The Digital University - possibilities

Research IT Club – 11 December 2018

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Universities need to avoid their own "kodak" moment and invest in their own digital strategy. A digital strategy that is inextricably entwined with business strategy.

A true digital university is one that embraces the digital age from back to front, inside-out and beginning to end.

A digital university is one in which lecturers teach students about the latest digital trends in their field – whilst using that technology to deliver the learning.

It is not a place but rather an experience – one that delivers the environment and support for lifelong learning and connection that transcends the physical boundaries of the campus – delivered through technology – but distinctive as Manchester
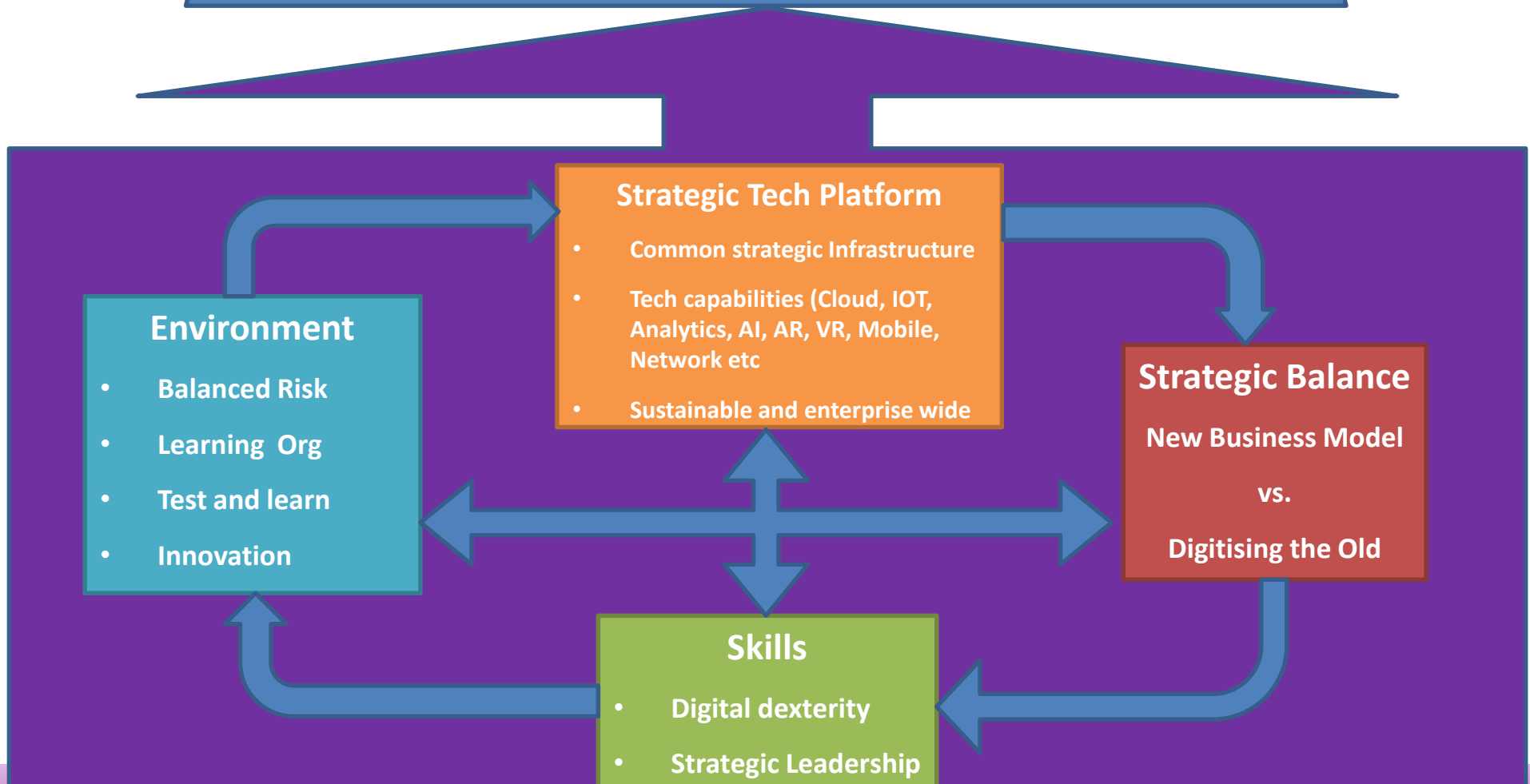
A university in which PhD students and Researchers use technology to create research ideas, undertake and deliver research and are able to digitally curate their outcomes.

