The Smart Campus of the Future

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Chief Digital Officer
Deakin University
Over 54,000 students – 25% study solely in the cloud

400 courses – the arts, science, architecture, business, law, medicine, engineering and education
Almost 10,000 international students from 121 countries

- China (32%)
- India (25%)
- Sri Lanka (6%)
- Vietnam (4%)
- Malaysia (3%)
- Philippines (3%)
- Australian leader in Student Satisfaction with IT Resources – AU Department of Education
- ANZ leader in Student Satisfaction with IT Service – VoiceProject Survey
- Most IT dollar efficient & effective university in ANZ – 2016 CAUDIT Financial Benchmark
- Named and Showcased as Digital Leader by Gartner, BBC, Reimagine Education, CEO Magazine, etc
DEAKIN UNIVERSITY’S STRATEGIC INTENT

DRIVING THE DIGITAL FRONTIER
WHY?
Motivation: Massive Disruption Ahead

Drivers:
- Technological
- Cultural
- Generational

Customer expectations at the centre of tectonic shift
“It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change.”

Charles Darwin
“If the rate of change inside an institution is less than the rate of change outside, the end is in sight.” - Jack Welch

Chairman and CEO of General Electric. During his tenure at GE, the company's value rose 4000%
“A good hockey player plays where the puck is. A great hockey player plays where the puck is going to be.”

WAYNE GRETZKY
THE GREAT ONE
The greatest hockey player ever
ZERO FRICTION EXPECTATIONS

Outpacing Organisational Responses
Engaging a cohort of one

In the new digital era, data is no longer just for business decision-making.

Today the key value of data is in powering personalisation and prediction to engage You.

Extreme Personalisation
Exponentiality
Linear strategy doesn’t work any longer.

The need for
Fluid Strategy

We suspect we have a problem
We try to respond but it is late
In serious trouble
Not much is Happening Yet
“In times of exponential change, it is fairly naïve to believe that it is feasible to find the solutions for the needs of the next generations by leveraging the mental models that work for the current generations”
The challenge is to transform the absence of sound and digital cacophonies into a digital symphony.
WHAT?
Three education delivery channels of the 2020’s

FULL CLOUD

SMART MOBILE

AUGMENTED CAMPUS
Full Cloud

- Immersive Reality Content and Experiments
- AI Personalised Assistance
- Holoportation / VR Meetings
Smart Mobile

- Proactive
- AI Personalised Assistance
- Optimised
Augmented Campus

- Combination of Mobile with SmartCampus features
- AI Personalised Assistance
- Augmented Reality
First wave of transformational platforms, 2013-2015
And beyond, 2016-2018
Experience Transformation
Enabling the Cloud Campus
Designed for ‘cloud-first’

- Engaging video
- Interactive content
- Practical experiments
- The best of the web
- Robust learning design

Taking your own fingerprints

It’s very easy to take your own fingerprints and you can follow these instructions if you would like to try for yourself.

After you take your own fingerprints go back and re-look at the video about fingerprint identification. You can use the information in the video to identify the features in your own fingerprints.

You can also look back at the US fingerprint source book (which you used previously and is in the ‘see also’ resource section below) which also

Incorrect - try again?

This coin refers to:
- A. An attempt to reinforce confidence in the strength of Constantius II and his co-emperors
- B. A period of peace and prosperity ushered in by the heirs of Constantine I
- C. Constantius II success in defeating usurpers and maintain frontier security

Partially correct. Constantius II defeated the usurper Magnentius in 353, but the coin does not explicitly refer to Magnentius. What other message is the coin also trying to convey?

You may find 5.11 Controlling the chaos: the 4th century useful.
Immersive Reality @ Deakin

Appointment:
You are catching up with Claire Smith at the Deakin Cube tonight.
Time: 6:00pm

You have 1 book on loan from the Burwood Library.
Title: Modern Design Principles
Due: 12.06.2023

Next Class:
Internal Design
Where: Business Theatre

Mobile AR
Mobile VR e.g. Samsung GearVR
HoloLens
Augmented Reality – learning: cARdiac ECG

Teaching and learning exemplar AR experience

• In active classroom use with 1st and 2nd year medical students

• Massive uplift (70%) in students’ confidence in their understanding and competency attainment
Genie helps the student be more successful in four major ways.

