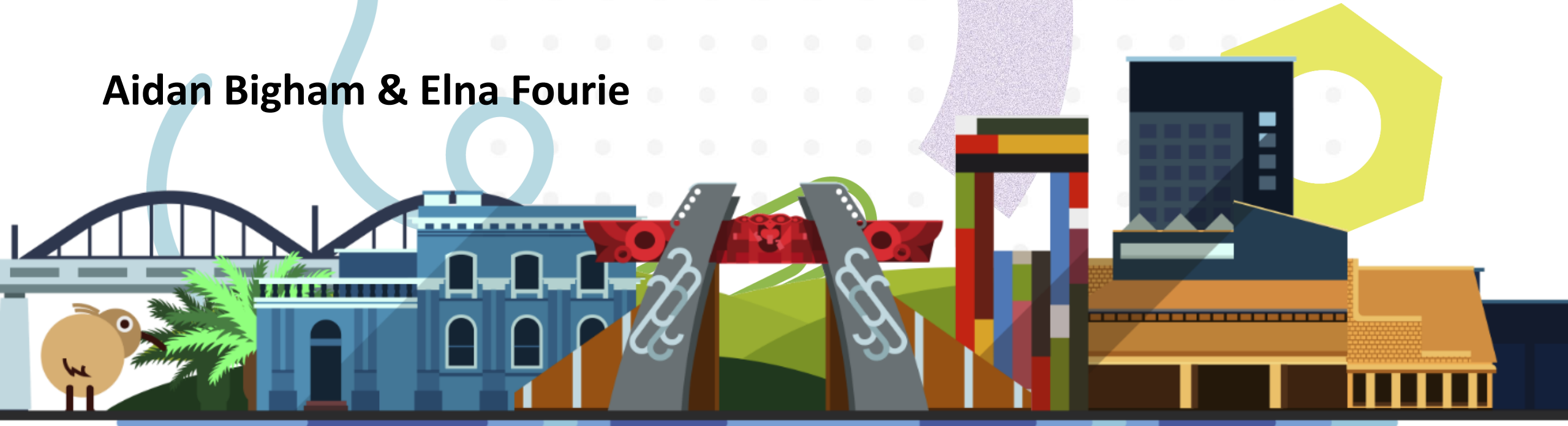


**AAEE Conference Workshop
Monday 10 December 2018**

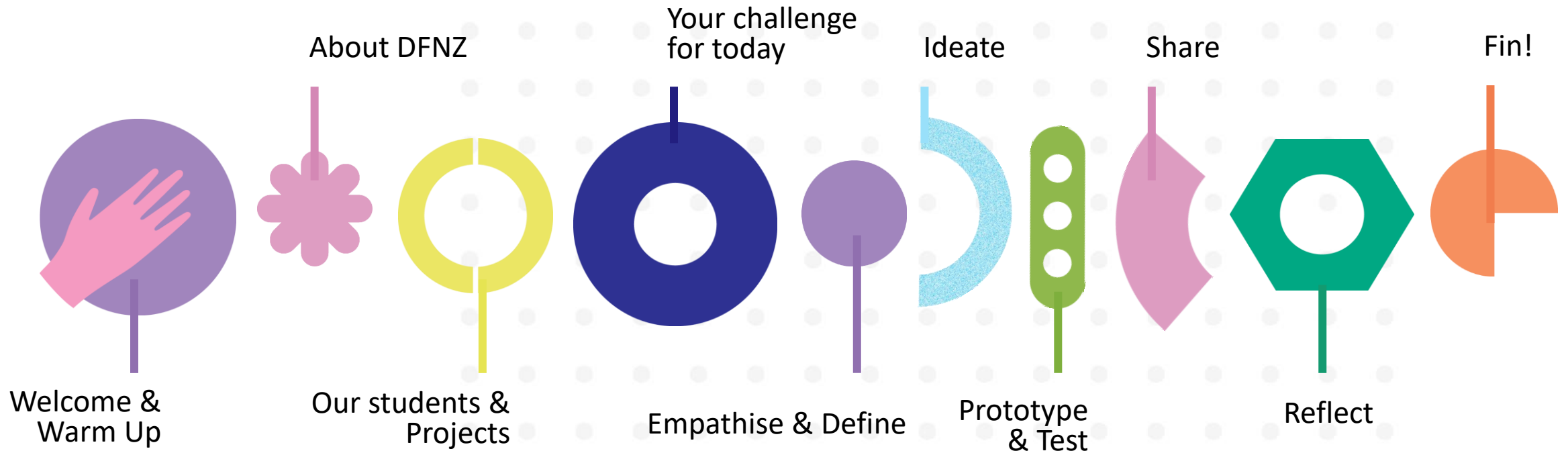
Design Factory New Zealand

Aidan Bigham & Elna Fourie





Workshop Overview





Rules of Engagement

- Participate
 - Give it all a go
- Encourage each other
- Have fun
- Learn something new
- Ask questions



Warm up

1. Without talking organise yourselves into a line of ascending birthday **DATE** and **MONTH**
2. Now keeping the same order, form a circle (or two)
3. In your circle identify something you all have in common (apart from engineering or being at AAEE, etc.)



What is the Design Factory?



A co-creation space, where we teach innovation, design thinking, empathy – and much more.



A space for collaboration across Wintec Centres - working with students from a range of backgrounds.

