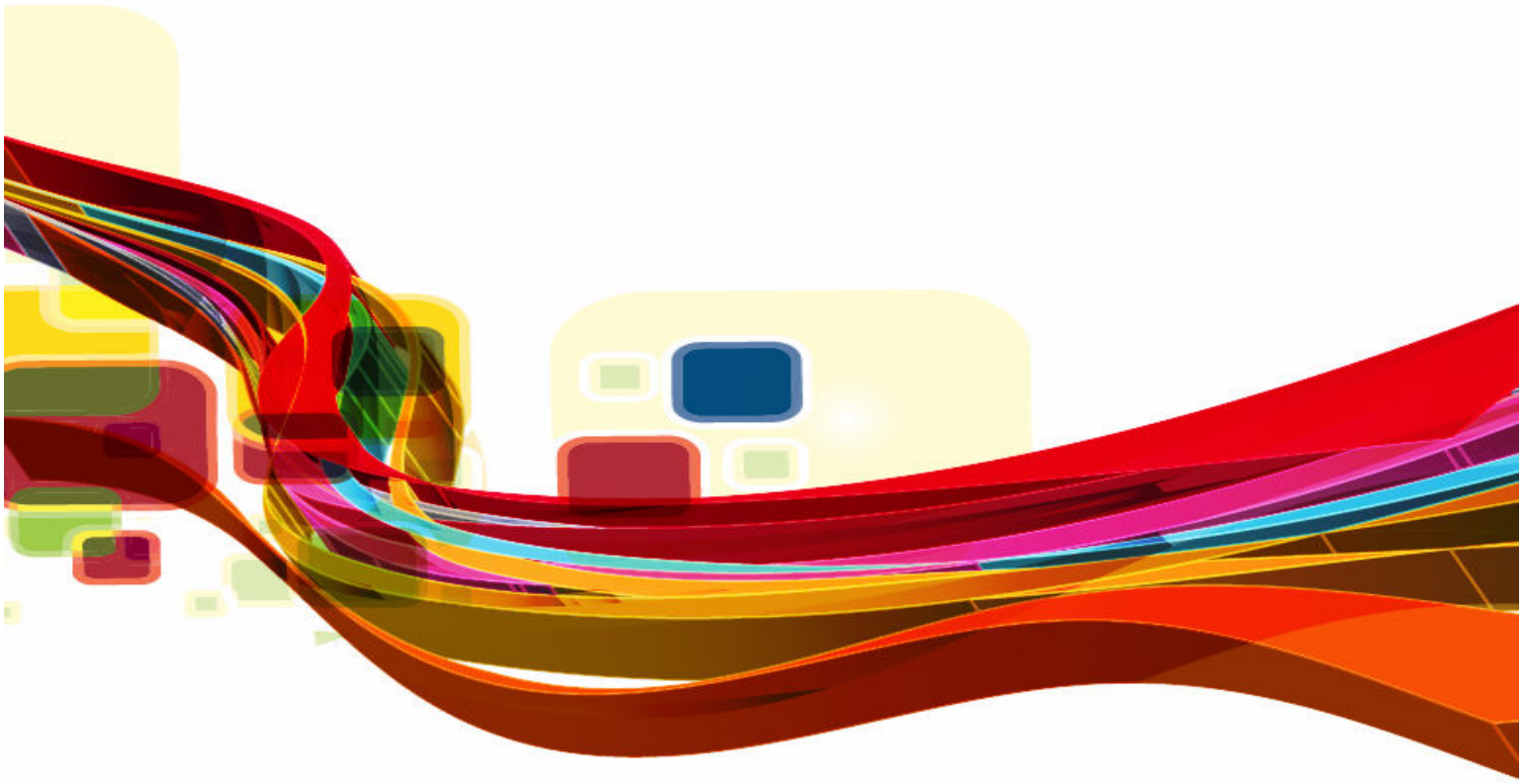
University of South Wales
Prifysgol De Cymru

University of South Wales

ICT Strategy

2014 - 2018



Revision History

Version No.	Date of revision	Summary of changes
0.1	December 2014	Initial release to DISAG for consultation
0.2	15th May 2014	Released to DISAG for consultation
0.3	19th May 2014	Released to Finance and Resource Committee for consultation
0.4	18th June 2014	Released to Corporate Heads for consultation
0.5	10th November 2014	Approved by Finance and Resources Committee
1.0	8th December 2014	Approved by Governors

Contents

Introduction and Overview

The University has a vision to be "*the University of choice in Wales and beyond for students, organisations and communities who value vocationally-focused education and applied research which provides solutions to problems that affect society and the economy".*

The Academic Plan, "the vehicle to bring the University strategy to life", states that we need to build on our strengths and have clarity of purpose in relation to what we are going to concentrate on for the next six years in order to meet our strategic goals and ensure our long-term sustainability.