One in which all members of staff are confident and competent in their use of technology and can support students in gaining the digital skills they need for their chosen future

It is underpinned by a culture of continuous test and learn that allows us to innovate, fail fast and deliver continuous improvement using technology as second nature

Digitally skilled teachers and reserachers, using digital capabilities to prepare the workforce of 2030

Strategic Tech Platform

- Common strategic Infrastructure
- Tech capabilities (Cloud, IOT, Analytics, AI, AR, VR, Mobile, Network etc
- Sustainable and enterprise wide

Environment

- Balanced Risk
- Learning Org
- Test and learn
- Innovation

Strategic Balance

New Business Model

vs.

Digitising the Old

Skills

- Digital dexterity
- Strategic Leadership

3

TODAY AND THE FUTURE

From

Students logging into **separate sites and portals** to access fragmented information and disconnected transactions.

Students accessing **numerous learning environments** to access activities and resources for different units.

Students needing to go to **specific computer labs on campus** to use software they need to complete their assignments.

Academics and advisors needing to pull from **multiple systems of information** to gather information on their students.

Users needing to navigate and seek out technology and application support through **disconnected support teams and processes**.

To

Students logging into a **digital student portal** to access personalised information and integrated student services.

Students accessing a **unified digital learning environment** that enables a more consistent learning delivery experience throughout their course.

Students accessing the software they need **"anytime, anywhere"** on the device of their choice.

Academics and advisors accessing a **single view of students** tailored to their needs to support student outcomes.

Users engaging with a **unified channel of support** to get the help they need to access and use their applications and technology.

1. As part of the emerging work on Business strategy define the extent to which we will focus on "Digitisation" vs "Digital Transformation

2. Delivering a core IT infrastructure that is predicated on supporting digital transformation and digitalisation of services across the institution – based on core Product Platforms – but which enable business product ownership and

3. Building a core capability that identifies how to understand and exploit digital capabilities in line with emerging technology enablers – coupled with an ability to exploit technology for business value across the institution – not just in pockets and projects but holistically

4. The ability to use design thinking to define how to deliver digital and technology capabilities consistently and use/reuse to maximum effect – similar to the work on our Student Lifecycle

5. Building customer insight to understand the nature of our students and therefore the way we might most effectively service them - proactively seek input from our students, ecosystem and staff as input to a digital future

6. Understand the capability gap in our staff in using and exploiting digital and build a plan to bridge the gap through training, sourcing and recruitment – consider the principles of digital dexterity

7. Consider how best to create a corporate learning culture across the organisation – which allows for reinvention and re-imagination of new processes and services – and reduces fear of risk taking and fear of failure

8. Consider how to best exploit the natural talent, intellect, curiosity across the institution to build a corporate innovation capability – the most effective digital organisations are investing in innovation, tech-garages or similar

9. Finally at the heart of a digitally focused business strategy leadership will need to be in place to focus on digital transformation across the institution – strategically and holistically – a bundle of digital projects does not equate to a digital organisation.

10. The final point through this to consider – linking action 1 to action 9 – is "how does this change the university, it's strategy and the proposition to our customers - students and researchers" We need to avoid thinking in terms of what we do now – just faster

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Process:

Prioritise the suggested actions in the list – add any that are clear omissions

Split group into small groups

Allocate 1 or more topics to each group

Discuss what the challenge is and what an action plan might look like together with ownership – in particular identify "what does Great look like"

Feed back with notes on flip chart

WHAT MIGHT A DIGITAL UNIVERSITY BE LIKE?

