The Triple Helix Approach to International Entrepreneurship

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A Collaborative Interdisciplinary Workshop
Entrepreneurial University, Engaged Industry & Active Government: Triple Helix Opportunities
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University of Surrey
Entrepreneurship as in:

- Opportunity creation and development in larger firms
- Driven by internationalisation of business
- The creation of new business models for innovation
- Involving varied forms of government intervention
- Mediated/enabled by universities
An Agenda

Two medium to large firms showing rapid growth over the years

Two countries (one destination) China; India to UK (both involved with U of Essex from 2007)

Direct approach to Essex

Seeking increased internationalisation

Two research questions:
How do larger firms from emerging economies internationalise?
Can internationalisation act as the catalyst for entrepreneurial endeavour?
Does the triple helix model help to explain internationalisation activities of larger firms from emerging economies?

Two conceptual questions:
Can existing theories help us make sense?
What are the possibilities of new theories/concepts being developed?
Approach, Method and Data

Ethnographic and Quasi-Constructivist

3 years of study, experimentation, narrative development, triangulation

Adoption of multiple theoretical insights

Entrepreneurship
Internationalisation of firms
Evolutionary concepts of organisational development and business models
Triple Helix model

Data Collection

Repeated observations, interviews at all levels of managers/employees/partners
Business reports/press releases/business federation responses
Comparative data of rival firms/ national projections
## Brief Case Profiles

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Wego</th>
<th>Zensar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of firm</td>
<td>Large</td>
<td>Large</td>
</tr>
<tr>
<td>Type of Firm</td>
<td>Private; networked</td>
<td>Private</td>
</tr>
<tr>
<td>Sector and technology base</td>
<td>High-tech manufacturing – Medical devices</td>
<td>High Tech software</td>
</tr>
<tr>
<td>Market Presence</td>
<td>Global (strategic alliances, acquisition)</td>
<td>Global (off shore/outsourcing + greenfield)</td>
</tr>
<tr>
<td>Management</td>
<td>Chinese</td>
<td>Indian</td>
</tr>
<tr>
<td>Management Style &amp; function</td>
<td>Hierarchical but distributed</td>
<td>Hierarchical</td>
</tr>
<tr>
<td>Internationalisation Rationale</td>
<td>Market size &amp; penetration, scale economies, location &amp; timing determinants. In Europe, 'Made in China' brand more important than ownership + networks</td>
<td>Market penetration, scale economies location &amp; timing determinants based on FDI literature. Ownership + networks</td>
</tr>
<tr>
<td>Entrepreneurial Orientation</td>
<td>Firm growth through constant experimentation &amp; new business models; network development; historical trade &amp; technology based antecedents</td>
<td>Firm growth through new business models &amp; spin-off type activities; network development; historical trade based antecedents</td>
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## Wego and the Evolution of Recent Chinese Internationalisation

<table>
<thead>
<tr>
<th>Evolutionary Process</th>
<th>Definition</th>
<th>Examples and Outcomes</th>
<th>Wego</th>
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<tbody>
<tr>
<td>Variation</td>
<td>second half of the 1980s, <strong>natural resource development projects, along with assembly</strong> and transport, dominated Chinese overseas investments</td>
<td>Chinese businesses invested more than $860m in over 90 countries. 50% were in Asia and 18% were in Africa. However, Chinese FDI accounted for only 0.1% of the global total</td>
<td>Infancy; established in 1988</td>
</tr>
<tr>
<td>Selection</td>
<td>1990s: <strong>2 resources and 2 markets’ strategy</strong> to target both domestic and international markets, while seeking resources such as capital, know-how and raw materials</td>
<td>By 2004, foreign investment by Chinese companies rose from $860m in mid-'80s to $3.6bn to $50bn in 2010</td>
<td>1st joint venture – 2003 (Bisensors); Joined Hong Kong stock market in 2004</td>
</tr>
<tr>
<td>Retention</td>
<td>By 2000 - <strong>shift of sectoral distribution of Chinese investment abroad</strong> from resource development to manufacturing</td>
<td>Euro zone is seen as China’s most important trading partner, making up 20% of China’s total exports. It is also China’s most vital technology partner. As the euro zone’s economic condition has deteriorated, Chinese FDI in the region has accelerated. Annual FDI flows to Europe tripled to $3bn in 2009 and 2010 before tripling again to almost $10bn in 2011. While absolute values remain small compared with Europe’s total inward FDI stock, the change in trend line is clear.</td>
<td>Presence in Germany, and in UK through University of Essex</td>
</tr>
<tr>
<td>Struggle</td>
<td>Increasing labour cost; increasing distribution of manufacturing; increased regional &amp; emerging economy focus; European mismatch</td>
<td>Increased activity in Africa, Latin America, Asia</td>
<td>New alliances/new business models</td>
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</table>
Wego and Networked International Entrepreneurship

