Comprehensive Exam Questions Area 1: Management of Collaborative R&D

Please do two of the following three questions:

1. Asian societies are traditionally perceived as valuing group dynamics and consensus-building activities over individualistic activities. How does the notion of "champions of collaboration" work within an Asian rather than western context? Cite examples from your experience in Japan. Are there significant cultural differences in how "champions" can work, and in how the concept must be defined or understood?

2. You quote Hofstede as writing "Common practices, not common values are what solve practical problems.Differences in values should be understood. Differences in practice should be resolved."
My question has three parts:
a) what does this quotation REALLY mean to you?
b) how would this statement be understood in your firm in Japan, in a firm or village in Bangladesh, in a firm or community you know in Canada?
c) That is, is the conceptual separation of value and practice "universally" seen as the solution to practical problems? If so, which practical problems? Who is to do the "separation"?

3. You identify Nonaka's concept of "ba" as applicable in the study of collaboration. Briefly explain what "ba" is and then describe some of the ways in which this concept could be used in the practice of collaborative R&D. In your answer, emphasize communication practices (and communication technologies, if possible) that a champion of collaboration might use.

# Comprehensive Examinations: Areas & Write-up Plan

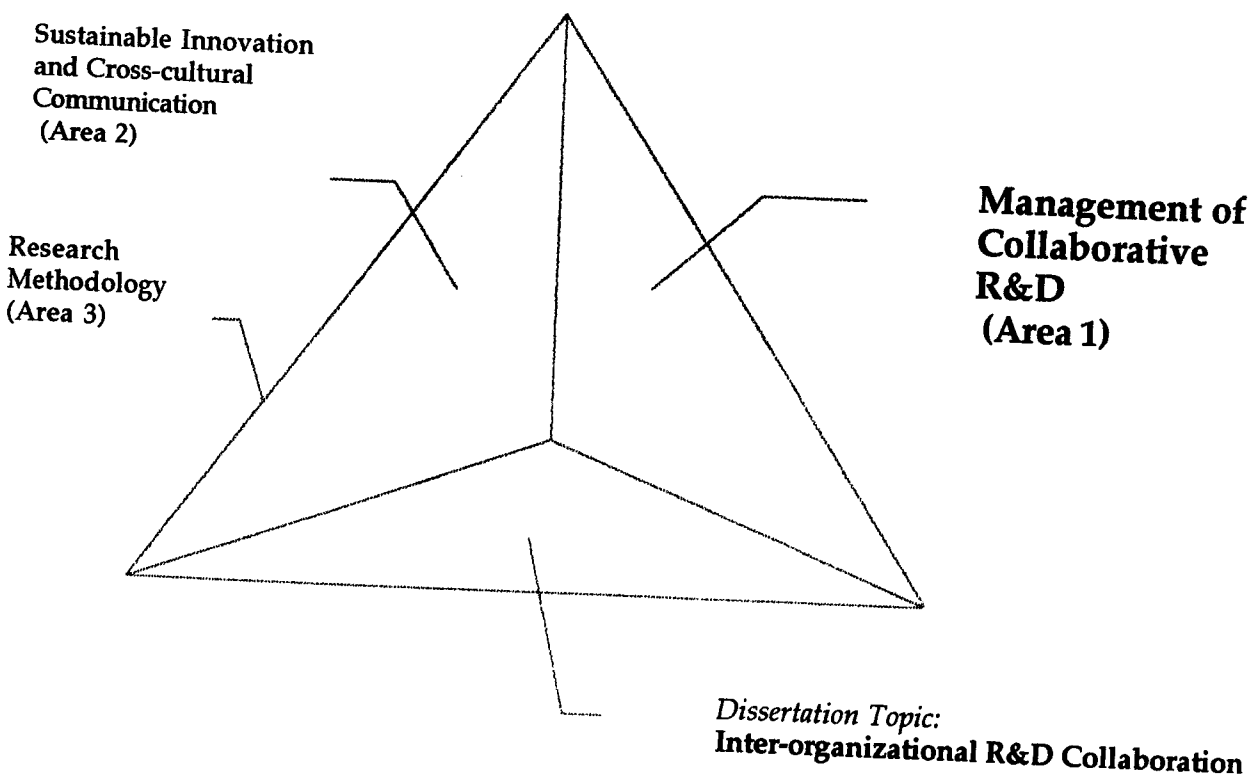
**Area 1: Management of Collaborative R&D (Practice, policy, mgmt. issues with case examples)**

Area 2: Sustainable Innovation & Cross-cultural Communication (Theorical perspectives)