WHY DIGITAL

- Challenges in Digital Transformation
- What are we doing
- What can you do

Student experience – geo tracking, schedule management and facility availability

Learning experience – in class engagement, polling, clickers

Teaching experience – rapid feedback , lesson planning, progression

Student health – exercise and nutrition guidance

Optimised environments – heating, lighting and power

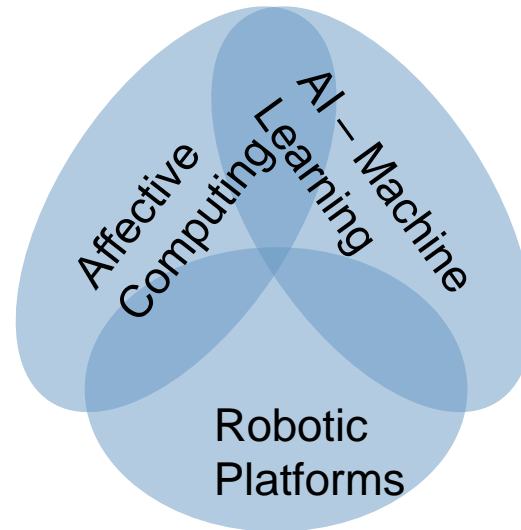Asset management – research equipment, learning materials
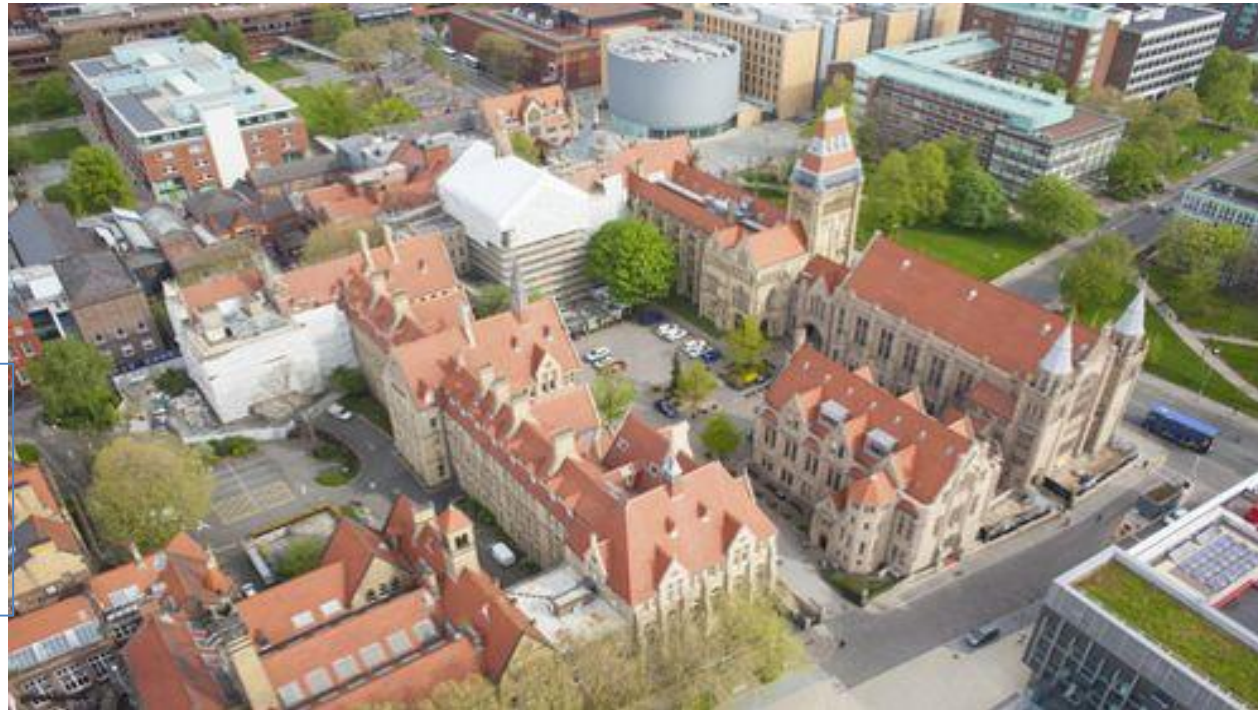
Security – Student, staff location, smart lighting and cameras

Resource and Space Management – facilities, equipment, people

Infrastructure management – lab, special equipment, materials, technology

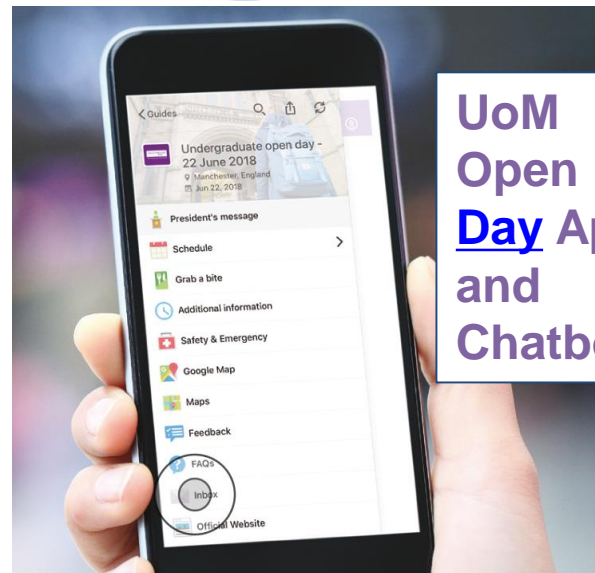**GeorgiaTech TA "Jill Watson" – trained by Georgia tech on 40,000 postings**

Little Dragon

Emotion AI platform using 4 million faces analyzed from 75 countries, 50 billion emotion data points.