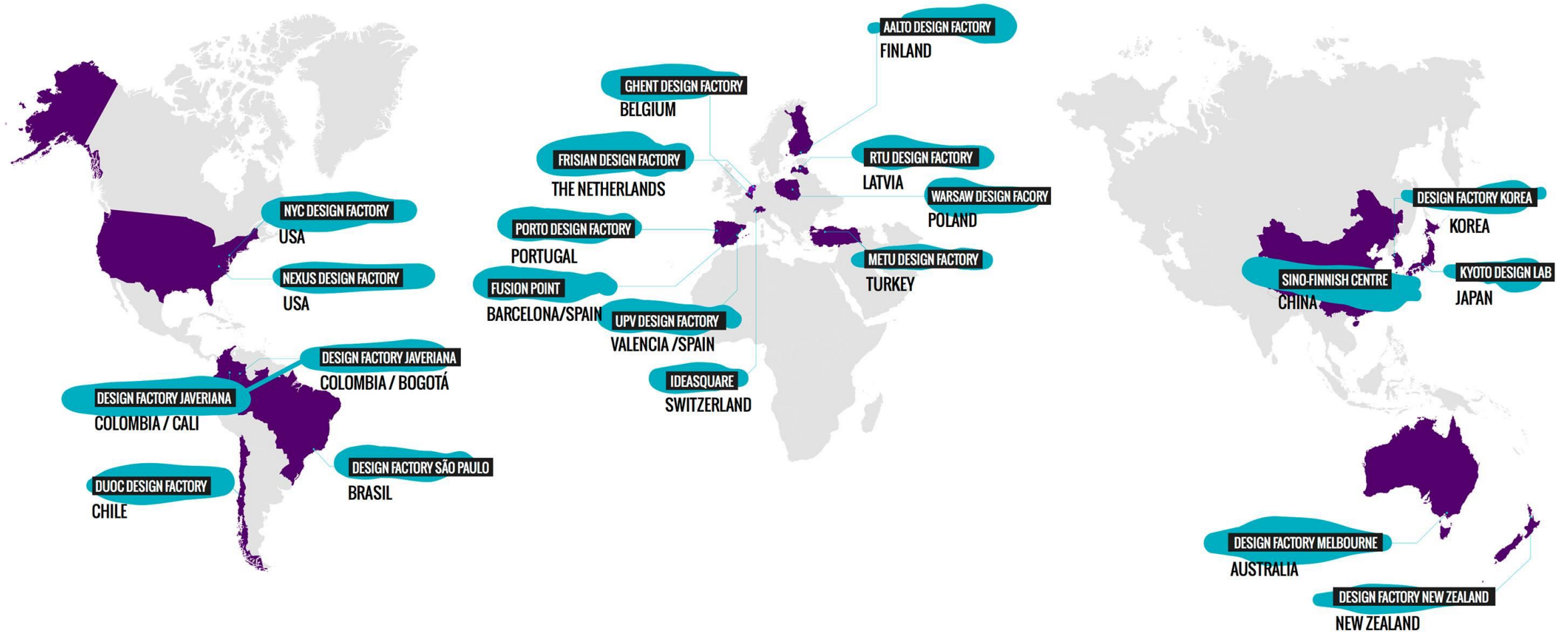


Designed for working with industry partners on solving real-world, wicked problems.



Human-centered, with a friendly, open and fun atmosphere – and lots of food!

Part of a Global Network





**Design
Factory
NZ**

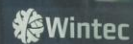


Wintec
WAIKATO INSTITUTE OF TECHNOLOGY
TE WHARE O WAIKATO



**Design
Factory
NZ**

A co-creation space
where students
work with industry
partners to solve
complex problems



Wintec

DFNZ701 Learning Outcomes



1. Participate, contribute fully and work in teams made up of diverse disciplines to co-create and solve industry driven problems
2. Apply professional communication strategies and actively engage others in your product, process or idea to communicate ideas successfully
