

Strengthening multi-sectoral collaboration: a framework for building interactive capabilities

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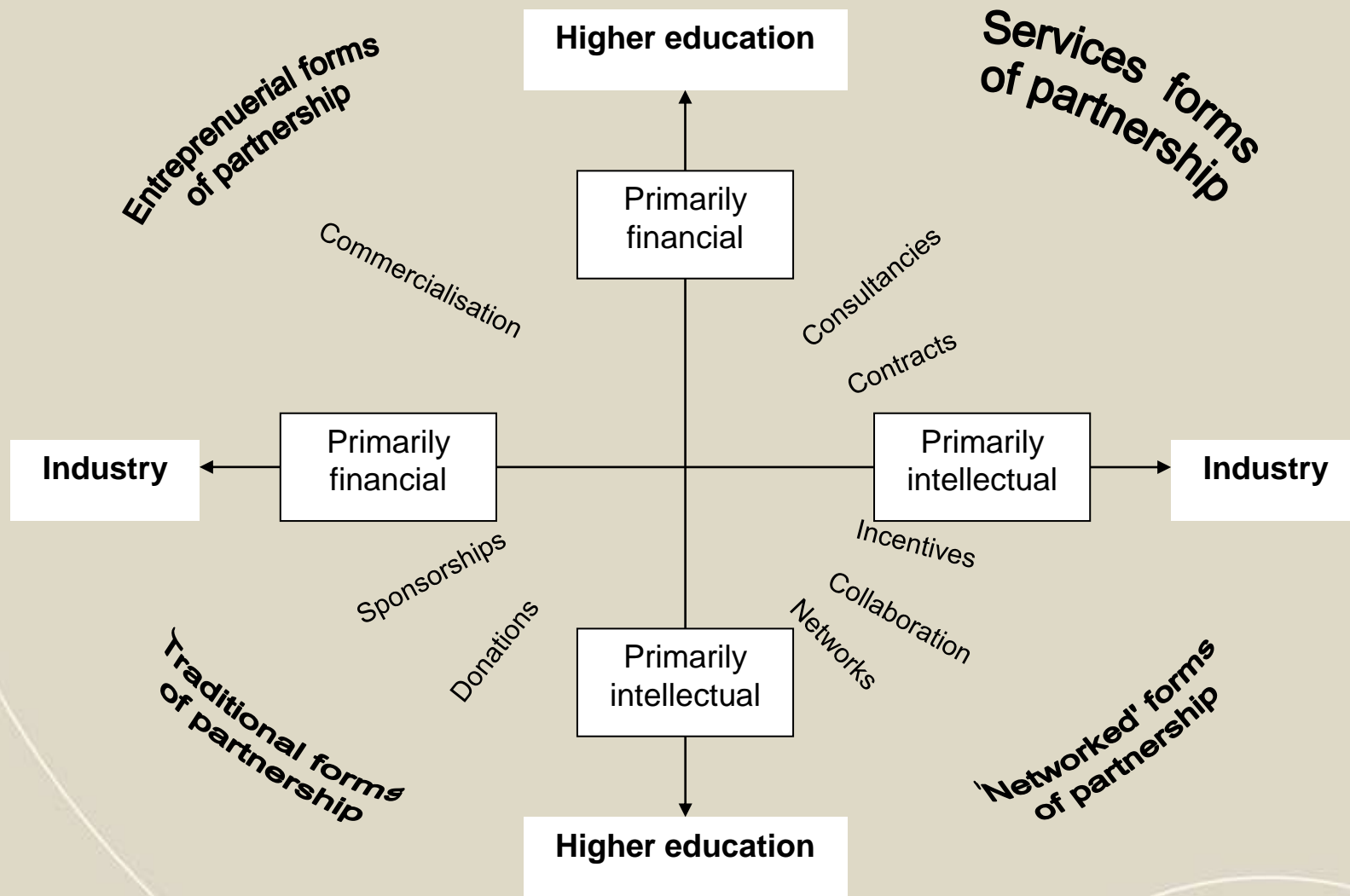