AI – Machine Learning

Affective Computing

Robotic Platforms

UoM Open Day App and Chatbot

Pepper robot enrolled in Shoshi High School and LDE-UTC
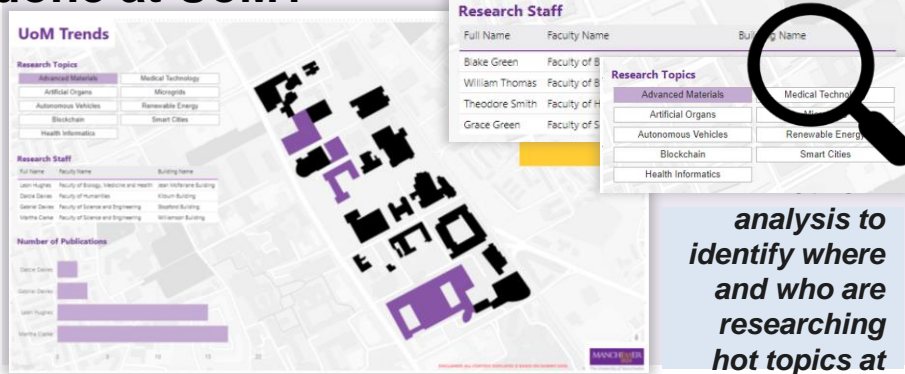
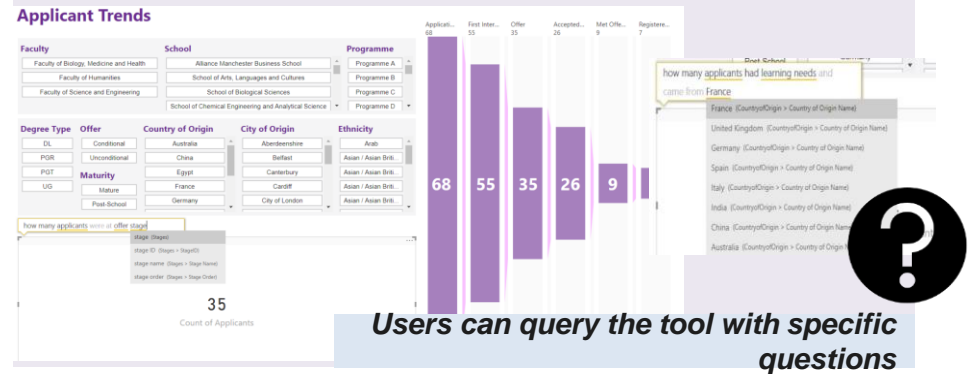**The robot, which can detect human emotions, is hired to:**

1. Help students struggling with communication
2. Study English
3. Study Robotics

Where is cutting edge research being done at UoM?

analysis to identify where and who are researching hot topics at UoM

Who is applying to study at UoM?

Users can query the tool with specific questions

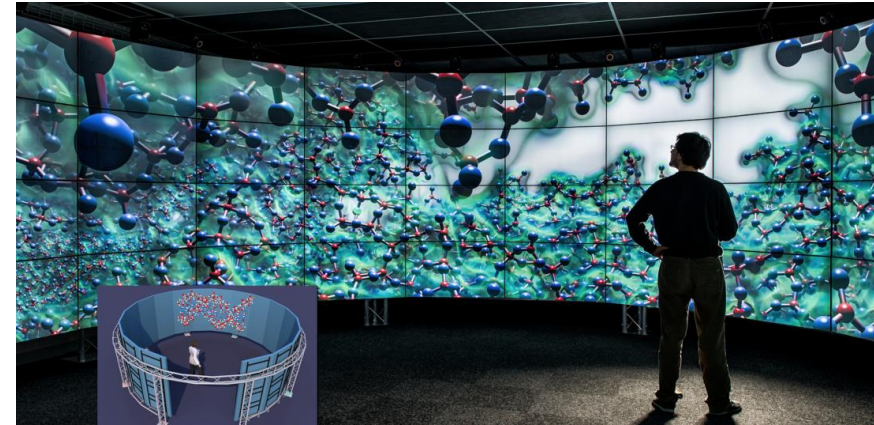## ANALYTICS AT UoM

What students are at risk?