3. Apply human centred design and apply a broad range of problem solving tools to innovate and solve an industry driven problem
4. Demonstrate efficacy, adopt a can-do approach, be self-motivated, accountable and, work successfully in both independent and collective situations
5. Acquire and apply future-focused employment skills to industry and educational contexts
6. Use empathy to research, investigate and produce reasoned and critical responses

Why ?

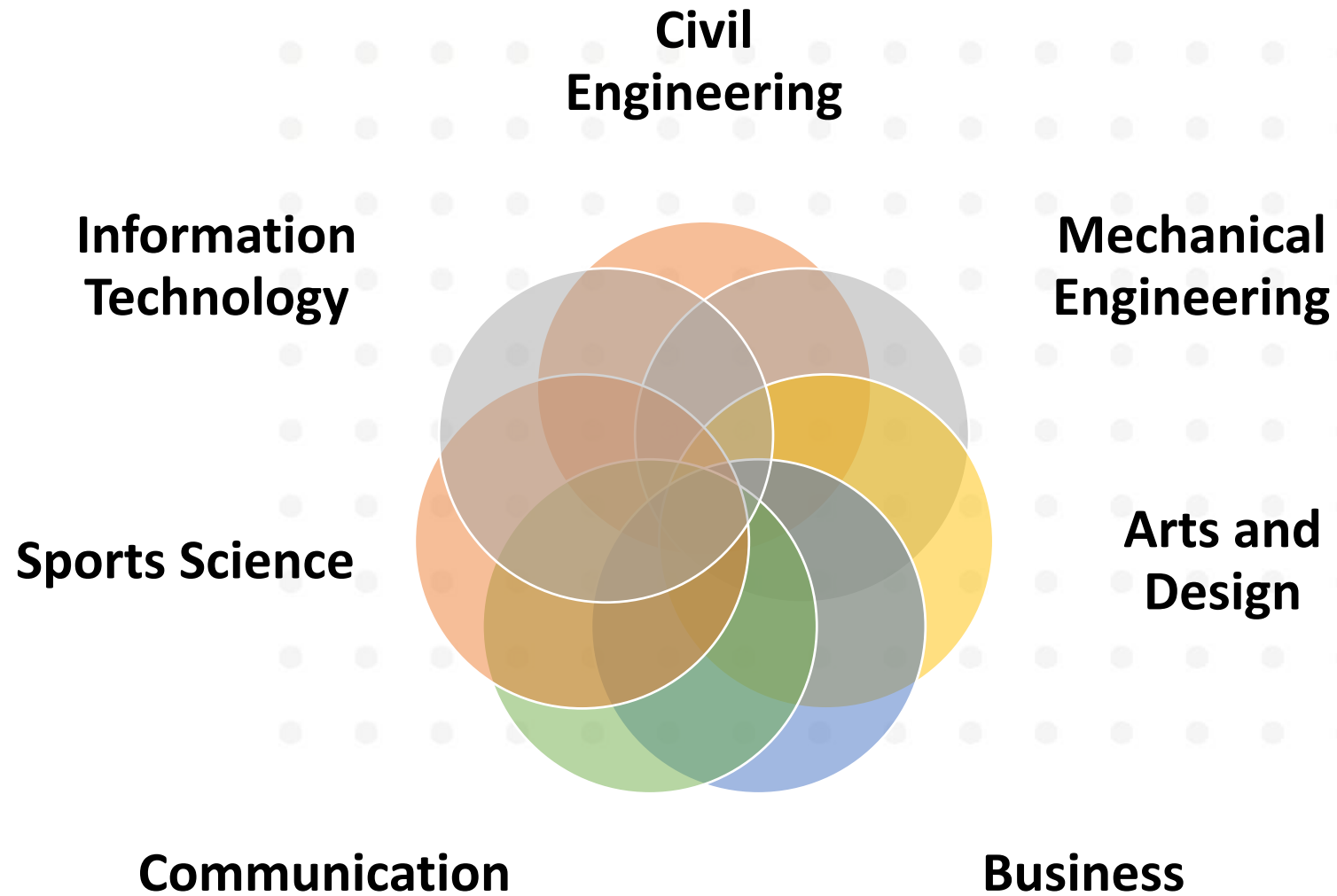
- Increase employability for students because they learn to work in interdisciplinary teams
- Co-create on a real world problems with Industry Partners
- Skills for innovation, problem-solving, communication
- Learning to deal with uncertainty and to adapt in ambiguous contexts



