

*Universities and Inclusive Innovation:
A fledgling innovation system
in the Western Cape, South Africa*

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'Innovation & Governance in Development' Conference

Maastricht University, The Netherlands

November 26-28, 2014

Our study: some background

- Part of the inter-university research program by “Center for Frugal Innovation in Africa” (Leiden University, Delft University of Technology, Erasmus University Rotterdam)
- Our interest: role of **universities** in **South African** innovation networks
 - Universities as hubs of knowledge /skills creation and dissemination
 - South Africa: high inequality and socioeconomic transformation
- Innovation systems perspective
 - Investigating the role of universities in regional/national innovation systems
 - University innovation in context
 - Interaction with other universities, business, government, NGOs
 - Starting point: university-specific contributions
 - Idea initiation, innovation design & development, value chain integration, technical support

On innovation systems & inclusive innovation

- Studies of university contributions to innovation systems tend to focus on university-industry linkages
 - University R&D for firms
 - Talent and competencies development for human resources (teaching & training)
- Underexplored: university contributions to inclusive innovation
 - ‘Inclusive innovation’: The development and implementation of new ideas which aspire to create opportunities that enhance social and economic wellbeing for disenfranchised members of society (George, McGahan & Prabhu, Journal of Management Studies, 2012)*
 - ‘Disenfranchised members of society’ in emerging markets: Low-income end-users
 - University students and faculty acknowledged as inclusive innovators, but research on their role in inclusive innovation systems in its infancy

Exploratory study on inclusive innovation at universities in the Western Cape, South Africa

- Small study of technology-based inclusive innovation at four universities in South Africa's Western Cape province to explore relevant themes for research
 - Western Cape province
 - Four universities
 - Cape Peninsula University of Technology (CPUT)
 - University of Cape Town (UCT)
 - University of Stellenbosch (US)
 - University of the Western Cape (UWC)
 - Technology-based innovation
 - Project level as starting point
 - Inclusive innovation project as unit of analysis