Alerts sent to your mobile when students are at risk

Which students need more help?

Analysis of student data automatically identifies the reasons why students are dropping out

From Clusters and static rooms
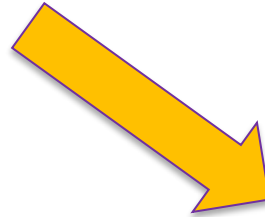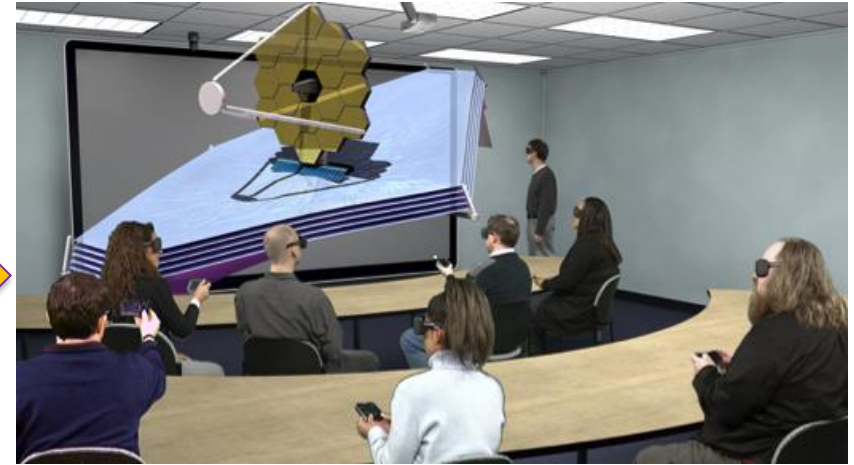
Use Virtual Reality, Augmented Reality and Immersive Environments

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Robotics Process Automation Future
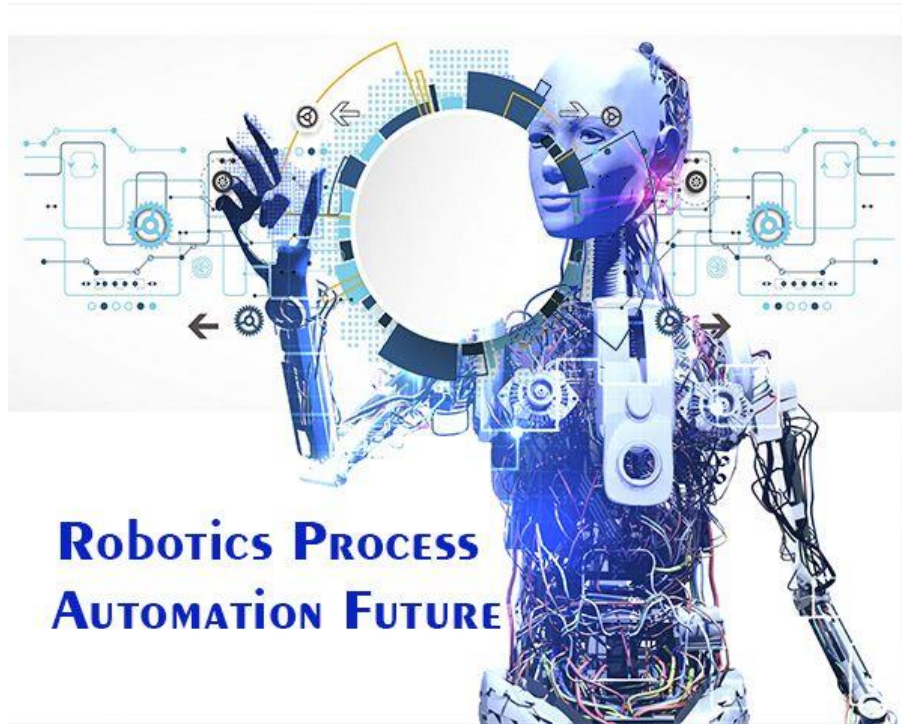
Use RPA and Artificial Intelligence to automate and personalise services

