

CISG-PCMG22

Digital Futures: Culture, Investment and Sustainability

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Overview

- HE and Institutional context
- The digital in the strategic context
- New ways of working
- New technology for educational change
- Into the Cloud
- Sustainability and Net Zero
- Risks – cyber and international
- Skills and staffing

University of Plymouth Context

- ~£250m, 18k students
- Comprehensive subjects including all health
- Strong cash position but also current major capital investment
- Operate in Plymouth (3 sites), Exeter and Truro
- Growing international students – on campus, online, TNE
- World-leading research areas – not least marine – major supporting infrastructure
- Strong industry partnerships
- Growing international strategic partnerships
- Regional working and engagement



UoP Digital Learning

- Covid allowed progression of digital agenda, can now be more ambitious.
- Strong institutional risk appetite underpins strategic decision-making.
- The need to be flexible and scalable is high priority.
- Must design products and services with future in mind. Configure not customise.
- Maintain small internal change management team bringing in additional expertise as needed.
- IT Professionals need to understand requirements (strategic and operational), select appropriate products, ensure change activity is planned in.
- Need two way dialogue: understanding and interpreting University strategy and Horizon scanning for opportunities relevant to own organisation.

Digital Strategic Plan – 2021-2025

- “By 2030, the University of Plymouth will be recognised for its digital provision on a regional, national and global stage. The University will offer digital solutions which are high performing, flexible and scalable to enable the institution to adapt quickly and thrive in a constantly changing world and empower its students and staff to make a difference.”

University Strategic Priority	DSP Focus
1. Deliver excellent education and research	Support best practice in education
	Digitally enhance the student support offer
	Establish robust digital infrastructure for research
2. Invest to ensure a leading-edge sustainable university	Enable optimisation of the supporting services
	Drive progress towards the University’s sustainability commitments
3. Drive global connectivity that makes a difference	Develop the digital ‘face’ of the University
	Leverage digital opportunities
4. Nurture outstanding students and staff	Build on digital skills
	Develop digital awareness – importance and opportunities

Responding to Covid

- Covid19 forced a rush into wide adoption of remote learning and working.
- Existing systems in place or in progress enabled a quick response, e.g:
 - Use of Zoom to support teaching of geographically dispersed student groups could be scaled up.
 - A refresh of classroom AV was in initial stages – could be adapted to support remote and hybrid learning.
 - Prior refresh of staff PC fleet had placed greater emphasis on laptops - supported enforced remote working.
 - Moodle based VLE had well established content standards.
 - Online assessment submission ensured student assessment.
 - Student engagement platform (Salesforce based) was enhanced - enabled a focus on understanding student engagement levels & identification of wellbeing concerns.
 - Well-established lecture capture (Panopto) – so capturing remote sessions could be layered on top.

New Ways of Working?

- University purpose and culture – this drives how we work
- Returned to predominant f2f education delivery
- Therefore have returned to f2f working - need to experience the campus community
- Not focused on changing working practices but on introducing new opportunities
- At 'local' level managers can decide if staff work at home for a part of a week
- Have seen a significant return to campus – people like to be with people
- Overall, hasn't had a negative impact on staff retention or recruitment

