Data#3

THE ANYWHERE CLASSROOM

Limitless Learning

Tertiary Discussion Paper

Contents

Introducing The Anywhere Classroom

Millennials are demanding flexible, technology-based learning delivery models that provide ubiquitous access to learning experiences and resources.

In a survey of 1,500 tertiary bound students in Australia, India, Singapore, the United Kingdom and the United States, 85 percent said that assessment of digital capabilities was a top determinate in their selection of a University or College.[1]

Given that they receive seamless digital experiences from their Governments, banks and online retailers, students are expecting the same or better levels of digital sophistication from education providers.

The survey also found that the strong demand for digital capabilities carried over to students currently attending a university, as well as recent graduates, with the majority (70 percent) calling for greater use of digital tools for learning and content delivery.

It's clear that students are increasingly flexing their education consumer muscle in a highly competitive tertiary education sector.

The Anywhere Classroom from Data#3 provides a framework for mobility and digital experiences in an education setting, along with a roadmap of how to achieve the next-generation campus using technology as a strategic enabler.

This vision of education mobility and pervasive digital connectivity, shifts the focus of IT from device to identity. It is all about students/staff and their ability to engage with a tailored or personalised education experience regardless of the device they are using or their location.

Focusing only on mobility, security and device management misses the point though. The vision needs to consider how technology can add value to the broader university experience in real-time and in context with current assignments, learning objectives and the social environment.

This might include interaction with relevant digital content, nearby facilities and resources, or physical and virtual collaboration opportunities based on the location and availability of peers, study groups and teachers.

This paper seeks to share the possibilities of The Anywhere Classroom, our experience with University Leaders, how they are motivated by the adoption of mobility technology and the enhanced learning experience this delivers tertiary students.

[1] Hillier, M (2015) "e-Exams: The story so far"

Executive Leadership

MY ROLE Chancellor, Deputy/Vice Chancellor, President, Dean, CFO, COO

MY MISSION

Provide an inclusive, engaging, and inspiring learning experience.

Drive innovation and world-class research capability.

MY KEY OBJECTIVES	BUSINESS OUTCOMES I NEED	THE ANYWHERE CLASSROOM APPROACH
▸ Deliver exceptional education outcomes	▸ Empower students for the jobs of the future ▸ Attract and retain committed, capable learners ▸ Provide an academic environment to foster excellence and innovation in teaching ▸ Provide a global, connected campus experience	▸ Secure, seamless access to personalised learning resources, applications and tools, anywhere, anytime ▸ Integration with administrative and learning systems, to provide 'in-context' delivery of digital resources and rich content
▸ Drive world-class innovation and research	▸ Grow research capability and capacity ▸ Attract and develop outstanding researchers ▸ Improve agility and innovation impact ▸ Develop strategic commercial partnerships	▸ Rapidly deploy and provision research environments to drive agility and speed to truth ▸ Provide a secure, digital environment to foster research collaboration with external partners
▸ Enhance the enterprise	▸ Create innovative learning environments - physical and in the Cloud ▸ Build employee capacity and productivity ▸ Access to critical performance metrics in real-time	▸ Dynamic control of digital learning environments, content, data and applications ▸ Drive productivity with seamless access to digital resources and data based on persona, time of day, location and other criteria ▸ Automated consolidation and presentation of key organisational data from disparate systems
▸ Deliver a best in market experience for our entire community	▸ Deliver services that enrich learning, living and social experience for students ▸ Strengthen connections with governments, industry, alumni and community ▸ Deliver services, resources and facilities to enable a vibrant, inclusive and satisfied university community ▸ Provide a flexible work environment	▸ Support equity and inclusion with the seamless delivery of digital environments regardless of device type ▸ Integration with administrative, learning, CRM and mobile applications to provide 'in-context' delivery of digital resources, rich content and language ▸ Provide secure digital collaboration environments for students, staff and alumni

