Developing an innovation and research uptake policy – designing incentives and support systems

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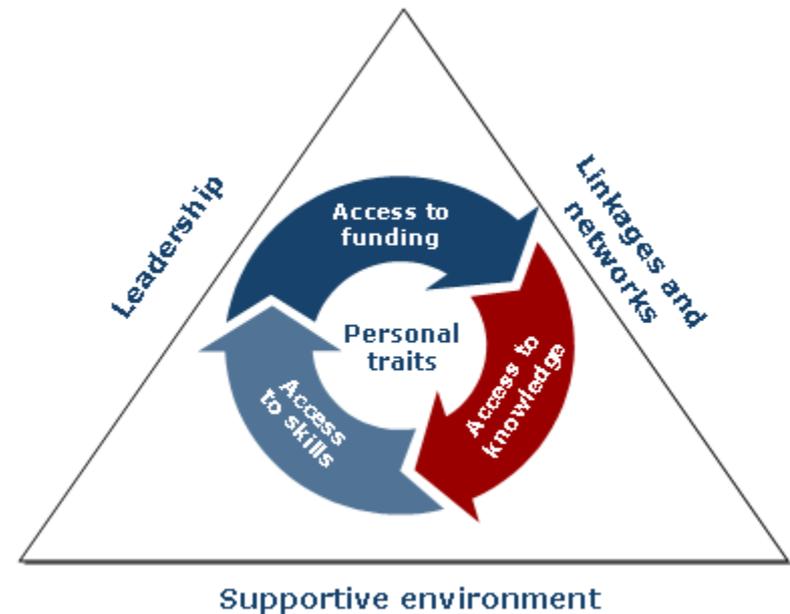## Drawing on a range of projects / research projects

- DRUSSA – Research Uptake Management capacity for 22 Universities
  - Benchmarkings of RUM in universities
  - A framework for supporting RUM capacity development

- Fort Hare – Case study of the AgriPark innovation platform
  - A transformation pathway framework – Development role
  - "Ecology of the university enterprise" refers to the conditions under which universities are attempting to accomplish their role in a "coherent fashion".

- UCT – innovation policy
  - Phase 1: Understanding the profile of innovation and its inhibitors and facilitators at UCT
  - Phase 2: Reviewing best practice in innovation policies of UK universities
  - Phase 3: Raising the profile of the debate on innovation at UCT – the innovation forum
  - Phase 4: The development of an innovation policy for the university

Heat Map Indicating Activity levels along the Innovation Value Chain

	Invention				Implementation				Market Penetration
	Research				Development			Industrial Application	
	Idea Generation & Screening	Preliminary Research	Research	Advanced Research	Development / Maturation	Technology Pack	Scale-up & Piloting	Commercial Implementation	Commercial Space
Funding									
IP									
Technology									
Market intel									
Personnel									
Training									
Marketing									
Advice									
Process support									
Networks / Linkages									

Legend:
- High activity
- Moderate activity
- Emerging activity

Leadership

Linkages and networks

Access to funding

Personal traits

Access to knowledge

Access to skills

Supportive environment

Phase 2: Reviewing best practice in innovation policies of UK universities

- **The key question that needs to be answered is: How do we bring innovation into the mainstream of the university?**

Selected factors driving supply of innovation outputs from a HEI

Leadership and management systems [1]
- Mission and mission integration
- Leadership
- Culture
- University policies

Cultural change and staff engagement [2]
- Incentives and staff policies
- KE staff capacity development
- Academic staff capacity development

Support infrastructure [3]
- Facilitating the research exploitation process;
- Skills and human capital development;
- Knowledge sharing and diffusion;
- Exploiting the physical assets of the HEI
- Supporting the community

Performance management and evaluation

Role for UCT as a university [4]
- Teaching
- Research
- Support of innovation activities though knowledge exchange
- Social development (third mission) – aligned with developmental university
- Public space functions
- Alignment of curriculum to local needs to increase employability of students

Goals for implementing an innovation strategy [5]
- Focus strategic thinking
- Culture change and bringing innovation into the mainstream
- Raising the profile of innovation activities
- Build support infrastructure and services
- Develop and increase capacity
- Support collaborations, networks and partnerships
- Integrating teaching, research and knowledge exchange
- Validating and responding to demand: Finding and exploring new opportunities

