Knowledge Transfer & Firm Performance

Seminar on Knowledge, Innovation & Change
October 13, 2006

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Agenda

- Knowledge transfer & firm performance
- Barriers of knowledge transfer
- Motivation of knowledge transfer
- Absorptive capacity
- Sticky Knowledge
- Causal Ambiguity
- Research direction
# Economic Perspective of Knowledge Transfer

<table>
<thead>
<tr>
<th>Inter-firm Knowledge Transfer</th>
<th>Economic Perspective</th>
<th>Social Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appleyard, 1996</td>
<td>Bouty, 2000</td>
</tr>
<tr>
<td></td>
<td>Schrader, 1991</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inter-group Knowledge Transfer</th>
<th>Economic Perspective</th>
<th>Social Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Kachra, 2002</td>
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<td></td>
<td>Hansen, 1999</td>
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<td>Tsai &amp; Ghoshal, 1998</td>
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<td>Szulanski, 1996</td>
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Economic Perspective of Knowledge Transfer

- Williamson Transaction Cost Economics (TCE) anchors on the knowledge transfer.
- Researchers adopting an economic perspective on knowledge exchange argue that tacit knowledge and the process by which it is typically exchange do not lend themselves well to monitoring and contracts.
Stickiness & Firm Performance

- **Stickiness** reflects the presence of internal factors that impede the realization of competitive advantage. This argument is made more specific and precise by grounding it in strategic management literature.

- **Stickiness** hinders the appropriation of rents from existing knowledge assets. This in turn suggests that factors cause stickiness to act as internal barriers to rent appropriation.
Rent Appropriation (1)

- Entry barriers (Bain, 1956),
- Barriers to Mobility (Caves & Porter, 1977), act as barriers to entry that are specific to a group of firms within an industry, rather than to an entire industry (strategic group, Hunt, 1972)
- Isolating mechanism (Rumelt, 1984). Rumelt argues that there is no theoretical reason to limit mobility barriers to groups of firms. He advanced the concept of isolating mechanism to refer the concepts of ‘phenomena that limit the ex-post equilibration of rents among individual firms’
Rent Appropriation (2)

- **Monopoly rent**, the scarcity value of that asset result from its protection from market entry. In monopoly, heterogeneity may result from spatial competition or product differentiation (Schmalensee, 1978). It may reflect uniqueness and localized monopoly (Peteraf, 1993).

- **Ricardian rent**, the scarcity value results from it being fixed supply, provided that the rent commanded by this factor is insufficient to attract new resources to use (Rumelt, 1987).

- **Entrepreneurial rent**, generates from combination of resources that generate a rent, when *a priori*. Rent yielding potential of that particular combination was uncertain (Knight, 1921).
Rent Appropriation & Competitive Advantage

Source: Peteraf (1993)
Rent Appropriation & Competitive Advantage

Source: Peteraf (1993)

Figure 1. Scarcity rents with heterogeneous factors
Key: $P^* =$ Equilibrium Price, $[] =$ Rents to Efficient Producer
Rent Appropriation & Competitive Advantage

Figure 2. Imitation (expansion) of low cost firms causes rents to dissipate and high-cost firms to exit. Key: $P^{**} = $ New Equilibrium Price.

Source: Peteraf (1993)
Transfer of Best Practices

- Transfer of best practice inside the firm has a concrete and fairly unambiguous meaning to practitioners. It connotes the firm’s replication of an internal practice that is performed in a superior way in some part of the organization and is deemed superior to internal alternate practices and known alternatives outside the company (Szulanski, 1996)

- Practice refers to the organization’s routine use of knowledge and often has a tacit component, embedded partly in individual skills and partly in collaborative social arrangement (Nelson & Winter, 1982; Kogut & Zander, 1992)

- Transfer of best practice are thus seen as dyadic exchanges of organizational knowledge between a source and a recipient unit in which the identity of the recipient matters. (Szulanski, 1996)

- Intrafirm transfer of best practice is seen as an unfolding process consisting of stages in which characteristics factors not only appear in greater or lesser degree but also in a certain order of occurrence. Four stage are identified: initiation, implementation, ramp-up, and integration (Szulanski, 1996)
Origins of Internal Stickiness

- Characteristics of the knowledge transfer
  - causal ambiguity
  - unproveness

- Characteristics of the source of knowledge
  - lack of motivation
  - no perceived as reliable