How?



DFNZ have students come from...



Some projects...

How might we prevent quadbike incidents in the Waikato?

Habitat for Humanity wishes to improve the inward goods process/experience in their second-hand stores (ReStores).

Hamilton City Council wishes to encourage people to use alternate modes of transport that improves the wellbeing of Hamiltonians.

Equus Education wishes to globalise the three strands of their business: foal education, research and presentations.

How might Wintec engage / create long-term relationships with its Alumni?

Waikato Regional Council is looking to increase efficiency in monitoring processes to deliver on Waikato Regional Council outcomes.

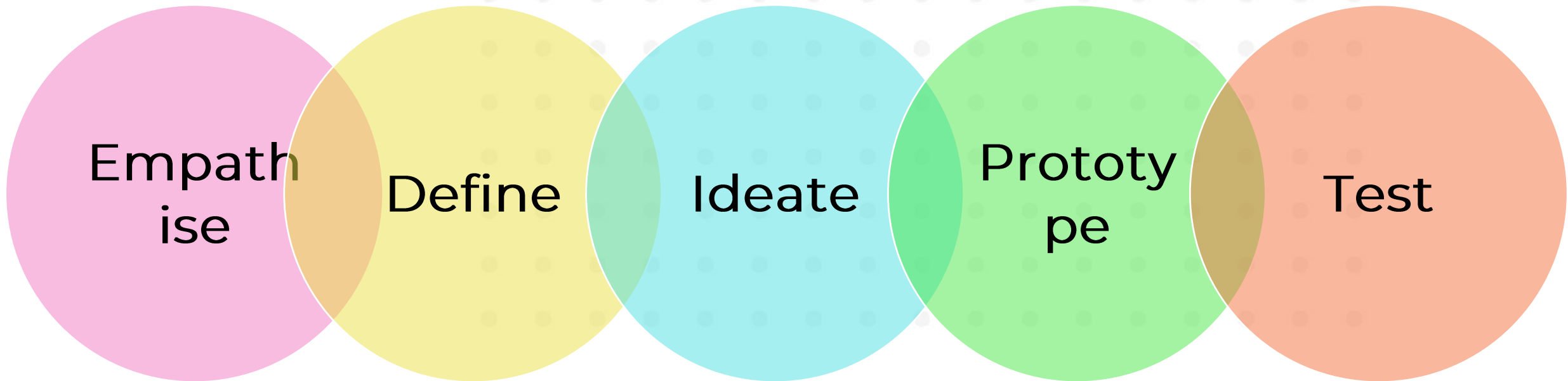
How might we develop below ground technology (instrumentation) that transfers real time data without requiring onsite human interaction?