Selected factors affecting demand for innovation outputs from a HEI

Private sector factors [6]
- Industrial structure and clusters
- Culture
- Cost of engagement
- Absorptive capacity

Public sector factors [7]
- Politics and policy
- Funding mechanisms
- Institutional environment

Society factors [8]
- Enrolment gap
- Level of income
- Cost of engagement
- Absorptive capacity

External environment [9]
- External funding possibilities
- Relationships with universities, companies, governments in other regions (national or international)
- Cost of engagement
- Absorptive capacity

[1] (PACEC)(Primary interviews)
[2] (PACEC)(Primary interviews)
[3] (PACEC)(Primary interviews)
[4] (Brundenius et al, 2007)(Brundenius et al, 2008)(primary interviews)
[5] (PACEC, 2009)

[6] (Lenoir et al, 2003)(Lester, 2005)(Porter, 1990)(Porter, 2001)
[7] (Brundenius et al, 2008)
[8] (Lenoir et al, 2003)(Primary interviews)(Galli and Teubal, 1997)
[9] (Etkowitz et al, 2000)(Primary interviews)

Key comments from first phases

The importance of maintaining basic research

- It was stressed in the State of Innovation report that UCT academic felt that promoting innovation within the university **does not imply that basic research projects should not be undertaken**.

- Respondents felt strongly that there is a strong case to be made that **continued research excellence** –a necessary ingredient for an excellent teaching and research-led tertiary institution.

Key best practice capacity development areas

- **Leadership support** for driving a culture change is crucial especially to the end of institutionalising staff engagement mechanisms;

- **Synergies between the three missions** need to be effectively explored and I&RU need to be integrated in the whole research process;

- Developing **appropriate infrastructure for engagement** is crucial for success both in facilitating a knowledge-push and demand-pull;

- **Monitoring and evaluation of activities** to track progress and performance need to be put in place.

The UCT innovation and research uptake policy framework

Enabling environment

- Provide appropriate leadership in order to inform and support visioning, mechanisms to achieve a **culture change and coordination of university-wide innovation and RU activities**
- Strengthen the enabling environment for innovation and research uptake through **appropriate incentives**

Support infrastructure

- Provide appropriate support activities through dedicated **support staff, activities and define their future capacity areas**
  - Collaborations and external contact
  - Understanding demand
  - Coordination of activities
- **Monitoring & Evaluation** of progress

Traditional functions

- Integrating innovation and research uptake in **teaching and training** and find synergies between these activities
- Integrating innovation and research uptake in **research activities**
- Engagement in **technology transfer, innovation and entrepreneurship**

