

**Co-operation and Coordination in the Co-operative Retailing System:
Essays on Economic and Identity Strategies**

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by

Florentina Nicoleta Uzea

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ABSTRACT

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Supervisor: Dr. Murray E. Fulton

This thesis, which consists of three self-contained essays, examines, both theoretically and empirically, some of the economic and identity strategies and mechanisms that federated co-operatives, in particular, and strategic alliances, in general, can use to achieve co-operation and coordination. To accomplish this objective, the thesis uses a combination of industrial organization and game theory concepts from economics, insights from social and cognitive psychology, and evidence from in-depth interviews with decision-makers in the Co-operative Retailing System (CRS) – an association of 264 independent Western Canadian retail co-operatives and their wholesaler, Federated Co-operatives Ltd. (FCL).

Essay One combines a case study of the CRS with an examination, in a game-theoretic framework, of the co-operation and coordination problems arising among firms in alliances and the potential solutions to these problems suggested in the economics and business strategy literatures. One of the contributions of this essay is to provide examples of the mechanisms that can be used to implement these theoretical solutions in a business setting – i.e., the essay identifies practical ways for alliances to alter partner firms' payoffs, to provide private rewards, to monitor behaviour, to establish long term goals among partners, to build high group identification within the alliance, and to focus partners' expectations on the efficient outcomes. Another contribution of this essay is to identify some of the second-order co-operation problems that arise in strategic alliances – e.g., lack of incentives by alliance partners to contribute resources that are necessary to develop alliance management mechanisms – and to offer examples of the strategies that can be used to deal with these problems.

Essay Two draws upon social identity theory and develops an economic model of behaviour to show how the core firm in a strategic network can promote effective co-operation among network members by inducing them to identify with the network. In addition, the essay offers

empirical evidence from the CRS that identity has successfully been used, together with economic mechanisms, to foster co-operation among member retails, and provides examples of the most important mechanisms that FCL, as the core firm in the CRS, has used to manage the identity of the retails. More generally, by incorporating the psychology (and sociology) of identity into an economic model of behaviour, Essay Two contributes to an emerging view that non-economic (behavioural) factors are complementary to the economic ones in the management of strategic partnerships.

Essay Three considers the collective action problems that arise in co-operatives when it comes to financing growth and identifies the conditions under which retained patronage can be an effective way for co-operatives to raise growth capital. The essay develops a game-theoretic model to examine the trade-off between the share of patronage refunds a co-operative wholesaler pays to member retails in cash and the share of patronage refunds it retains and invests, so as to provide retails with enough short-run benefits to encourage them to patronize their organization, while still retaining resources to invest in long-term growth. Analytical results show that when there are increasing returns in patronizing the co-operative wholesaler, retails' decisions to patronize their organization are complementary strategies and, as a result, multiple equilibria are possible. Some of these equilibria are ones with high patronage and high investment, while others are characterized by low patronage and low investment. Retails' expectations about the actions of their counterparts are critical in determining the prevailing equilibrium. The analysis also shows that the existence of the horizon problem further constraints the ability of the wholesaler to raise growth capital. Taken together, these results suggest that the retention of patronage refunds can be an effective way for the co-operative wholesaler to raise growth capital, provided it acts to focus retails' expectations on the 'good' equilibrium and to mitigate the horizon problem.

By examining the strategies and mechanisms that the CRS has used to achieve co-operation and coordination, and in so doing illustrating the mechanisms that firms can use to manage partner opportunism and prevent coordination failure, the thesis contributes to the alliance management literature. Firms today are increasingly forming strategic alliances with suppliers, buyers, and even competitors in order to achieve sustainable competitive advantage. However, despite their increasing popularity and value-creation potential, alliances more often fail than succeed, with

alliance failure often attributed to opportunistic (non-co-operative) behaviour by one or more of the partners and to coordination failure. As a result, it is important to identify strategies and mechanisms that alliance partners can use to achieve co-operation and coordination, and thus realize the benefits from their association.

The thesis also contributes to the co-operative literature by shedding light on the age-old debate on whether federated co-operatives need to be centralized to ensure efficiency. In particular, the thesis shows that federated co-operatives can be efficient, provided they address the co-operation and coordination problems that arise among their members, and provides examples of the mechanisms that federated co-operatives can use to achieve co-operation and coordination. In addition, the thesis offers the first analytical treatment of how the horizon problem influences investment decisions in co-operatives.

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Contents

PERMISSION TO USE	i
ABSTRACT	ii
ACKNOWLEDGEMENTS	v
List of Tables	ix
List of Figures	x
1 Introduction	1
References	7
2 The Co-operative Retailing System – An Overview	9
2.1 Current Structure	9
2.2 History	11
2.2.1 The Formation of the Co-operative Retailing System	11
2.2.2 The Financial Crisis of the Early 1980s	13
2.2.3 Federated Co-operatives Ltd.’s Strategic Leadership	15
2.2.4 The Financial Crisis of Calgary Co-op	20
2.3 A Strong Co-operative Retailing System	21
References	23
3 Essay One: Mechanisms for Successful Alliance Management	28
3.1 Introduction	28
3.2 Co-operation and Coordination in Strategic Alliances	31
3.2.1 Co-operation and Coordination Problems	31
3.2.2 Potential Solutions	35

3.2.2.1	Solutions to the Co-operation Problem	35
3.2.2.2	Solutions to the Coordination Problem	40
3.3	Co-operation and Coordination in the Co-operative Retailing System	42
3.3.1	Research Method	42
3.3.2	Co-operation Problems in the Co-operative Retailing System	44
3.3.3	Coordination Problems in the Co-operative Retailing System	46
3.3.4	Achieving Co-operation and Coordination in the Co-operative Retailing System	48
3.3.4.1	Strategies for Achieving Co-operation	49
3.3.4.2	Strategies for Achieving Coordination	60
3.4	Concluding Discussion	64
	References	67
	Appendices	74
4	Essay Two: Identity and Strategic Network Management	80
4.1	Introduction	80
4.2	Identification and Co-operation	82
4.2.1	The Nature of Co-operation	83
4.2.2	Identity and Identification at Individual and Group Level	84
4.2.3	Identity and Identification at the Inter-Organizational Level	86
4.2.4	Identity as a Strategic Network Management Tool	88
4.3	Theoretical Model	89
4.3.1	Analytical Solution	91
4.3.1.1	Stage 2 – The Member’s Choice Between Co-operation and Defection	92
4.3.1.2	Stage 1 – The Optimum Intensity of Identity Management	92
4.4	Identification and Co-operation in the Co-operative Retailing System	94
4.4.1	Opportunism in the Co-operative Retailing System	95
4.4.2	Management of Opportunism	97
4.4.2.1	Economic Mechanisms	98
4.4.2.2	Identity Mechanisms	99

4.5 Conclusion	105
References	107
5 Essay Three: Retained Patronage, Increasing Returns and Member Patronage	114
5.1 Introduction	114
5.2 The Model	117
5.3 Discussion and Conclusion	127
References	129
6 Summary and Conclusions	135
6.1 Main Findings and Implications for Strategy	135
6.2 Ideas for Future Research	137
References	140

List of Tables

3.1	Payoffs in a Prisoners' Dilemma Situation	33
3.2	Payoffs in a Coordination (Assurance) Game Situation	34
3.3	Mechanisms for Achieving Co-operation in the Co-operative Retailing System . .	50
3.4	Mechanisms for Achieving Co-operation in the Co-operative Retailing System (Continued)	51
3.5	Mechanisms for Achieving Coordination in the Co-operative Retailing System . .	61
4.1	Network Members' Material, Identity, and Total Payoffs	91

List of Figures

2.1	Distribution of Patronage Allocation Between Cash and Equity Over the 1976-2009 Period (2009 Constant Dollars)	24
2.2	Evolution of the Share of Cash Patronage Refunds in Total Patronage Allocation Over the 1976-2009 Period	25
2.3	Contribution of Petroleum Operations to Federated Co-operatives Ltd.'s Sales and Net Profits, 1976-2009	26
2.4	Evolution of Federated Co-operatives Ltd.'s Sales and Net Profits Over the 1976-2009 Period (2009 Constant Dollars)	27
3.1	Evolution of Federated Co-operatives Ltd.'s Sales and Net Profits, 1976-2009 (2009 Constant Dollars)	79
4.1	Members' Decisions	112
4.2	Determination of the Optimal Level of Identity Management	113
5.1	Retails' Decisions in Stage 3	132
5.2	Minimum Number of Member Patrons in Stage 1	133
5.3	Retails' Decisions in Stage 1	134

Chapter 1

Introduction

Collective action problems are ubiquitous phenomena. They arise everywhere from inter-personal relationships – e.g., students failing to do their fair share of the work on a group project (Aggarwal and O’Brien, 2008; Strong and Anderson, 1990) or employees not performing up to their potential when working in team settings (George, 1992; Liden et al., 2004) – to relationships among firms – e.g., cartel members undercutting a collusively set price (Slade, 1990) or learning alliance partners over-protecting their skills and blocking the information and knowledge exchange necessary for collective gains (Hamel, 1991; Khanna, Gulati, and Nohria, 1998) – and all the way to relationships among nations – e.g., national governments failing to coordinate stimulus packages in response to the global economic crisis (Münchau, 2009) or countries shirking the responsibility of reducing carbon emissions to other countries (Cole, 2008).