ICT is strategically placed to be exploited as a catalyst for change.

The University operates an extensive network of IT resources, including some 4,000 personal computers supporting around 33,000 students and 2,000 staff. Information technology is pervasive in all aspects of study and work at the University, including the classrooms of which a majority are equipped with AV resources.

The University has a record of achievement and strong reputation for being at the leading edge of the adoption of relevant technology to innovate teaching and learning and to manage its ICT investments. Within UK higher education, it was among the first to:

- *develop a web presence;*
- *provide state of the art Computer Aided Design and Computer Aided Manufacture (CADCAM) facilities in its teaching;*
- *apply virtualised technologies for storage and servers and clustered IT laboratory provision to manage down costs;*
- *develop and deliver fully online distance learning courses though the e-College Wales (ECW) programme;*
- *and adopt cloud services to deliver free student email.*

It also has a record of developing innovative bespoke solutions where off-the-shelf software applications were not suitable to meet requirements e.g. the Enquiries and Admissions system was developed to maintain communication with potential students, and the 'Make IT Personal' student portal was designed to personalise information to individual students.

Universities operate in an increasingly complex and rapidly changing global environment. The consumerisation of IT, competition for students, flexible modes of learning and teaching and the geographical distances between University campuses have enabled our expectations to broaden:

- *Increasingly, our students are 'digital natives' (individuals who have never known a world without computers) and increasingly entwined with mobile technology.*
- *Students and staff are bringing their own mobile technologies/services to the University and there is an expectation that these will be used for their daily activities.*
- *Knowledge, information and data are the driving forces for informed management decisions with a requirement that there is a single "source of truth " for the underpinning data.*
- *Keeping systems maintained in a timely fashion to meet the proliferation of annual statutory requirements is a significant challenge e.g. HESA returns.*
- *Students and staff are expecting to strike a balance between work/life/study with opportunities for traditional modes of campus based study/work to be broadened with an expectation of 24 hour*

access and 24/7 support.

- *Communication between parties (staff and students, staff with staff, students with students) and working as a team are expectations in different modes of study, time differences, and geographical distances involved.*
- *Technological changes occur at a seemingly relentless rate and expectations from students' and staff are high and changing rapidly.*
- *and, this needs to be addressed within the context of the pressures on institutional income whilst maintaining control over its ICT investment.*

Within this context, the University like all other organisations is reviewing its provision and delivery models and to prioritise and refocus IT investment whilst demonstrating intent and purpose. The University is dependent on relevant, efficient and up to date technology to support and enhance "the business of higher education".

This Plan has drawn its strategic priorities from the need to provide accurate information, to manage costs and the technology required to support the vision of what it would be like to be a learner at USW in 2020 (See appendix1).

GOAL

- ***To deliver a pedagogically sound learning and teaching experience which engages the learner and supports those delivering teaching in their role.***

- ***To use ICT to deliver efficient and cost-effective services.***

- ***To deploy 'fit for purpose' ICT infrastructure and services to support the University in realising its strategic ambitions for our students, applied research & innovation, and engagement.***

The University must continue to develop its ICT capacity and capability so that by 2020 staff and students will be immersed in employment and educational experiences that, as a minimum, equate to that at any other leading learning and teaching institution.

The success of the IT environment will have an impact on the quality of the student and staff experience. The University's agile IT infrastructure will enable opportunities to be seized to innovate as they emerge and to deal with challenges in ways that make technology a strong enabler to learning and teaching[1]. Greater use will be made of quality simulation resources, available via the internet, through open educational resourcing or through new devices and systems to support learning in simulated environments.

ICT infrastructure and enterprise systems will support evidence-based decision-making in the University and contribute to efficiency in administrative operations. As enablers, our key 'enterprise systems' must support efficient business processes to enhance staff experience. Equally importantly,

[1] W14/31HE Revised Enhancing Learning and Teaching Through Technology Strategy, HEFCW July 2014

well integrated user-centric University systems will exploit emerging technologies to allow people to focus on their academic endeavours and not on technical or administrative barriers.

Strategic Aims

ITS1 - Enhancing the Student/Staff Experience

Emerging technologies which are not yet mainstream and not yet embraced in University life will change the way that current activities are carried out in 2020 and beyond. Students and staff will expect to use these technologies in their University work and in other aspects of their lives; the challenge, and the opportunity, for University IT is not only in accommodating this, but also in exploiting the consequent opportunities to transform the way work is done. Our responsive ICT infrastructure and services will need to reflect the needs of our students and staff through an agile and innovative approach to problem solving and demonstrate versatility in practice.
The University's 'People Plan' will ensure that "staff will be enabled and required to work in a technologically adept way".