Area 3: Research Methodology (Justification of Case Research Method for the Study)

| | Area 1 | Area 2 | Area 3 |
|---|---|---|---|
| **Dr. Smith** | Q1 | Q2 | Q3 |
| **Dr. Anderson** | Q1 | Q2 | Q3 |
| **Dr. Lewis** | Q1 | Q2 | Q3 |

| | |
|---|---|
| Receive Questions on Area 1: | |
| Submit Answers: | 2 Oct (Fri)<br>5 Oct (Mon) |
| Receive Questions on Area 2: | |
| Submit Answers: | 9 Oct (Fri)<br>12 Oct (Mon) |
| Receive Questions on Area 3: | |
| Submit Answers: | 16 Oct (Fri)<br>19 Oct (Mon) |
| Oral Examination: | 27 Oct (Tue) |



**Simon Fraser University**
Burnaby, B.C.
CANADA

**Faculty of Applied Science**
**School of Communication**
**PhD Program**

**Fall Semester 1998**
**CMNS 895**
**Comprehensive Examination (Area 1)**

# Management of Collaborative R&D

***(A Holistic Approach)***

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*"Intercompany relationships are a key business asset, and knowing how to nurture them is an essential managerial skills"* **(Rosabeth Moss Kanter, *Collaborative Advantage:The Art of Alliances, 1994*).**

*"A knowledge-creating company does not operate is a closed system but in an open system in which knowledge is constantly exchanged with the outside environment"* **(Ikujiro Nonaka and Hirotaka Takeuchi, *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation, 1995*)**

*"Cooperative situations require different skills and perspectives. Managers must therefore continuously probe their organizational boundaries to determine how porous they are to admitting the influx of external knowledge – how adequately their firms can access external wellsprings of technological knowledge"(Dorothy Leonard-Barton, Wellsprings of Knowledge: Building and Sustaining the Sources of Innovation, 1995)*

*"Technological collaboration among firms, and between firms and universities and state laboratories, has been rapidly increasing in the 1980s and early 1990...there is no established theory of technical alliances and collaboration."* **(Jorge Niosi, *Strategic Technological Collaboration in Canadian Industry: Towards a theory of flexible and collective innovation, 1996*)**

## Overview (Scope & Limits)

Rapid technological change; globalization of businesses; increasing competition in global marketplace; increasing tendency towards risk reduction and knowledge sharing; managing uncertainty; and growing concern in sustainable development are increasing collaborative innovation and inter-organizational R&D collaboration in recent years. Researchers from different disciplines are making contributions in the area of collaboration. However, communication is intertwined with collaboration, but very limited number of studies have been accomplished in the area with communication perspectives.

The scope of this course will be limited into the areas of preparation for management of collaborative R&D. This course will mainly focus on the communication aspects of inter-organizational R&D collaboration and collaborative innovation. In this course, collaboration refers to any formal or informal relationships among organizations under which substantial research and development (R&D) activities are jointly conducted for technological innovation. At the end part of this course, a concept of 'champions of collaboration' will be discussed.

## Background Preparation

*"Importing and absorbing technological knowledge from outside of the firm"* of Dorothy Leonard-Barton's Wellsprings of Knowledge: Building and Sustainable the Sources of Innovation (1995) book; and "Champions of Technological Innovation" of Howell, J. M., & Higgins, C. A. (1990) are suggested to review as a part of background preparation for this course.

## Exercises

Answers of any two of the following three questions are required to be submitted one week after the last class. The answers should be written in journal paper format and each paper should be limited in 2500-3000 words.

1. Discuss the major issues of collaborative R&D in Canadian and Japanese industries? What do you suggest for future research in the area?
2. Briefly discuss why firms are increasingly engaging in inter-organizational collaboration at a global scale? Also discuss the major challenges of such collaboration in your point of view?
3. Discuss the 'champions' concept in innovation research. Also discuss, how do you like to extend the 'champions' concept in management of collaborative R&D with communication perspectives?

## Evaluations

Grades are based on a combination of active participation in classroom discussion, timely submission of the exercise papers, and an oral examination scheduled one week after submission of the paper. The oral examination will be limited into the contents of the submitted report.

## Course Schedule and Readings

### 1. Challenges of Collaborative R&D in Canada

*Lecture:* Overview of the Course & Collaborative R&D in Canada
*Discussions:* Key Challenges of Canadian Organizations
*Readings:*
Minden, K., Sickmeier, M., Smith, R., Poh-Kam, W., & Rawa, T. (1995). Managing Collaborative R&D in the Pacific Rim (Workshop Report). Vancouver: Asia-Pacific Foundation of Canada. [http://www.cprost.sfu.ca/tc.june-95-workshop/cac.html]

Niosi, J. (1996). Strategic Technological Collaboration in Canadian Industry. In R. Coombs, A. Richards, P. P. Saviotti, & V. Walsh (Eds.), Technological Collaboration: The Dynamics of Cooperation in Industrial Innovation (pp. 98-118). Cheltenham, UK: Edward Elgar.

