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# Managing research and commercialisation: Is there a best model?

Innovation Support &  
Technology Transfer  
*Innovation for tomorrow*



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## Background



- Models for TTO
  - Specific topic of interest in SA
  - NB for universities/countries at start of process
- Integration with research activities unclear
- Model you start with usually remains
  
- Is there a best approach?
  - TTO model
  - RO/TTO model



## Definition

- Technology Transfer:
  - Providing external parties with solutions to their problems via research and consulting agreements (external grants and contracts)
  - Intellectual Property protection, management and commercialisation
    - Commercialisation is “the process of converting science and technology, new research or an invention into a marketable product or industrial process”



## “New mission”

“Pure” academic university



→ “Entrepreneurial” university

- Driven by
  - Understanding the role that universities play in regional **innovation and economic growth**
  - Increasingly **professionalised higher education sector**
  - Reduced government spending and budget constraints requiring **new revenue streams**

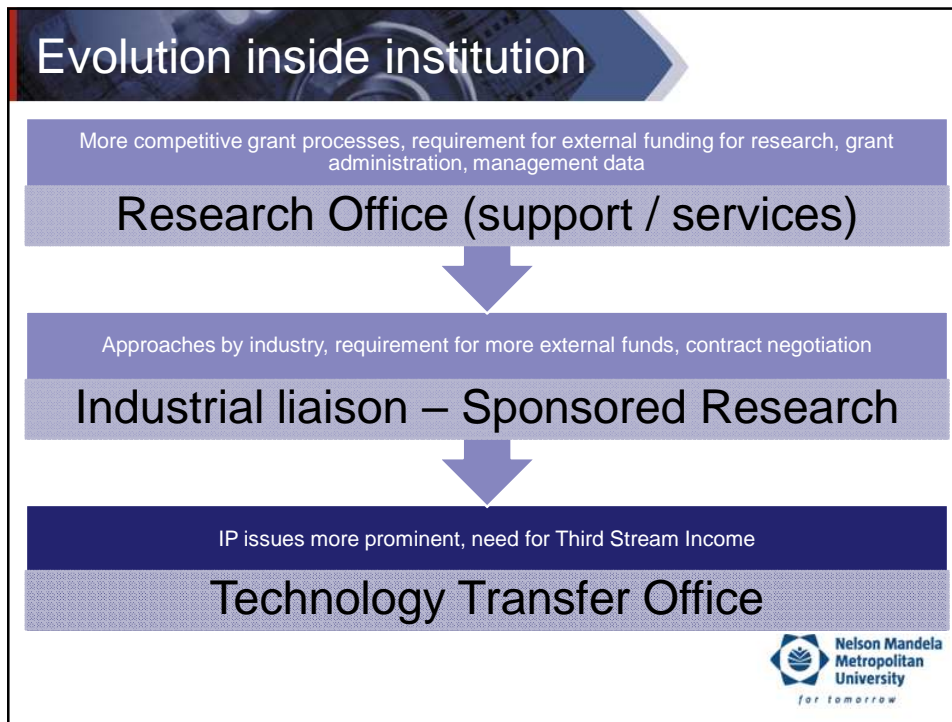


## Broad challenges

- Changes in funding regimes
- New societal demands on universities and university systems
- Changes in the practice of innovation and research
- Expanding research links between universities, industry, commerce, government and the wider community


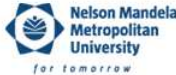


(Connell, 2004)



## Does the model matter?

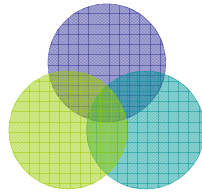
- Different structures have different implications (Bercovitz *et al.*, 2001):
  - Ability to coordinate activity
  - Ability to facilitate internal and external information flows
  - Ability to align incentives consistent with strategic goals with respect to technology transfer
- Structure of the TTO critical to success of the transfer process (Markman *et al.*, 2004)
- The closer the TTO is physically to the scientists and researchers it serves, the more effective it will be (Nelson, 2007)

The slide discusses the importance of the Technology Transfer Office (TTO) structure. It lists three key implications of different structures: the ability to coordinate activity, facilitate information flows, and align incentives with strategic goals. It also notes that the structure is critical to success and that physical proximity to scientists and researchers increases effectiveness.