All these examples of collective action problems share some common features. First, each example involves a group of actors who share a common interest. Second, the actors are mutually interdependent – i.e., when one actor does something, all other actors are affected by that action. As a result, each actor must take into account the choices of others when assessing personal choices. Third, the joint benefits that players obtain when they act independently are less than could have been achieved if they coordinated their actions.

While there are many problems that may hinder coordination of efforts by two or more interdependent actors working toward a common goal (see Holzinger (2004) for a typology of collective action problems), this thesis focuses on the free-rider problem and coordination failure. The free-rider problem defines a situation in which each self-interested actor in a group

has an incentive not to contribute to the group effort and simply “free-ride” off the benefits provided by the others (Hardin, 1982; Olson, 1965). Olson (1965) argues that the very fact that a goal is common to a group means that no one in the group can feasibly be excluded from the benefit brought about by its achievement. This *de facto* infeasibility of exclusion from the collectively provided benefit usually eliminates any direct incentive from individual group members to contribute to the collective good. As a result, the good in question will either not be provided at all, or be provided to a smaller extent than what would be efficient for the group as a whole.

Authors such as Heckathorn (1996) and Runge (1984) have shown that collective action also confronts problems of coordination. Specifically, when there are increasing returns in the production function of the collective good, each individual’s decision to contribute to the collective good makes it more attractive for others to contribute. However, individuals do not want to contribute unless others will do the same. Thus, individual decisions are conditioned on the expected decisions of others and the collective action problem is one of failure to coordinate expectations on the co-operative solution – i.e., where assurance is insufficient to create confidence that others contribute to the collective good, collective action fails.

The general tenor of the collective action theory is that collective action problems are difficult, if not impossible, to solve, especially in large groups (e.g., Hardin, 1982; Olson, 1965). Yet, empirical evidence (e.g., Bromley et al., 1992; Ostrom, 1990, 2000) demonstrates that collective action problems *can* be overcome. The on-going challenge is to identify practical ways to discourage opportunistic behaviour and to prevent coordination failure in collective action.

The purpose of this thesis is to draw upon empirical evidence from the Co-operative Retailing System – an association of 264 Western Canadian independent retail co-operatives that formed their own wholesaler, Federated Co-operatives Ltd. (FCL), to strengthen their bargaining position relative to manufacturers and to achieve economies of scale – to examine the co-operation and coordination problems facing strategic alliances in general and federated co-operatives (i.e., alliances of co-operative business firms) in particular and, more importantly, to identify strategies and mechanisms that can be used to deal with these problems. The CRS, given its federated structure in which retail co-operatives are independent from each other and from FCL, is perhaps

one of the best laboratories for the study of the co-operation and coordination problems arising in alliances. The local ownership and control of the retailers reduces their incentive to act co-operatively and to coordinate the actions. At the same time, the fact that retailers are autonomous means that the CRS does not have access to the control instruments that characterize centralized structures and therefore has had to find alternative ways to promote co-operation and coordination among its members.

This thesis contains three essays that attempt to answer the following questions: (1) what are some of the business mechanisms that alliance partners can use to achieve co-operation and coordination, and thus realize the benefits from their association; (2) how does alliance partners' identity influence their decision-making and how can identity be used to deter opportunism in alliances; and (3) what are the specific collective action problems facing federated co-operatives when it comes to financing alliance growth and what are the conditions under which the use of retained patronage refunds can be effective in addressing these problems? Each one of these chapters is presented as a self-contained essay.

By examining the strategies and mechanisms that the CRS has used to achieve co-operation and coordination, and in so doing illustrating the mechanisms that firms can use to manage partner opportunism and prevent coordination failure, the thesis contributes to the alliance management literature. Firms today are increasingly forming strategic alliances with suppliers, buyers, and even competitors in order to achieve sustainable competitive advantage (Hoskisson et al., 2008). However, despite their increasing popularity and value-creation potential, alliances more often fail than succeed (i.e., alliance failure rate has been reported at or higher than 50 percent by Arend (2009), Kale, Dyer, and Singh (2002), and Sammer (2006), among others), with alliance failure often attributed to opportunistic (non-co-operative) behaviour by one or more of the partners (e.g., Park and Ungson, 2001; Parkhe, 1993; Zeng and Chen, 2003) and to coordination failure (e.g., Gulati, Lawrence, and Puranam, 2005; Park and Ungson, 2001). As a result, it is important to identify strategies and mechanisms that alliance partners can use to achieve co-operation and coordination, and thus realize the benefits from their association.

The thesis also contributes to the co-operative literature by shedding light on the age-old debate on whether federated co-operatives need to be centralized to ensure efficiency (such a

debate was also present in the CRS in the 1960s and 1970s). In particular, the thesis shows that federated co-operatives can be efficient, provided they address the co-operation and coordination problems that arise among their members, and provides examples of the mechanisms that federated co-operatives can use to achieve co-operation and coordination. In addition, the thesis offers the first analytical treatment of how the horizon problem influences investment decisions in co-operatives.

The thesis is structured as follows. It starts with a descriptive chapter that provides an overview of the CRS including: current structure, origins and development (including the financial crisis that the CRS experienced in the early 1980s as a result of opportunistic behaviour by the retailers, and the strategies and mechanisms that the CRS has used to promote effective co-operation and coordination among its members), and the strong economic performance of the CRS today.

Essay One, titled “Mechanisms for Successful Alliance Management”, uses a game theoretic framework to describe the co-operation and coordination problems that arise among firms in strategic alliances and reviews the potential solutions to these problems suggested in the business and economics literatures. With this conceptual structure as background, Essay One presents a case study of the CRS, focussing on the co-operation and coordination problems that arise among members of the CRS, and the business mechanisms that the system has deliberately designed and implemented to address these problems. While much of the published research considers the factors that may enhance co-operation and coordination in inter-firm relationships, the literature is short on the actual procedures that firms can use. One of the contributions of Essay One is to provide examples of the mechanisms that can be used to implement these theoretical solutions in a business setting. For instance, the essay shows how firms can monitor partners’ behaviour by providing them with support services, increase communication by using marketing programs, or reward co-operative partners by using an effective succession planning system.

Consistent with previous results, Essay One shows that firms can stimulate their business partners to behave co-operatively by inducing them to identify with the group. The questions that arise are: how does partners’ identity influence their decision-making and how can identity be used to deter opportunism in alliances? Essay Two, titled “Identity and Strategic Network Man-

agement”, incorporates insights from social and cognitive psychology into a standard economic model to answer these questions.

Following social identification theory, Essay Two argues that firms’ identification with a strategic group leads to internalization of group norms. This normative frame of reference then affects behaviour in that any norm-breaking act will be accompanied by an identity cost. Thus, when the group develops co-operative norms, identification with the group creates an identity cost from defection that reduces the payoffs associated with defection and, implicitly, firms’ incentive to defect. Building on this idea, Essay Two develops a two-stage economic model of behaviour to show how the core firm in a strategic network can use identity to deter opportunism by network members. In the first stage, the core firm acts to establish co-operation among network members as a key aspect of the network identity and to foster members’ identification with the network. In the second stage, network members choose between co-operation and defection based on both material and identity payoffs associated with each strategy. An important feature of the model is that firms are assumed to be heterogeneous with respect to their propensity to identify with the network and, implicitly, their identity cost from defection. This heterogeneity, in turn, creates the potential for opportunism to be managed. The essay also includes a comprehensive description of the most important mechanisms that FCL, as the core firm in the CRS, has used to foster retailers’ identification with the system, including: the succession planning system, group training programs, marketing programs, subsidy programs, a wide range of meetings, and newsletters and bulletins.