One of our approaches:



Design Thinking





Today's Challenge...

“How might you create opportunities for engineering students to work in multidisciplinary teams?”



“How might you create opportunities for engineering students to work in multidisciplinary teams?”

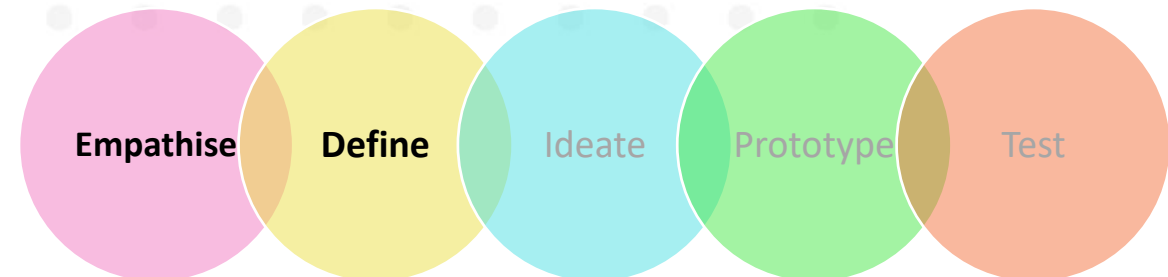
Lets get into some teams

1. Individually (on post-its, 2 mins)

- Who do your students currently work with?
- What is your institution known for?
- What other schools/centres are there in your institution?
- What projects do your students currently work on?
- What are the benefits of multidisciplinary teams? What are the challenges?
- Other questions?

2. Share in your group & cluster your post-its (5 mins)

3. Share with the whole group



What this looks like in DFNZ...





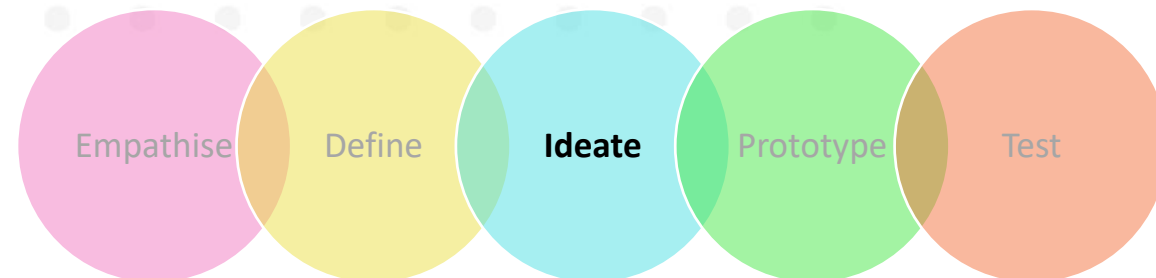
1. Time to brainstorm some ideas!

- Individually (2 minutes, in silence)
 - One idea per post-it
- Share in your group (5 minutes)
- Dotmocracy – vote for your favourites (2 minutes)