Policy objective 1: Creating an enabling environment

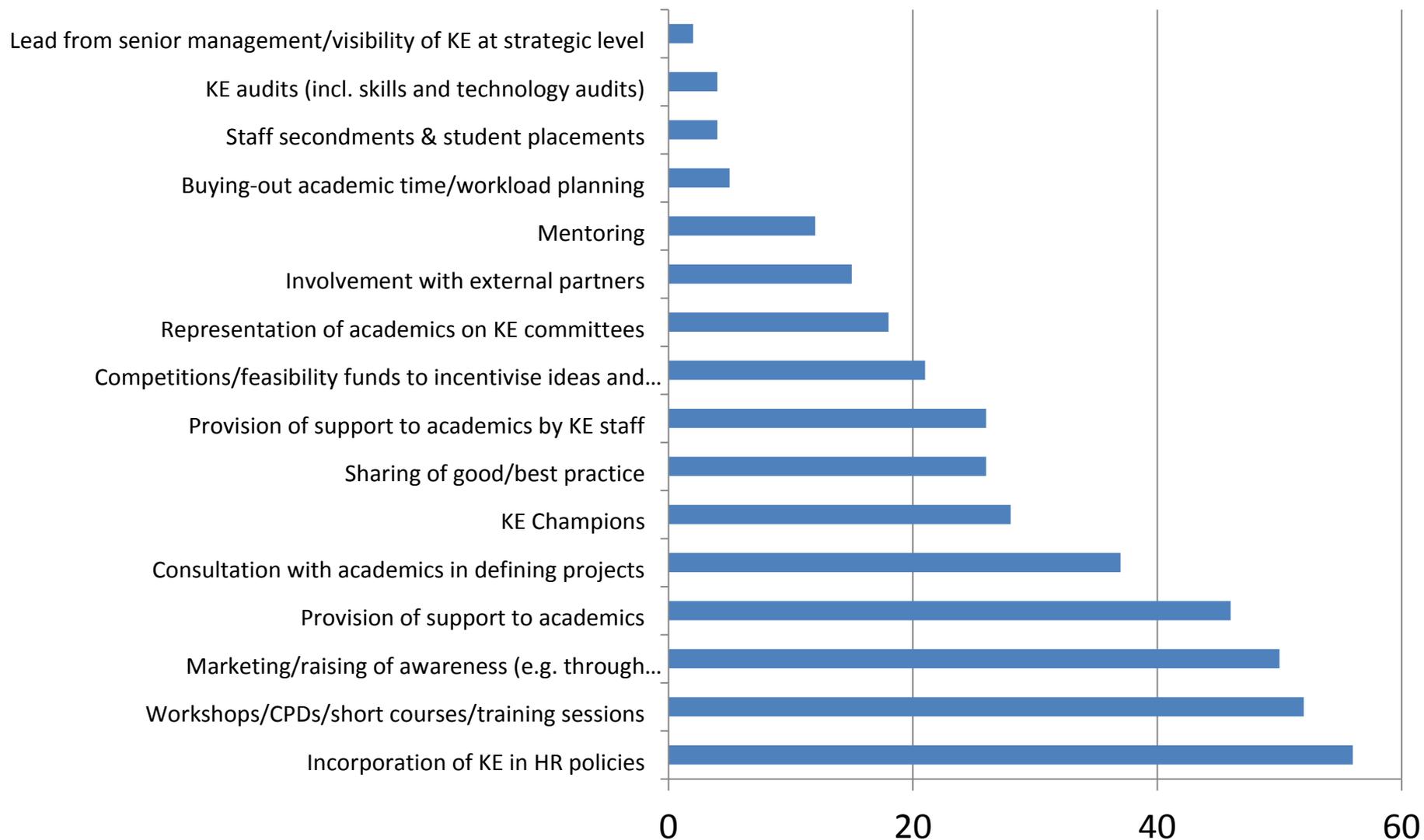|	
Enabling environment	• Provide appropriate leadership in order to inform and support visioning, mechanisms to achieve a culture change and coordination of university-wide innovation and RU activities • Strengthen the enabling environment for innovation and research uptake through appropriate incentives

Approach for creating an enabling environment

Focus strategic thinking – Innovation forum:
- **Strategic thinking** in the university will be focused through the **various focus group meetings.**
- **Awareness** - Through the strategy development process the **importance of innovation and the role that the university plays** within the region and nationally
- Academic and forums – voiced need for a forum – **share know-how and learn about each other's work**

Culture change and bringing innovation into the mainstream through staff engagement activities:
- A suggested key goal of the strategy is to **suggest implementation measures** through which a **culture change** could take place within the university.

Measures used by UK universities to encourage staff engagement

Measure	Value
Incorporation of KE in HR policies	56
Workshops/CPDs/short courses/training sessions	52
Marketing/raising of awareness (e.g. through...	50
Provision of support to academics	46
Consultation with academics in defining projects	37
KE Champions	28
Sharing of good/best practice	26
Provision of support to academics by KE staff	26
Competitions/feasibility funds to incentivise ideas and...	21
Representation of academics on KE committees	18
Involvement with external partners	15
Mentoring	12
Buying-out academic time/workload planning	5
Staff secondments & student placements	4
KE audits (incl. skills and technology audits)	4
Lead from senior management/visibility of KE at strategic level	2

Source: PACEC

Case study: HR policies and incentives at the University of Hertfordshire

The University of Hertfordshire developed a human resources strategy to encourage the integration of innovation activities into the mainstream of the university. This strategy outlined a career-cycle model to engage staff in knowledge exchange activities. This included the following:

– The university's business focus was reflected in **person and job specifications**;

– **Criteria for recruitment** has been revised to acknowledge technology transfer, consultancy and knowledge exchange;

– Staff go through **induction** where they attend workshops to be introduced to the university's business focus;

– **Staff appraisal processes** is geared towards incorporating business activity by considering business related outcomes and plans to achieve future targets;

– Staff is rewarded through a **bonus structure if they achieve objectives** for their division;

– **Training** forms a key part of the HR strategy with the **development of business facing skills,**

Source: PACEC

Policy objective 2: Creating the appropriate support infrastructure

Support infrastructure

- Provide appropriate support activities through dedicated support staff, activities and define their future capacity areas
  - Collaborations
  - Understanding demand
  - Coordination of activities
- Monitoring & Evaluation of progress

Approach for creating the right support infrastructure:

I&RU platforms for engagement to be created:

- Pull factors: Creating demand
- Collaborations and networks
- Validating and responding to demand: Find and explore new opportunities.