1 Define Narrow SMART Use Cases

2 Begin With Data

3 Do Good With the Data

4 You Got to Get Talent

5 Get a Machine on Your Team

AI
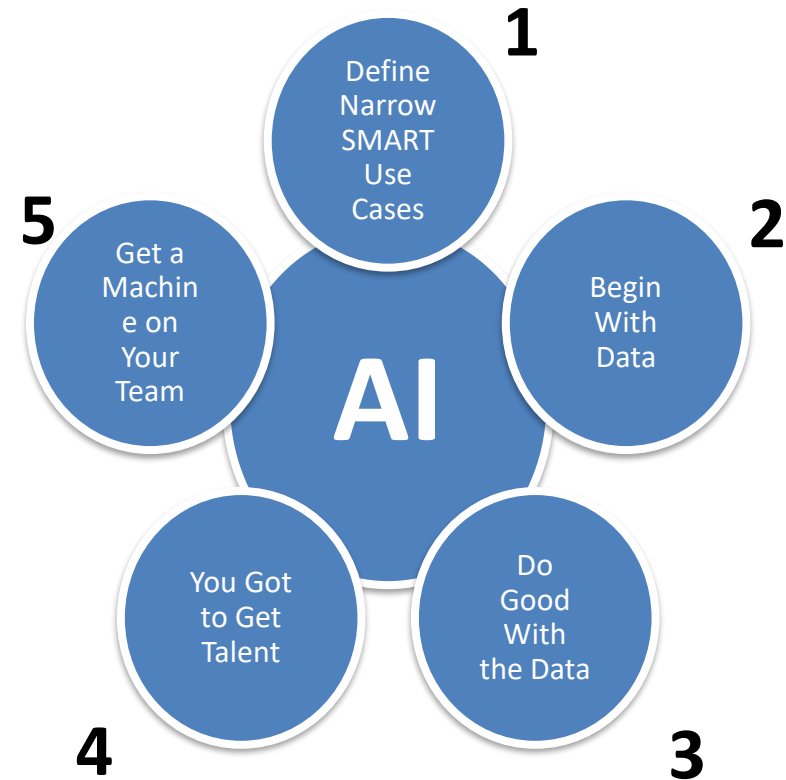
12403 days – just shy of 34 years of perfect multi-variant testing

