International Innovation Benchmarks: Scan of overseas models of university-industry collaboration

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Introduction

• Considerable amount of theoretical literature/case study literature
• Need for practical comparison and usable paths forward
• International scan illuminates; future directions for university-level comparison
Firms/HEI collaboration, 2008-10

Source: OECD 2013
Context

• Higher education new populist role
• Need for revenue, more practical research
• Student seeking employable outcomes

Yet much remains unknown
What is UIC?

• Formal and informal relationships and joint initiatives that combine university resources with industry resources for collaboration, engagement and innovation
Our frame

• International scan of UIC of 15 relevant countries

• Structured using a multidimensional framework

• Examined environmental, technical and managerial dimensions
<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Attributes</th>
<th>Description</th>
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<tbody>
<tr>
<td>Environmental</td>
<td>Broader research policies</td>
<td>Broader research policies that set milieu relevant to collaboration</td>
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<tr>
<td></td>
<td>Broader industry policies</td>
<td>Broader industry policies that set milieu relevant to collaboration</td>
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<td></td>
<td>Specific collaboration policies</td>
<td>Any specific/isolated policies that may exist</td>
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<td></td>
<td>Historical trends</td>
<td>History of collaboration in the country</td>
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<td></td>
<td>Regional contexts</td>
<td>Any regional factors (between countries/provinces) pertinent to collaboration</td>
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<td></td>
<td>Research ecosystem</td>
<td>Aspects of the broader research environment relevant to collaboration</td>
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<td>R&amp;D culture</td>
<td>National social/cultural priorities regarding R&amp;D, and dispositions regarding entrepreneurship and startups, etc.</td>
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<td>Technical</td>
<td>Information sources</td>
<td>Whether information is available to assist with collaborations</td>
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<td>Evaluation systems</td>
<td>Whether review and monitoring systems provide information about collaboration</td>
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<td>IP policies and practices</td>
<td>Whether IP policies and practices are conducive to fostering/sustaining collaboration</td>
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<td>Fiscal settings</td>
<td>Incentive or other schemes administered through tax or other arrangements</td>
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<td>Overall research funding</td>
<td>Broader research funding relevant to collaboration</td>
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<td>Targeted funding</td>
<td>Any specific/isolated funding that may exist</td>
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<td>Managerial</td>
<td>Research training</td>
<td>Whether doctoral education builds collaboration-relevant skills (via internships, training programs, etc.)</td>
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<td>Workforce development</td>
<td>Whether university or industry staff are encouraged to collaborate (via HR, IR, PD/OR policies or practices, etc.)</td>
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<td>Strategic emphasis</td>
<td>Extent to which collaboration is emphasised in institutional leadership priorities and incentives</td>
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<td>Precincts</td>
<td>Degree to which science/industrial parks and other precincts exist</td>
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<td>Dedicated offices</td>
<td>Whether institutions have established specific offices to manage collaboration</td>
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<td>Broader workforce contexts</td>
<td>Extent to which broader national technical/professional workforce characteristics are relevant to collaboration</td>
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Why managerial?

- **Important barriers identified**: Within changing organizational culture and processes

- **Less focused research to date**: Much research focused on outcomes like patents

- **Impacts other dimensions**: Our analysis hypothesizes that managerial dimension may impact environmental and technical aspects
Beware: McNamara Fallacy

Only that which is measurable is important
Findings: Managerial facilitators

1. **Distributed human resources**
   (e.g. human resource partnerships across sector, architectures for doctoral students...)

2. **Exchange-facilitating infrastructure**
   (e.g. networks and platforms, science parks...)

3. **University coordinating offices**
   (e.g. dedicated industry-facing offices, incubators...)
1. Distributed human resources

• Example of working across sectors:
  – French Innovation Law/Singapore 52 day rule

• Example of doctoral training:
  – Brain Korea 21 Program

• Example of collaboration:
  – California Institute for Telecommunication and Information Technology (Calit2)

• Challenged contexts:
  – China and India – the role of personalised networks and institutions
2. Exchange-facilitating infrastructure

- Canada Mitacs Program
  - Producing internships with industry, improved employability of graduates, R&D investment
- French National Centre for Scientific Research (CRNS)
  - Across ten research institutes, over 1,000 research units
7 UK Catapult Centres

- Connecting centres for critical problems or new products for commercial purposes
- 1/3, 1/3, 1/3 funding model
- Additional £185 million to InnovateUK for innovation support in 2015-16
3. University coordinating offices

- Facilitate communication
- Incubators
- Commercialisations
- Deliver agreements
- Contracts
- IP policies
Israel: Technology Incubator Program

• Allows for various structures, but most are privately owned and managed
• Greatest developments made outside university IP
• Receives hundreds of applicants each year
Suggestions for practice

1. Encourage people to work across sectors
2. Build infrastructure to facilitate long-term relationships
3. Open and support transfer or linkage offices
4. Draft clear policies and guidelines for IP
5. Analyse institutional culture
Related study* findings – in progress

• Poor levels of UIC in Australia for a range of reasons:
  – Little need over last 2 decades – both sectors grown well without the other
  – Universities not structured nor incentivised (nor culturally attuned) to collaborate with Industry
  – Mutual misunderstanding between Universities and Industry
  – Government innovation policy not strategic or broad-based – narrowly focussed on single elements (e.g. access to VC, tax credits)

• Collaboration is about “doing a deal” – need for perceived value in the deal for both parties

Summary considerations

- A need for more holistic measures
- Future analysis of the underlying facilitators to start and support initiatives
- Investigation of how the dimensions and factors interact with one another