ITS1.1 - Effective collaboration and sharing of good practice - All students and staff will be able to collaborate with each other using common systems (e.g. email/calendar/Webinar).

ITS1.2 - Digital First (Digital by default) - The University will aim to provide greater information and access to resources and services online reducing travel time and costs, and the requirement for face-to-face interactions. Technology will be used where it can deliver the same high standards in a way that is more flexible and convenient for students and staff and at a lower cost. The student portal will evolve to integrate University-provided tools with those of the cloud, social networking, online collaboration and the vast resources available through third party internet-related suppliers, e.g. Google, Twitter, Facebook.

[Academic Plan Strategic Target: APT4.4]

ITS1.3 - Flexibility and accessibility of provision – Mobile applications will be available to make use of inbuilt global positioning systems (GPS), Near Field communications, compass, accelerometer and gyroscopic orientation sensing. Students will have the choice to download these applications to provide location dependent information; getting from A to B; paying for goods and services; registering their attendance; participating in classroom surveys and voting; accessing electronic learning resources and engagement with online lectures.

ITS2 - Supporting the Learner Journey

Enhancing, enabling and supporting the learning experiences of staff, students, employers and partners at a place, pace and mode of their choice through the integrated and embedded use of pedagogically sound technology lie at the heart of the University Vision. Technology will be embedded across the life-wide learner journey, i.e. pre-University, during the formal learning experience and post-learning into employment.

This will result in a digitally fluent staff and student population enabling wider communication and

enhancing the academic and pastoral life of the University. USW graduates will possess high levels of employability attributes and digital literacy through practical awareness of and skills in appropriate technologies for the academic and working worlds.

Approach

Technological awareness, support, education and research to enable pedagogical developments for staff and students will be progressed in partnership with Faculties, Corporate Departments and partners across the University of South Wales Group. Collectively, this will stimulate and enable the development of innovative and appropriate technological creativity, competences and confidence reflecting and linking with initiatives across the broader Welsh and UK pedagogical spectrum. This significant cultural shift will be progressed through:

- A shared, owned and embedded vision of enabling learning through appropriate technologies;
- Clear communication of the benefits of learning through appropriate technologies to staff and students, promoting increase in the range of teaching styles, greater efficiency in working practices, enhanced effectiveness in accessing information, variety in assessment methodologies and enhancing the student experience;
- Owned and embedded localised action plans ensuring that enhancing learning through technology developments is embedded in learning and teaching practices;
- A robust staff and student educational development programme focusing on appropriate digital literacy skills based on sound pedagogical principles– with a staged associated expectation of these pedagogic approaches as the norm - at times and places which suit them best and maximize engagement.

All learners will be enabled to:

- Gain a level of digital fluency to support their learning and enhance performance within learning and employability contexts;
- Learn flexibly and at a pace that works best for them within regulatory parameters;
- Engage with the institution at all levels, strategically, pedagogically and pastorally through technological approaches;
- Customise (wherever possible) their experience of learning resources to inform pedagogical styles;
- Experience equality of access to technical and pedagogical support regardless of geographical location and time zone;
- Access to a wide variety of course materials, learning resources and activities reflecting different mediums and locations with similar learning outcomes.

All staff will be enabled to:

- Gain a level of digital fluency to support their learning needs and those of their students irrespective of geographical location;
- Customise and engage in flexible staff development appropriate to their needs, both online and face to face, to enable them to participate in and deliver learning through traditional, blended and distance online delivery, as appropriate;
- Access resources for learning and teaching with flexible and responsive technical and pedagogical support;

- Be immersed in a technology-rich environment which meets all their accessibility requirements and those of their students;
- Acquire knowledge and awareness of emerging technologies which support or enhance learning and teaching where appropriate;
- Experience equality of opportunity and support in the use of technology enhanced learning irrespective of their mode of employment.

From a technological perspective, this will meet the following objectives:-

ITS2.1 - Enhancing Learning and Teaching through technology – Pedagogical sound learning and teaching approaches will be supported by a blend of solutions which are reliable and available to students 24/7/365.