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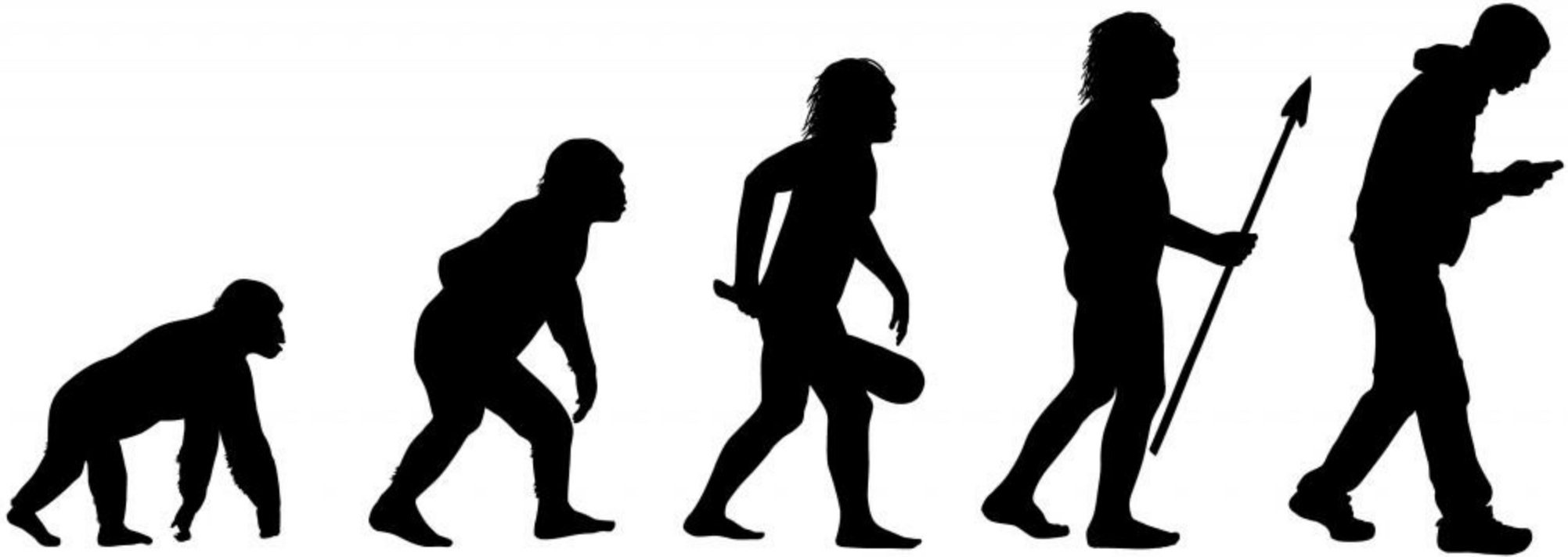
Jayme – digital thought exchange
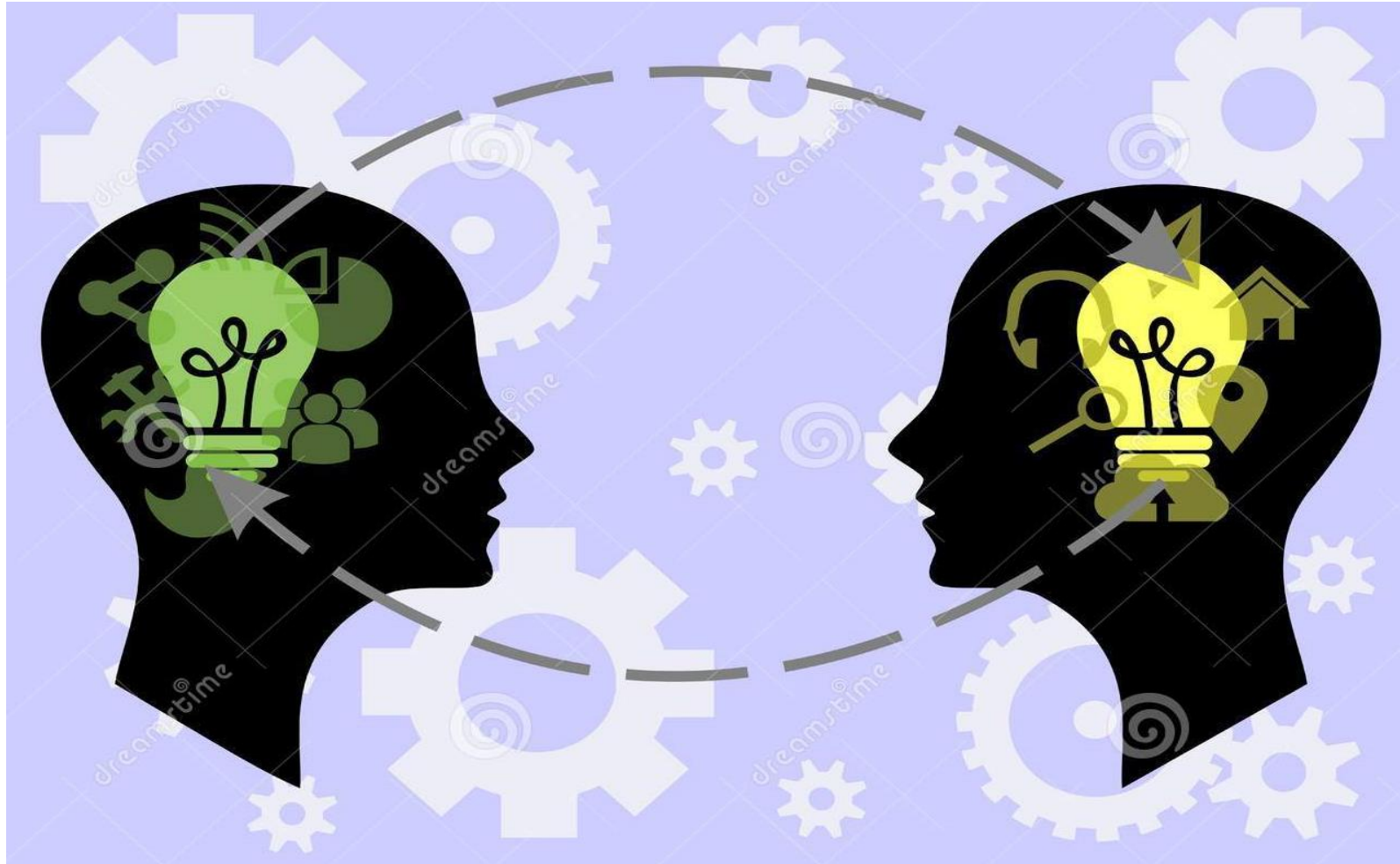
- Artificial Intelligence will change the professions we teach for, so we need to change how we teach for those professions