Academics & Research

MY ROLE Dean, Lecturer, Tutor, Head of Department or Faculty, Researcher

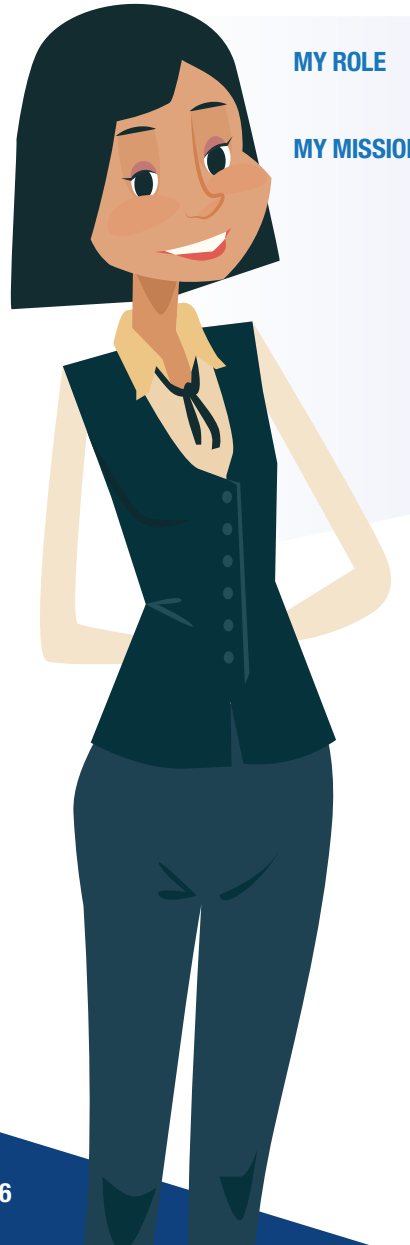
MY MISSION

Deliver exceptional education outcomes.

Drive world-class innovation and research.

MY KEY OBJECTIVES	BUSINESS OUTCOMES I NEED	THE ANYWHERE CLASSROOM APPROACH
▸ Adapt to emerging trends in teaching and learning	▸ Streamline digital services and learning resources to accommodate bring your own device (BYOD) ▸ Enable flexible course content delivery including live and/or recorded lectures online ▸ A personalised, engaging experience based on student requirements	▸ Onboarding and ongoing management of applications and services made simple ▸ Deliver services, applications or platforms as required and in real-time ▸ Granular control of, and policy enforcement of shared (lab) environments
▸ Provide seamless access to applications and learning resources	▸ Anywhere, anytime access to the course content, applications and resources that students need, on any device or platform ▸ Automate workflows between devices and platforms to ensure users always pick up where they left off	▸ Flexible delivery of any application, data and resources on any device, anywhere, anytime ▸ Seamless single sign-on environment ▸ Content synced and maintained within the security framework to address data loss prevention
▸ Remove language and cultural barriers	▸ Automatically deliver a digital experience to students in context with language and cultural considerations ▸ Deliver a personalised experience for students and staff with self-service application and resource provisioning ▸ Support a diverse range of applications to address varying demographics	▸ Policy-based customisation of resources, applications and content based on student profile e.g. automatic inclusion of specific language help resources
▸ Harness technology to support teaching staff in ways that free up time (improve productivity)	▸ Package information and resources easily for access by students in individual subjects ▸ Contact and respond to students quickly, from any location, in convenient ways (SMS, email, online forum post, in-app notifications)	▸ Policy-based content distribution to specified student profiles e.g. all students in subject X, all indigenous students in faculty Y, all English as a second language students on campus
▸ Leverage technology to drive research innovation and maximise outcomes	▸ Reduce complexity and time in establishing secure research infrastructure ▸ Improve research team productivity ▸ Drive improved national and international research collaboration ▸ Embrace industry collaboration	▸ Mobilise access to High Computation environments. ▸ Provision secure collaboration environments with industry partners and peers ▸ Leverage Cloud automation to rapidly provision research environments or workloads

Information Services



MY ROLE CIO, CDO, IT Manager/Director, Digital Learning Coordinator

MY MISSION **Deliver IT systems and support to enable a unified learning and collaboration experience.**

