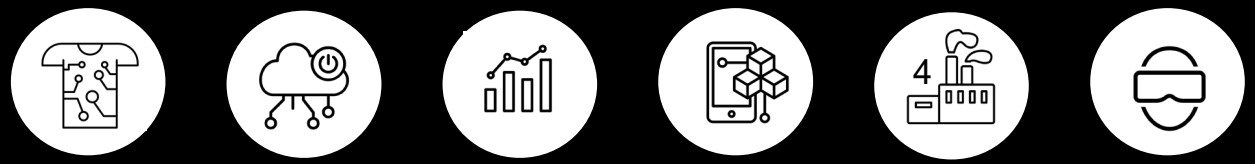
Rapido

Unlock Technology.
Shape the Future.



Presenter: Hervé Harvard

Director UTS Rapido

Director UTS ProtoSpace

Faculty of Engineering and IT at the University of Technology Sydney

- Over 12,000 Students & 480 Staff (faculty)
  - 19% (2293) postgraduate
  - 6% (745) Higher Degree by Research
  - 42% International Students
- Ranking (Times):
  - 9th in Australia, 196th Overall
  - *Top 50 under 50*: 1st in Australia, 16th Overall

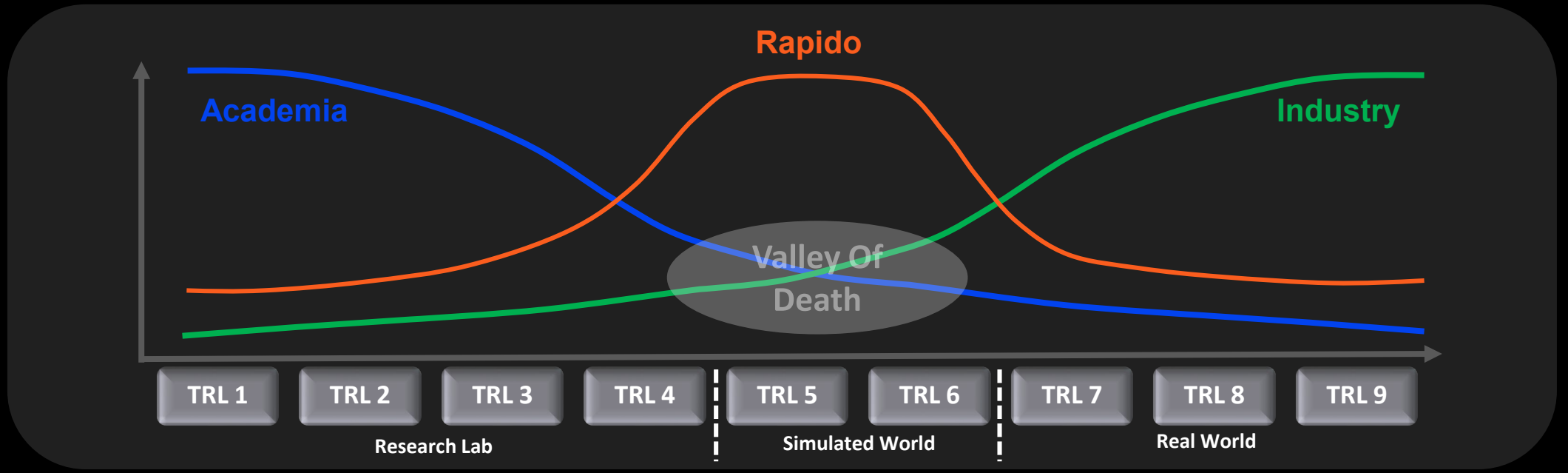
Research Strengths

- Electrical machines & power electronics
- Green energy vehicle innovation
- Intelligent mechatronic systems
- Quantum computation and intelligent systems
- Real-time information networks
- Human-centred technology design
- Advanced analytics
- Innovation in IT services and applications
- Health technologies
- Built infrastructure
- Technology in water and wastewater
- Energy policy

- School of **Biomedical Engineering**
- School of **Civil and Environmental Engineering**
- School of **Electrical and Data Engineering**
- School of **Mechanical and Mechatronic Engineering**
- School of **Software**
- School of **Information, Systems & Modelling**

The Model

Drive business value by unlocking access to world-leading technology and research



UTS Rapido

- **(Engineering Capabilities)** R&D As a Service offering (not just 'R')
- **(Cultural Fit)** working across both Academia & Industry