Research methodology

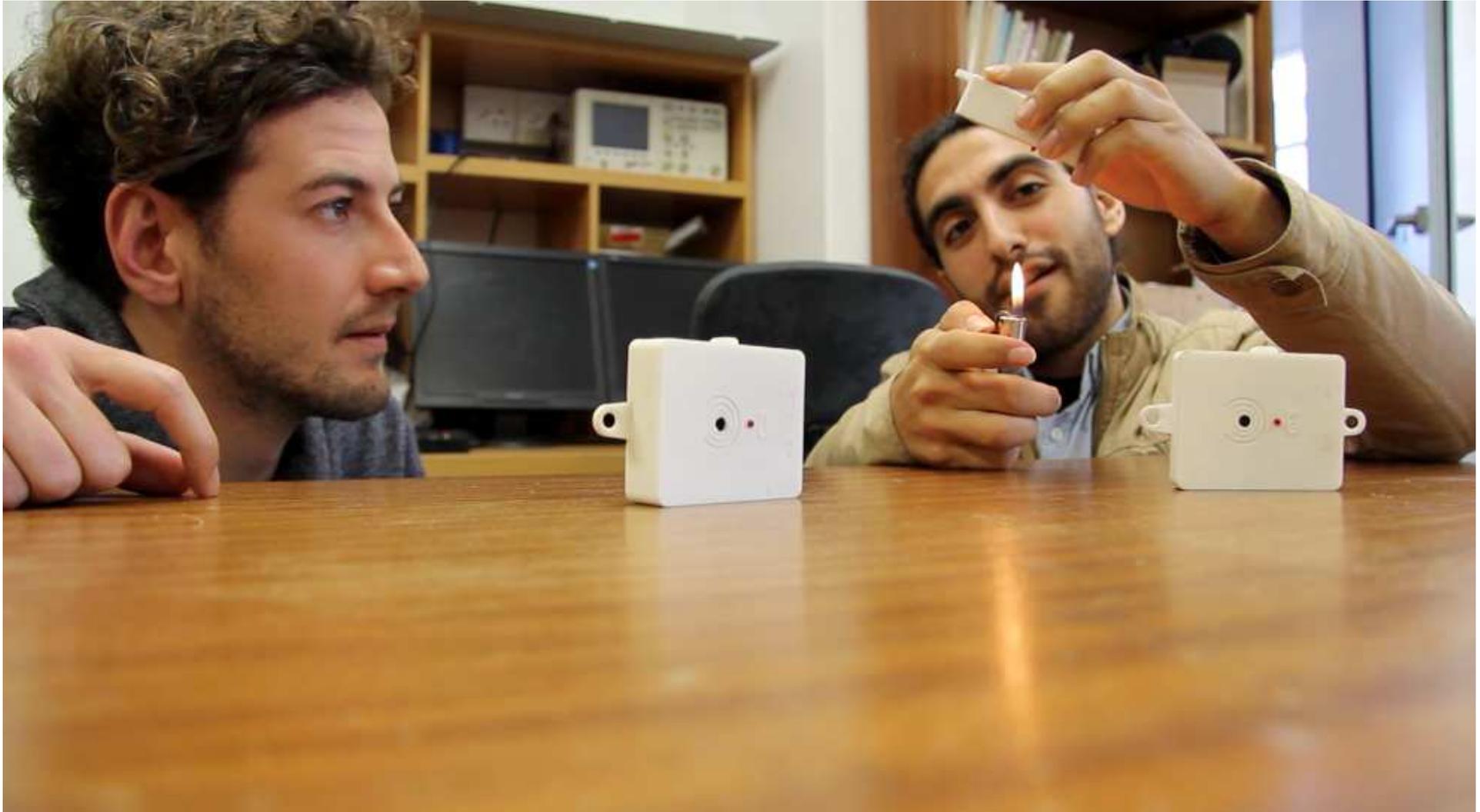
- Inductive research approach
- Data collection
 - Study conducted between November 2013 and June 2014
 - Desk research (phase 1)
 - Questionnaire (phase 2)
 - Semi-structured interviews (phase 3)

Preliminary findings

ARTIST (Adaptive Real Time Internet Streaming Technology)