MY KEY OBJECTIVES	BUSINESS OUTCOMES I NEED	THE ANYWHERE CLASSROOM APPROACH
▸ Provide a personalised, anywhere, anytime learning environment that meets the expectations of students and staff	▸ A robust, secure, always on network ▸ Support for multiple devices and platforms (BYOD) ▸ Flexible ICT platforms that support changing teaching and learning models	▸ High density Wi-Fi infrastructure designed for education ▸ Seamless, secure onboarding of student devices ▸ Centralised management and persona-based policy control of devices and applications
▸ Improve service delivery and support resolution times, achieved with less cost	▸ Fast turn-around on support issues so students and staff are not impacted ▸ Reduce costs of deployment and low-level support activities	▸ Managed IT Service Delivery ▸ Managed Network and Maintenance ▸ Managed Device ▸ Proactive network monitoring and self-healing
▸ Provide an environment that supports seamless interaction and collaboration across the university community	▸ Secure internal and external collaboration, supporting formal and informal learning ▸ Leverage Cloud for an always-on, connected experience ▸ Provide a comprehensive range of services via self-service catalogue	▸ Integration with administrative, learning, CRM and mobile applications to provide 'in-context' delivery of digital resources, rich content and language ▸ Provide secure digital collaboration environments for students, staff and alumni
▸ Maintain security and enforce policy	▸ Meet or exceed organisational standards around Information Management ▸ Manage access to applications and resources ▸ Manage shared environments and labs more effectively	▸ Application and resources automatically delivered to staff and students based on pre-defined criteria including persona, device, location and time ▸ Lab devices managed centrally to deliver consistent experience for students ▸ Integrated MDM / Firewall solutions
▸ Balance agility, openness and collaboration with security, risk and privacy in a hybrid environment	▸ A fit-for-purpose digital strategy to support the institution's future in a rapidly changing landscape ▸ Leverage Cloud services strategically for integrated services to students and staff	▸ Development of strategic plans and Cloud adoption frameworks ▸ Content synced and maintained within the security framework to address data loss prevention

The Student Engagement Journey

A closer look at how The Anywhere Classroom can enhance key engagement points over the course of a student's tertiary education journey.

ATTRACTING STUDENTS

ENROLMENT

LECTURES & CLASSWORK

COLLABORATION

ASSESSMENTS

STUDENT RETENTION

GRADUATION & ALUMNI

ATTRACTING STUDENTS

85 percent of tertiary bound students reported that assessment of digital capabilities was a top determinate in their selection of a University or College.[2] Therefore, it pays to showcase the breadth of your technology capabilities and vision while students are still choosing where they want to study.

A seamless, professional experience at every recruitment point makes a huge impression.

A lot of recruitment work is typically performed off-campus so this situation perfectly represents the value of The Anywhere Classroom – the ability to deliver consistent user experiences and capabilities regardless of location or device.

- **ANYWHERE, ANYTIME ACCESS** – For school visits, career fairs or college open days, admissions officers should have real-time access to all the information and resources they need wherever and whenever they are talking to potential students.
- **CAPTURE INFORMATION** – Anywhere access to the institutions CRM to enter prospective student details and allow an ongoing dialogue to start.
- **SHAPING THEIR VIEW** – Once you have access to a prospective student's details, you can share relevant information about what their life might look like at your institution through various channels e.g. how to use public transport to get there, the best place to meet fellow students, how to apply for housing etc.

[2] Hillier, M (2015) "e-Exams: The story so far"

ENROLMENT

Enrolment and orientation is traditionally an overwhelming time in a student's tertiary journey. In the past, new students would be bombarded with physical information and resources, manual registrations and set-up procedures over just a few hectic days.

Now much of that process is completed online but the challenges have evolved, not disappeared. A student enroling today needs to be granted access to a system with all this vital content online, in one easy-to-reach location, categorised by subject and lecturer with granular control of course material. If the system is accessed via a smartphone app, that needs to be provisioned and authenticated to gain access to the appropriate portals and content for that specific student.

Use these self-assessment pointers to gauge what stage your campus is at in relation to three key elements: strategy, learning experience and technology.