Essay Three, titled “Retained Patronage, Increasing Returns and Member Patronage”, is purely theoretical and considers a group of retail co-operatives that have formed their own co-operative wholesaler to strengthen their bargaining position relative to suppliers and to achieve economies of scale. However, like each and every co-operative member, any particular co-operative lacks the incentive to invest in the growth of their wholesaler due to free-rider, horizon, and portfolio problems. While the retention of patronage refunds by the co-operative wholesaler could be used to mitigate some of these investment problems, it has the potential to create other problems – i.e., by depriving retail co-operatives of an immediate benefit in the form of

cash patronage payment, retained patronage refunds may affect retailers' desire to patronize their co-operative wholesaler and provide the funds for growth and expansion.

This essay develops a game theoretical model to analyze the interaction between member patronage and wholesaler investment. An important assumption of the analysis in this essay is that there are increasing returns to scale in patronizing the co-operative wholesaler, which leads to the retailers' decisions to do business with their wholesaler to be complementary strategies. This, in turn, leads to multiple equilibria, some of which exhibit high patronage and high investment, while others are characterized by low patronage and low investment. Retailers' expectations about the actions of their counterparts are shown to play a critical role in determining the prevailing equilibrium. Analytical results suggest that the retention of patronage refunds can be an effective way for co-operatives to raise growth capital, provided co-operatives act to coordinate members' expectations on the 'good' equilibrium and to mitigate the horizon problem.

A summary and conclusions chapter constitutes the last part of the thesis. The chapter offers a review of the thesis main results, discusses the managerial implications of this research, and presents ideas for future research.

References

- Aggarwal, P. and C. O'Brien (2008), Social Loafing on Group Projects: Structural Antecedents and Effect on Student Satisfaction, *Journal of Marketing Education*, 30(3): 255-264.
- Arend, R.J. (2009), Reputation for Cooperation: Contingent Benefits in Alliance Activity, *Strategic Management Journal*, 30: 371-385.
- Bromley, D.W., D. Feeny, M.A. McKean, P. Peters, J.L. Gilles, R.J. Oakerson, C.F. Runge, and J.T. Thomson (1992), *Making the Commons Work: Theory, Practice, and Policy*, San Francisco: Institute for Contemporary Studies Press.
- Cole, D.H. (2008), Climate Change and Collective Action, available online at SSRN: <http://ssrn.com/abstract=1069906>.
- George, J.M. (1992), Extrinsic and Intrinsic Origins of Perceived Social Loafing in Organizations, *Academy of Management Journal*, 35:191-202.
- Gulati, R., P.R. Lawrence, and P. Puranam (2005), Adaptation in Vertical Relationships: Beyond Incentive Conflict, *Strategic Management Journal*, 26: 415-440.
- Hamel, G. (1991), Competition for Competence and Inter-Partner Learning Within International Strategic Alliances, *Strategic Management Journal*, 12(Summer Special Issue): 83-103.
- Hardin, R. (1982), *Collective Action*, Baltimore, Maryland: The Johns Hopkins University Press.
- Heckathorn, D. (1996), The Dynamics and Dilemmas of Collective Action, *American Sociological Review*, 61(2): 250-277.
- Holzinger, K. (2004), The Problems of Collective Action: A New Approach, Max Planck Institute for Research on Collective Goods Preprint No. 2003/2.
- Hoskisson, R.E., M.A. Hitt, R.D. Ireland, and J.S. Harrison (2008), *Competing for Advantage*, Second Edition, Mason, OH: Thomson South-Western.
- Kale, P., H. Dyer, and H. Singh (2002), Alliance Capability, Stock Market Response, and Long-Term Alliance Success: The Role of the Alliance Function, *Strategic Management Journal*, 23(8): 747-767.
- Khanna, T., R. Gulati, and N. Nohria (1998), The Dynamics of Learning Alliances: Competition, Co-operation, and Relative Scope, *Strategic Management Journal*, 19(3): 193-210.

- Liden, R.C., S.J. Wayne, R.A. Jaworski, and N. Bennett (2004), Social Loafing: A Field Investigation, *Journal of Management*, 30(2): 285-304.
- Münchau, W. (2009), Why This Crisis Is a Collective Action Problem, *Financial Times*, March 16, available online at <http://www.eurointelligence.com/Article3.1018+M56b7df19b71.0.html>.
- Olson, M., Jr. (1965), *The Logic of Collective Action: Public Goods and the Theory of Groups*, Cambridge, Massachusetts: Harvard University Press.
- Ostrom, E. (1990), *Governing the Commons: The Evolution of Institutions for Collective Action*, New York: Cambridge University Press.
- Ostrom, E. (2000), Collective Action and the Evolution of Social Norms, *Journal of Economic Perspectives*, 14(3): 137-158.
- Park, S.H. and G.R. Ungson (2001), Inter-firm Rivalry and Managerial Complexity: A Conceptual Framework of Alliance Failure, *Organization Science*, 12(1): 37-53.
- Parkhe, A. (1993), Strategic Alliance Structuring: A Game Theoretic and Transaction Cost Examination of Interfirm Cooperation, *Academy of Management Journal*, 36: 794-829.
- Runge, C.F. (1984), Institutions and the Free Rider: The Assurance Problem in Collective Action, *The Journal of Politics*, 46: 154-181.
- Sammer, J. (2006), Alliances: How To Get Desired Outcomes, *Business Finance*, 12(4): 38-40.
- Slade, M.E. (1990), Cheating on Collusive Agreements, *International Journal of Industrial Organization*, 8: 519-543.
- Strong, J.T. and R.E. Anderson (1990), Free Riding in Group Projects: Control Mechanisms and Preliminary Data, *Journal of Marketing Education*, 12: 61-67.
- Zeng, M. and X.P. Chen (2003), Achieving Co-operation in Multiparty Alliances: A Social Dilemma Approach to Partnership Management, *The Academy of Management Review*, 29(4): 587-605.

Chapter 2

The Co-operative Retailing System – An Overview

The purpose of this chapter is to provide an overview of the Co-operative Retailing System (CRS), the organization that constitutes the focus of Essays One and Two and has created the potential for Essay Three. Specifically, the chapter presents the current structure of the CRS, the origins and development of the CRS (including the financial crisis that the CRS experienced in the early 1980s as a result of opportunistic behaviour by the retailers, and the strategies and mechanisms that the CRS has used to promote effective co-operation and coordination among its members), and the strong economic performance of the CRS today.

2.1 Current Structure

The CRS is a unique, multi-billion dollar organization based on the fundamental principles of co-operation. It is comprised of a network of approximately 264 autonomous retail co-operatives across Western Canada that own and operate their wholesaler, Federated Co-operatives Ltd. (FCL). These retailers, in turn, are owned by more than 1,300,000 individual co-operative members.

Retail co-operatives vary in size from Calgary Co-op (Calgary, Alberta) – the largest retail co-operative in the CRS, with annual sales of just over \$1 billion in 2009 (Calgary Co-operative Association Ltd., 2010) – to co-operatives like Red River Co-op (Winnipeg, Manitoba) and Saskatoon Co-op (Saskatoon, Saskatchewan), which generated \$362 million (Red River Co-operative Ltd., 2010) and \$266.6 million (Saskatoon Co-operative Association Ltd.), respectively, in annual sales in 2009, and all the way to co-operatives like Broadview Co-op (Broadview, Saskatchewan) and Elm Creek Co-op (Elm Creek, Manitoba), which made \$16.7 million (The

Grenfell Sun, 2010) and \$8.4 million (The Valley Leader, 2010), respectively, in sales in the same year.

FCL provides central marketing (i.e., manufacturing, wholesaling, and distribution) and administrative services to its member retails. Specifically, FCL supplies retail co-operatives with a variety of products including food, petroleum, crop supplies, livestock feed, and general merchandise such as hardware, building products, and family fashions. Of these products, FCL manufactures petroleum, feed, and lumber and plywood products. As well, FCL provides member retails with a wide range of support services including recruitment, industrial relations and training, retail accounting, external audit services, advertising and printing, communications and legal services, member relations, and retail facilities project planning and construction.