- Staff and student feedback will inform the plans for the University's virtual learning environment and associated learning technologies.
- Effectiveness of provision will be monitored against the UCISA 'Survey of Technology Enhanced Learning for higher education in the UK'.
- Courses will continue to be supported by Social Media tools, Social Networking, Video Conferencing, Webinars, Lecture Capture, Virtualised Learning Environments and Plagiarism detection tools.
- Learning material will be available in multiple formats.
- There will be greater adoption of simulation and scenario tools.
- Students will be offered additional technology-enhanced learning focused training.
- A greater number of learning applications will be easily accessed on students' mobile technologies e.g. Blackboard Mobile.
- A greater number of artefacts will be available on iTunesU.
- The development of Y Porth will continue to be supported in line with the Coleg Cymraeg Cenedlaethol strategic plan

[Academic Plan Strategic Targets: APT2.4, APT4.5]

ITS2.2 - Enhancing the Learning Environment – The University will continue to review and refine its collaborative learning spaces to enhance the learning experiences of staff and students. Traditional learning environments will evolve and standardised classroom technology deployed. As modes of teaching delivery migrate to a mix of on and off campus, appropriate blends of synchronous and asynchronous mainstream and emerging technologies will influence the design and use of the learning environment.

[Academic Plan Strategic Targets: APT4.6]

ITS2.3 - Software Applications – These will be managed and licensed to allow students and staff to use them across any device, anywhere and at any time.

[Academic Plan Strategic Targets: APT4.7]

ITS3 - Supporting Research, Business and Community Engagement

The University will look to implement research systems that will keep pace with changing requirements:

ITS3.1 - Support and facilitate effective research leadership and management.

ITS3.2 - Support the dissemination of high quality research in the best channels possible.

ITS3.3 - Promote and support multidisciplinary collaborations across the institution, nationally and internationally.

ITS3.4 - Promote and support collaborations with external partners such as industry and business.

ITS3.5 - Meet statutory requirements.

In partnership with the Public Sector Broadband Aggregation (PSBA), the University's infrastructure will be developed to fully support its engagement with businesses and the community. Businesses will have secure access to High Performance Computing facilities. Staff seconded to businesses under initiatives such as the 'Strategic Insight Programme' will have access to university facilities regardless of location. Strategic partnerships will be developed with local government and health agencies through the 'SE Wales Regional ICT boards' and 'Prosperity Partnership Boards' to align broadband access and cloud based services across the region. Our business incubation and UHOVI activities will benefit from an expansive broadband internet network across the region.

[Academic Plan Strategic Targets: APT4.8]

ITS4 - Supporting the Business process of Higher Education

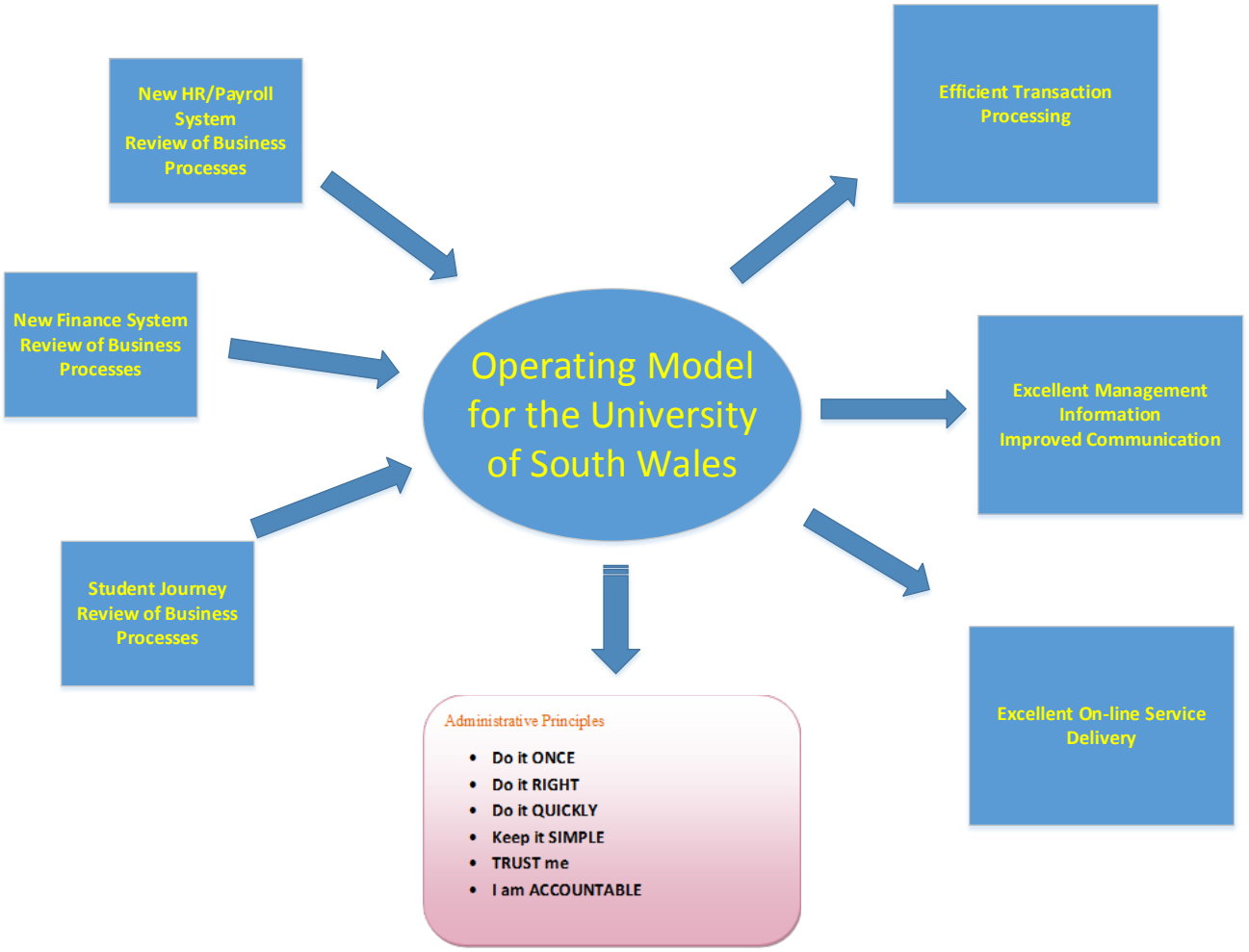
From the end-user perspective, University systems must (at least) meet, and possess the capacity to exceed, the expectations that students and staff have from their experience as consumers.