- **ONLINE ENROLMENT** – Enrolment and subject selection can be completed online.
- **ONBOARDING** – A once-only registration to the university's identity and access management system, which is secure, automated, and policy-based for multiple devices.
- **SINGLE SIGN-ON (SSO)** – Each student only needs one set of credentials (username/password) to log in from any authenticated device, to all required university systems and resources, with access tailored to their enrolment.
- **SELF-SERVICE ADMINISTRATION** – A student can reset their password or update personal details without administrator assistance.
- **ACCESS TO THE PORTAL** – Each student has access to a centralised portal, anytime and anywhere, enabling them to access all the relevant applications, resources and collaboration they require.
- **TAILORED TO THE STUDENT** – Policy-based enrolment systems customise access and information to the individual's enrolment. For example, when a student logs on for the first time it can trigger a pre-recorded welcome message from the Dean of the Faculty.
- **DIRECT COMMUNICATION** – As a student navigates their way through the system, they can be provided with instant, vital information direct from their lecturer for selected subjects. Having everything online saves time for both the student and lecturer.
- **IT AS AN ENABLER, NOT THE FOCUS** – Tertiary students are digital natives, and IT management requires a different level of duty of care to school IT. However, treating tertiary students like informed adults doesn't negate the need for privacy controls, security controls and hierarchical access to information on a need-to-know basis. A successful tertiary campus system applies these controls in the background to deliver a seamless digital experience.

LECTURES & CLASSWORK

More than 4 in 5 of today's students experience blended learning with a mixture of online and face-to-face classes.[3] However, we are also seeing an increase in the number of lectures with both face-to-face and web-based students at the same time, which obviously has a major impact on teaching methods.

Even with a live video feed of the lecture theatre, it can be impossible to see something written on a whiteboard or annotated on a presentation while also seeing the lecturer.

Technology is already enabling innovative and interactive blended course delivery and many tertiary institutions are embracing small pilots as a highly effective way to test these concepts.

HAS YOUR CAMPUS TRIALLED SOME OR ALL OF THESE DIGITAL INTERACTION ENABLERS? WHERE DO THESE CAPABILITIES SIT WITHIN YOUR STRATEGIC PLAN?

- **REAL-TIME INTERACTION** – When there has been a last minute change, (a room change for example) the lecturer can send a message to students in real-time, immediately notifying them at the earliest possible moment. This one-message-to-all approach makes communication a convenient, efficient experience.
- **ONLINE RECORDINGS** – Lectures are recorded and made available for students to 'catch up' or re-watch as study material, from any device, anytime, anywhere. In a study by Charles Sturt University,[4] 87% of today's students have accessed online lectures, with 74% positive that online lecture recordings enhanced their learning experience.
- **LIVE STREAMING** – Streaming class content in real-time adds a new dimension to online learning. Rather than statically recording and publishing lectures after the fact, you can create a sense of urgency to 'watch it now', while incorporating interactive features such as in-class Q&A with online students. This creates a more immersive and inclusive experience for all students.
- **INTEGRATING DEVICES** – Are your staff encouraged and supported to leverage technology in their curriculum? In an ECAR faculty study,[5] the majority of lecturers and instructors said they could be more effective if they were better skilled at integrating student's laptops, tablets and smartphones.
- **GETTING IT OUT OF THE WAY** – Facilitating this efficient, tailored digital interaction releases time back to academic staff by avoiding administrative, menial tasks, such as printing and answering basic student questions which would hinder class time.

[3] net.educause.edu/ir/library/pdf/ss14/ERS1406.pdf
[4] csu.edu.au/__data/assets/pdf_file/0009/2497185/2016-09-Student-Learning-Technology-Survey-Report.pdf
[5] ECAR Faculty Study - 2014

COLLABORATION

Students want to learn collaboratively and educators know that teamwork skills are critical to students' future careers. Collaborative study can offer an alternate dynamic to learning, which individual study cannot provide.

In a 2016 Student Learning survey,[6] 66% of students were positive that the use of technology makes communication and collaboration with fellow students more effective.