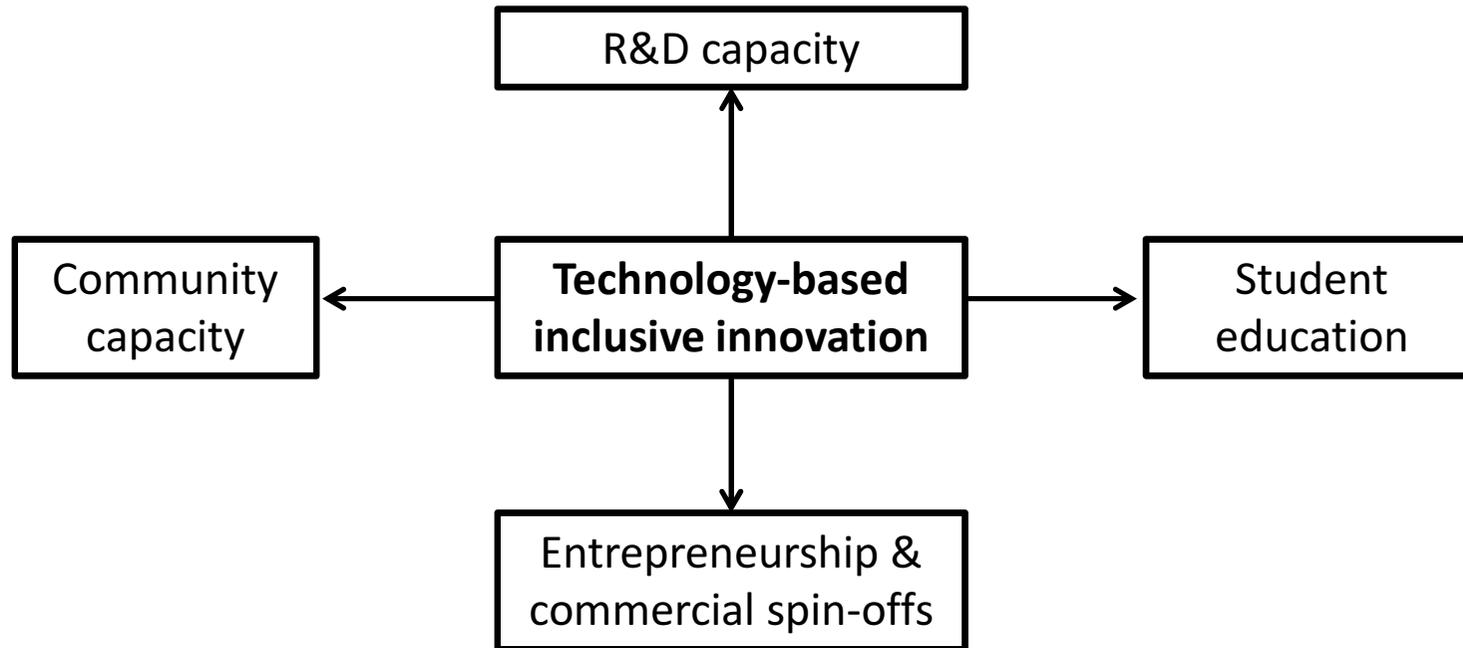


Khusela fire detector

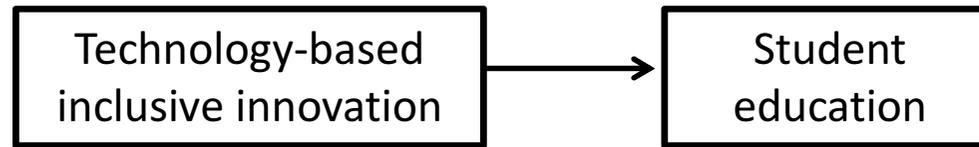


DEGREE / TYPE	Product/service	Process	Product/service + process
Incremental innovation	<ul style="list-style-type: none"> UCT low cost fence CPUT sustainable housing 	<ul style="list-style-type: none"> CPUT guidelines 	
Modular innovation	<ul style="list-style-type: none"> UWC water pots 	<ul style="list-style-type: none"> CPUT CDA UCT CVD app 	
Architectural innovation	<ul style="list-style-type: none"> CPUT E2 Story world CPUT Flamingo Crescent UCT water platforms UCT biogas US iTurtle 		
Radical innovation	<ul style="list-style-type: none"> UCT Khusela UCT ARTIST UWC Mankosi network 	<ul style="list-style-type: none"> UCT Aquatest UCT StAR 	<ul style="list-style-type: none"> US Solar Turtle

When universities get it right...