To serve retail co-operatives, FCL operates a home office in Saskatoon and five regional offices in Winnipeg, Regina, Saskatoon, Calgary, and Edmonton.¹ The regional teams comprise a region manager, who reports to the Retail Operations Vice-President of FCL, commodity support people and retail sales coordinators in all the different commodities, and retail advisors. The role of the commodity support people is to carry forward the marketing programs that FCL develops for the retails, explain them, and make sure that retails understand and execute them properly. To achieve this, commodity support people organize commodity clinics constantly throughout the year to help retails get hands-on experience with the programs (e.g., in food, a produce clinic that shows the staff how to go about running a good produce operation).

The role of the retail advisors is to ensure that retails operate efficiently. For instance, retail advisors review retails' financial information (e.g., cost per employee-hour in the food department) and give them ideas and suggestions as to how they can improve. Retail advisors also play a monitoring role and contribute to the creation of a shared identity between FCL and the retails.

In addition, FCL operates distribution centers in Winnipeg, Saskatoon, Calgary, and Edmonton. FCL also owns and operates a sawmill and plywood plant in Canoe, British Columbia, as well as seven feed plants and a number of corporate food stores and petroleum operations throughout Western Canada. As well, FCL has two wholly-owned subsidiaries – Consumers' Co-

¹The Calgary and Edmonton regional offices look after British Columbia as well.

operative Refineries Ltd. (CCRL), a petroleum refining/heavy oil upgrader facility in Regina and The Grocery People Ltd. (TGP), a grocery wholesaler and fresh produce supplier in Edmonton.

As a second-tier co-operative, FCL is controlled through a democratic decision-making process by the 264 retail co-operatives it serves. FCL's member retails are divided into 15 electoral districts, with each district entitled to one representative on the FCL's Board of Directors. Retail co-operatives are represented at FCL's Annual Meeting through the appointment of delegates (retails are eligible for up to six delegates, depending on their annual purchases from FCL). Through this representational system, member retails can influence the way their organization is run, and the type of goods and services offered.

2.2 History

While a successful organization today, the CRS has gone through some very difficult times in its history. The history of the CRS was described by Fairbairn (1989, 2003) in two books – the first book illustrates the origins and development of the CRS up to the 1980s, while the second book examines the 1980s onward.

2.2.1 The Formation of the Co-operative Retailing System

As Fairbairn (1989) outlines, the formation of the CRS goes back to the early 1900s when retail co-operatives started to form in Western Canada. One driving force for the formation of retail co-operatives was the introduction of power machinery in agriculture, which meant a need for equipment, parts, service, fuel, and lubricants. Farmers' fixed costs went up, while their incomes, derived from fluctuating world markets, remained variable. Under these conditions, farmers saw co-operative buying of the inputs they needed for their farms as a way to mass their purchasing power to keep prices down and alleviate their economic dependency. Another driving force was the advent of the chain store and concentrated industrial concerns. Consumers saw these concentrations of economic power as threats to their own independence, for if a few big concerns drove the many small shopkeepers out of business, consumers would be exposed to monopoly pricing. Consumer co-operation was thus seen as a way to ensure that consumers paid a 'fair' price for the goods and services they needed. Moreover, retail co-operatives often created a new service in a location where no services had been offered before.

In 1927-1928, locally-owned retail co-operatives in Western Canada came together to form provincial wholesalers (i.e., the Manitoba Co-operative Wholesale Ltd., the Saskatchewan Co-operative Wholesale Society, the Alberta Co-operative Wholesale Association, and the British Columbia Co-operative Wholesale Society) in order to expand their buying power. Private suppliers often refused to sell goods to retail co-operatives. By forming their own wholesalers and concentrating their volumes, retail co-operatives could overcome this problem and also benefit from price discounts. It is important to note that in those days co-operative wholesalers did not generally have warehouses or inventories of goods. They merely grouped the orders of member co-operatives and placed these combined orders with suppliers, obtaining volume discounts by doing so.

An important episode in the history of the CRS was the development of Consumers' Co-operative Refineries Ltd. (CCRL) – the world's first co-operatively-owned petroleum refinery – at Regina in 1935. The fall in farm prices from 1929 to 1931 put a squeeze on farmers to reduce their input costs, immediately following the mechanization that had occurred in the 1920s. With petroleum the principal item of expenditure, the price of fuels became a crucial concern for farmers and led to the establishment of about ten oil co-operatives in the area around Regina to keep gasoline prices down. However, the concentration that took place in the oil industry between 1931 and 1934 led to higher gasoline prices, which meant that retail margins declined and co-operatives were caught in the squeeze. Moreover, duties on imported gasoline raised in 1933, making American sources uneconomical. Under these circumstances, local co-operatives in the Regina area decided to work together and build their own oil refinery – CCRL – which began production in 1935. The formation of CCRL is important because petroleum became the engine of the CRS, the profitable commodity that powered the system's expansion and sustained it to the present day.

With an 86 percent return on share capital and 10 percent dividends on purchases in its first year of operations, the refinery was a great success, catching the attention of the Saskatchewan Co-operative Wholesale Society (SCWS). Thus, in 1936, the two wholesalers agreed that SCWS would act as a broker for refinery products and would purchase and accumulate stock in CCRL the same as local oil co-operatives did. Following this decision, many oil co-operatives bought

their oil through SCWS and many established retail co-operatives added oil as a commodity and began to sell CCRL products. Over time, SCWS aided the Co-op Refinery in developing a distribution network, while the refinery's significant growth in sales was paralleled by and contributed to the growth in the sales of the SCWS. The two organizations eventually joined in 1944 to create a single and even more powerful organization – Saskatchewan Federated Co-operatives Ltd. (SFCL) – with tremendous sales volume, economies of scale, and reinforcing functions in production and distribution.² With the formation of SFCL, Saskatchewan consumers saw a union of co-operative production and distribution, adding the margins at the production end to those at the distribution end in the savings that could be achieved. The merger between SCWS and the Co-op Refinery also allowed for elimination of duplication, pooling of leadership, and greater coordination with elimination of conflicting policies.

Starting in the 1950s, retail co-operatives in the four Western provinces faced increasing competitive pressure from chain stores that offered consumers not only competitive prices, but also service. To succeed in this competitive environment, retail co-operatives needed facilities and equipment of the most modern design, operated at high efficiency. However, co-operative wholesalers in Manitoba, and particularly in Alberta and British Columbia, did not have the purchasing volume and resources to help co-operatives deal with these changes. As a result, the Manitoba Co-operative Wholesale Ltd. merged with SFCL in 1955 to form Federated Co-operatives Ltd. (FCL) – a more efficient operation with stronger buying power and larger economies of scale that could generate the savings necessary to finance new premises and modernization of existing retail co-operatives. Subsequently, the Alberta Co-operative Wholesale Association and the British Columbia Co-operative Wholesale Society merged with FCL in 1961 and 1970, respectively, and the CRS came into existence.

2.2.2 The Financial Crisis of the Early 1980s

Formation of the CRS meant that retail co-operatives could enjoy stronger bargaining power relative to manufacturers through centralized negotiation, could achieve economies of scale and efficiencies by pooling resources in warehousing, transportation, promotion and other marketing

²SCWS became the parent co-operative and voted its shares in the refinery as a wholly-owned subsidiary, while all CCRL shareholders became SCWS shareholders.

functions, and could talk with a 'louder voice' in the marketplace by leveraging each other's market presence. Association with the CRS also meant that retailers could benefit from stronger bargaining power relative to manufacturers through FCL's membership in larger buying groups such as the Interprovincial Co-operative Ltd. (IPCO) and the United Grocers Inc. (UGI). IPCO is a Canadian procurement and manufacturing co-operative. It coordinates member purchases of animal feed ingredients and protein meals, manufactures crop protection products, and controls the use of the Co-op[®] label across Canada. UGI is an association of Canadian grocery retailers that also includes Overwaitea Foods, Safeway, A. & P., Metro Inc., Colemans Food Centre, and Co-op Atlantic. Apart from negotiating volume rebates for the group with suppliers, UGI also negotiates prices for private label products.