Some examples of how this could work in practice are:-

Enrolling online should be as easy and convenient as making an online purchase; working with the University finance system should be as easy and convenient as internet banking. The experience of "back-office" staff, for example staff in the finance department using the financial systems as distinct from those merely carrying out transactions, should be comparable with the experience of those staff in similar back office roles in relevant industries, e.g. in the financial services industry.

The University spends a vast amount of time on manual tasks to bridge processes across departments, business units, platforms, applications, or geographic locations. These manual tasks can be ineffective and inefficient, diverting staff away from value-adding projects, slowing the distribution of important information and ultimately costing the University money.

The University will look to deploy Enterprise Process Automation (EPA) software which is designed to unlock the potential for speed, efficiency, accuracy and compliance by creating alignment across the business and technical silos.



There will be a requirement to replace and integrate enterprise systems to unlock the data for access by stakeholders as depicted in the diagram above. These will include:

- *Replacement of HR, Payroll and Finance systems*
- *Integration of timetabling linked to course, modules and student records*
- *Marketing of academic portfolios*
- *Library management systems*
- *Integrated CRM*

Enablers

ITE1- Production of 'fit for purpose' Management Information

Data is one of the University's most valuable assets and there must be a single "source of truth". The ability to visualise data, interrogate it and gain new insight will inform and transform the decisions we make and the outcomes that follow.

Through the use of suitable business intelligence derived from multiple sources of data (structured and unstructured) the University will be able to visualise, analyse and explore data, uncovering new insights in areas such as:

- *Enhancing student retention and success by*
    - *Enhancing communication to staff and students on on-course attendance and technological engagement with predictive modelling of attainment through appropriate technologies;*
    - *Strategic and operational summary reporting including analyses of overall course retention and success achievements against course targets;*
    - *Identifying opportunities to maximise potential through appropriate positioning of enhancement opportunities;*
    - *Evaluating the impact and success of specific projects in retention and achievement.*
- *Evaluating the success of student recruitment and marketing*
- *Assessing financial performance, discovering potential savings*
- *Improving strategic planning*
- *Optimising resources, aligning university resources with demand*
- *Benchmarking performance against internal and external metrics*

Data will be held securely, but available to appropriate users and the owners should be able to manage their data.

The following information management principles will apply:

- University systems will be set up to enable staff and students to access, create, analyse, publish, store and archive information and data.
- Staff and students will have easy access to relevant information, on campus or remotely, according to need and in accordance with relevant legislation.
- Information will be fit for purpose, i.e. relevant, up to date, accurate, secure and compliant with legislation and University policies. Wherever possible, information will be shared and duplication minimised.
- Each area of information will have a person responsible for ensuring the quality of data and for providing appropriate access.
- All users will be made fully aware of their rights and responsibilities in accessing and using information.
- An appropriate infrastructure will be put in place for the handling of information across the University. Appropriate, integrated information systems will provide and regulate access and provide facilities for secure storage, access and dissemination, with appropriate procedures for the deployment and use of these systems.
- Systems will be put in place for the communication of information to staff, students and external stakeholders.
- An information governance framework to meet regulatory, compliance and other requirements.