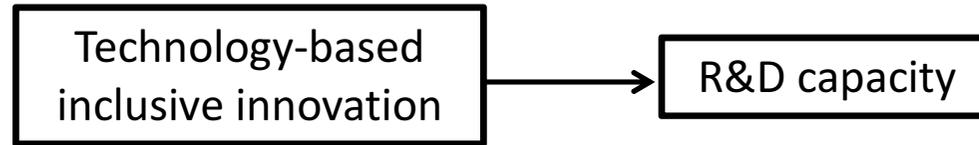


Inclusive innovation as a vehicle for education



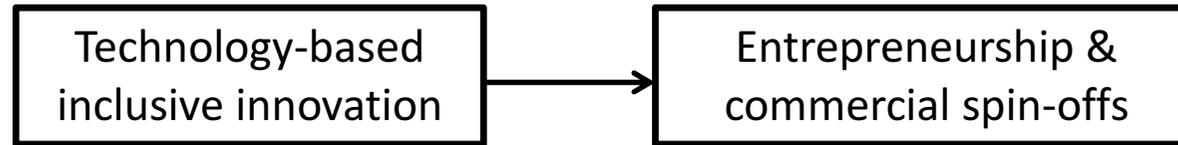
- Opportunity for students to apply knowledge to practical, real-life issues
 - Developing knowledge, skills and attitudes
 - Social consciousness, awareness, confidence
- Challenge: How to combine educational and inclusive innovation objectives
 - Educational requirements and process not necessarily aligned with the innovation process
 - Course time lines versus innovation time line
 - When educational requirements are met, students leave – loss of knowledge
 - Faculty as project champions
 - Ensuring continuation, transfer of knowledge

Research capacity building



- Inclusive innovation as an opportunity to gain new knowledge
 - Alliances with other universities and research institutes in South Africa
 - North-South research alliances
 - Research grants available from local and international governments and NGOs
- Challenge: How to leverage new knowledge
 - Some, mostly informal, cross-department/faculty sharing of knowledge
 - Lack of institutional structures to encourage and facilitate knowledge sharing
 - Some evidence of disconnects between projects and Tech Transfer Offices

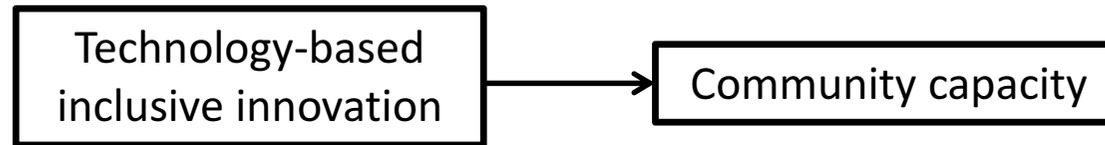
Business ventures with socio-economic impact



- A couple of examples of commercial spin-offs from inclusive innovation projects
 - Commercial ventures are a key to scaling up and multiple applications