- Characteristics of recipient of knowledge
  - lack of motivation
  - lack of absorptive capacity
  - lack of retentive capacity

- Characteristic of the Context
  - Barren organizational context
  - Arduous relationship
Characteristic of knowledge & stickiness

- **Causal ambiguity**
  - H1: CP, causal ambiguity is positively correlated with stickiness
  - idiosyncratic features
  - theory of uncertain imitability (Lipman & Rumelt, 1982)
  - Jensen & Meckling (1992)

- **Unproven knowledge**
  - H2: CP, absence of proof of the usefulness of knowledge is positively correlated with stickiness
  - the expectations of potential recipients (Lenox, 1999)
  - re-creation of knowledge (Rogers, 1983)
  - controversial integration efforts (Goodman et al., 1980; Nelson & Winter, 1982)
Recipient lacks motivation

H5: CP, the lack of motivation of the recipient is positively correlated with stickiness

Recipient lacks absorptive capacity

H6: CP, the lack of absorptive capacity of the recipient is positively correlated with stickiness

Recipient lacks retentive capacity

H7: CP, the lack of retentive capacity of a recipient is positively correlated with stickiness
Characteristic of contexts & stickiness

- Barren organizational context
  H8: CP, a barren organizational context is positively correlated with stickiness

- Arduous relationship between the source and the recipient
  H9: CP, an arduous relationship between source and recipient is positively correlated with stickiness
Typology of Stickiness

- **Initiation of stickiness**
  slack – causal ambiguity

- **Implementation stickiness**
  The implementation stage begins with the decision to proceed.

- **Ramp-up stickiness**
  The ramp-up stage begins when the recipient starts using the transferred knowledge, that is, after the first day.

- **Integration stickiness**
  The integration stage begins after the recipient achieves satisfactory results with the transferred knowledge. Use of transferred knowledge gradually becomes routinized.
Knowledge Stock, Flow & Enabler (1)

- **Assets stock & flow** (Dierixk & Cool, 1989)

- **Knowledge stock** defined as the existing level of knowledge at a point in time (Bourreau, 2003). Argote & Ingram (2000) suggest that knowledge is held in three basic ‘reservoir’ or element of organizations – member, tools, and task – as well as their connections and networks.

- **Knowledge flow** defined as the movement of knowledge between entities, including individuals, organizations, or organizational levels. This includes notions of knowledge transfer, organizational learning, group interaction and information flows through networks. (Bourreau, 2003).
Nahapiet & Ghosal (1998) noted that the nature of knowledge transfer mechanism, including social networks, must be considered part of an organization’s knowledge resources.

Conner & Prahalad (1996) suggested that knowledge acquisition, transfer, and use are significant reasons for the existence of firm
Knowledge Stock, Flow & Enabler (3)

- Fiol (2003) notes that knowledge flows should be conceived not only as ‘pipelines’ that reflect traditional movement of disembodies knowledge but also as ‘rivers’ that reflect the myriad personal and social inflows and outflows of knowledge and the unpredictability of its flow patterns.

- **Enabler** are investments – processes, structures, and activities established by organizations to change or maintain knowledge stocks or influence knowledge flows.
Enabler facilitate changes in knowledge stocks and flows. The fact that enablers are present does not necessarily mean that they are actually used or that knowledge is generated or moved (DeNisi et. al., 2001).
Knowledge transfer is the process through which an individual, team, department, or division is affected by the experience of another (Argote, Ingram, Levine, & Moreland, 2000)

Knowledge transfer has been studied at the individual and team level by cognitive and industrial/organizational psychologists and at the organizational level by strategic management and organizational theory researchers (Noe, Colquitt, Simmering & Alvarez, 2001)
Absorptive Capacity (1)

- Labeled by Cohen & Levinthal (1990)
- Absorptive capacity, the capacity to absorb new knowledge can be associated with organizations, unit, and partners (Cohen & Levinthal, 1990)
- Absorptive capacity measures overlap with some of the knowledge stock measures, because having prior knowledge aids assimilation and exploitation of new knowledge (Cohen & Levinthal, 1989)
The ability to exploit external knowledge is thus critical component of innovative capabilities. We argue that the ability to evaluate and utilize outside knowledge is largely a function of the level of prior related knowledge. At the most elemental level, this prior knowledge includes basic skills or even a shared language but may also include knowledge of the most recent scientific or technological developments in a given field. Thus, prior related knowledge confers an ability to recognize the value of new information, assimilate it and apply it to commercial ends. These abilities collectively constitute what we call a firm’s ‘absorptive capacity’ (Cohen & Levinthal, 1990)
From Individual to Organizational Absorptive Capacity (1)