Academic Expertise | **High Calibre Engineers** | **Commercial R&D Experience** | **Multi-disciplinary Teams** | **Focused on Business Value** | **External Partners**

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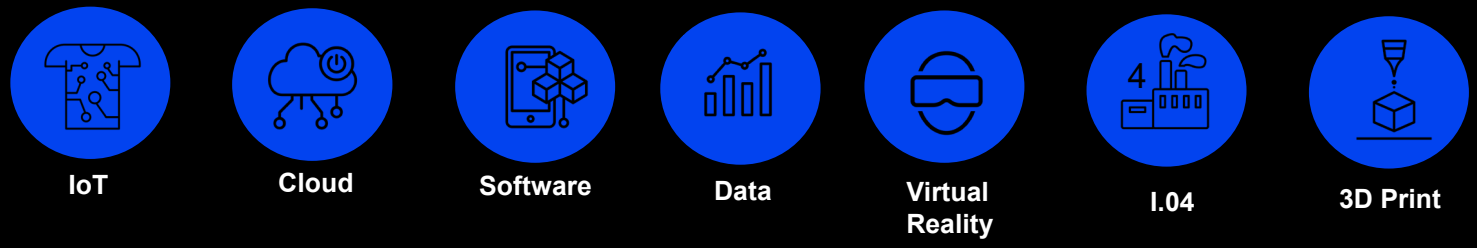
- Launched July 2016
- Currently around 19 Staff
- 25 projects with diverse partners:
  - 12 projects completed
  - 6 projects in progress
  - 7 projects scoped



UTS Rapido
NSW GOVERNMENT Health
NOKIA
rotacaster
WATERCO
AMGC
ADVANCED MANUFACTURING GROWTH CENTRE LTD
Downer
RAIL MANUFACTURING CRC
Making Connections
CELESTINO
SPEE3D
imarc
Mineral Technologies
A Downer Company
Tec.Fit

Example Projects

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Case Study

Software

Data

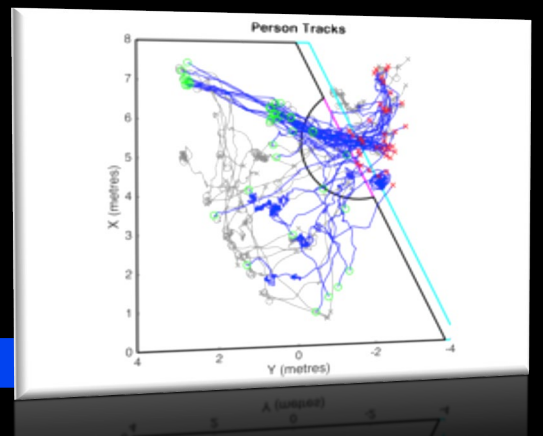
IoT

Downer Dwell Track

'On The Right Track'

Objective

Assist rail operators maintain on-time running of trains by providing insights into commuter movements on/off trains and along the platform edge.



Technology

Research from the Centre for Autonomous Systems to track individuals in densely populated crowds using 3D sensing.

Designed and built HW & SW platform.

Impact

Real-time dashboarding aggregates commuter movements with train running information providing platform staff with a single source of information to better manage train departures.

RAIL MANUFACTURING CRC
Making Connections

Downer

Rapido

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Case Study

Mechatronics

Rotacaster Transfer Station

'Technology in Motion'

Objective

Develop an efficient multidirectional, modular conveyor transfer station using omni-directional wheels to replace current complex industry-standard transfer stations.

Technology

Omnidirectional wheels provide a robust and flexible method of applying forces to objects in motion.

The compact, modular design, coupled with dynamic simulation, allows for custom conveyor builds.

EXPECTED GROWTH

- Rotacaster has the potential to take a $1.15 – $2.3 million share of the Australian Market and $85 – $170 million share of the global market

EXPECTED JOBS

- Five – 10 high skilled jobs

AMGC

AMGC

rotacaster

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Case Study

I 4.0

3D Print

Mineral Tech

"Building the Future'

Objective

Replace traditional manufacturing of gravity spiral separators (GSS) with Industry 4.0 production through the development a large scale bespoke 3D printer.