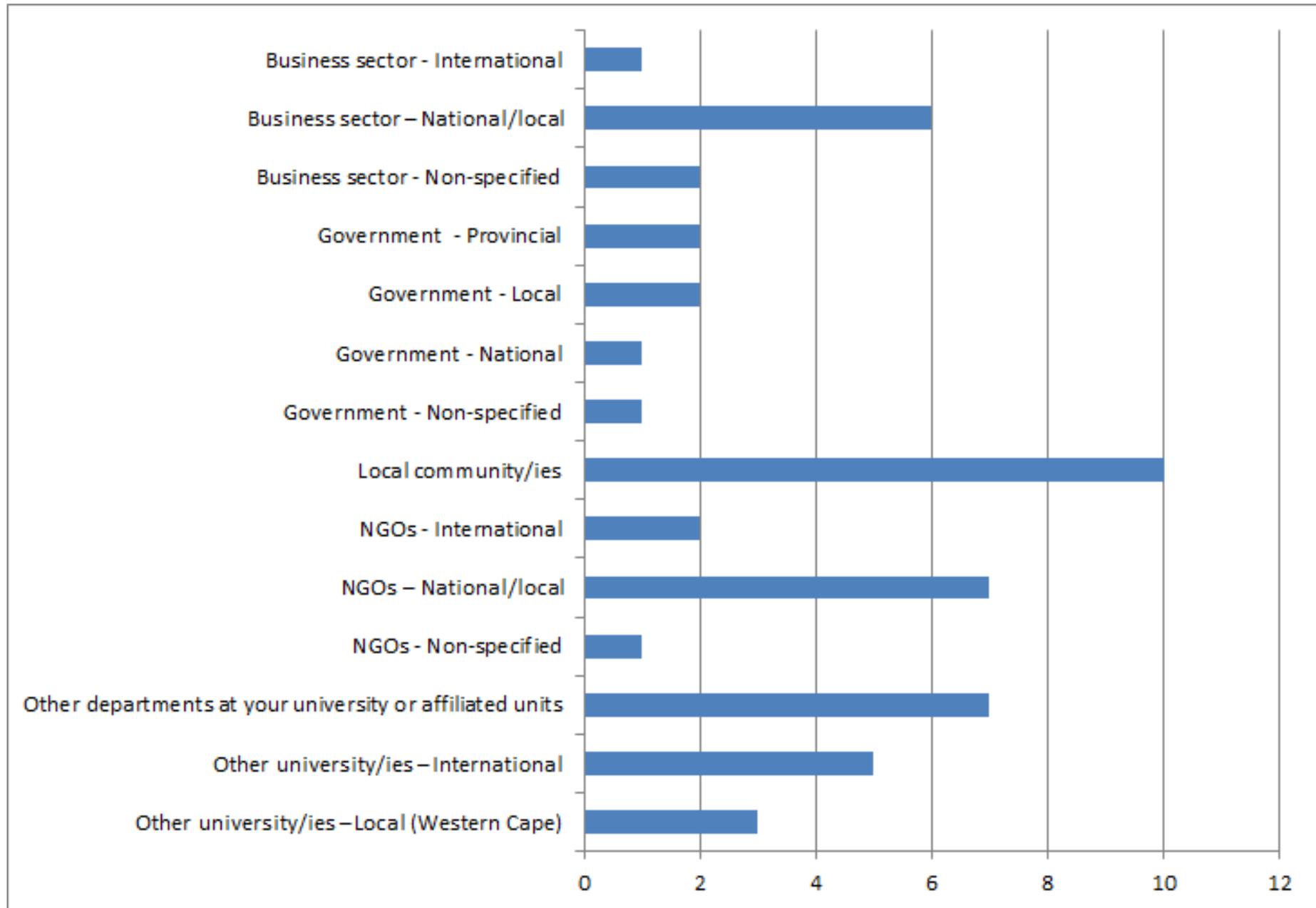
My real excitement is that this technology will unlock video streaming as an industry in Africa. [...] The reach offered by this medium can also have a quick and significant impact in areas such as education (Pierre van der Hoven, MD of Turuntulu, UCT ARTIST spin-off).
- Challenge: How to source and manage the necessary resources
 - Different types of knowledge needed: technical, business, market
 - Partnerships with businesses, entrepreneurs, NGOs
 - University intrapreneurship not necessarily supported or encouraged
 - Lack of incentive structures