Information Security Framework

Information is one of the greatest assets of the University, but only where it can be made available in a reliable and trustworthy manner. The University's Information Security Framework is grounded on the three principles of confidentiality, availability and integrity of information and data. The framework protects the University and its participants from any actual or perceived threat or vulnerability, thereby adding an acceptable degree of confidence to those with a vested interest in the institution.
Under this framework IT policies and procedures will be maintained to safeguard the physical and environmental security of the university's ICT assets, provide safeguards to enable business continuity and ensure compliance with legal requirements.

ITE2 - Developing ICT infrastructure and campus core networks to support current and future activity

The University will move away from the tradition that systems are predominantly run in-house. In standardised and commoditised systems, 'cloud' providers enjoy economies of scale and scope which the University cannot emulate. The markets may not evolve in ways which make cloud-sourced systems the best option for the University in all cases, but our first question will be 'can someone else do this for us in a more cost effective manner than we can do ourselves'?

Identity and access will be managed in such a manner that what students and staff can do depends on who they are, not where they are or how they are connected to the system.

The University Network will evolve to provide both wired and wireless connectivity at a scale to meet demand. The network transformation will bring the managed flexibility and control of the best of the consumer services. We will continue to enhance internet services within our halls of residence to offer access to the latest services offered via third party suppliers.

The University will look to reduce its PC stock by making it easier for staff and students to work with their own devices.

ICT infrastructure Strategy

The University's ICT infrastructure Strategy will be maintained to reflect the core technical building blocks that are needed to support the delivery of the overarching ICT Strategy and the integrity of systems. This will:

- provide a high level description of the building blocks, along with the proposed actions to be taken for each;
- assist in the discussions around determining the priority order for delivering the building blocks and subsequent applications and services, noting other requirements e.g. costs, timescales etc;
- provide detail on how IT will be used to drive down costs and improve the return on investment;
- set out the deployment of common products, services and approaches.

ITE3 - Governance of ICT Strategy

The governance structure will be reviewed to ensure that adequate controls and measures are in place to comply with domestic law and commercial contracts, and that investments in ICT will generate business value and mitigate against the risks associated with using ICT.

ICT regulations will be developed to ensure that the University's ICT facilities are used safely, lawfully and equitably.

The University will monitor its compliance to Freedom of Information requests to ensure that they are responded to in a timely manner.

ICT security policies, procedures and practices will be regularly reviewed to ensure appropriate protection of data from internal and external threats such as cyber-attacks.

The governance structure and processes will be lean and agile to ensure effective and efficient decision making, but guided by the university's project management framework. Appropriate audit and review mechanisms will ensure effective and transparent project governance and communication.

A list of ICT Strategic priorities developed from this strategy will assist in prioritising investment and a five year financial investment plan will inform the annual costs associated with the ICT infrastructure required to deliver the strategy.

Aligned with the University's planning processes Corporate and Academic business units will be invited to submit project proposals which add key strategic value to the university. There will be a requirement to identify and realise the direct and consequential benefits from ICT investments.

ITE4 - Pursuing environmental sustainability

The University is aware of its responsibility to future generations to minimise our adverse impact on the environment. The University will pursue technology solutions to reduce the use of paper and embrace online collaboration solutions to reduce travel.

The University will exploit virtualisation and cloud solutions to reduce the environmental footprint of IT. This will become a key driver in our procurement and management of IT equipment and services.

Staff and students will be encouraged to use their own devices and the University's PC estate will contract.

[Academic Plan Strategic Targets: APT4.9]

Strategic Targets

Inputs

1. To deliver an effective ICT Strategy within the benchmark spend of the University Alliance.
2. To maintain the ratio of university provided work stations per student at a proportion comparable to the average of the University Alliance.

Outputs

1. A return on investment for major new capital projects.
2. An excellent/good rating for ICT provision in the National Student Survey.
3. Targeted user surveys achieving good or better ratings and a culture of continuous improvement.
4. Academic Plan Targets

Academic Plan Targets		ICT Strategy
APT2.4	Develop two new courses per year that are offered fully on line or with a significant blended approach *[link to HEFCW CS Target T4 – Part-time]*	ITS2
APT4.4	ICT | Digital First - 80% of student facing service online, 100% of student processes online, etc.	ITS1.2
APT4.5	ICT | Technology Enhanced Learning - 100% of core systems available over a 24/7/365 operation	ITS2.1
APT4.6	ICT | Classroom Environment - 50% of GPT rooms equipped with video capture	ITS2.2
APT4.7	ICT | Software Apps on Demand - 100% of core applications delivered on demand	ITS2.3
APT4.8	ICT | Research – new Research MIS by 2020	ITS3
APT4.9	ICT | Environmental Sustainability - 35% utilisation of 75% of standard ICT teaching labs	ITE4

Appendix 1 – The Learner IT Experience in 2020

The following story takes you through the life of a potential and actual student as they progress through the student lifecycle. In this story the enabling technology is already in place, and is used to set the scene for overcoming the ICT challenges that the university must address.