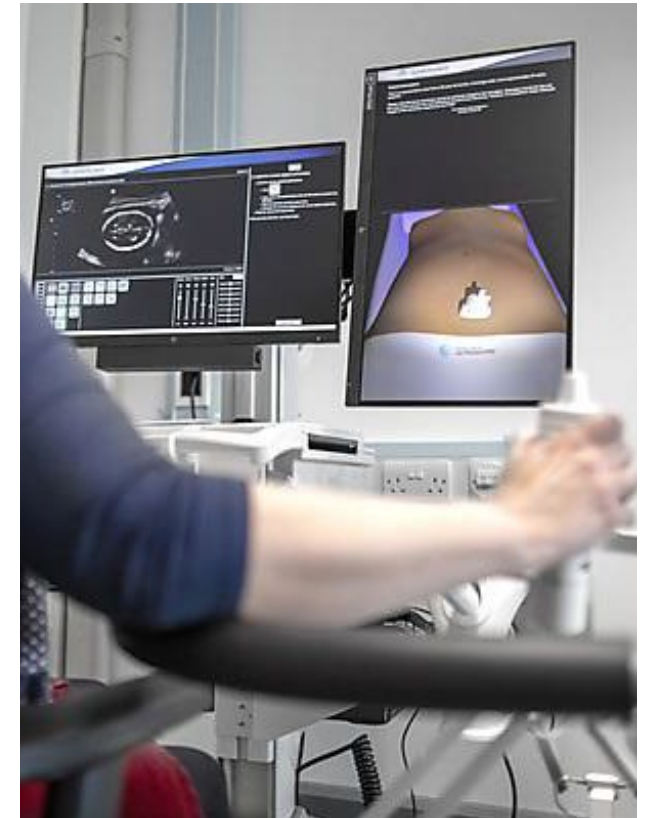
Innovation – Research + Education

- Cyber-SHIP Lab – enhancing global shipping security
- £3m Research England + Industry
- World-first capability
- Hardware-based testbed complementing fleet of nine ship simulators and cyber ranges.
- Can determine physical systems' key vulnerabilities under a range of cyber attacks.
- Development and demonstration of safeguards at technical, system & operational levels
- New MSc in Cyber Security (FT & PT)



Innovation in Experiential Learning

- Use of technology to bring a geographically dispersed student body together – examples in Nursing, Midwifery and Health Professions.
- Use of simulation and virtual reality tools to support learning in Medicine:
 - Hololens (remote diagnosis)
 - Anatomage (digitised anatomy training)
 - Bodyworks (ultrasound simulation)
- Online assessment – Medicine/Dentistry had digital assessment pre Covid. Extended to remote proctored assessments during Covid19. Now adaptive testing – leading broader based innovation on summative assessment



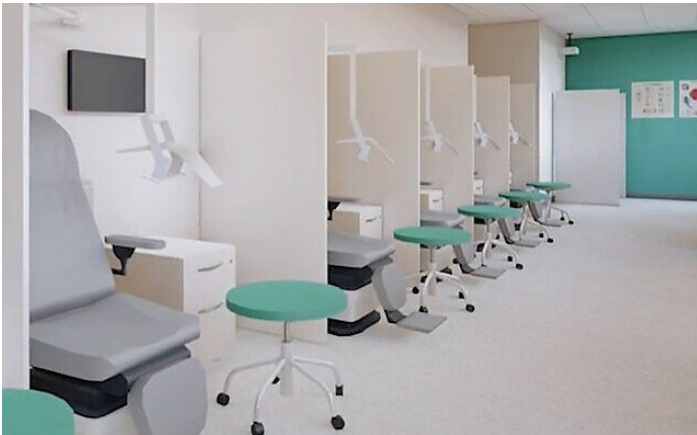
Investing in our future - 1

- Engineering & Design Facility – £60m total investment
- Digi-Fab Lab
- VE & Immersive Visualisation
- Control & Autonomous Systems lab
- HPC + CAD/CAE computing labs
- Virtual engineering suite
- Labs for Composites/materials testing/structures/precision manufacturing



Investing in our future - 2

- InterCity Place - £42M
- Allied Health Professions + Nursing
- Paramedic science suite
- Physiotherapy lab
- Optometry lab
- Hospital simulation ward
- Podiatry suite



Into the Cloud – 2018 onwards



Existing Cloud Services



Aging on-premise data centre infrastructure



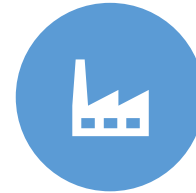
High support / risk profile



Move to modern, state-of-the-art supported environments



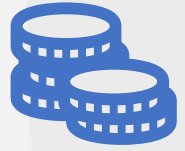
Improve Scalability & Responsiveness



Rationalisation & optimisation of applications



**UNIVERSITY OF
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Project Business Case Benefits

- Cashable
 - Lower total cost of ownership
- Non-cashable
 - Reduced risk profile
 - Aligning to the academic mission – colleagues have closer control of services
 - Greater autonomy for end-users when identifying and consuming digital services
 - Elasticity of supply and increased speed of deployment or release of services
 - Conforms to required GDPR standards - formally accredited to host Official (sensitive) data
 - Step change in financial transparency, with costs linked to usage and demand
 - Reducing reliance on key individuals
 - Increases IT agility and frees up resources to focus on developing value from investment in IT
 - Defers and avoids capital investment in underlying non-value adding components



Post Cloud Project

- Leveraging the cloud:
 - Microsoft Azure Labs
 - Business Intelligence and Reporting
 - Windows Virtual Desktops
 - Research
- Further consolidation, reduction and migration of applications
- Moved to a smaller data centre