Non Equity Modes
R&D Contracts & Licensing Agreements

Advanced Moist Wound Care and Tissue Engineering

Universities
Research Centres
SMEs

Business Model Strategy
- Motive is market-seeking
- Two options: Low-cost or Differentiation
- Hybrid strategy of high quality products at low cost recommended + multi-country exposure
- Replication of its Chinese network marketing model with hospitals, clinics and other health institutions
- Manufacture and market a range of products instead of just one
- Seek legitimacy through institutions – govt and international partners

Equity Modes
Joint Ventures

Biosensors Int. 2003
Medtronic 2007

Business R&D Network through UoEssex

Networked Mode

Action Research
Modelling
Case Studies
Strategic, Experimental and Networked Business Model

Focus on government led economic growth model based on
Key industries
Technological advancement
Multiple partnerships
Rapid internationalisation

Networked Business Model

R&D  Strategic Alliance  Academic & Acquisition/JV  Manufacturing & Sales
## Components of The Chinese Triple Helix Approach to Internationalisation

<table>
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<tr>
<th>Concentration on:</th>
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<tr>
<td>high volume production</td>
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<td>high technology</td>
</tr>
<tr>
<td>socially useful venture</td>
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<tr>
<td>Dependent research</td>
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<tr>
<th>Rapid technological capacity development</th>
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<tbody>
<tr>
<td>Strategic international intervention – mix of inward and outward FDI/strategic alliance/network development</td>
</tr>
<tr>
<td>Front-loaded involvement</td>
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<tr>
<td>Networked approach</td>
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<th>International Partnership</th>
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<tr>
<td>Limited local interaction</td>
</tr>
<tr>
<td>Research focus on business model development</td>
</tr>
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<td>Establishment of international centre</td>
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Zensar and the Evolution of the Indian Software Industry

Table 17.2 Evolutionary process and the Indian software industry

<table>
<thead>
<tr>
<th>Evolutionary process</th>
<th>Definitions</th>
<th>Indian software industry examples</th>
<th>Future scenario planning</th>
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<tbody>
<tr>
<td>Variation</td>
<td>Changes from current routines &amp; competencies /change in organizational forms</td>
<td>Use and valorisation of technical, English language and entrepreneurial skills; constant upgrading of skills and new market opportunities</td>
<td>Building on existing success; inherent in other processes but distinctive consideration necessary because of possible separate conditions for their realisation</td>
</tr>
<tr>
<td>Selection</td>
<td>Differential elements of certain types of variation</td>
<td>Emphasis through deregulatory measures on software industry, training, export support, fiscal policy, STPs, stable regional economic environment, organisational learning</td>
<td>Keeping ahead of competition through extended technological platform; incentives for new enterprise development; diaspora Indian support through investment and returning Indian entrepreneurs; global delivery model based partnerships ++</td>
</tr>
<tr>
<td>Retention</td>
<td>Selected variations are preserved, duplicated or otherwise reproduced</td>
<td>Selection of software development talent, replication in a variety of regions, generation of nation-wide STPs, computer technology training, coupled with enterprise development programmes</td>
<td>New champions Opening up of Competitive global market of talent; Increased local cost; Low growth markets New products for local markets</td>
</tr>
<tr>
<td>Struggle</td>
<td>Contest to obtain scarce resources</td>
<td>Exemplified in keeping and growing market share despite increasing competition from other states, without depending on cheap costs only</td>
<td></td>
</tr>
</tbody>
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Source: Adapted from Aldrich (1999).

