ITM515 STRATEGIC TECHNOLOGY MANAGEMENT

Chapter 8

Collaboration Strategies

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Contents

Overview

➢ Technology acquisition mode

- [Going solo] Make: In-house R&D
- [Collaborating] Cooperate: Joint venture, joint R&D, alliance, etc.
- [Collaborating] Buy: R&D contract, acquisition, licensing, and outsourcing

➢ Collaboration

- can enable firms to achieve more, at a faster rate, and at less cost and risk
- also entails sharing control and rewards, and may risk partner's misbehavior

Reasons for Going Solo

- Availability of capabilities
  - A firm has all of the necessary capability for a project
  - There is no potential partners with required capabilities

- Protecting proprietary technologies
  - A firm has a fear of giving up its proprietary technologies
  - A firm wishes to have exclusive control over proprietary technologies created during a project

Reasons for Going Solo

- Controlling technology development and use
  - A firm desires to have complete controls over its development process and the use of any resulting new technologies
    - ✓ Pragmatic reasons (e.g. do not want share margins from a project)
    - ✓ Cultural reasons (e.g. emphasizing independence and self-reliance)

- Building and renewing capabilities
  - A firm believes that the development efforts are key to renewing or developing the firm's capabilities
  - The potential for creating and enhancing the organization's capabilities may be more valuable than the innovation itself

Advantages of Collaborating

- Obtaining necessary skills or resources more quickly
  - It is not unusual for a company to lack some of the complementary assets required
  - A firm can gain rapid access to important complementary assets through collaboration

- Reducing asset commitment and increasing flexibility
  - When technology is progressing rapidly, firms may seek to avoid committing themselves to fixed assets that may rapidly become obsolete
  - A firm may choose to become more narrowly specialized and to use linkages with other specialized firms to access resources

Advantages of Collaborating

- Learning from partner
  - Close contact with other firms can facilitate both the transfer of knowledge between firms and the creation of new knowledge
- Sharing costs and risks
  - Important when a project is very expensive or its outcome highly uncertain
- Facilitating the creation of a shared standard
  - Cooperation in the commercialization may be crucial for technologies in which compatibility and complementary goods are important

Types of Collaborative Arrangements

➢ Strategic Alliances

- Definition: Formal or informal agreements between two or more organizations to cooperate in some way
- Purpose
  - ✓ Accessing critical capabilities that is not possessed in-house or more fully exploiting own capabilities by leveraging them
    - Firms with different capabilities pool their resources to collectively develop the product or market faster or less expensively
    - Firms that have similar capabilities collaborate to share the risk and cost or to speed up market development and penetration
    - Large firms take a limited stake in the smaller firm's development efforts
    - Small firms tap the larger firm's greater resources, capabilities, and credibility
  - ✓ Enhancing a firm's overall level of flexibility
    - Firms establish a limited stake in a venture while maintaining the flexibility to either increase their commitment later or shift resources to another opportunities
    - Firms use alliances to gain an early window on emerging opportunities
    - Firms rapidly adjust the type and scale of capabilities the firm can access
  - ✓ Learning from each other and developing new competencies

Types of Collaborative Arrangements

- Strategic Alliances
  - Technology alliance strategies
    - ✓ Capability complementation: Combining and pooling the capabilities of partner firms, but not necessarily transferring those resources
    - ✓ Capability transfer: Exchange of capabilities across firms in such a manner that partners can internalize capabilities and use them independently of the particular development project

	Individual Alliance	Network of Alliances
Capability Complementation	A GE-SNECMA alliance	B Corning Glass alliances
Capability Transfer	C Thomson-JVC alliance	D Aspla

Types of Collaborative Arrangements

➢ Joint Ventures

- A particular type of strategic alliance that entails significant equity investment
- Involving a significant equity investment and often resulting in establishment of a new separate legal entity

➢ Collective Research Organizations

- Organizations formed to facilitate collaboration among a group of firms
- Formed through government or industry association
- e.g. The Semiconductor Research Corporation