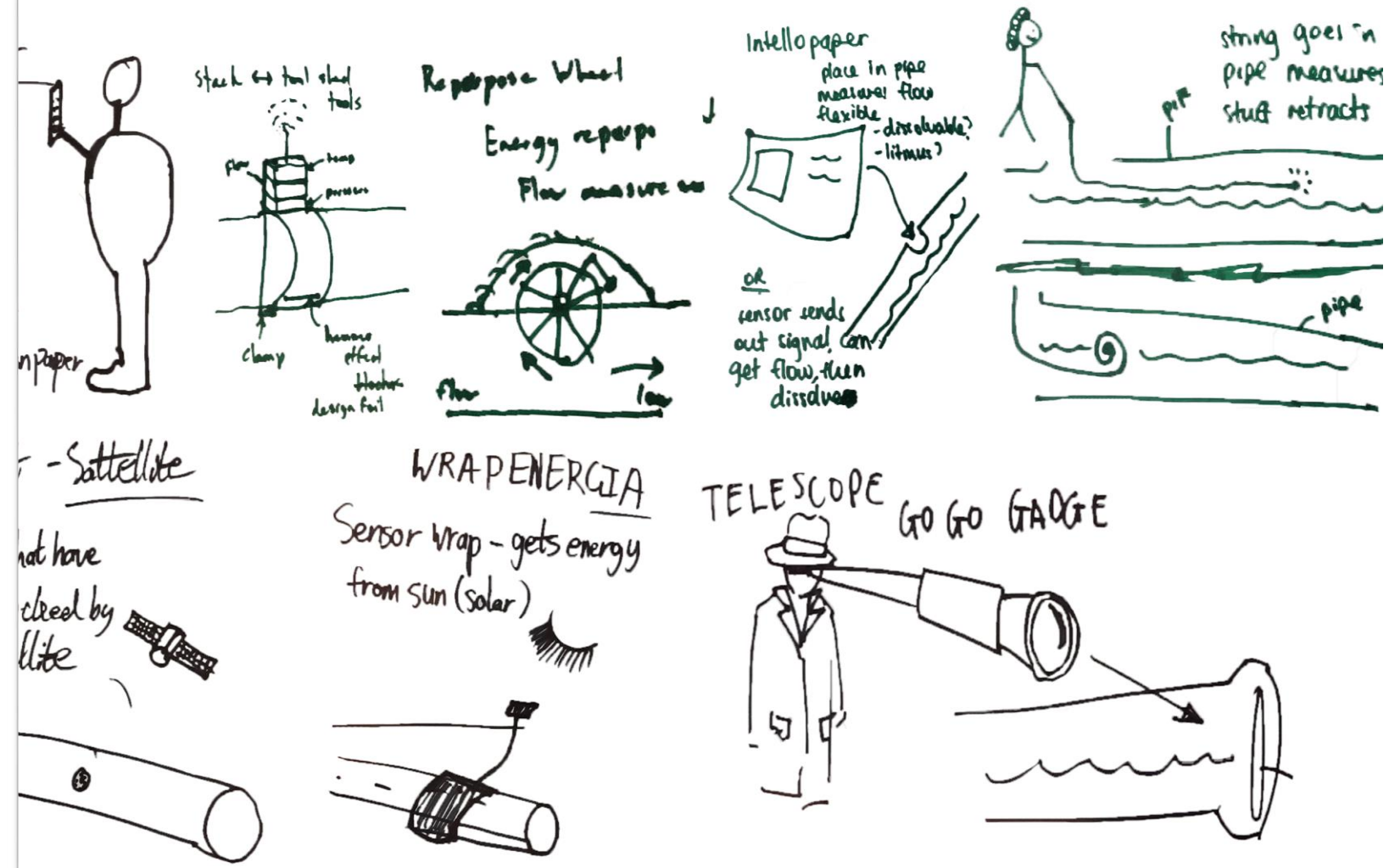
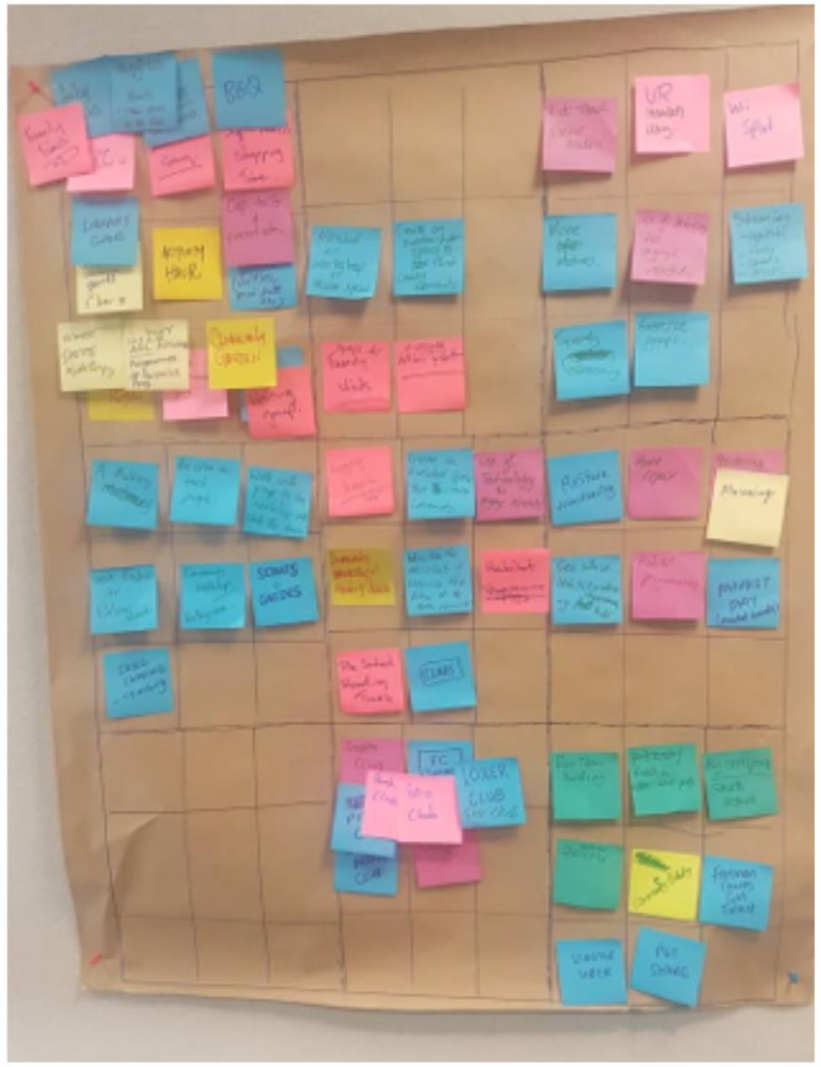
“How might you create opportunities for engineering students to work in multidisciplinary teams?”

