Efficacy of R&D Work In Offshore Captive Centers: An Empirical Study of Task Characteristics, Coordination Mechanisms And Performance

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Motivation

MNCs are increasingly leveraging emerging markets to develop innovative capabilities

- Leverage low-cost labor to reduce costs of ownership
- Tap into a more skilled/specialized labor pool
- Develop products for fast growing regional markets

Source: Booz & Company, 2008
Motivation

• Our understanding of organization of work in captive R&D centers and drivers of their performance is quite limited
• Prior research has predominantly focused on provisioning of IT services such as software application development and maintenance (Cataldo et al, 2006; Mullick et al, 2006) or on more routinized tasks such as back office operations
• Means of coordinating routine work cannot be easily extended to the context of knowledge work

• WHAT TYPES OF COORDINATION MECHANISMS ARE USED FOR THE EXECUTION OF KNOWLEDGE WORK? UNDER WHAT CONDITIONS ARE EACH OF THESE MECHANISMS EFFECTIVE?
Captives Score High on Quality of Processes of Moderate Complexity

Aron and Singh 2006
But At High Costs of Process Ownership

Aron and Singh 2006
This is True of Processes of High Complexity Too

Aron and Singh 2006

Mean Quality (Equivalent)

Months Since Inception

BPO  Captive  EOF
Costs of Execution of these Processes are Comparable

Note: Extent of Managerial Control is specified in the SLA

Aron and Singh 2006
Theoretical Model

• Coordination theory proposes two modes of organizing work:
  – Investments in modularization reflects a design approach to reorganizing tasks and activities that minimizes interdependencies and reduces the need for coordination
  – Investments in information sharing acknowledge interdependencies in the activities of the captive and manage coordination by facilitating information sharing and ongoing communications
Theoretical Model

- ROUTINENESS (+)
- ANALYZABILITY (+)
- NOVELTY(-)

Controls
- Size
- Centralization
- Primary Market
Theoretical Model

INTERDEPENDENCE

- ROUTINENESS (+)
- ANALYZABILITY (+)
- NOVELTY(-)

PERFORMANCE

Controls
- Size
- Centralization
- Primary Market

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Theoretical Model

- **Modularity**
  - H1, H2, H3

- **Interdependence**
  - H4, H5, H6

- **Info Sharing**
  - ROUTINENESS (+)
  - ANALYZABILITY (+)
  - NOVELTY (-)

- **Performance Controls**
  - Size
  - Centralization
  - Primary Market
Data

• Survey data collected from 132 captive R&D centers in India in the context of their largest, most strategic R&D projects

• Performance assessed by the extent to which the project meets cost targets, quality targets, technical targets and the center’s expectations regarding the contribution of the project
Results

![Graph showing performance comparison between low and high MOD]

<table>
<thead>
<tr>
<th>Pair of slopes</th>
<th>t-value for slope difference</th>
<th>p-value for slope difference</th>
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</thead>
<tbody>
<tr>
<td>(1) and (2)</td>
<td>3.253</td>
<td>0.001</td>
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</table>
Results

![Graph showing performance against MOD levels]

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<tr>
<td>(1) and (2)</td>
<td>6.031</td>
<td>0.000 (***)</td>
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Results

![Graph showing relationship between dependent variable and Inf_shr with high and low novelty conditions. The table below the graph shows the pair of slopes, t-value for slope difference, and p-value for slope difference.](image)

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To summarize

• An effective coordination strategy positively influences innovation outcomes and competitiveness of the MNC

• Investments in modularization of work across locations are effective when the offshored work is analyzable and routinized

• Information sharing to develop shared meanings and achieve an integrated response has the highest impact when the offshored work is less analyzable and more novel