Types of Collaborative Arrangements

➢ Licensing

- Definition: A contractual arrangement whereby an organization or individual (*licensee*) obtains the rights to use the proprietary technology of another organization or individual (*licensor*)
- Types: Exclusive / Non-exclusive / Cross-licensing
- Advantages
  - ✓ For licensor: enabling the firm's technology to penetrate a wider range of markets
  - ✓ For licensee: much less expensive and faster than in-house R&D
- License or not ??
  - ✓ Licensor gives up the ability to earn monopoly rents
  - ✓ Licensing preempt their competitors from developing their own competing technologies
  - ✓ Licensing enables a firm to opt for a steady system of royalties rather than gambling on the big gain or big loss of having its technology compete against others for market dominance

Types of Collaborative Arrangements

➢ Outsourcing

- Definition: Contracting out of a business process to a third-party rather than producing them in-house
- Type: Manufacturing, Design, Marketing, HR, IT, etc…
- Pros and cons
  - ✓ Allowing firms to meet market requirements without committing to long-term capital investments
  - ✓ Enabling firms to specialize in activities central to their competitive advantages
  - ✓ Imposing significant transaction costs
  - ✓ Involving a risk of proprietary technology being expropriated

Choosing a Mode of Collaboration

- Trade-offs between different modes of development

	Speed	Cost	Control	Potential for Leveraging Existing Competencies	Potential for Developing New Competencies	Potential for Accessing Other Firms' Competencies
Solo Internal Development	Low	High	High	Yes	Yes	No
Strategic Alliances	Varies	Varies	Low	Yes	Yes	Sometimes
Joint Ventures	Low	Shared	Shared	Yes	Yes	Yes
Licensing In	High	Medium	Low	Sometimes	Sometimes	Sometimes
Licensing Out	High	Low	Medium	Yes	No	Sometimes
Outsourcing	Medium/High	Medium	Medium	Sometimes	No	Yes
Collective Research Organizations	Low	Varies	Varies	Yes	Yes	Yes

Choosing and Monitoring Partners

➢ Partner Selection

- Resource Fit
  - ✓ How well does the potential partner fit the resource needs of the project?
  - ✓ Are resources complementary or supplementary?
- Strategic Fit
  - ✓ Does the potential partner have compatible objectives and styles?
- Impact on Opportunities and Threats in the External Environment
  - ✓ How would collaboration impact bargaining power of customers and suppliers, degree of rivalry, threat of entry or substitutes?
- Impact on Internal Strengths and Weaknesses
  - ✓ Would collaboration enhance firm's strengths? Overcome its weaknesses? Create a competitive advantage?
- Impact on Strategic Direction
  - ✓ Would the collaboration help the firm achieve its strategic intent?