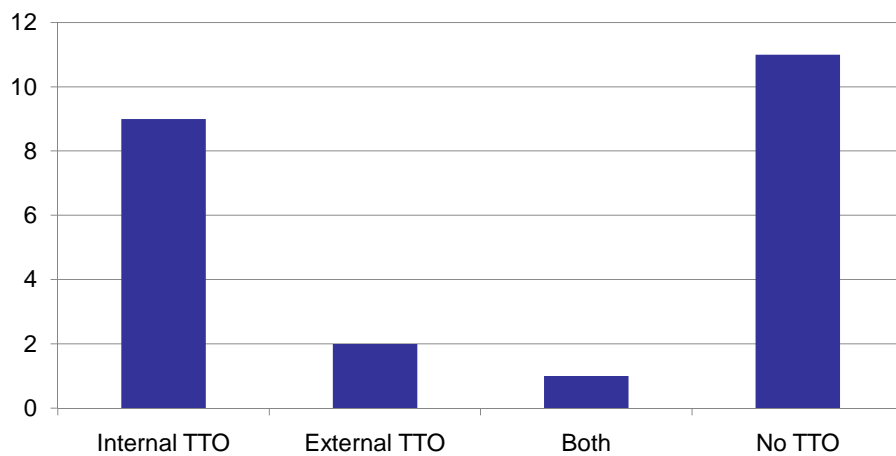
## Types of models

- Infinite variety of models
  - Different RO models
  - Different TTO models
  - Different RO/TTO models
    - Location of grants and contracts function



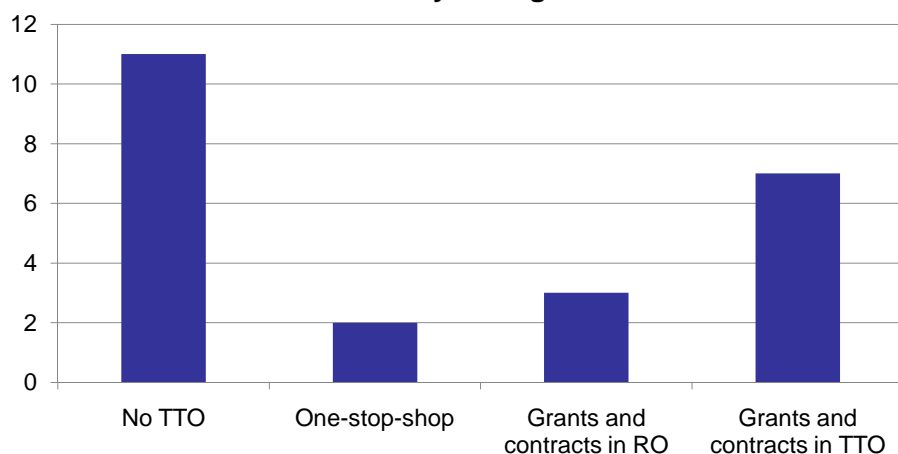
## TTOs

SA universities



## TTO/RO arrangements

### SA university arrangements



## Research management

- Managed at two levels
  - Macro level
    - Policy and strategy
      - Institutions under pressure to respond to local and regional needs for relevant and appropriate research outputs and teaching programmes, and to broaden and diversify their funding sources
  - Micro level
    - Researchers need to be made aware of funding opportunities; proposals need to be written and costed; contracts need to be negotiated and monitored; intellectual property (IP) rights need to be resolved, and so on.

## RO models

- Leadership
  - Authority to make institutional policy
- Membership
  - Make policy with academic colleagues in key committees
- Secretariat
  - Token representation on decision-making committees, provide advice, reports and data
- Separate
  - Not involved in the making of research policy but play a role in implementation

## TTO models

- Inside RO
- Sister department
- Separate reporting line inside university
- Outside company