Technology

Bespoke 3D Printing Technology enabling:

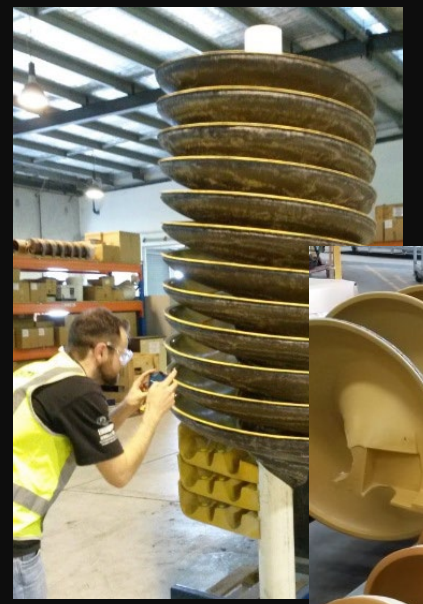
Embedded IoT sensors enable remote monitoring & automation of GSS.

Increase design flexibility with reduced labour & time cost.

Impact

Improve Health and Environmental Impact during production.

Supply chain disruption: Deliver the 'Factory' to the customer.



imarc

Mineral Technologies
A Downer Company

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Case Study

IoT

Cloud

Data

Waterco

'A splash of cloud technology'

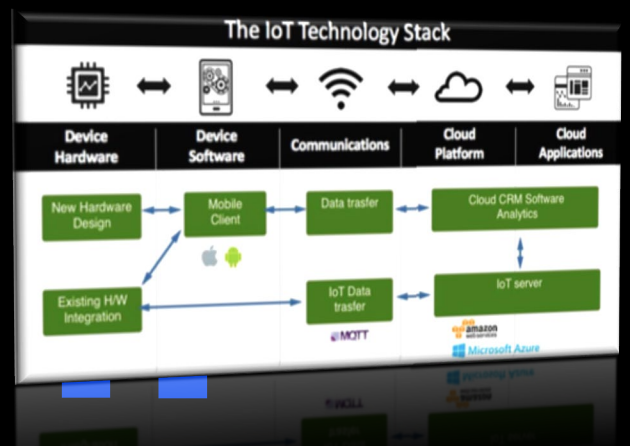
Objective

Transform the multi-franchise pool manufacturer Waterco into a united, cloud-optimised business with integrated IoT technology, data analytics & pool remote monitoring.

Technology

Develop an active Cloud interconnected interface

Add data analytics & a pool maintenance booking system.



Impact

Process efficiency for Waterco customers and franchisees as well as new business models opportunities.

NSW GOVERNMENT

WATERCO
water, the liquid of life

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Case Study

IoT

Cloud

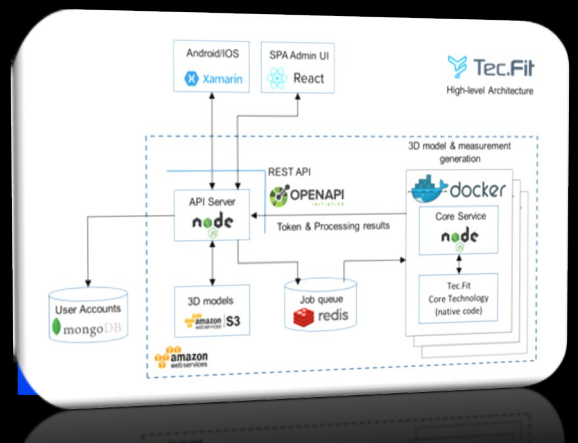
Software

Tec.Fit

'The Perfect Fit'

Objective

Enable Tec.Fit customers to capture their measurements easily at home, lowering the barrier to entry for tailored clothing.