Choosing and Monitoring Partners

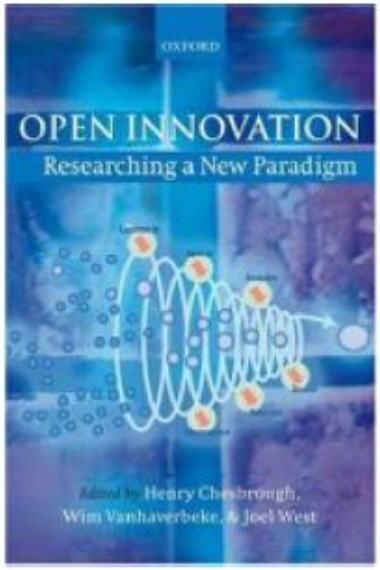
➢ Partner Monitoring and Governance

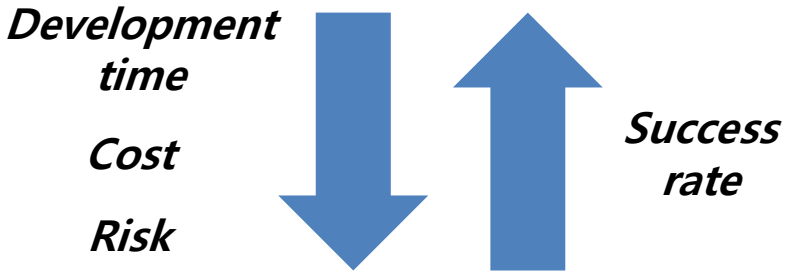
- Successful collaborations have clear, yet flexible, monitoring and governance mechanisms
- The more resources put at risk by collaboration, the more governance structure partner firms impose on the relationship
- Types of governance mechanisms
  - ✓ Alliance contracts: Legally binding contractual arrangements to ensure that
    - Partners are fully aware of rights and obligations
    - Partners have legal remedies for violations
  - ✓ Equity ownership
    - When each partner contributes capital and owns a specified right
    - Aligning the incentives and providing a sense of ownership and commitment
  - ✓ Relational governance
    - Self-enforcing norms based on goodwill, trust, and reputation
    - Emerging over time through repeated experiences of working together

Open Innovation

➢ Concept

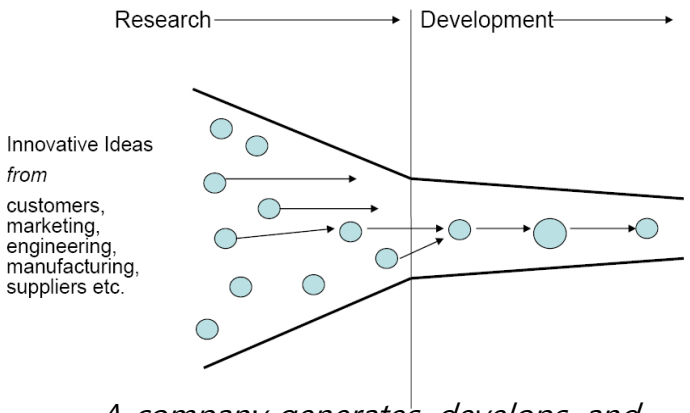
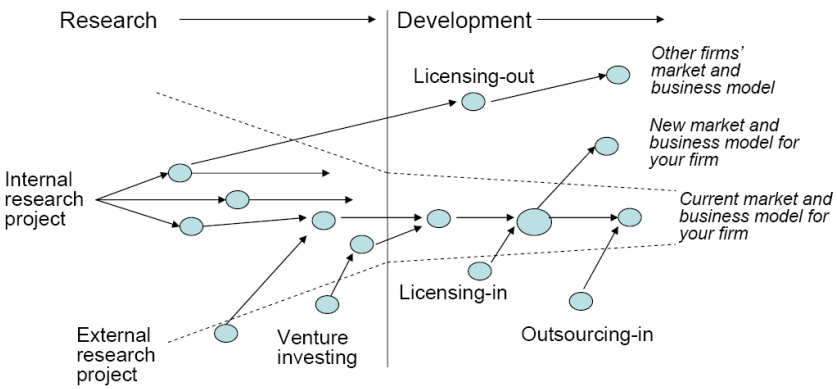
- A paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology
- Innovating with partners by sharing risk and sharing reward





Open Innovation

From Closed to Open

Closed innovation	Open innovation
 *A company generates, develops, and commercializes its own ideas*	 *A company commercializes both its own ideas as well as innovation from other firms*
The smart people in our field work for us	Not all the smart people work for us so we must access knowledge of bright individuals outside our company
To profit from R&D we must discover, develop and ship it ourselves	External R&D can create significant value; internal R&D is needed to claim some portion of that value
If we are the first to commercialize an innovation, we will win	Building a better business model is better than getting to market first
If we create the most and best ideas, we will win	If we make the best use of internal and external ideas, we will win
We should control our IP so that our competitors don't profit from our ideas	We should profit from others' use of our IP, and we should buy others' IP whenever it advances our own business model

Open Innovation

- Connect & Development (C&D)

Open Innovation

➢ Acquisition & Development (A&D)

Race to Acquire Top AI Startups Heats Up