Community capacity building

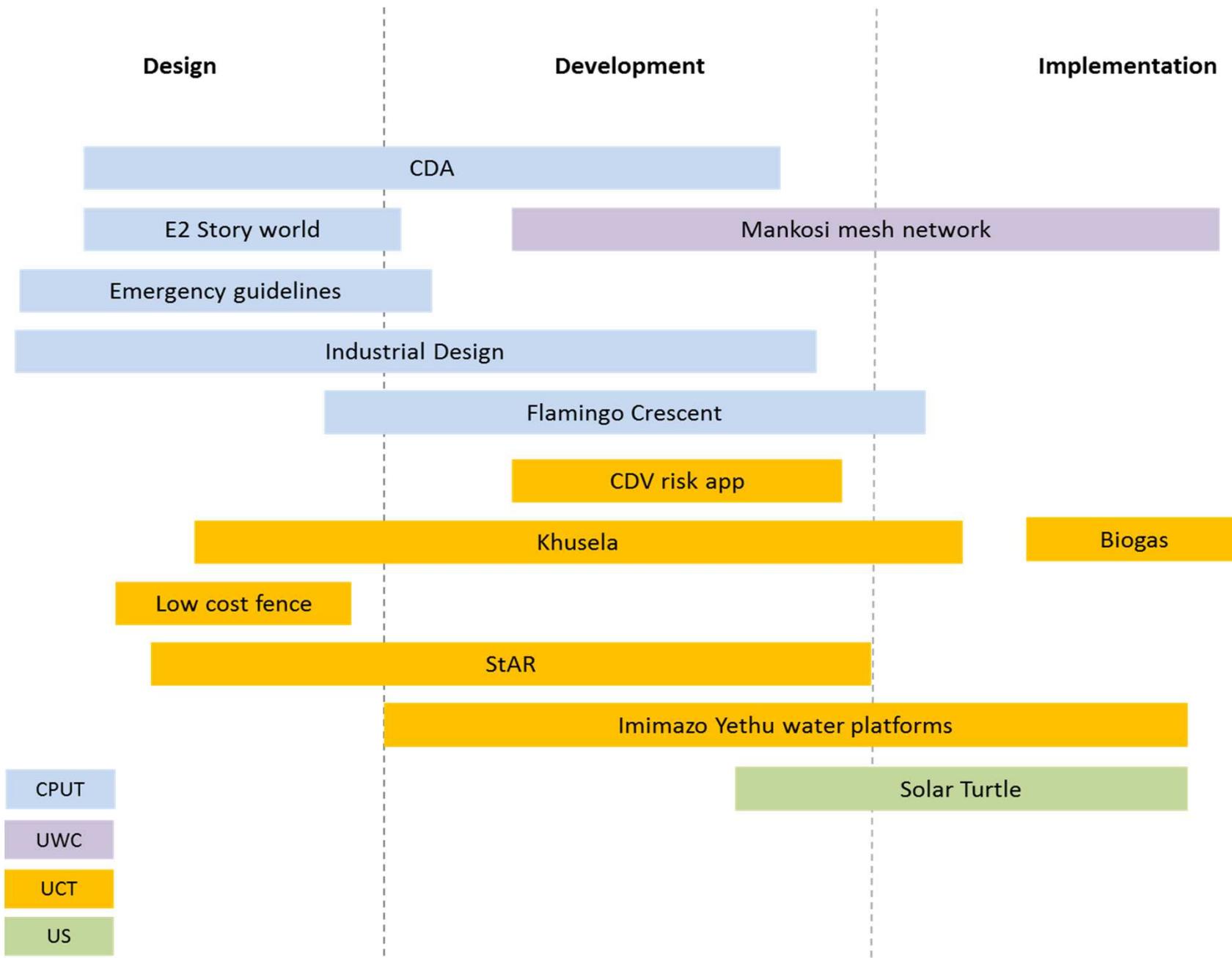


- Transfer of knowledge and skills from university to community
 - To help the community understand itself, learn how to organise and mobilise themselves, build confidence, build partnerships, build social capital within the community and between the community and other stakeholders (the City, the university) (lead faculty).*
- Involvement of community members in the innovation process helps to transfer the right knowledge and skills
 - University innovators learn from community members/end users about their needs and the context
 - User-centric design especially evident at University of Technology
 - Examples of partnerships with NGOs to build community production capacity
 - Inclusion is about demand AND supply side

Partners in inclusive innovation projects



Where do community members participate?



Inclusive innovation divide

- Preliminary evidence of a divide between inclusive innovation have's and have nots
 - University reputation & network matter for access to funding and innovation opportunities
 - Availability of resources matters in implementation
 - However, students and staff a potential source of social and intellectual capital for underresourced universities

Research limitations & future research

- Sample may not be representative of population
 - Based on data available in public domain + snowball sampling
 - Sample limited to Western Cape province
- Project-level data
 - Limited insight into institutional factors and regional innovation dynamics
- *Future research*
 - Detailed case studies, possibly a longitudinal component
 - Project level + institutional level and how these two interact
 - Understanding how to measure impact will be critical
 - Developing a project-level performance indicators system

Thank you!