Student Lifecycle => Marketing/Enquiry/Application/ Enrolment/Study/Exam/Graduation/Alumni

	IT Strategic Aim / Enablers
Marketing	
As a potential student Susan expects to receive the information she needs when she needs it. Context is everything. I'm very good at spotting when someone is 'selling' or 'upselling'. I need to be inspired by the University. The uniqueness of the course/lifestyle needs to be conveyed. Attending the University is one of the most expensive things I will ever buy, so it needs ...	ITS1.2
I don't want to have to look for information. It has to be available in the digital format I use every day. I expect a standard that compares favourably with what I would see from commercial organisations for professional contexts. This content is tailored to my interests, timely and understands the context of my location and the choices I make.	ITS1.3
Design has to be fresh and current. I expect information to be clear and to the point. I don't want to have to read or watch long pieces of information. I expect to be able to follow the University of social media, but only in a manner I can control. If I have questions I expect prompt, clear answers	
Enquiry	
Susan is in the first year of her A' levels and is starting to think about her future, and via discussions with her parents, peers and teachers decides to investigate University options. She's out and about sees an advert for USW, so immediately does a search for USW using her mobile device. She lands on the website and easily finds content about subject areas she is interested in. She wants to find out more and discuss with her parents so orders an electronic prospectus by answering a few simple questions. The phone notifies her that a new email has arrived with electronic prospectus attached.	ITS1.3 Mobile App (MyCampus)
That evening Susan opens up the email and prospectus using her laptop so she can review with her parents. They like what they see so follow the suggestion of attending an open day. They click on the link in the email to book and using the same interface and password they used to order the prospectus, they quickly book onto an open day. They also read personalised content which has been provided to their Enquirer/Applicant Portal following the two previously undertaken actions. Her Phone notifies her that a new email has arrived confirming the open day bookings and gives her the option of adding the event to the calendar on her	ITS1.1 ITE-1 ITS4 CRM

	IT Strategic Aim / Enablers
phone.	
A few weeks have passed and Susan receives an email from USW. It's more information on the open day booking. It's a draft timetable for the day and information about how to personalise her experience. She is offered either to download an app for her phone or re-visit her Portal either of which will allow her to make the most of the open day. She downloads the App.	ITS4
The Open day arrives, having followed the directions to the University, delivered via the app, Susan and family park the car. Her phone beeps, that app welcomes her to USW and delivers her news that her first talk of the day has relocated, and it provides a new route from the car park to the new location. As Susan enters the registration hall she is automatically registered as attending the event. On leaving Campus Susan is thanked for attending the open day via a phone notification and given information on how to Apply to study.	ITS1.3

Application / Enrolment

John was so pleased that the evening following the open day he received an email confirming that he could have a place at USW as long as he reached his projected grades. He instantly clicked the option to accept the offer and made USW his first choice. All done without him having to do anything else.	ITS1.2
Throughout the following months whilst John was preparing for his examinations, he received regular emails/texts/tweets informing him of recent activities and achievements of students currently studying the same course as he hopes to attend. Hearing how graduates have achieved the steps onto the career ladder he wants.	ITS4 CRM
He was also really impressed that the University had listened to his personal interests, rugby and gaming, and kept him up-to-date and in touch with current and prospective students with those same interests. He could see himself playing for the University team.	
On the day of his results, not only did he get an email from UCAS informing him of his grades he was also relieved and impressed that the University emailed him to congratulate him.	
After the celebrations he welcomed another email from the University confirming his place in the on-site accommodation and links to the social media contacts for his room-mates. He was really pleased that some of them he had already been interacting with as part of the interaction about rugby and gaming.	ITS1.1
John then received an invite to participate in using the 'preparing for university' website which really helped him to get everything together that he needed and gave him a heads-up on what to expect. When he received a message to confirm that he still intended to go to USW, he didn't hesitate to accept the confirmation	