- "The Future of the Professions - How Technology Will Transform the Work of Human Experts - Richard Susskind and Daniel Susskind
- There are over 130 new jobs/roles that are being created as a consequence of digital technology and transformation – Global Futures Forum
- Obvious jobs like Data Miner and Robot mechanic – but maybe less obvious like Waste Data Handler and Network Counsellor

RICHARD DANIEL
SUSSKIND SUSSKIND

THE FUTURE OF
THE PROFESSIONS

HOW TECHNOLOGY WILL TRANSFORM
THE WORK OF HUMAN EXPERTS
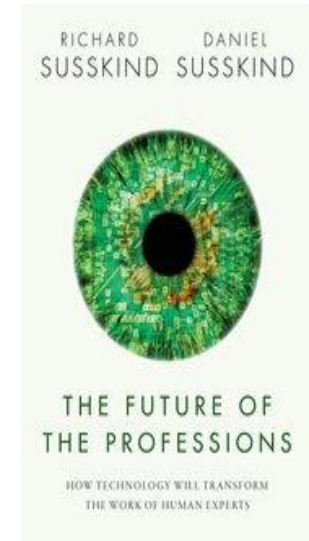
1. **Our Students** expect now **and will demand** access and mobility together with a personalised experience that allows them to interact with their learning and university at a time, in a location and through their interface of choice.

2. **The University** needs to prepare for a future that is increasingly going to utilise a range of technologies – AI, AR, VR, analytics, cloud – and our staff – academics and administration – need to be capable of using technology competently and confidently.

3. **Digital technology** can enable **efficiency and effectiveness** way beyond our current expectations as well as delivering a learning experience with feedback that can enable us to help our students, teachers and researchers to be the best they can be through combinations of digital technology

4. **Creating an environment for digital innovation** where we can create new capabilities through the use of technology – getting the art of the possible in the hands of our staff and students.

Digital Friction

Digital Potential

- Digital Revenue
  (New Channels, Customer Loyalty, New Business Model)

- Digital Optimisation
  (Increased Productivity)

- Digital Enablement
  (New Products/Services)

- Regulation

- Workforce Skills

- Culture of Change
  (Risk Averseness)

- Lack of Learning From Failure

Optimize
Current Business

Transform
Pursue New Business and Models

1
2
3
4

Improved Productivity and Products

Better Customer Experience

New Product and Services

New Business Models

Big Data and Analytics

Cloud

Omnichannel

AI

Internet of Things

Changing siloed **mindsets and culture**.

Encouraging employees to **work iteratively,** collaboratively and efficiently.

Coping with **ambiguity, interdependencies.**

Learning to **think about the end customer's journey**

Competencies, Culture and Mindsets

Ways of Working

Leadership and Change Management

Customer Experience

Business Model and Strategy

Corporate Clock Speed and Governance

IT's Operating Model

Incentives, Prioritization and Funding Model

Compliance and Risk Management

Developing **a shared ambition and vision** for digital.

Making **faster and better decisions.**

Reorienting IT teams to partner closely on digital business outcomes

Making digital part of **behavior-driving metrics and goals.**

Overcoming aversion to risk and failure.

Source: CEB analysis.

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KPMG/Harvey Nash Survey – published this week:

Education sector is unclear on how digital can be best used to support its business objectives

Range:

Technology sector 47%
Education 17%

Sector	No	No, but we are currently working on one	Yes, within individual business units	Yes, enterprise-wide
Technology	4%	21%	28%	47%
Telecommunications	6%	21%	29%	43%
Healthcare	5%	35%	22%	39%
Power & Utilities	9%	33%	19%	38%
Business/Professional Services	10%	28%	26%	36%
Broadcast/Media	11%	18%	35%	35%
Financial Services	6%	28%	34%	32%
GLOBAL AVERAGE	9%	32%	27%	32%
Government	11%	37%	22%	29%
Manufacturing/Automotive	16%	38%	21%	26%
Transport/Logistics	8%	41%	27%	24%
Construction/Engineering	10%	43%	23%	23%
Charity/Non-Profit	13%	39%	25%	23%
Retail	7%	43%	27%	23%
Pharmaceuticals	21%	28%	28%	23%
Oil & Gas	14%	34%	31%	22%
Leisure	9%	30%	40%	21%
Education	17%	40%	26%	17%

■ No ■ No, but we are currently working on one ■ Yes, within individual business units ■ Yes, enterprise-wide