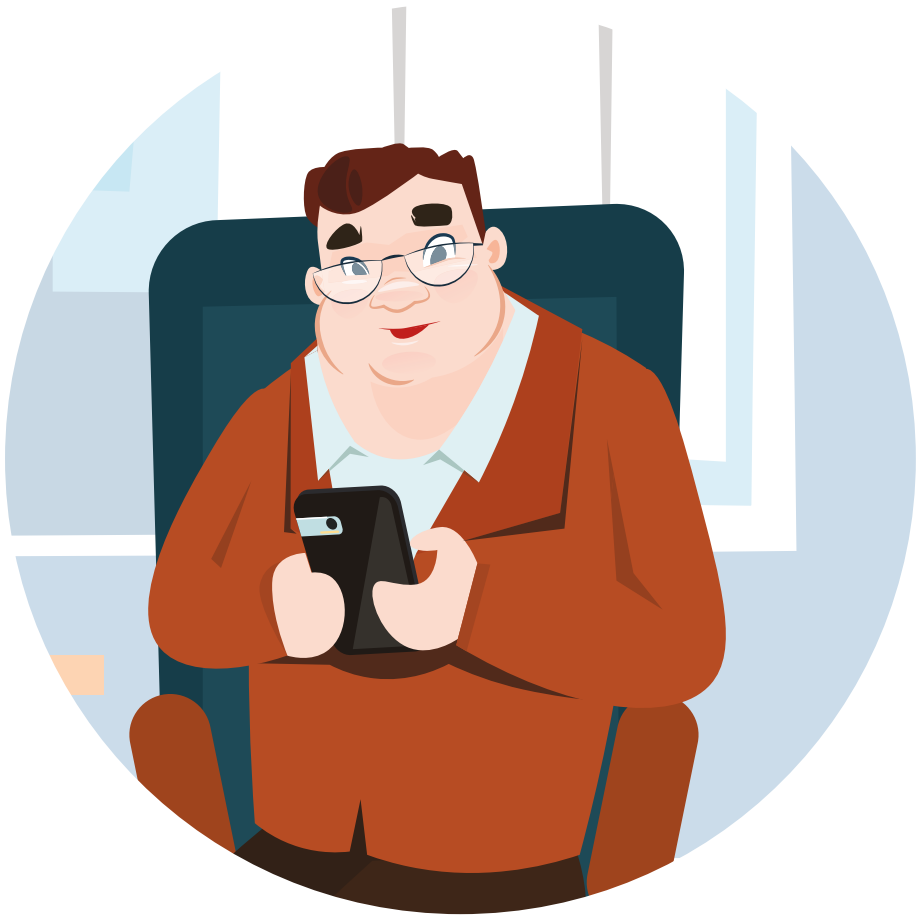
However, tertiary institutions often grapple with aging shared labs, risk of data loss, and location-restrictions for group work in physical collaboration environments. With a growing volume of students via correspondence, digital collaboration platforms are vital and the only connection many of these students have to their peers/ lecturers/ tutors they have never met. If these tools are not provided, students will invariably find their own options - the education equivalent of 'Shadow IT'.

New approaches within The Anywhere Classroom framework provide the ability to collaborate one-to-one, in small groups, or in large scale course collaborations using shared devices. This enables a limitless, immersive digital media experience, anywhere and anytime.

DO THESE EXAMPLES RING TRUE FOR YOUR CAMPUS NOW?
ARE THEY PART OF YOUR CAMPUS PLAN?
DO YOU HAVE AN OVERARCHING PLANNING FRAMEWORK TO ENABLE YOU TO PRIORITISE INVESTMENTS TO GET THERE IN THE MOST EFFICIENT WAY?

- **COLLABORATION IN A LAB ENVIRONMENT** – Modern lab spaces provide the opportunity to integrate technology through big screen TVs or Team Boards (such as the Microsoft Surface Hub and Cisco Spark Board), wireless shared access and collaborative, innovative design of space and furniture where students can come together as teams.
- **COLLABORATION BEYOND THE LAB** – Technology solutions now enable a similar experience to be delivered outside of physical labs (providing options for cost-saving scale back or repurposing of some labs). High performance 3D Applications can be delivered through solutions such as VMware Horizon and Citrix to imitate the shared student experience. This enables students to stay on the network using their own devices, and interact with their research, working on collaborative projects anywhere, anytime, making assignments a far more connected experience. In the future virtual reality applications will influence this space as well with VR peer 'hangouts' such as Facebook Spaces already gaining attention.
- **TARGETED RESOURCE PROVISION** – When a student returns from a field trip and logs into their profile, it immediately populates their authenticated device(s) with related resources and applications, leveraging multiple devices as important learning tools. They can instantaneously compare the notes they made with classmates, and refine their research.
- **DATA SECURITY** – While these collaborative interactions take place, secure networks, firewalls and policy-based resource access, protects students and their data. Context aware security policies for on and off campus ensure the opportunity to work in a group remains secure.
- **DATA LOSS PREVENTION** – With multiple users accessing the framework, students want reassurances that their data will not be lost in transit, and stays only within the boundaries of peers and lecturer. Lab devices are centrally managed, automatically syncing and maintaining content, and preventing data loss.