- Organizational absorptive capacity (AC) will depend on the absorptive capacity of its individual members.
- A firm’s AC is not, however the sum of the AC of its employees, and it’s therefore useful to consider what aspects of AC are distinctly organizational.
- AC refers not only to the acquisition or assimilation of information by and organization but also to the organization’s to exploit it.
- The firm’s AC depends on the individuals who stand at the interface of either the firm and the external environment or at the interface between subunits within the firms.
Thus, as with Nelson & Winter (1982) view of organizational capabilities, an organization’s absorptive capacity is not resident in any single individual but depends on the links across mosaic on individual capabilities.

Learning by doing does not contribute to the diversity that is critical to learning about or creating something that is relatively new. Moreover, the notion of ‘remembering by doing’ suggests that the focus on the class of activity entailed by ‘learning by doing may effectively diminish the diversity of background that an individual or organization may have at one time possessed and consequently undercut organizational absorptive capacity and innovative performance.
Path Dependence & Absorptive Capacity

- Path dependency labeled by Teece (1988)
- The notion of path dependencies recognized that ‘historical matters’ (Teece, Pisano & Shuen, 1997)
- Accumulating absorptive capacity in one period will permit its more efficient accumulation in the next (path dependencies / historical matters) (Cohen & Levinthal, 1990)
- The cumulativeness of absorptive capacity and its effect on expectation formation suggest an extreme case of path dependence in which once a firm ceases investing in its absorptive capacity in a quickly moving field, regardless of the value of that information (Cohen & Levinthal, 1990)
Absorptive Capacity and R&D Investment (1)

- If absorptive capacity is important, and R&D contributes to it, then whatever condition the firms incentives to learn (i.e. to build absorptive capacity) should also influence R&D spending (Cohen & Levinthal, 1990).

- The basic model of how absorptive capacity affects the determination of R&D expenditures is represented on ‘Model of Absorptive Capacity and R&D
Absorptive Capacity and R&D Investment (2)

Model of Absorptive Capacity and R&D Incentive

Source: Cohen & Levinthal (1990)
Causal Ambiguity (1)

- **Lippman & Rumelt (1982)**: ambiguity as to what factors are responsible for superior (or interior) performance acts as a powerful block on imitation.
- **Lipmann & Rumelt (1982)** used **causal ambiguity** to describe the phenomenon surrounding business actions and outcomes that makes it difficult for competitors to emulate strategies. When an advantage is based on competencies that have causally ambiguous characteristics, then it will be difficult for competitors to overcome the advantage by imitation. Causal ambiguity creates barriers to imitation.
Causal Ambiguity (2)

- Competencies (tacitness, complexity, specificity) can be simultaneously source of advantage and ambiguity (Reed & De Fillipi, 1990)

- Tacitness. Tacitness is a source of ambiguity to rivals and as such it creates barriers to imitation (Reed & De Fillipi, 1990)

- Complexity. Core competence that are complex generate ambiguity. Complexity and thus ambiguity arise from large numbers of technologies, organizational routines, individual or team based experiences (Reed & De Fillipi, 1990)

- Specificity. The business actions that result from resource and skill deployments (competencies) can be highly specific and interdependent with the firm’s internal or external transaction partners. Skill and resources deployments can remain ambiguous to the competition, and through their specificity such competencies raise barrier to imitation (Reed & De Fillipi, 1990)
Types Causal Ambiguity (3)

- Type 1: Fundamentally Irreductible Causal Ambiguity (Ex Ante and Ex Post Irreductible)

- Type 2: Ex Ante Irreductible / Ex Post Reducible Causal Ambiguity
  Causal relationship are unknowable ex ante, but knowable ex post

- Type 3: Ex Ante and Ex Post Reducible Causal Ambiguity with Ex Ante Irreductible and Ex Post Reducible Input Uncertainty
  Causal relationships are knowable ex ante and ex post; input to causal mechanisms are unknowable ex ante, but knowable ex post

- Type 4: Ex Ante and Ex Post Reducible Causal Ambiguity with Ex Ante and Ex Post Reducible Input Uncertainty.
  Causal relationship are knowable ex ante and ex post, inputs to causal mechanism are knowable ex ante and ex post
Causal Ambiguity as the central attribute of knowledge

When knowledge transfer is seen as a quest to reproduce results obtained elsewhere, it then becomes evident that causal ambiguity affects such knowledge transfer in a fundamental way.
Managing tacit and explicit knowledge transfer in IJV: the role of relational embeddedness and the impact on performance.