2. Sketch the idea

- Individually (2 minutes, in silence)
- Share & collate into one drawing



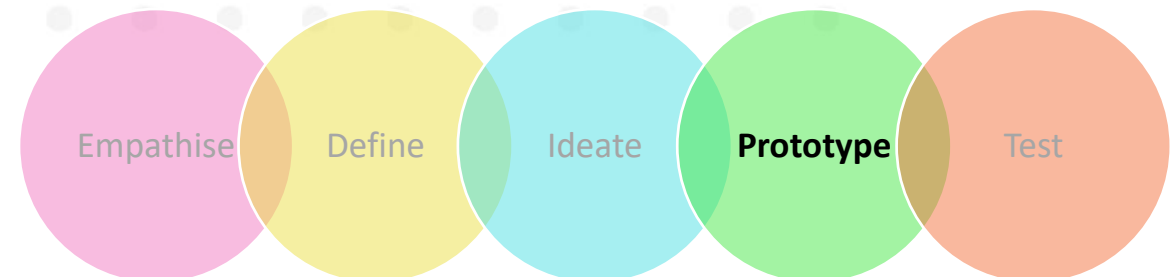
What this looks like in DFNZ...



Prototype your idea

- Physical model
or
 - Role play
- (10 minutes)
- Make it quick, make sure it tells the story of your idea
 - Fail fast

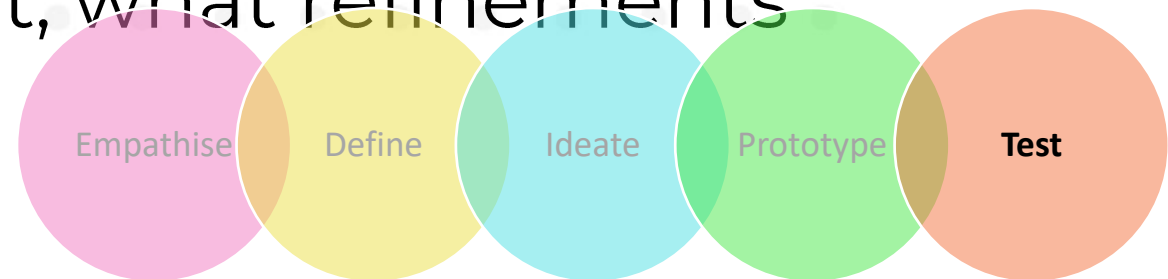
“How might you create opportunities for engineering students to work in multidisciplinary teams?”