[6] csu.edu.au/__data/assets/pdf_file/0009/2497185/2016-09-Student-Learning-Technology-Survey-Report.pdf



ASSESSMENTS

Students want access to the network anytime and the ability to submit questions in context, especially when they are studying. Lecturers similarly, often do not want to be delayed by a queue of students waiting at the office door first thing in the morning.

Unsurprisingly modern students agree, 74 percent believe technology makes communication with their lecturers more effective.[7]

A more dynamic approach can improve responsiveness to student needs and provide flexibility for academic staff.

This extends to formal assessments as well as in-class tasks including:

- **TARGETING ASSIGNMENTS AND RESOURCES TO STUDENTS** – Lecturers can allocate assignments to hundreds of students with automatic distribution of assignment and associated resources. Policy-based online access to tailored resources removes any need for lecturers to stand over the photocopier.
- **ANYWHERE ACCESS** – Students can also access approved resources through their own device(s). If a student misses a lecture, lesson notes, lecture video/audio recordings, slide decks, resources and assignments are all waiting online.
- **FLEXIBILITY FOR LECTURERS AND TUTORS** – Lecturers and tutors can choose to allow students to submit assignments online. This allows assessments to be completed anywhere, it makes spot-check double marking and moderation easier, and it enables efficient response back to the student with digital annotations and online communication for timely student feedback.

[7] csu.edu.au/__data/assets/pdf_file/0009/2497185/2016-09-Student-Learning-Technology-Survey-Report.pdf

STUDENT RETENTION

Today's education funding rules revolve around the student, not the institution, so a student who drops out or leaves a university takes their funding with them. This act alone has been enough to drive up the focus on student retention with analytics emerging as a key tool in identifying 'at-risk' students.

- **PREDICTIVE ANALYTICS** – While IT may be hidden in the background it does have a powerful role to play. Analytics and artificial intelligence can be harnessed to monitor interaction between students and educators for predictors of drop-out or disengagement to enable proactive contact by teaching and perhaps even pastoral staff. Similar systems can also examine certain qualities and/or demographics to identify students that may be interested in pursuing a Masters or accepting a research role etc. Approaching the right students with the appropriate support and opportunities they require creates a more personal and engaging tertiary experience for all.
- **LEARNING ANALYTICS** – More creative, engaging, and interactive use of mobile devices within courseware also provides a secondary benefit in terms of early alert and intervention notifications. Incorporating this approach can highlight substandard student progress and allow action to be taken that may prevent failure and subsequent drop-out.

GRADUATES & ALUMNI

The role of a student beyond graduation as an alumnus is more important than ever in our socially connected world - a personal referral is something we all value highly. A recent Sydney University census highlighted the potential of the alumni community to act as advocates on the university's behalf, with 98 percent of all respondents recommending the university to family or friends in some way.[8]

The ultimate goal is to develop a lifelong connection with alumni which requires ongoing engagement activities such as social events, extended learning, career advice, philanthropic opportunities and access to fellow alumni and industry leaders.