Figure 1  Embeddedness, knowledge transfer and performance: a structural model.
MNC Knowledge Transfer, Subsidiary Absorptive Capacity and HRM.

MNC Knowledge Transfer, Subsidiary Absorptive Capacity and HRM.

- Minbaeva et. al. (2003) melakukan studi hubungan praktik-praktik human resource management (HRM) / absorptive capacity / knowledge transfer pada antar anak perusahaan / cabang beberapa perusahaan multinasional di USA, Rusia dan Finland.

- Riset dilakukan terhadap 169 anak perusahaan MNC tersebut. Pertama, mereka menguji hubungan penerapan praktik-praktik HRM tertentu terhadap absorptive capacity. Kedua, mereka menyarankan bahwa absorptive capacity harus dikonsepsualisasikan as being comprised of both employees’ ability and motivation.

- Hasil risetnya menunjukkan bahwa baik kemampuan dan motivasi menyerap knowledge (absorptive capacity) dalam proses knowledge transfer diperlukan oleh kedua belah pihak.
Mahnke, Pedersen, Venzin (2005)

*The Impact of Knowledge Management on MNC Subsidiary Performance: The Role of Absorptive Capacity.*

- Higher absorptive capacity increases knowledge inflows
- Knowledge tool positively influence AC
- Knowledge inflows influence positively a subsidiary’s performance
Mahnke et. al. (2005) melakukan riset pengaruh KM tools.

Dalam risetnya, absorptive capacity digunakan sebagai endogeneous construct terhadap managerial discretion dan menunjukkan bagaimanakah ..... melalui pengaruh signifikan absorptive capacity dan knowledge inflows.
Chen & Ching (2004); An Empirical Study of the Relationship of IT Intensity and Organizational Absorptive Capacity on CRM Performance

Source: Chen & Ching (2004); An Empirical Study of the Relationship of IT Intensity and Organizational Absorptive Capacity on CRM Performance
Jensen & Szulanski (2004)

Stickiness and the adaptation of organizational practices in cross-border knowledge transfer.
Additional Materials
Gabriel Szulanski is Professor of Strategy at INSEAD, which is where he earned his Ph.D. in Strategy in 1995. He joined the faculty of INSEAD in 2002 after serving on the faculty of the Wharton School of the University of Pennsylvania (1995/02). Gabriel's research interests focus on strategic management, with a specific focus on the management of knowledge assets and the making of strategy. His research was honored with the best dissertation award (BPS division), best conference paper from the Academy of Management TIMS division (honorable mention), twice with the best conference paper from the Strategic Management Society (honorable mention). His paper in the Harvard Business Review on replication of business practices was included in the 2002 list of breakthrough ideas for management. His paper on Stickiness was awarded the prestigious Best Paper award from the Strategic Management Journal. His research has been published in a variety of business newspapers including Financial Times, academic journals including Strategic Management Journal, OBHDP, Organization Science, Management Science, Journal of International Business Studies, and business journals including Long Range Planning and Harvard Business Review. Gabriel sits on the editorial board of leading academic journals including Administrative Science Quarterly, Organization Science, Long Range Planning and the Journal of International Business Studies.
2.1.2a Economic Perspective on Knowledge Transfer

Williamson's (1975) work on Transaction Cost Economics (TCE) anchors the economic perspective on knowledge transfer. Researchers adopting an economic perspective on knowledge exchange argue that the nature of tacit knowledge and the process by which it is typically exchanged do not lend themselves well to formal monitoring and contracts. Tacit knowledge transfers are typically informal exchanges of knowledge whose value is not necessarily immediately apparent or measurable. It is
Rents Appropriation

- Ricardian Rents
- Monopoly Rents
- Schumpeterian Rents