Genie proactively delivers a suite of intelligent, personalised services at the moment you need them, where you need them.
Genie: carefully and comprehensively designed
MAKING THE CAMPUS ‘SMART’

What does ‘smart’ mean?

- Security
- Temperature control
- Lighting
- Way-finding
- Mobile notifications
- Transport

![Diagram of a smart campus with various features such as security, temperature control, lighting, way-finding, mobile notifications, and transport.]
SMART CAMPUS

The *why* – a campus that knows and helps you!

Solutions designed from the **campus user’s point of view**

Digitally enabled, **responsive and personalised experiences**, in and around our campus environments

Optimised for **mobile** devices

**Inclusive** 4 primary campus ‘journeys’:
- All key services / experiences
- All campus users’ core needs
The *what*—six ‘foundation enablers’

**Foundations** because, although largely invisible, they are *fundamental infrastructure elements* of a Smart Campus.

**Enablers** because they are being designed to both *support and facilitate all areas of Deakin* to achieve their own objectives.
SCOUT: The Smart Campus Unified Interface
**Proximity and Location**

Pinpointing people's location as they move around our campuses, and delivering context-aware experiences, services and content.

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**What is this?**

**Location-based services** refers to the ability to pinpoint the geographic position and location of people as they move around Deakin campuses. Identification of their position and movement is made via devices frequently carry - smartphones and tablets - using a range of technologies such as **Wi-Fi** and **GPS**.

"Location based services key concepts video"
# Digital Passport (Digital ID)

Tailoring Deakin’s digital services and applications for the individual through automated personalisation

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**What is this?**

Deakin Digital Passport or Digital ID is an online context of a Deakin user. The information held in the Digital ID is used to provide personalisation when using Deakin’s online services and applications.

The Digital Passport (Digital ID) service is an enterprise approach for sharing a Digital ID of a staff or student across Deakin’s online applications to assist in the personalisation of that application for the user. Having the user’s context will enable the application to provide more relevant information and remove information that you don’t need.
Big Data & Analytics

Deriving actionable insights to improve the user experience, by capturing and analysing vast amounts of data generated by campus users and sensors.

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**What is this?**

**Big Data** refers to the storage and use of large and complex datasets that traditional systems cannot easily handle. The key areas differentiating big data is the capture, storage, curation, sharing, transfer, visualisations, security, and analysis of the vast quantities of complex data.

**Analytics** is a term mostly used to describe the use of tools and methods to extract business value from the data.

[More]
Content Services

Supporting delivery of the right Deakin content to the right person/device, at the right time, in the right place, through integrated digital engagement platforms and content management systems.

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What is this?

While ‘content’ is obviously a huge and complex domain at Deakin, in the context of Smart Campus Content Services refers not to content itself, but to:

- the technology platforms and systems that underpin the management and delivery of Deakin content to campus users – students, staff and visitors
- the analytic data collected about when and how people use and interact with our content
Sensors and Actuators

Collecting information about user behaviours and campus use and responding with appropriate actions, via a network of embedded, connected ‘smart devices.’

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**What is this?**

Sensors and actuators are the core building blocks of a Smart Campus. Collectively, they represent a kind of digital nervous system – eyes and ears using cameras and microphones, spatial awareness using GPS and other location-based services, and sensory organs measuring noise, temperature, speed and pressure.

More
# Digital Signage and Smart Screens

Providing campus users with digital signs and way-finding, public and personalised information, and touch-screen or screen-to-mobile interactions, through a network of large format 'smart screens' located across Deakin campuses.

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## What is this?

Interactive Digital Signage Screens – also called 'Smart Screens' – is a label that describes a fully coordinated, integrated digital channel to provide information, communication and engagement between Deakin and our campus users, via large format screens around our campuses.