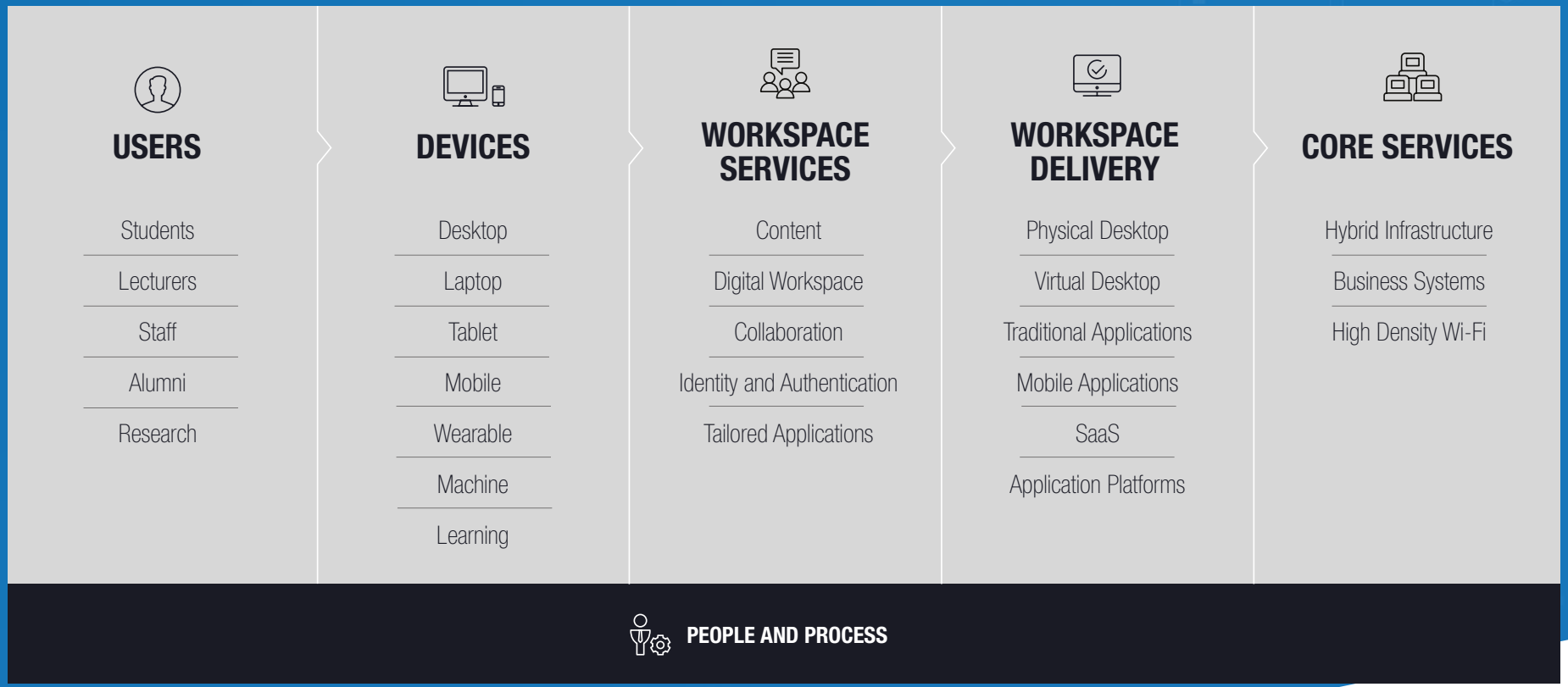
- **COMMUNICATIONS** – The key activity behind alumni engagement is an ongoing communication program, but how do you use the technology behind The Anywhere Classroom to amplify your communication results? Managing alumni contacts in a CRM system is crucial for tracking their education journey and later career, in order to identify candidates for different alumni programs. Content management as well as event and social platforms are critical IT solutions to ensure frequent alumni engagement whilst minimising administrative costs and efforts.
- **ONGOING ACCESS** – By including alumni in The Anywhere Classroom model, carefully curated content such as recorded lectures or footage of guest speaker presentations, research findings or CSR opportunities can be made available to all or select segments of the alumni.

[8] Hillier, M (2015) "e-Exams: The story so far"

A Framework for Mobility

An education mobility framework is invaluable in guiding your thinking and IT planning discussions. The Anywhere Classroom framework from Data#3 provides a holistic view of education mobility and details the components of a successful mobility strategy as well as how these components interact with and depend on one another.

If you would like to further discuss how Data#3 can help develop a mobility strategy to enable your Anywhere Classroom, contact us today.



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