However, these potential benefits did not ensure co-operation among retailers in the CRS. Owned and controlled by local consumers in the community it serves, each retail co-operative is interested in maximizing benefits to its consumer-members. Thus, retailers' autonomy in pursuing individual goals gives each one of them an incentive to behave opportunistically in order to appropriate a larger share of the benefit they collectively generate by working as the CRS. In fact, opportunistic behaviour by the retailers in the late 1970s and early 1980s, along with the recession of the early 1980s, brought the entire system to the brink of collapse in 1982.

Specifically, during the late 1970s and early 1980s, retail co-operatives used to do business with outside suppliers, instead of patronizing FCL, when they received better offers. This opportunistic behaviour negated the economies of scale and countervailing power the CRS could provide if FCL had access to all the business of the retailers. As a result, the total system profits were smaller than what the CRS could generate if retailers operated inside the system.

Also, retail co-operatives often shirked on quality maintenance of the Co-op brand name – e.g., retailers allowed their store quality or their customer service quality to degrade. Due to the collective good nature of the Co-op brand name, each retail co-operative had an incentive to free ride on the efforts of other retailers, and consequently to under-develop and under-maintain the Co-op brand name. This opportunistic behaviour created spillover effects that were experienced by all retail co-operatives in the CRS. The result was that customers lost trust in the Co-op brand

– i.e., they lost trust in the quality of the products and services offered by retail co-operatives in the CRS.

Moreover, retail co-operatives over-expanded through loans that they guaranteed with their shares in FCL. Each retail co-operative believed that if it was to experience financial hardship, then the other retails would bail it out. As a consequence, the retails collectively took on a debt level that could not be supported by the system; the magnitude of this debt almost drove the entire system to bankruptcy in the early 1980s.

The story of the financial crisis that the CRS experienced in the early 1980s was described by Fairbairn (1989, 2003). As Fairbairn outlines, the negative real interest rates and high consumer demand of the 1970s encouraged retail co-operatives to borrow money and build expensive malls, using their shares in FCL as collateral for their loans. Retail long-term debt increased 272 percent over the period from 1974 to 1981. But by the time the malls were built and stocked in the early 1980s, the recession had hit and retails were faced with high interest rates and decreased demand, along with tough competition on the food side from new warehouse-style discount retailers (e.g., Superstore and Save-On-Foods). Retail local savings fell across the system as a whole from \$12.8 million in 1980 to \$1.2 million in 1981 and were heavily negative in 1982, amounting to a loss of \$18.1 million. Since they could not get the sales volume to cover their high-interest-rate loans, retail co-operatives increasingly called for higher cash repayments and more financial assistance from FCL, as well as more loans to be guaranteed by FCL. But the recession also hit the wholesaler, whose net savings dropped almost 80 percent in 1982 as compared to 1981. Thus, FCL's returns to retails fell sharply, with the result that 116 retails – about one quarter of the total system – remained in a net-loss position even after FCL's patronage refund. With more than 60 percent of FCL's shares assigned to retail loans, the system was on the verge of collapse.

2.2.3 Federated Co-operatives Ltd.'s Strategic Leadership

The financial crisis that the CRS experienced in 1982 created an opportunity for FCL to take a leading role in the system. Since the retails had debts, FCL had to be the source of the initiative to respond to the crisis. FCL had an overview of the problems, given its direct ties with each

retail co-operative; it also could not exist in isolation, since without the retails FCL could not make any money.

The crisis action plan that FCL developed had two targets – FCL itself and the retails. Within FCL, the action involved cutting down staff by more than 20%, rolling back salaries, selling nonproductive assets, and taking two production facilities (i.e., a sawmill and a manufactured-homes plant) out of production to save costs, among other measures. These measures were meant not only to ensure that FCL’s financial situation remained strong, but also to set an example to the retails.

At the retail level, because FCL did not have enough money to pull all retails out of their problems, they decided to help those co-operatives that would allow the system as a whole to preserve enough volume and market presence to keep its operations viable, while closing others. However, FCL would not provide the retails with direct financial assistance or any other help unless they adopted FCL’s recommendations, which included: closing inefficient departments; selling assets; reducing costs in every area possible, including layoffs, salary freezes, and rollbacks; controlling inventories and accounts receivable; avoiding all but emergency capital expenditures; and requesting relief from lenders. Also, FCL worked closely with the retails to improve their operations, finances, and human resources. When FCL’s plan led to tangible improvements taking place in the activity of insolvent retails and the system as a whole year by year, FCL gained the trust of the retails and was accepted as the leader of the CRS, despite the fact that retail co-operatives are owners of FCL itself.³

As the leader of the CRS, FCL has used a combination of economic and identity strategies and mechanisms to promote robust co-operation and coordination among retails following the financial crisis of 1982. While the economic strategies have focused on changing the material incentives that member retails have in their commercial operations, the identity strategies have focused on altering the identity costs that members have with the system by altering the relationship features within the CRS.

³It is important to acknowledge that the successful retail co-operatives understood that they needed the volume of insolvent retails and, hence, accepted to take a reduction in earnings from FCL in order to help the latter retails improve their financial situation and thus continue to be part of the CRS.

Perhaps the most important economic mechanism that FCL uses is the patronage refund system, which allows FCL to distribute part of its net savings/profits to member retails in proportion to their patronage. Patronage refunds increase retails' benefits for operating inside the system, hence, providing retails with incentives to co-operate in dealing with their wholesaler – the more retails purchase through FCL, the more economies of scale FCL can achieve, and the more patronage refunds retails can enjoy.

However, only a certain share of the patronage refunds is returned to retails in cash, the rest being allocated to them in the form of additional equity in FCL. Figure 2.1 illustrates the distribution of patronage refunds between cash and equity over the 1976-2009 period, while Figure 2.2 presents the evolution of the share of cash patronage in total patronage allocation over the same period. As Figure 2.2 shows, once the system got back on track in 1985-1986, FCL has increased the share of cash patronage refunds relative to the share of allocated equity. This has attracted more business from the retails and, as a result, more patronage refunds that could be allocated year after year.

Insert Figures 2.1 and 2.2 about here.

Moreover, FCL invests the retained patronage refunds to increase its efficiency and grow the business, and, consequently, to increase future patronage refunds to be allocated to member retails. Some of the most important investments that FCL has made following the financial crisis of the early 1980s were targeted at expanding the petroleum operations, which have been a strength for the CRS – Figure 2.3 depicts the contribution of petroleum operations to FCL's total sales and net savings/profits over the 1976-2009 period.

Insert Figure 2.3 about here.

These investments included a long stream of expansions at the Co-op Refinery and the NewGrade Energy Inc. upgrader. The largest refinery expansion was completed in 2003 and cost the CRS \$400 million (Fairbairn, 2003). The expansion added more than 50% to output (i.e., from 55,000 to 90,000 barrels per day), while also enabling the refinery to take in a wider

range of types of crude oil and to put out products that meet higher environmental standards. Also, in 2008, the FCL/CCRL Board of Directors approved another refinery expansion project, which is scheduled for completion in 2012 and will cost the system \$1.9 billion (Consumers' Co-operative Refineries Ltd.). The project will increase the output of the refinery by 30% (i.e., from 100,000 to 130,000 barrels per day).

The NewGrade Energy Inc. upgrader adjacent to and integrated with the Co-op Refinery in Regina was a 50% partnership between CCRL and the Government of Saskatchewan (Fairbairn, 2003). Its purpose is to upgrade heavy crude oil to a light, sweet crude that can be used by the refinery. CCRL's initial contribution when the upgrader was built between 1982 and 1988 was represented by the infrastructure of the refinery and \$100 million of renovations to the refinery so that it could mate with the new upgrader. In 1993, CCRL contributed another \$120 million toward the debt associated with the upgrader. In 2007, CCRL purchased the Saskatchewan Government's share of the NewGrade Energy Inc. for \$325 million plus dividends on 2006-2007 earnings, becoming the sole owner of the upgrader (Canadian Co-operative Association, 2007).