	IT Strategic Aim / Enablers
and was well pleased to be congratulated that he was now a student.	
On the day John received confirmation from the Student Loan Company that they were going to pay his tuition fees and a contribution to his accommodation costs, he also received an email asking him to make a direct-debit agreement to pay for the remaining accommodation costs. His father duly obliged and took up the option to purchase credit at the food outlets, making sure that John was going to have at least one good meal a day, whilst he learnt how to cook for himself. John would have preferred a bar tab but that option was missing.	ITS1.3 Mobile App for Banking
Study	
Harry is a part-time student, studying towards a B.Sc. in Forensic Science. Harry "lives on the internet", connected most of the day whether using his laptop, smartphone or tablet. He uses the internet constantly in his life as a student, as a professional and in personal life. The University online presence is but one, important, part of his online interaction with content, with family and friends, and with colleagues within and beyond the University.	ITE2
The day begins checking the Calendar on his iPhone, which is synced to the University's calendaring system, amongst others.	ITS4 Integrated course and timetabling system.
Each semester when Harry enrols, Syllabus+ automatically populates his calendar with classroom commitments and key assessment and administrative dates.	
Today, along with two seminars to attend and an essay to submit, Harry's calendar reminds him that his tuition is due.	
His tutorial group is due to present a seminar this morning, and they worked long into the evening finalising the presentation in GoogleDocs while discussing it in GoogleTalk. It's a good thing that between them, Syllabus+ and Blackboard take care of making sure that these collaborative spaces automatically know who is working with who and therefore maintains the sharing settings - otherwise he'd spend more time messing about with sharing settings and less time getting on with learning. One of the group isn't able to get to the seminar in the morning due to work commitments so plans to attend online. The group talk through how this will work so that everyone feels as though their contribution fits together – one of the valuable attributes that technology provides for earning and learning learners.	ITS1.1 Collaboration tools. ITS2.1 Lecture Capture
Over breakfast, he makes a final review of the GoogleDocs presentation using his iPad, and saw that his colleague John had picked up and fixed a small, but awkward mistake.	
On the train into Cardiff, Harry's still using the iPad. He checks his email; nothing there. He logs into the student portal to download the tuition invoice, and then	ITS2.1 Personal

	IT Strategic Aim / Enablers
logs into his bank to make the payment. Then some time out on Facebook before the train pulls into the Queen Street station.	Learning Environment
Lecture time, Harry's tutorial group use the classroom lectern PC to login to their Google Docs space, and also to a shared Dropbox space where they've prepared some other resources. He gets an SMS from John - he's fallen off his bike and won't be there. OK, at least they know. The group presents, and Harry moderates the ensuing discussion, using Quickpoll to put contentious questions to the vote - fellow students vote using their smartphones, with real time results displayed on the big screen, along with the twitter feed for the seminar. At the end of the class, the tutor gives his perspective on the presentation and the discussion, and refers the class to recent and relevant papers.	ITS1.3 Voting App
Downtime, some coffee and a chat, and no IT! Then it's off to the Print Room to download those papers. One is an ePub on iTunes U and Harry downloads it straight to the iPad. The other paper is in an external research database which he pays for using his mobile phone.	ITS1.3
That done, an Instant Message from John pops up on Skype - is the tutorial group up for lunch at Stilt's? Yes they all are, in 45 minutes. Harry leans back to read through today's paper, iPad edition, before lunch.	
After lunch, Harry's next class is in a special location, a building he's not been to before. The Jonstown Building. On his iPhone, he uses the Unimobile app which detects his position using GPS and guides him from Stilt's to that building.	
After the class, it's time for a final review of the essay due for submission today. Harry then logs in to the VLE and submits the essay via Turnitin. Whilst at the VLE, he notices some lecturer's notes for a class next week, and also that the Lecture Capture recording of his presentation this morning is now available for download.	ITS2.1 VLE
On the train home, Harry gets started reading the ePub paper on his iPad, making notes and placing bookmarks. He checks into an online forum associated with the morning lecture; a fairly animated discussion is still underway and Harry adds a few comments of his own before reaching home.	
After dinner, before turning to his studies, Harry pays a few bills on his mobile and then turns to the more cheerful business of using Railtrack and Expedia to book a trip to watch his favoured football team play in Manchester next weekend.	ITS1.3 Mobile App (Banking)
No classes tomorrow, so it's a good evening to get some work done in the CAD/CAM lab. There are only 20 CAD/CAM cloud PCs licensed (the software costs £1k, so he's not about to buy it for his own laptop), and they are all in use so he registers in the queue.	
Time for some Wikipedia browsing and some silly YouTube videos. Half an hour later the SMS comes in - a CAD/CAM cloud PC is now available and he has five minutes to grab it. On his laptop, he launches the thin client application and logs straight in to the cloud PC. He's not sure whether it is on campus or in Caerleon	ITE2 Virtual Desktop

	IT Strategic Aim / Enablers
for that matter - and he doesn't care. He's at home, effectively using a 'virtual' computer lab running software he can't afford to have at home. Sure beats the days of hanging around on campus all night.	
Throughout the day, Harry used many kinds of online resource and applications. Some of it was via 3G, some was via his home wireless network, some was via the campus wired and wireless networks. That was all seamless - his computer and other devices switch automatically between available services. It all just worked. He moved seamlessly between University-oriented activity and other things, barely perceiving a difference in terms of the technology. Student IT post-2020 is all about Harry, not the University or the technology.	ITS2.3