[Digital Signage & Smart Screens overview pack](#)
HOW?
• The response to DIGITAL DISRUPTION is not INFORMATION TECHNOLOGY. The response is DIGITAL TRANSFORMATION.

• DIGITAL TRANSFORMATION is not TECHNOLOGY MODERNISATION.

• DIGITAL TRANSFORMATION is the process of acquiring DIGITAL MATURITY.

Confusion
• **DIGITAL MATURITY** requires to develop
  
  ➢ **DIGITAL PERFORMANCE,**
  
  and to mutate to
  
  ➢ **DIGITAL DNA from the Industrial DNA**

• A new **PARADIGM** for the **DESIGN** and **CHANGE** of educational **ORGANIZATIONS**

The challenge within
Deakin’s Digital Principles

For Deakin to continue our journey of digital maturity, and effectively provide a universally delightful experience for all stakeholders throughout their lifecycle of engagement with us, there are some fundamental principles that everyone creating, managing and maintaining digital information, content, channels, technologies and solutions must abide by.

A key characteristic of these principles is that they work together as a cohesive and interdependent whole. Should any digitally enabled initiative break one of these principles, the outcome will be a negative impact on the overall Deakin experience.

**Content Principles**

- **Content must be compliant** by adhering to organisational standards (e.g., Brand, Tone of Voice, etc.), legislative standards (e.g., Privacy, Accessibility, Records Management, etc.) and Channel Strategy Requirements (e.g., Watson, Search, etc.).
- **Content must be made inclusive and accessible** to everyone who needs it.
- **Content must be managed**, i.e., created by designated Content Creators, available centrally and used across all Digital Channels as appropriate. Content creation must also include a combination of centralised, federated and delegated approaches, based on risk, expertise and value.
- **Content is smart** in that it is personalised, cost-effective, efficient, relevant and functional. We create content once and re-use it many times on many channels.

**General Principles**

- To ensure everyone can find content when and as needed (for students, staff and anyone else to consume as well as for Content Creators to reuse), we must label, structure and index content effectively.
- To maximise benefit for the University, these principles apply to all areas at Deakin.
- The execution of every initiative requires us to adhere to a standard of reasonable care to avoid harming any function, process, solution or platform already in place at the University, unless a business case for those actions is approved by the Executive.

**Solutions Principles**

- To deliver effective digital solutions that create enhanced stakeholder experiences, improved business processes and richer information repositories, implications on experience, process and information must be understood before acting on any initiative.
- To bring the opportunities of the digital age into the real world of Learning, Ideas, Value and Experience, we need to look at each solution as it relates to, and properly integrate it into the overall University ecosystem.

**ONE Experience**

provided consistently across channels and business units

**ONE Truth**

that minimises duplication and maximises the searchability of information

**ONE Ecosystem**

of effectively integrated systems

**ONE Philosophy**

the whole of Deakin lives and breathes by

**Digital Channel Principles**

- To allow students, staff and partners to move seamlessly between our digital channels, we must provide a personalised path using that channel along with an omni-channel experience.
- To avoid creating information content silos, we must structure our digital channels to present and capture content from common repositories (being the source of truth).
- To ensure consistency across digital channels, all digital channels must operate under a centrally defined set of organisational and legislative standards: User Experience, Tone of Voice, Brand, Accessibility, Privacy etc.

**Information Principles**

- To ensure all digital channels harmonise with each other, all digital channels must conform to an Enterprise Digital Channel Master Plan, having clear objectives, audience, business owner and operational model.
- To ensure the quality of our information, designated stewards are accountable for well-defined life-cycles and values of information repositories.

**University Information**

must be protected from unauthorised use and disclosure.

**Use common solutions**, to avoid conflicting data, unnecessary expense and duplication across the University.
Execution
Final Thoughts

• These are times of accelerating change and exponentially rising expectations.
• Linear strategy doesn’t work any longer. Strategy is fluid.
• Opportunities and risks appearing at the periphery.
• Need for action under uncertainty.
• Culture of experimentation and fast response.
• The digital challenge is philosophical first and organisational second, not technological.
• The hardest part for organizations: unlearn & relearn.
Thank you!

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