Another important investment was the purchase of The Grocery People Ltd. (TGP) – an Edmonton-based grocery wholesaler and fresh produce supplier – in 1992. The purchase of TGP was the result of FCL trying to reduce the costs of its distribution system (Fairbairn, 2003). TGP was a co-operative of independent food retailers – owners of small-to-medium-sized food stores across Western Canada joined together to form a wholesaler that handled both regular groceries and perishable produce. After the acquisition of TGP, FCL allowed the company to keep its name, identity, marketing programs, and symbols in order to maintain its strong relationships with the independents and, thus, to maintain their volumes.⁴

Interest in the future potential benefits to be generated by these investments (e.g., new efficiencies from the refinery's larger production volume; extra earnings for the refinery from upgrading heavy crude oil to the light, sweet crude it uses in production; reduced warehousing and distribution costs on grocery and fresh produce as a result of the larger volumes that are

⁴However, FCL and TGP integrated their procurement, information services, accounting, and logistics departments to generate significant cost savings.

handled, and extra earnings from improved fresh produce operations) has provided retailers with incentives to co-operate in patronizing FCL for their petroleum, grocery, and fresh produce purchases, and in preserving and promoting the Co-op brand name, in order to maximize investment performance.

In addition to altering the material incentives that retail co-operatives have in their commercial operations, FCL has also acted to foster a system identity among retailers in order to promote effective co-operation in the CRS. In this respect, FCL has created numerous opportunities for communication among retailers, including: group training programs, commodity clinics, U.S. tours, trade shows, the Executive Management Committee, and a large number of meetings. These communication mechanisms have contributed to the creation of a shared identity among retailers by exposing them to a system-wide perspective, by providing them with an opportunity to socialize and network, and by allowing retailers to discover that they all face similar problems (e.g., they compete against the same competitors). As well, FCL has provided retailers with financial incentives to adopt various marketing programs (e.g., programs regarding store layout, signage and décor, Co-op[®] product programs, the common flyer program, and the unique price management system), which contributed to the creation of a physical identity across the CRS and gave the retailers a sense of being part of a system.

This sense of a shared identity is expected to enhance co-operation among retailers by creating a sense of cohesion that increases the probability system members will take the common interest of the CRS into account when making their own decision. Alternatively, strong identification with the CRS is expected to lead to the coupling of a retailer's identity with the system. This coupling process, in turn, increases the retailer's concern for the success of the CRS – when a retailer thinks of itself as a member of the CRS, it perceives the success of the system as its own success. Through this process, identification with the CRS is expected to lead retailers to work together for their mutual benefit. As another option, identification with the system may increase retailers' awareness of their interdependencies and strengthen their expectations of future interactions. These expectations likely moderate retailers' temptation to defect and encourage co-operation. Finally, it is expected that retailers that identify with the system will incur an identity cost when they do not act according to the perceived system norm – i.e., co-operation with the other system

members. This identity cost will reduce the payoffs associated with defection and, implicitly, the retailers' incentives to defect.

These economic and identity strategies reinforce each other in promoting effective co-operation and coordination among retail co-operatives in the CRS. That is, when retailers receive significant economic benefits from patronizing their wholesaler, and from preserving and promoting the Co-op brand name, they are more likely to operate inside the system and to contribute to the quality maintenance of the Co-op brand. This will improve the profitability of the CRS, hence making it more likely for the retailers to identify with the system as a result of the positive feedback that membership in a successful group has on the retailers' identity and image. At the same time, identification with the CRS is expected to enhance co-operation among retailers in patronizing their wholesaler and in preserving and promoting the Co-op brand name. As a result, the net savings that are generated at the wholesale level will increase, which means that FCL will have access to the resources it needs to encourage additional co-operation and coordination among retailers through the provision of material incentives.

2.2.4 The Financial Crisis of Calgary Co-op

While FCL's strategic leadership has significantly reduced the incidence of opportunism in the CRS following the financial crisis of the early 1980s, it did not eliminate it completely. A case in point is the opportunistic behaviour of Calgary Co-op – the largest retail co-operative in the CRS – in the late 1990s when the co-operative was dealing outside the system for bargains from suppliers, while at the same time claiming funds from internal pools generated by the system's own contracts with suppliers (Fairbairn, 2003). Apart from acting opportunistically, the management team at Calgary Co-op was also making decisions that affected the co-operative's competitive position, including: expansions in inefficient directions, overstaffing with management and overpayment of managers, and restructuring that caused staff turmoil, among others.

As a result, Calgary Co-op's savings fell from \$22.7 million in 1997 to just \$13.8 million in 1998 and then to \$12.5 million in 1999. With \$18 million patronage refunds from FCL in 1998, this means that Calgary Co-op was actually losing money on its local operations. At the same time, long term debt rose to about \$23 million and member equity was beginning to slide. What

is more, market share was eroding. The system's largest co-operative was experiencing a crisis and the Calgary board, who had lost confidence in its entire management team, asked FCL for help.

FCL and the rest of the CRS could not afford for Calgary Co-op to go out of business, given the co-operative's sheer size – Calgary Co-op had at that time a third of the system's total volume. Thus, in December 1998, FCL provided a transition team to guide the co-operative through the restructuring process, which lasted one year. Calgary Co-op's sales and earnings increased from 2000 onwards.

Calgary Co-op's experience has further enhanced co-operation among retails in the CRS, as it demonstrated that even the biggest retail co-operative is not big enough to make it alone, in the long run, in today's competitive environment.

2.3 A Strong Co-operative Retailing System

As the evidence examined in this study suggests, FCL's effective strategic leadership has contributed to the strong economic performance of the CRS in the 1990s and 2000s. Figure 2.4 illustrates the evolution of FCL's real sales and net savings/profits over the 1976-2009 period. As shown in Figure 2.4, FCL went from being on the brink of financial collapse in the early 1980s to record sales and profits year after year during the 1990s and 2000s. Since 1982, FCL's real sales to the local retails have grown at an annual rate of 4.3%, while its real net profits have grown at an annual rate of 16.7%. The 2008-2009 economic recession that affected retail businesses across Canada has led to a fall in FCL's sales and net savings in 2009 compared to the record year of 2008. However, the CRS came through the recession in reasonably good strength. With sales of \$6.5 billion and net profits of \$491.6 million, FCL was the second largest business in Saskatchewan (Saskatchewan Business Magazine) in 2009.

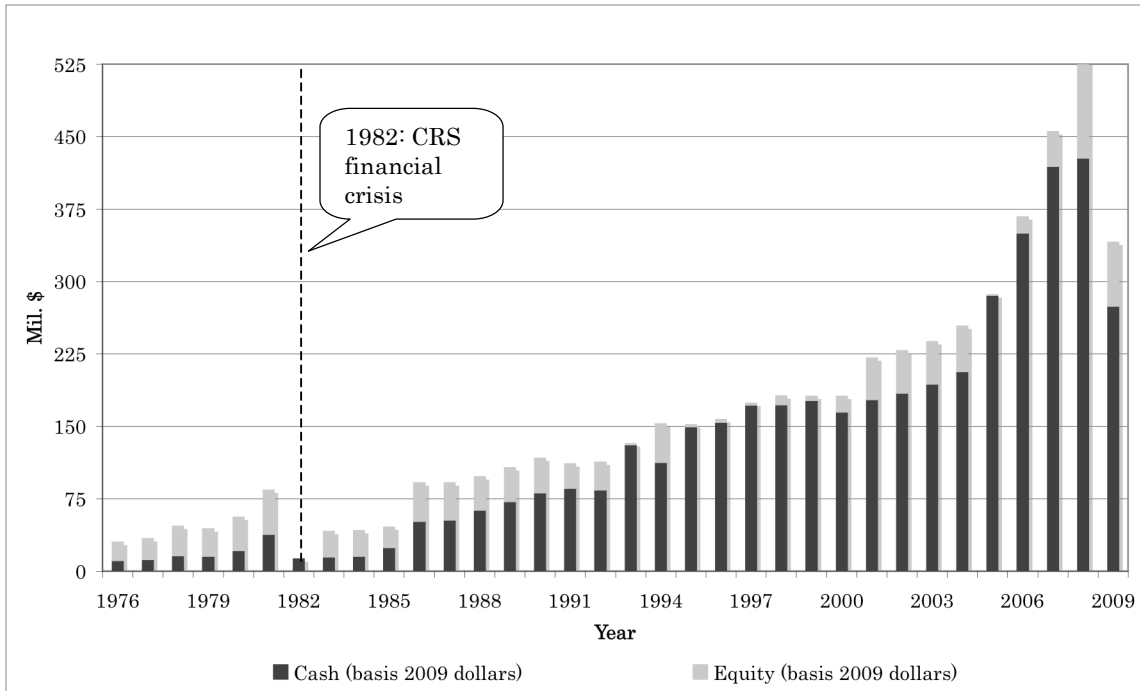
FCL's success has been shared with the member retails – Calgary Co-op, for instance, is the largest retail co-operative in North America (Canadian Co-operative Association, 2009). Calgary Co-op generated just over \$1 billion in annual sales in 2009, a slight decrease from the record sales of \$1.05 billion in 2008 (Calgary Co-operative Association Ltd., 2010).