Four research trends and a framework

- University perspective: scale and forms of interaction that exist in different types of university
- Firm perspective: nature of firm demand and dynamics in diverse sectors
- Policy perspective: significance of coordination and alignment across the national system of innovation
- Institutional perspective: need to balance forms of interaction, and to build interactive capabilities within university
- => a framework and approach to ***build interactive capabilities*** at institutional, sectoral and policy levels

University perspective

- Scale and forms of interaction with firms: how important is it for universities?
- Most recent data HSRC 2010: 5 universities representing main types
- 81% interact, 1 759 academics
- Of this group 55% interact with firms
- 58% SMMEs, 56% large firms, 42% MNEs
- Primarily SET 55%, BUT Business and Commerce 17-18%, Humanities, 15-18% and Education 8%
- => considerable scale
- BUT forms ?



Firm perspective

- Government incentivisation (THRIP, IF) but recent funding decline, outputs decline
- Innovative firms: 52% innovate, 15% of these collaborate with local universities; sectoral differences
- R&D: university as main collaborative partners; sectoral differences
- => not high general demand for technology or knowledge from universities as collaborative partners
- => Universities need to have sound understanding of firm demand and dynamics
- Disaggregate – propensity of firms in specific sectors and knowledge fields

Policy perspective

- Case studies highlight absence of alignment and coordination across NSI, impacts on outputs, outcomes and benefits of interaction
- => examine policy environment to highlight key areas of misalignment to determine how conditions facilitate or constrain

Emerging research capacity

LAISSEZ-FAIRE

EMERGING

ASPIRATIONAL

ENTREPRENEURIALISM

Unstructured

Structured

LAISSEZ-FAIRE

HARNESSING INNOVATION

TRADITIONAL

POTENTIAL

Strong research capacity

Framework: Building interactive capabilities

1. The conceptualization: a broader framework of responsiveness and interaction - teaching, research and outreach activities - a range of external social partners
2. An appreciation and promotion of differentiated university approaches shaped by institutional types, knowledge niches and expertise, institutional historical trajectories and cultures
3. The promotion of a strategic balance of diverse forms of interaction with attendant benefits and risks
4. Development of interactive capabilities on the part of academics, heads of departments, institutional managers and leaders

5. An understanding of firm demand and the specificities of innovation and R&D dynamics in priority sectors and relevant knowledge fields
6. The promotion of coordination and alignment between universities and other agencies in the national system of innovation, and of alignment with national socio-economic development priorities
7. The promotion of stronger collaboration within the national science and technology system across institutional boundaries of universities and science councils, as a basis for more sustainable interaction

Institutional interactive capabilities

- Promote debate on responsiveness and interaction in relation to changes in academic roles and identities, and to national priorities
- Support strategic planning
- Support sharing of best practice in relation to internal and external interface mechanisms

Commercialisation forms of interaction

- How can limited expertise to manage IPR be shared in regional technology transfer offices
- What are the best approaches to the ownership and management of spin off firms
- How can venture capital be sourced nationally so that spin-off firms are not vulnerable to global markets
- How can funding be accessed to move from basic research to proof of concept
- What are the best vehicles to move from proof of concept to proof of product and what partners are required

Services forms of interaction

- What are the interface mechanisms required to offer customized training to firms
- How can contracts offices manage the negative effects of contract research on publications and students
- How can heads of department manage and monitor workloads to allow for consultancies without risking core responsibilities

Traditional forms of interaction

- How can institutions attract firm sponsorship and donations, particularly those in rural areas
- How can institutions build collaborative relationships with industrial bodies, professional associations, SETAs and FET colleges to inform programme and curriculum design in areas of scarce or critical skills
- What are the interface mechanisms to involve firms more effectively in experiential learning and mentorship