### 2. Emerging Global Issues

*Lecture:* Competition and Collaboration in Global Economy
*Discussions:* Challenges of Inter-organizational Collaboration
*Readings:*
Somerville, I., & Mroz, J. E. (1997). New Competencies for a New World. In F. Hesselbein, M. Goldsmith, & R. Beckhard (Eds.), The Organization of the Future (pp. 65-78). San Frasncisco: Jossey-Bass Publishers.

Dodgson, M. (1993). Why Collaborate?, Technological Collaboration in Industry: Strategy, Policy, and Internationalization in Innovation (pp. 25-40). London: Routledge.

Hamel, G., Doz, Y. L., & Prahalad, C. K. (1989). Collaborate with your Competitors and Win. Harvard Business Review (January-February), 133-139.

Kodama, F. (1992). Technology Fusion and The New R&D. Harvard Business Review (July-August), 70-78.

Hagedoorn, J. (1993). Understanding the Rationale of Strategic Technology Partnering: Interorganizational Modes of Cooperation and Sectoral Differences. Strategic Management Journal, 14, 371-384.

Steele, L. W. (1990). Managing Joint International Development. Research-Technology Management, 33(July-August), 16-26.

Kanter, R. M. (1997). Collaborative Advantage: The Art of Alliances, Rosabeth Moss Kanter on the Frontiers of Management (pp. 224-246). Boston: Harvard Business School Press.

Westney, D. E. (1997). Managing R&D in a Globalizing Economy: New Challenges. In D. F. Simon (Ed.), Techno-Security in an Age of Globalization (pp. 88-106). Armonk: M.E. Sharpe.

**3. Key Issues in Managing Innovation**
*Lecture:* Managing Innovation
*Discussions:* Major Challenges of Managing Innovation
*Readings:*
Van de Ven, A.H. (1986). Central Problems in the Management of Innovation. Management Sciences, 32(5), 103-122.

Drucker, P. (1985). The Discipline of Innovation. Harvard Business Review (May-June), 67-72.

von Hippel, E. (1988). Overview, The Sources of Innovation (pp. 3-10). New York: Oxford University Press.

Leonard-Barton, D. (1995). Importing and Absorbing Technological Knowledge from Outside of the Firm, Wellsprings of Knowledge. Building and Sustaining the Sources of Innovation (pp. 135-176). Boston: Harvard Business School Press.

Tidd, J., Bessant, J., & Pavitt, K. (1997). Learning Through Alliances, Managing Innovation:Integrating Technological, Market and Organizational Change (pp. 197-238). New York: John Wiley & Sons.

**4. Collaboration: Partner Selection, Building Trust, and Knowledge Creation**
*Lecture:* Selecting Partner, Building Trust, and Creating Knowledge
*Discussions:* Challenges of inter-organizational collaboration for innovation
*Readings:*
Laage-Hellman, J. (1997). Selection of Partner, Business Network in Japan: Supplier-Customer Interaction in Product Development (pp. 109-118). London: Routledge.

Dodgson, M. (1993). Learning, Trust, and Technological Collaboration. Human Relations, 46(1), 77-93.

Nonaka, I., & Takeuchi, H. (1995). Managerial and Theoritical Implications, The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation (pp. 224-246). New York: Oxford University Press.

**5. Collaboration: Communication and Negotiation**
*Lecture:* Communication, Negotiation, and Cross-cultural Issues
*Discussions:* Challenges of inter-organizational collaboration for innovation
*Readings:*
Nonaka, I., & Konno, N. (1998). The Concept of "Ba": Emerging Foundation of Knowledge Creation. California Management Reivew, 40(3), 40-54.

Tushman, M. L. (1988). Managing Communication Network in R&D Laboratories. In M. L. Tushman & W. L. Moore (Eds.), Readings in the Management of Innovation (pp. 261-274). Cambridge: Ballinger Publishing Company.

Steward, F., & Conway, S. (1996). Informal Networks in the Origination of Successful Innovations. In R. Coombs, A. Richards, P. P. Saviotti, & V. Walsh (Eds.), Technological Collaboration: The Dynamics of Cooperation in Industrial Innovation (pp. 201-221). Cheltenham (UK): Edward Elgar.