Insert Figure 2.4 about here.

The following three chapters examine in greater detail the economic and identity strategies and mechanisms that FCL has used to foster co-operation and coordination among retail co-operatives in the CRS following the financial crisis of the early 1980s.

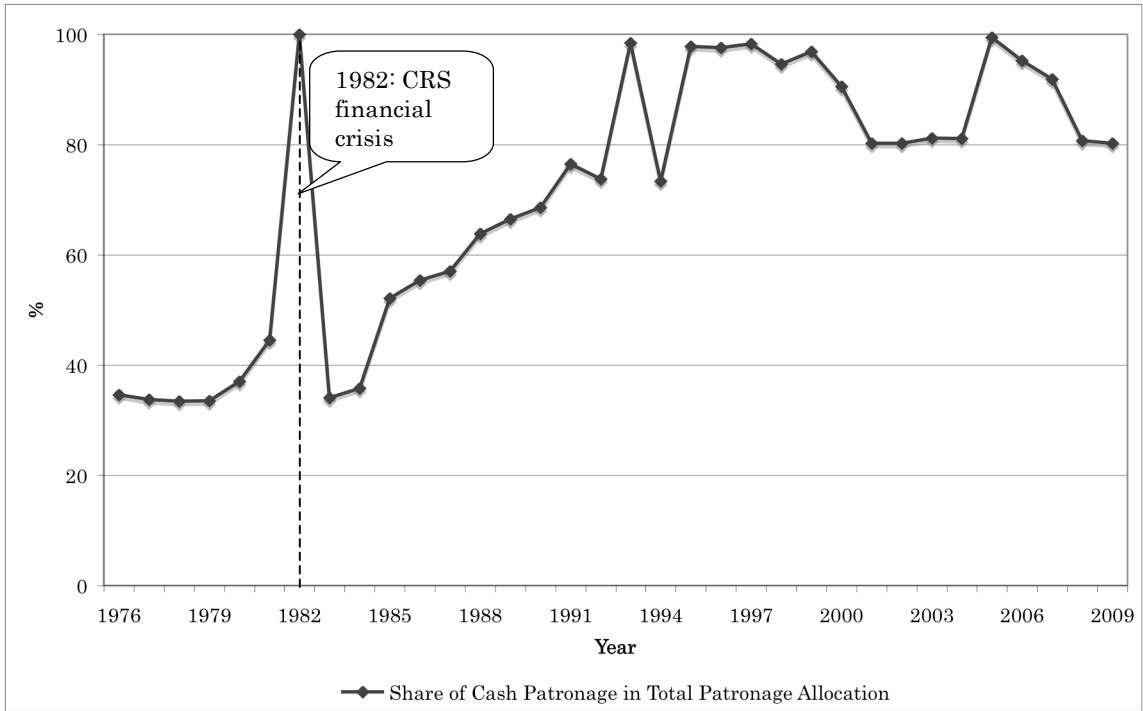
References

- Calgary Co-operative Association Ltd. (2010), *2009 Annual Report*, available online at http://www.calgarycoop.com/about_us/news_room/publications.php.
- Canadian Co-operative Association (2007), FCL to Purchase Saskatchewan Government's Interest in NewGrade Upgrader, *Co-operative News Briefs*, 8(18), September 27.
- Canadian Co-operative Association (2009), Calgary Co-op Sales Reach 1.05 Billion Dollars, *Co-operative News Briefs*, 10(4), February 19.
- Consumers' Co-operative Refineries Ltd., *The History of CCRL*, available online at <http://www.ccr1-fcl.ca/history.htm>.
- Fairbairn, B. (1989), *Building a Dream: The Co-operative Retailing System in Western Canada, 1928-1988*, Saskatoon, Saskatchewan: Western Producer Prairie Books.
- Fairbairn, B. (2003), *Living the Dream: Membership and Marketing in the Co-operative Retailing System*, Centre for the Study of Co-operatives, University of Saskatchewan.
- Federated Co-operatives Ltd. (1977-2010), *Annual Report 1976-2009*.
- Red River Co-operative Ltd. (2010), *Red River Co-op Newsletter*, February, available online at http://www.rrcoop.com/whatnew_details.jsp?ID=107.
- Saskatchewan Business Magazine, *2008 Saskatchewan's Top 100 Companies*, available online at <http://sasktop100.ca>.
- Saskatoon Co-operative Association Ltd., corporate website <http://www.saskatooncoop.ca> (accessed June 12, 2010).
- The Grenfell Sun (2010), *Broadview Co-op to See Major Changes*, March 30, available online at <http://www.grenfellsun.sk.ca/Living/Food/2010-03-30/article-988039/Broadview-Co-op-to-see-major-changes/1>.
- The Valley Leader (2010), *Mixed Results for Elm Creek Co-op*, May 7, available online at <http://www.carmanvalleyleader.com/ArticleDisplay.aspx?e=2567632>.



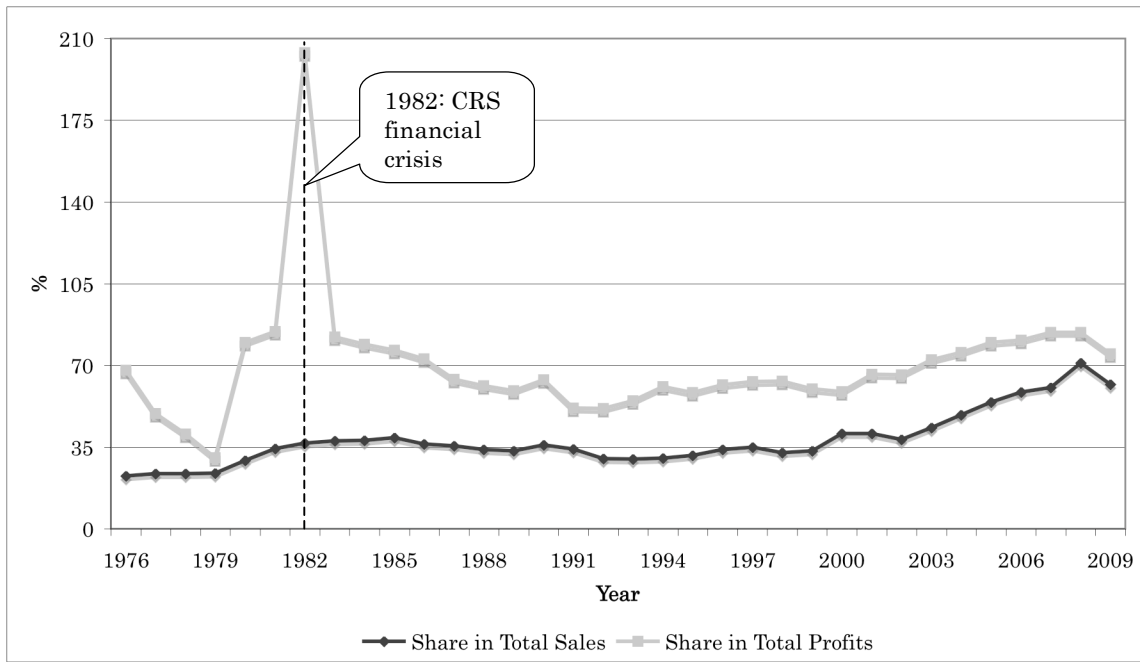
Source: Author's own calculations based on data from the FCL Annual Reports 1976-2009.