Monitoring and evaluation

I&RU platforms for engagement - possibilities

Enabling "pull" factors: Innovation/Research Uptake platforms

- Regular contact with the **media;**

- **Incentives to develop external linkages – co-funding**;

- Support for staff to get **access to enabling networks and other "neutral environments**" or informal contact;

- Promotional activities targeting decision-makers in the private and public sectors;

- Self-assessment tools that focus on capacity to find and use research evidence in decision-making;

- Proactive measures to create opportunities for the **presence of university staff on discussion forums or advisory bodies**, which are often formed to study or discuss a specific Issue.

Support and mechanisms for external contact and engagement

- Support academics to **understand demand** and equip them to **feed back to teaching, research and innovation**

- Support for **formal identification of stakeholders and a stakeholder engagement** strategy: **Databases** of external contacts and potential research users;

- **Staff secondments and student placements**

Possible mechanisms for creating supporting infrastructure

Validating and responding to demand

- Consultation with academics in defining projects – **more strategic research**
- **Champions** to identify project with potential

Training

- Mentoring support for staff and post graduate students
- Marketing, awareness raising (e.g. through publications, awards, networking events)

Ethics

- The *ethical component* of stakeholder engagement. The university needs to ensure that appropriate mechanisms and processes exist to make sure that projects with and engagements within communities at the very least are not harmful, but rather have positive benefits and spin-offs.

Monitoring & Evaluation

- Given the increased emphasis on accountability by donor organisations and governments, universities need to ensure that monitoring and evaluation (M&E) capacities are established. These include:
  - Support for research M&E capabilities;
  - Integration of research M&E into policies and annual reports;
  - Research Uptake audits (including skills and technology audits)
  - Sharing of success stories to build momentum

Policy objective 3: Transforming traditional functions of the university

Traditional functions

- Integrating innovation and research uptake in teaching and training and find synergies between these activities
- Integrating innovation and research uptake in research activities
- Engagement in technology transfer, innovation and entrepreneurship
- Strengthen and establish mechanisms for improved external contact and engagement

Approach for making innovation and research uptake part of the way we work

Teaching and training for I&RU:

- Ensuring **capacity is developed** through training and teaching **for entrepreneurship**.
- Staff and students need also be educated regarding the benefits of engaging in all three activities as there will come to exist a symbiotic relationship between them which in turn will benefit the community.

Strategic research for I&RU: Have mechanisms in place to be more strategic about how research is approached.

Actual entrepreneurship and innovation activities and support:
Decide how, in what form and what mechanisms will be used to support entrepreneurship and innovation

Strategic research for I&RU – change in form and focus

- Major gap identified for understanding markets and demand-side: **"we need to understand market better"**

- Innovation work needs to be done and based on market knowledge
  - Help and encourage linkages with industry / decision makers / policy makers e.g. Sectors and academics – give ideas and focus research
  - Engagement with funders – people follow money

- The development of research strategies that ensure **research focuses on feasible practical outcomes**:
  - **How do they develop research strategy?** How is this aligning with current and future opportunities– how can we assist academics with strategically planning research
  - **Consulting** - **Identifying technical hurdles for research** – it directs things and forces a larger research group how they will get outputs
  - Need to bring in **techno-economic modelling and review of research** – at least make them aware of it – needs to be process for deciding on research – there may be reasons in research perspective but lets be aware of what the outputs will be

Conclusion

- Creating enabling environment through e.g. incentives and platforms – many shapes and forms

- Select from a rang of mechanisms those that are appropriate for context

- Understanding the university's role in development – in response to context

- Tactics: Consider changes in the form and focus of traditional university missions

- Designing systems to create **a dynamic of engagement**

- Explore options from a framework – not copies and pastes

- Design for synergy between functions