Source: adapted from Mitra and Natarajan, 2011; Natarajan
The Evolution of the Innovation Hub

Proposed Business Model & Competency Development Hub at UoEssex

GDM Datacenters

Pune-Hyderabad

Customer

4000+ Km
(Geographically)

SBP Server
• Code-generator Service
• Design Versioning Server
• Clustered Model repository Service

BPF Interface server
• Manages Repository-Client interaction
• Proxies SBP and Collaboration services

Web-Portal Server
1. Registered modelers:
• can update data
• can view allotted projects, deadlines and other relevant project metrics
• Publish their calendar
2. Project Managers:
• can publish project metrics
• Grant/Revoke privileges, restrictions
• Can query for resources
3. Customers:
• Transparently view progress
• Seek design Updates
• Initiate change requisition
• Seek automated reports
4. Manage BPF roles, model repository, model versioning, design templates and patterns.

Legend:
BPF Client and Modeler
Web-browser communication
BPF Client - BPF Interface Server Communication over Internet
Server-Server Communication
LAN Communication

Source: adapted from Mitra & Natarajan, 2011; Natarajan, 2007
Inclusive Evolutionary and Entrepreneurial Business Model

- Build talent for the global IT industry
- Enable a new entrepreneurial model to be incubated in the University
- Establish a UK-India partnership model that could be a model for Europe

Source: adapted from Natarajan, 2007
### Components of the Indian Triple Helix Approach to Internationalisation

| I | Demand and opportunity led  
Focused business model development  
Ability to integrate variations in market orientation  
Ad hoc approach to institutions |
| A | Opportunistic institutional partnership  
University as possible catalyst for learning to support growth in demand  
Focus on competency development and underpinning research – doctoral student  
Development of spin-off learning organisation |
| G | Arms length research and training project involvement  
Back up only to institutional developments |
Matrix Mapping of a Triple Helix Approach to Internationalisation
Possible Responses to Research Questions

- Dependent on degrees of experimental freedom and evolutionary approach
- Dependent on focus on networks of opportunity development

In both cases studied emphasis is on:
  - access to knowledge resources
  - network development
  - opportunity search rather than opportunism
  - openness to experimentation
  - evolution over time

We consider emphasis on above to reflect higher levels of entrepreneurship

- **Wego** – more socially integrated networked model – early search for institutional Stakeholders (university; NHS; BMA; and firms); network integration;
- **Zensar** – more westernised growth model (established business presence first, then search for new networks); network experimentation & spin-offs.

Different from Japanese firms’ experience – 3 stages of their investment strategies, natural resource-seeking (1950s and 1960s), market penetration (1970s and 1980s), and the combination of cost-saving and market expansion from the 1990s (Park, 2003)
Possible Responses to Conceptual Questions

• EEP (Entrepreneurial, Evolutionary Perspective) offers better insights; incorporates issues of ownership, localisation, internalisation, market imperfections, local competition (Dunning, 2000; Hymer, 1968 and Vernon, 1966) but adds idea of opportunity development

• EEP allows for consideration of market size, labour cost, location and timing issues as determinants of internationalisation (FDI-based: Chakraborty and Basu, 2002; Filippaios, Papanastassiou and Pearce, 2003; Deichmann, Karidis and Sayek, 2003; Park, 2003, and Love 2003), but differentiates through focus on network development and business model-based innovations

• EEP different from Uppsala Model in that it is not staged or incremental but experimental

• In EEP equity/non-equity modes are subsumed in networks of entrepreneurship

• EEP model can incorporate a triple helix approach because EEP more reflective of recent developments in global business practice

• Closer to Matthews (2006) 3L model – Linkage, Learning, and Leverage, and Prahalad and Krishnan’s (2011) idea of access to resources being more important than ownership

* Quanxi and its modern equivalent more appropriate to China; Jugaad more relevant for India
The International Entrepreneurship Forum

Essex Business School, University of Essex, UK

and

University Externado of Colombia
Faculty of Business Administration, Bogota, Colombia

13th International Entrepreneurship Forum
(13TH IEF) Conference

Conference Theme
Entrepreneurship and Development:
The Idea of Inclusive Opportunity Creation

31 July – 2 August, 2014
Bogota, Colombia
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