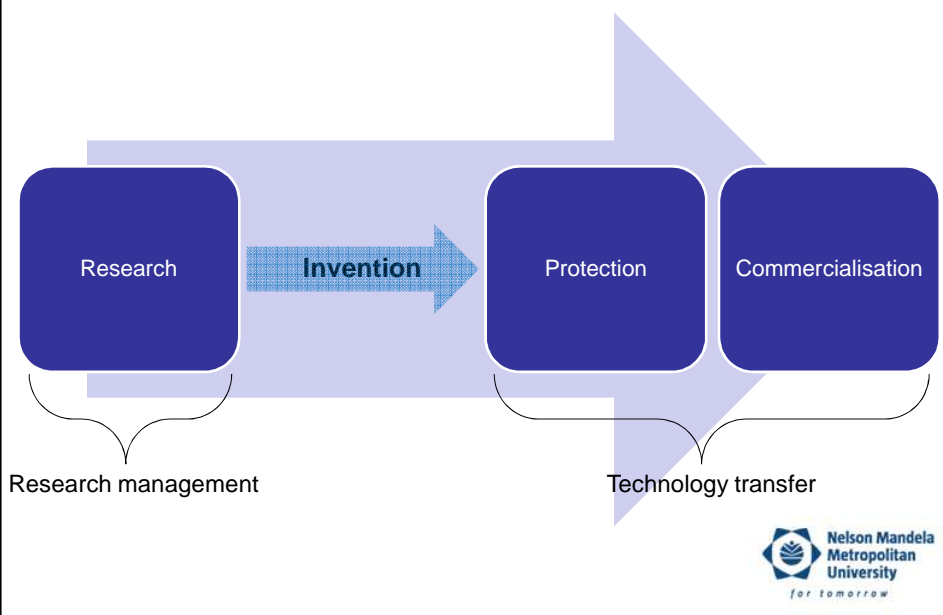
## Combination arrangements

- One central office - 'One Stop Shop'
  - Administers grants and deals with industrial liaison and commercialisation
  - Some deal with financial management of awards
- Multiple central offices
  - Two or more offices other than finance involved in main functions of research management
    - Research office administering grants
    - Industrial liaison and/or a TTO making contact with businesses and doing commercialisation

(Stackhouse and Day, 2005)



## Innovation value chain

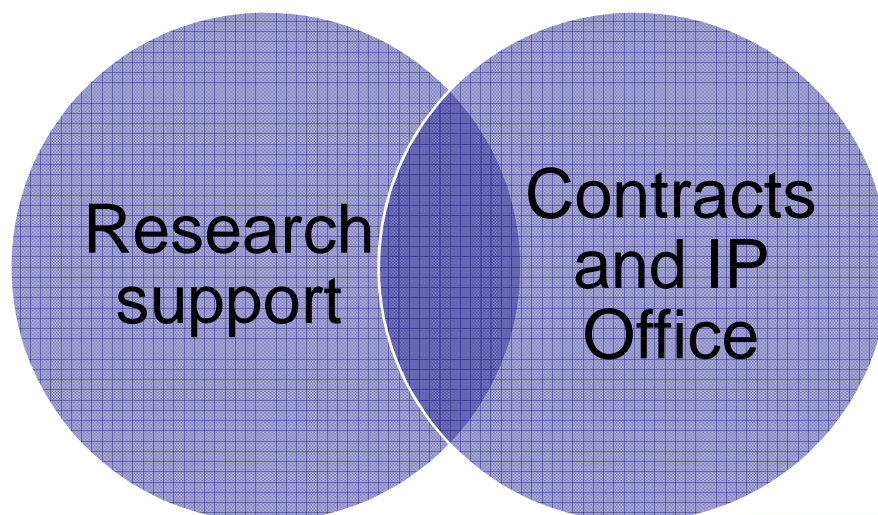


## And times have changed

- Sponsored research
  - Grants vs. Contracts
- Most research done under contract
  - Not just industry/for-profit anymore
- Important distinction
  - Academics think they can do what they want with grants
  - But most grants now have stipulations



## Activity-based approach



## Activity-based approach

- Research support / services
  - Information on external funding opportunities
  - Management of research grants
  - Management of research support programmes
  - Database of research information
  - Ratings of researchers
  - Research capacity building
- Contracts and Intellectual Property
  - Contracts negotiation and management
    - Industry liaison
  - IP disclosures
    - Patent filing
  - Commercialisation



## Project-based functions

- Increasing trend towards competitive project-based research
- Pre-award
  - Sourcing and application for funding
  - Contract negotiation – including industry contracts
- Post-award
  - Project administration and management
  - Commercialisation and dissemination



(Kirkland, 2005)

## Project-based approach

### Pre-award

- Sourcing and application for funding
- Contract negotiation


### Post-award

- Project administration and management
- Commercialisation and dissemination

## Conclusion


- Depends on context (thanks, Phil)
  - Environment
  - Skills available
  - Funding available
  - Research capacity in university
- But history should not constrain change!





“Think back only 50 years...and you will encounter a world of higher education in which the concept of money was controversial or at least impolite. True, one expected something called a pay check at appropriate intervals. But the idea that it was compensation for some vulgar artefact called services rendered was nearly unthinkable. In that world, the connection between work and pay had been rendered mysterious or taboo”

Johnstone (2002) *quoted in Van Hoorebeek and Marson (2005)*



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