Cloud Sustainability Benefits

- Reduced size of on-campus data centre by 72%
- Reduced data centre power consumption by 70%
- Decommissioned space and associated connectivity in an off-campus site
- Also Cloud telephony (zoom) project – power saving of 18kWh
- Cloud compute and storage in carbon-neutral Microsoft Azure
- Reduced cyclical capital investment + supports financial transparency



Sustainability & Net Zero

- Biennial sustainability reports against the GRI (Green Gown Reporting award 2016)
- Carbon Management Plan

Goal 1	• Net zero emissions from direct emissions (scope 1 & 2) by 2025.
Goal 2	• Continue to reduce mains grid electricity use by 20% and mains gas by 25% as a minimum by 2030 from 2005–06 levels, with the intention to support further reductions through wider energy generation projects.
Goal 3	• Develop a 'net positive' framework accounting for the positive environmental impact of research outputs to balance the negative output of the University's carbon footprint.
Goal 4	• Raise awareness and build a carbon community with our staff and student population, including engagement with target and action plan setting.
Goal 5	• Be actively involved in projects that seek to encourage and enable large-scale carbon reduction and promote low carbon transitions in the city and nationally
Goal 6	• Reduce emissions outside of the University's direct control (scope 3) to net zero by 2030–50 in line with local and national targets.

Example Net Zero energy projects

- **Energy wide campus infrastructure project** - transitioning to 5th generation lower carbon electrical led system combined with an ambient ground loop.
- **LED lighting replacements**
- **Energy metering upgrades** – linked to campus Information Control System
- **Building energy Management System (BeMS) upgrade**
- **Roof top PV** – on all suitable roofs
- **Power Management** - updating the PC power management settings to reduce energy use associated with IT.

Cyber - 1

- **RED risk** area – Audit Committee and Board strong interest.
- UoP is fortunate in having significant cyber security research expertise.
- Internal audit 2021 – found good practice
 - *Security Monitoring.* A well structured pro-active approach to monitoring and alerting of suspicious events, with further work planned to further enhance the detection of potential threat activity.
 - *Security Policies.* A good set of published Information Security policies.
 - *Multi-factor Authentication* for staff users logging in to Office 365 (and a continuing roll-out to students).
 - *Training and Awareness Fundamentals.* Mandatory online training for new staff and every two years for existing staff, supported by an on-going cyber awareness programme.
- **Further IT upgrades** – *Microsoft Defender* for Endpoint, to provide enhanced protection against viruses and ransomware; *Microsoft Intune*, mobile device management and protection technology; *Data Loss Prevention technology* controlling where data can go, and enabling access via personal devices if appropriately secured

Cyber - 2

- Latest insurance (August 22)
 - Limit of cover reduced from £2m to 1m;
 - Excess increased from £100,000 to £150,000;
 - The premium increased by 43% to £179,700; and
 - Three risk management conditions to be in place within 90 days of the cover date: -
 1. *MFA on email accounts and remote access* 
 2. *Implementation of employee awareness training including phishing incidents, for all employees with network, system or email accounts* 
 3. *Implementation of at least annual testing of incident response plan for cyber events and threats – NEW*
- Question – when does insurance become too ‘expensive’? How to judge and accept cost of additional mitigation if not insured?

Managing Risks in Internationalisation: Security Related Risks - UUK 2020

Protecting reputation and values	• Building resilience to security-related issues • Data diligence • Promoting UK HE values
Protecting people	• Internal & external communication and knowledge sharing • Protecting staff & students travelling & working overseas
Protecting campuses	• Cyber security, estates & visitors
Protecting partnerships	• Research security, IP and export control • TNE

Staff and Skills

- Digital Strategic Plan Objectives 21-25 (with Exec Lead)
 - Embed digital literacy in the student curriculum
 - Embed digital literacy in staff development.
 - Provide academic staff with dedicated assistance for session design, pedagogy and creation of digital material.
 - Facilitate peer-led opportunities for students and staff to develop and share digital capabilities.
 - Embed awareness of data ethics, security and privacy across the institution.
 - Establish a culture of data-driven decision making.
 - Establish a robust governance framework to support digital activities.
 - Recognise and reward digital innovation and leadership.

Summary

- Embed a culture of the digital within overall strategy.
- Ensure the digital **plan** integrates with other plans (research, teaching, capital, international, carbon, etc).
- Prioritise a connected student and staff experience and culture.
- Invest in rich learning environments for the future.
- Agility and flexibility are key.
- A 'one-team' culture and approach is essential (between the services and the academic).