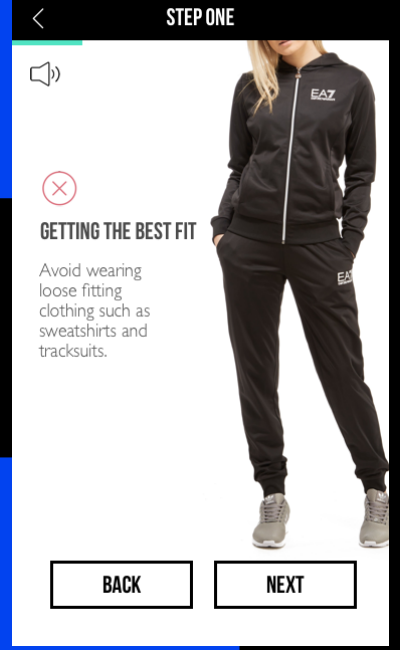
Technology

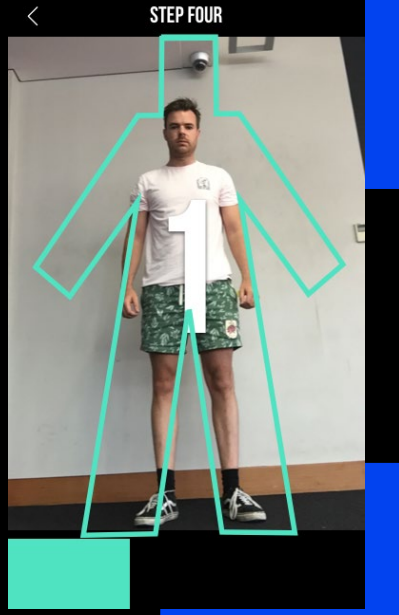
Algorithms from the UTS Multimedia & Data Analytics Lab to construct a 3D body model from a sequence of 4 photographs.

Cloud infrastructure to the host the algorithms. IOS and Android apps make the technology easily accessible to end users.

Impact

Disruption of the clothing industry through enabling mass customization.





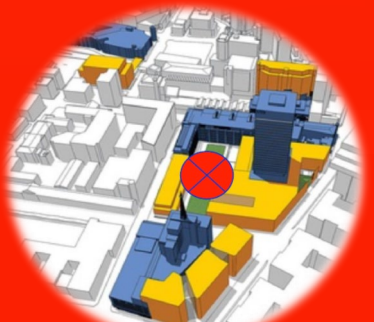
NSW GOVERNMENT

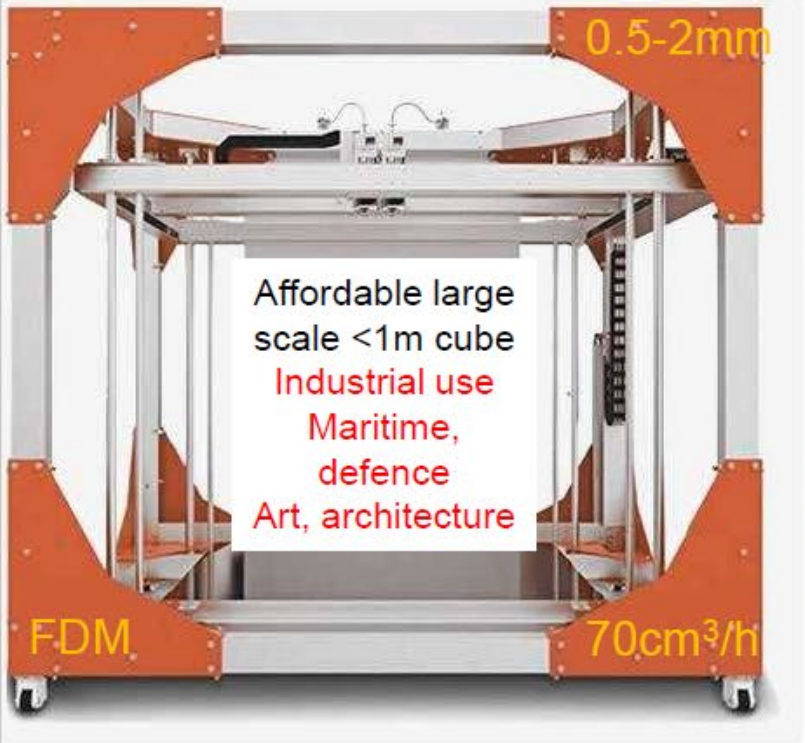
Tec.Fit

ProtoSpace

Access to industry partners, academics & students

900m² advanced, additive manufacturing laboratory & workshop





BigRep Large Scale 3D Printing Experience

World's First Full-Colour Multi-material 3D Printer Stratasys J750

Automotive
Surgeons/Medical
Film makers
Product design
Educational products

World's First PCB Printer Nano Dimension DragonFly 2020

Inkjet deposition and curing system for printing multilayer circuit boards.
Can print an entire board or just part of a circuit
Credit card sized board x 2 layers in 28hrs

Markforge 7x Precision composite reinforced plastic printer

Strengthen parts by embedding supportive fibres into part (Carbon, fibreglass, Kevlar)
Produces structural parts for many different uses
3.3cm³/h

UTS:

Thank you

Contact: *Hervé Harvard (herve.Harvard@uts.edu.au)*