Tung, R. (1996). Negotiating with East Asians. In P. N. Ghauri & J. C. Usunier (Eds.), International Business Negotiations (pp. 369-381). Oxford: Elsvier Science Ltd.

**6. Collaboration: Decision Making**
*Lecture:* Decision Making
*Discussions:* Challenges of Collaborative R&D Decision Making
*Readings:*
Millson, M. R., Raj, S. P., & Wilemon, D. (1996). Strategic Partnership for Developing New Products. Research Technology Management, 39(3), 41-49.

Chen, S. H. (1997). "Decision-Making in Research and Development Collaboration." Research Policy 26: 121-135.

Ouchi, W. J., & Bolton, M. K. (1988). The Logic of Joint Research and Development. California Management Review, 30(3), 9-33.

Gibson, D. V., & Rogers, E. M. (1994). Lessons Learned, R&D Collaboration on Trial (pp. 541-553). Boston: Harvard Business School Press.

**7. Collaboration: 'Individual' Issues**
*Lecture:* 'Champions of Collaboration'
*Discussions:* Implications of 'champions' concept in collaborative R&D
*Readings:*
Schon, D. A. (1963). Champions for Radical New Inventions. Harvard Business Review, 41(March-April), 77-86.

Chakrabarti, A. K. (1974). The Role of Champion in Product Innovation. California Management Review, 18(2), 58-62.

Allen, T. J. (1977). The Technological Gatekeeper, Managing the Flow of Technology: Technology Transfer and the Dissemination of Technological Information within the R&D Organization (pp. 141-180). Cambridge: MIT Press.

Maidique, M. A. (1980). Entrepreneurship, Champions, and Technological Innovation. Sloan Management Review (Winter), 59-76.

Howell, J. M., & Higgins, C. A. (1990). Champions of Technological Innovation. Administrative Science Quarterly, 35, 317-341.

Yamanouchi, T. (1989). Breakthrough: The Development of the Canon Personal Copier. Long Range Planning, 22(5), 11-21.

Rogers, E. M. (1994). Innovation Champions, Diffusion of Innovations (pp. 398-399). New York: The Free Press.

Beatty, C. A., & Gordon, J. R. M. (1991). Preaching the Gospel: The Evangelists of New Technology. California Management Review, 4, 73-94.

Kanter, R. M. (1991). Change-master Skills: What It Takes to Be Creative. In J. Henry & D. Walker (Eds.), Managing Innovation (pp. 54-61). London: SAGE Publications.

Bruce, M., Leverick, F., & Littler, D. (1995). A Management Framework for Collaborative Product Development. In M. Bruce & W. G. Biemans (Eds.), Product Development: Meeting the Challenge of the Design-Marketing Interface (pp. 161-180). Chichester: John Wiley & Sons.

Nadler, D. A., & Nadler, M. B. (1998). Finding the Right People, Champions of Change (pp. 229-248). San Francisco: Jossey-Bass Publishers.

**8. Collaboration: 'Team' Issues**
*Lecture:* Teams in Collaborative R&D
*Discussions:* Challenges of Team Performance
*Readings:*
Katz, R. (1994). Managing High Performance R&D Teams. Working Paper #87-93, MIT, Cambridge.

Taylor, G. L., Snyder, L. J., Dahnke, K. P., & Kuether, G. (1995). Self-Directed R&D Teams: What Makes Them Effective? Research Technology Management, 38(6), 19-23.

Clark, K. B., & Wheelwright, S. C. (1992). Organizing and Leading "Heavyweight" Development Teams. California Management Review(Spring),9-28.

**9. Collaboration: 'Organizational' Issues**
*Lecture:* Organization and Collaborative Innovation
*Discussions:* Challenges of Designing Organization for Collaborative Innovation
*Readings:*
Kanter, R. M. (1988). When a Thousand Flowers Bloom: Structural, Collective, and Social Conditions for Innovation in Organization. Research in Organizational Behavior, 10, 169-211.

Kotabe, M. (1992). New Product Development: The Japanese Model, Global Sourcing Strategy: R&D, Manufacturing, and Marketing Interfaces (pp. 135-149). New York: Quorum Books.

Galbraith, J. R. (1982). Designing the Innovating Organization. Organizational Dynamics (Winter), 5-25.

Quinn, J. B. (1992). Managing the "Intelligent Enterprise", Intelligent Enterprise: A Knowledge and Service Based Paradigm for Industry (pp. 373-414). New York: The Free Press.

**10. Review**
Collaboration in Canadian & Japanese Industry/Challenges of Managing Innovation/Individual, Team, and Organizational issues in collaborative R&D/'Champions' concept in innovation research and its implications in inter-organizational R&D collaboration