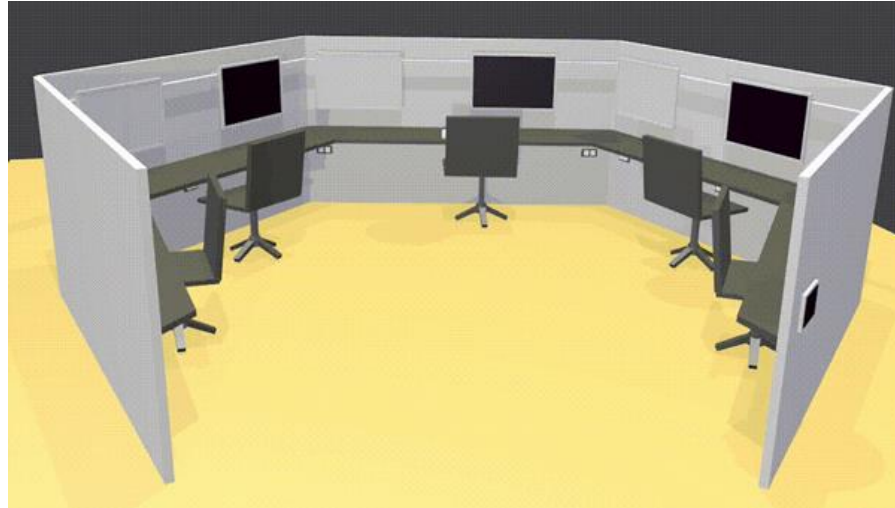


Share

- Share / Pitch your idea
- Give feedback on others' ideas
 - *"I like...."*
 - *"I wish..."*
 - *"What if..."*
- What feedback did you get, what refinements would you make?



What this looks like in DFNZ...



MOCK UP OF BIKE-E-TRON APP



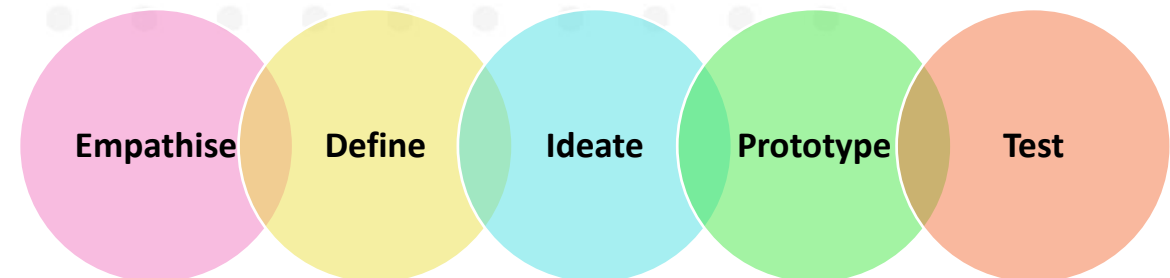
What's the outcome?





Feedback & Reflection

- What was challenging?
- What was surprising?
- What's your take-away?



Student experience... they value...



- the 'realness' of the learning, with industry
- that it demystifies employment expectations
- that it makes them feel valued and useful
- that they learn to network and communicate better
- They are excited to work with other disciplines



Thank you



I like, I wish feedback to leave the room...

To find out more:

<https://www.wintec.ac.nz/designfactory> (Find us on the internet)

<https://www.facebook.com/DesignFactoryNZ/> (Find us on Facebook)

Aidan.bigham@wintec.ac.nz

Elna.fourie@wintec.ac.nz