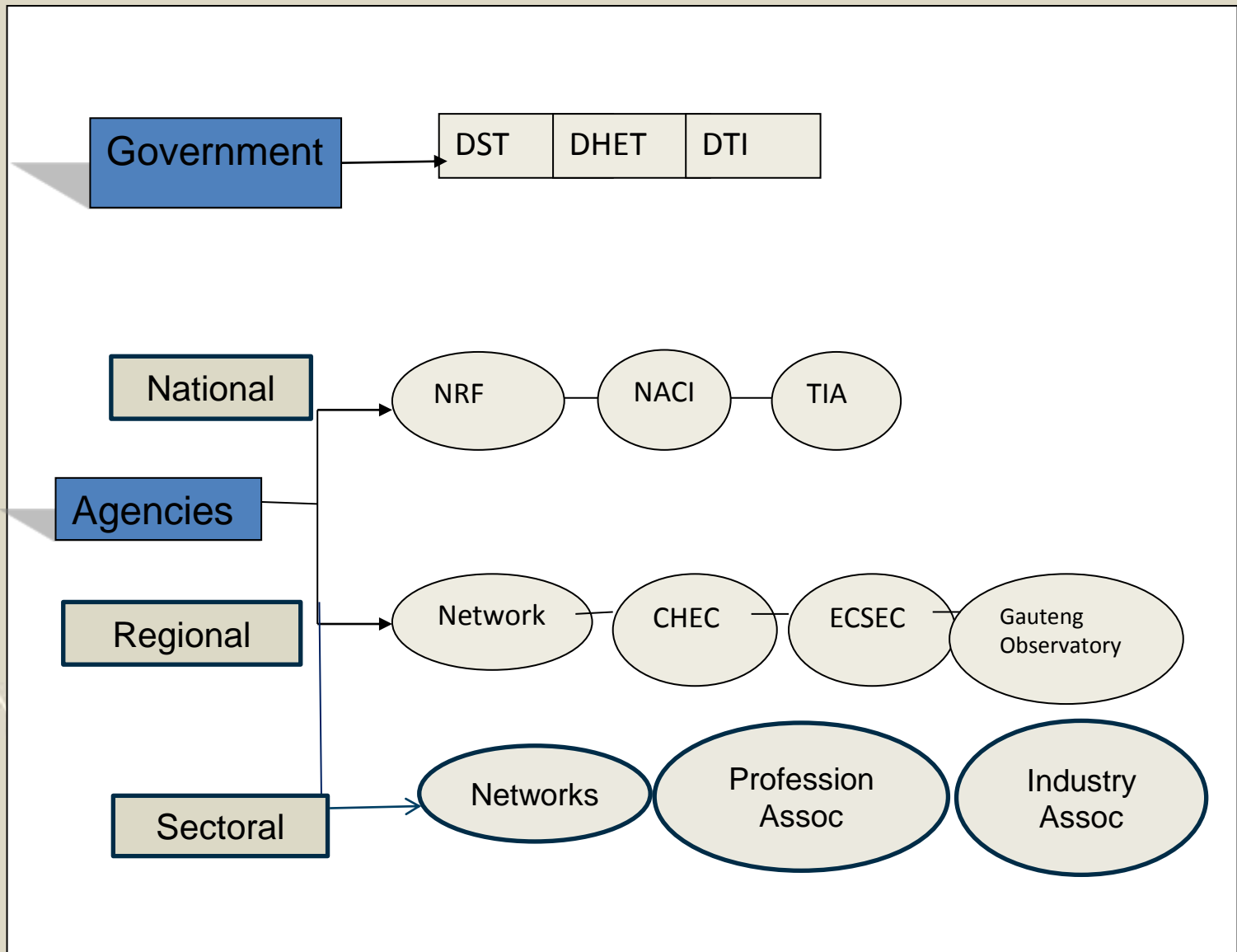
Network forms of interaction

- How can the dynamics of collaborative knowledge creation be managed
- How can firms be involved in collaborative research networks focused on products with potential benefits for those in rural areas
- How can research universities collaborate with comprehensive universities and universities of technology to benefit from their applied research and technology development expertise and build research capabilities

Promoting sectoral interactive capabilities

- Commissioning sectoral studies of skills, R&D and innovation demand; constraints in the NSI in key sectors
- Extending and deepening support for existing sectoral networks (Biotech, Nano, ICT, Space, Pharma...)
- Facilitating closer alignment with DTI and DHET strategies in specific sectors
- Coordinating and deepening collaboration between UoT and research universities in priority sectors for SMMEs
- Coordinating and facilitating collaboration with professional bodies and industry associations
- Facilitating regional support for science parks, incubators or centres of excellence

Policy level: promoting coordination and alignment



Thank you!

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