

Knowledge Basics

Knowledge creation and management *costly and complex*
(Demsetz 1988)

Critical resource in competitive settings
(Drucker 1993)

Creation, transfer, assembly, integration, and exploitation
of knowledge assets essential organizational capabilities
(Teece 1998)

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Research Question

Challenge of cost-effective knowledge creation and absorption

↳ Inter-organizational knowledge networks

Why and how do organizations initiate or get involved in such networks despite potential competitive counter-arguments ?

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Knowledge as Resource

Knowledge as intellectual resource, not naturally scarce
(Suchmann 1989; Dean, Kretschmer 2007)

Resource-Based View
(Wernerfelt 1984; Barney 2001)

- Knowledge as competitively relevant resource
- Threat of leakage and dilution of valuable assets

Relational View
(Liebeskind et al. 1996; Dyer, Hatch 2006)

- Sharing of capabilities and knowledge
- Competitive advantage from re-combining commonly available knowledge

Co-opetition: Simultaneous cooperation and competition
(Brandenburger, Nalebuff 1996)

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Resource-Based View and Knowledge

Back Up

Focus on exploitation of resources, competencies, and capabilities
(Barney 2001; Rugman, Verbeke 2002; Felin, Hesterley 2007)

Firm-specificity, value to customers, non-substitutability, and non-imitability

↳ conditional to sustained superior returns (Teece et al. 1997)

Specialized knowledge "costly to produce, maintain and use"
(Demsetz 1988, p. 171)

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Inter-Organizational Knowledge Networks

Back Up

Relational View of Firm

Inter-organizational networks as source of sustainable competitive advantage
(Liebeskind et al. 1996; Dyer, Hatch 2006)

- Institutional framework for specialized knowledge creation across organizational boundaries (Pahalad, Ramaswamy 2000; Dhanaraj, Parkhe 2006; Dyer, Hatch 2006)
- Mechanisms, structures, and behavioral patterns overcoming functional, hierarchical, or legal boundaries between organizations (Cross, Cummings 2004; Hansen et al. 2005)

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Requiring Inter-Organizationally Mutual Understanding of Knowledge

Each organization with *idiosyncratic knowledge* and *jargons* creating formative context

- Different understanding of knowledge (Pentland 1992)
- Hampered knowledge absorption (Reagans, McEvily 2003)

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- Common frame of reference as contextual framework
- Facilitated interpretation of transferred knowledge (Weick 1995)

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Issues of Knowledge Exchange

Knowledge 'Sociality'
 Embedded within routines, culture, and norms (Spender 1996)

↳ Not readily tradable

No equilibration or transfer via factor markets → Relations necessary

BUT
 Intra-organizational learning via interaction facilitating knowledge absorption (Larsson et al. 1998)

Interaction based on shared understanding; Extrapolation to new context (Nonaka 1994; Reagans, McEvily 2003) **OR** Interaction based on radically different interpretative models (March 1991)

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AstraZeneca Case

Company Profile

- Pharmaceutical company
- Resulting from '99 merger of Swedish Astra AB and British Zeneca PLC
- > 60,000 employees
- '07 revenues of ~ \$ 29.6 bill. and EBIT of \$ 9.1 bill.

Industry Challenge
 Increasingly strict FDA requirements causing difficulties for pharmaceuticals' R&D labs

Industry Approach
 Contracting knowledge creation tasks to academic/non profit laboratories (Roth 2003)

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AstraZeneca's Knowledge Network Structure

Five Groups

- Statistics
- Epidemiology
- Medicine & Science
- Health Economy
- Quality of Life

Clinical Science Unit (CSU) → Contracting out discovery-development process → **Contract Research Organizations (CROs)**

- All groups staffed with highly qualified, scientific personnel
- One CSU expert per project
- CSU re-combining newly created knowledge from various CROs for specific drug discovery-registration process

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AstraZeneca's Knowledge Creation Process

Request for specific part of discovery-development process

Project Leader
 Expert with generic, relevant knowledge

Personal Network
 Experts in scientific research centers

Monitoring and managing body of knowledge ↔ Provision of specialized knowledge

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METRO Group Case

Company Profile

- World's third largest retailer
- '07 sales of ~ \$ 105 bill. and EBIT of \$ 3.4 bill.
- Wholesale, supermarket, hypermarket, department store, and electronics discounter sales divisions, and several central service units

Industry Challenge
 Competitive pressure leading retailers towards differentiation

METRO Group Approach
 Offering customers innovative, increasingly individualized and comfortable shopping experience

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METRO Group Case

Objective
 Establishing **end-to-end** infrastructure chain, facilitating innovative IT for in-store applications

METRO Group IT (MGI)

- Meeting with external experts in meetings and conferences
- Initiated inter-organizational knowledge network called MG Future Store Initiative (FSI)
- Re-combining knowledge from external FSI members in lab called MG Innovation Center

MGI

Future Store Initiative

- Technology vendors
- Consultants
- Brand manufacturers
- Etc.

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Issues

- Externalization of Knowledge Creation
- Inter-Organizational Knowledge Network Formation
- Specific Interaction Schemes for Mutual Understanding
- Avoidance of Core Competence Leakage

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Externalization of Knowledge Creation

<p>AstraZeneca Gaining specialized external knowledge with different perspectives from Contract Research Organizations (CROs)</p>	<p>METRO Group Gathering expertise from specialized experts with different industry perspectives</p>
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Externalization of knowledge creation feasible and advantageous

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Inter-Organizational Knowledge Network Formation

<p>AstraZeneca Strategic flexibility through on-demand access to knowledge creation</p>	<p>METRO Group MGI as interface balancing METRO Group interests with interests of external experts</p>
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Inter-organizational knowledge networks complex, but providing cost and flexibility advantage

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Specific Interaction Schemes for Mutual Understanding

<p>AstraZeneca Scientific personnel specifically suited for initiating and coordinating knowledge creation via interaction with Contract Research Organizations (CROs)</p>	<p>METRO Group Organizing events for enhanced interaction among inter-organizational network members</p>
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Similar educational background and face-to-face encounters improving mutual understanding and knowledge transfer

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Avoidance of Core Competence Leakage

<p>AstraZeneca Creating new context-specific knowledge by re-combining externally created knowledge</p>	<p>METRO Group Aiming for time advantage by taking technology leadership position</p>
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Position as knowledge aggregator or early mover avoiding fast depreciation of knowledge

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Summary of Lessons Learnt from Cases

- Externalization of knowledge creation feasible and advantageous
- Inter-organizational knowledge networks complex but providing cost and flexibility advantage
- Similar educational background and face-to-face encounters improving mutual understanding and knowledge transfer
- Position as knowledge aggregator or early mover avoiding fast depreciation of knowledge

Inter-organizational knowledge creation as strategic opportunity in markets increasingly depending on knowledge

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Conclusions

- Shift to knowledge creation in inter-organizational networks based on complexity and cost arguments
- Organizations benefiting in terms of cost savings and specialized knowledge from inter-organizational knowledge networks
- No transactional, but relational knowledge transfer
- Experts with similar educational background required for
 - Creating common formative context
 - Allowing for proper interpretation of knowledge
- Knowledge reassembly capabilities and speed of innovation as core competencies

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