Figure 2.1: Distribution of Patronage Allocation Between Cash and Equity Over the 1976-2009 Period (2009 Constant Dollars)



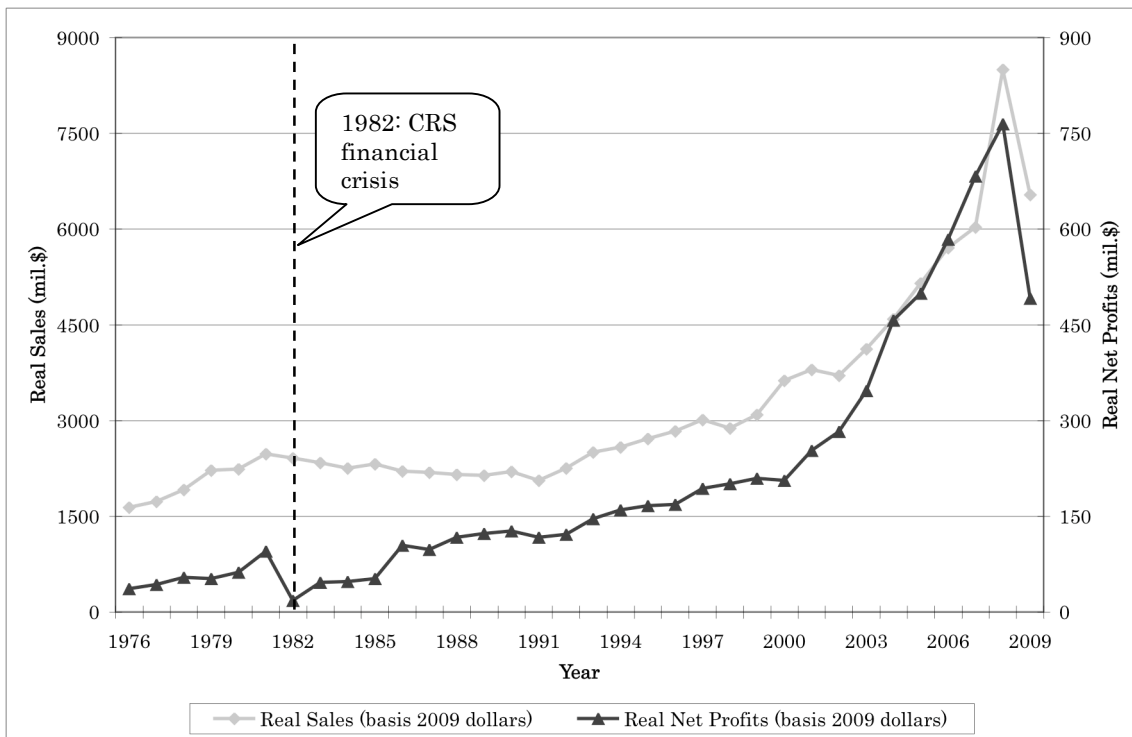
Source: Author's own calculations based on data from the FCL Annual Reports 1976-2009.

Figure 2.2: Evolution of the Share of Cash Patronage Refunds in Total Patronage Allocation Over the 1976-2009 Period



Source: Author's own calculations based on data from the FCL Annual Reports 1976-2009.

Figure 2.3: Contribution of Petroleum Operations to Federated Co-operatives Ltd.'s Sales and Net Profits, 1976-2009



Source: Author's own calculations based on data from the FCL Annual Reports 1976-2009.

Figure 2.4: Evolution of Federated Co-operatives Ltd.'s Sales and Net Profits Over the 1976-2009 Period (2009 Constant Dollars)

Chapter 3

Essay One: Mechanisms for Successful Alliance Management

3.1 Introduction

With more than 10,000 partnerships created annually (Schifrin, 2001) and growth rates projected between 25 and 35 percent per year (Harbison and Pekar, 1998; Pekar and Allio, 1994), strategic alliances are an important organizational form for governing business transactions (Das and Teng, 2000; Dyer and Nobeoka, 2000; Zaheer and Bell, 2005). Broadly defined, strategic alliances are voluntarily initiated co-operative arrangements between two or more partners in which resources and capabilities are shared with the objective of enhancing the performance and competitive position of each partner (Gulati, 1998; Parkhe, 1993; Spekman et al., 1998). Popular forms of alliances include joint ventures (e.g., Harrigan, 1988), co-marketing and licensing agreements (e.g., Bucklin and Sengupta, 1993), R&D partnerships (e.g., Hagedoorn, 2002), and voluntary and co-operative wholesale groups (e.g., Stern, El-Ansary, and Coughlan, 1996), to name but a few.

Alliances have the potential to create economic value through synergy – by combining resources, business partners can obtain benefits that they would not have been able to achieve individually (Spekman et al., 1998). For instance, networks can leverage the market presence of each of the partners (Lorange and Roos, 1993), while co-marketing agreements allow partners to talk with a 'louder voice' in the marketplace and to grow market share more quickly.

Although popular and embedded with significant value-creation potential, strategic alliances often fail, with the failure rate reported at or higher than 50 percent (Arend, 2009; Kale, Dyer and Singh, 2002; Sammer, 2006). Alliance failure is often attributed to opportunistic – that is, non-co-operative – behaviour by one or more of the partners (e.g., Park and Ungson, 2001; Parkhe, 1993; Zeng and Chen, 2003) and to coordination failure (e.g., Gulati, Lawrence, and Puranam, 2005; Park and Ungson, 2001).

These problems, however, can be overcome. One example is the Co-operative Retailing System (CRS), an alliance of 264 Western Canadian independent retail co-operatives that formed their own wholesaler, Federated Co-operatives Ltd. (FCL), to strengthen their bargaining position relative to manufacturers and to achieve economies of scale. Since 1982, when the CRS was on the brink of financial collapse, FCL's real sales to the local retailers have grown at an annual rate of 4.3%, while real net profits have grown at an annual rate of 16.7%. With sales of \$6.5 billion and net profits of \$491.6 million, FCL was the second largest business in Saskatchewan in 2009 (Saskatchewan Business Magazine). The success of a federated co-operative system is noteworthy, since as Hogeland (2002) and Zeuli and Foltz (2005) argue, federated systems are likely to be particularly susceptible to the opportunistic behaviour described above. Specifically, the local ownership and control of the retailers reduces their incentive to act co-operatively and to coordinate the actions.

The CRS case is insightful because of the decision in the 1970s to retain the federated structure and to eschew a centralized structure that would have provided a single decision making body. As a result, the CRS does not have access to the control instruments that characterize integrated structures, and therefore has had to find alternative ways to promote co-operation and coordination among its members.

The purpose of this paper is to examine the strategies and mechanisms that the CRS has used to achieve co-operation and coordination, and in doing so to illustrate the mechanisms that alliance partners can use to realize the benefits from their association. There is a substantial literature on the factors that may enhance co-operation and coordination in inter-firm relationships (e.g., Arend and Seale, 2005; Gulati, Khanna, and Nohria, 1994; Gulati and Singh, 1998; Parkhe, 1993; Zeng and Chen, 2003). For instance, Zeng and Chen (2003) argue that, among other strategies,

alliance partners can improve their chances for co-operation by establishing co-operative norms, creating high identification with the alliance, establishing long-term goals, and making each partner's action identifiable.

However, the literature on precisely how these theoretical solutions can be operationalized is surprisingly less developed (e.g., Browning, Beyer, and Shetler, 1995; Dyer and Nobeoka, 2000; and Langfield-Smith and Greenwood, 1998). Little is known, for instance, about the specific mechanisms that partners can use to promote a co-operative norm, to build high group identification within the alliance, or to effectively monitor behaviour. One of the contributions of this paper is to identify how an alliance puts these conceptual understandings to work in a business environment.

As will be shown, FCL's active and strategic leadership appears to be critical to the CRS success. As the literature suggests (e.g., Ostrom, 1990), collective action problems can be addressed through the creation of an entity that is given the authority to make decisions on behalf of the individual players. In the case of the CRS, FCL is such an entity. However, such a strategy opens up the so-called second-order dilemma problem (Ostrom, 1990), namely how to ensure that the various players follow the lead of the central organization.

The answer that emerges from the analysis in this paper is that effective leadership by FCL involves altering the local retailers' decisions through the provision of material incentives and the expenditure of resources. FCL is able to have access to the resources it needs by capturing a portion of the net savings that are generated at the wholesale level and reallocating them to cover the costs of rebuilding gas bars, redesigning retail stores, holding trade shows, supporting tours of U.S. retailers and holding meetings. A key lesson from the CRS case is that effective management of the retained surplus so that co-operation and coordination are enhanced leads to further increases in the retained surplus so that additional co-operation and coordination can be encouraged.

This paper is organized as follows. The next section uses a game theoretic framework to describe the co-operation and coordination problems that arise among firms in strategic alliances, and reviews the potential solutions to these problems suggested in the business and economics literatures. The following section presents a case study of the CRS, focusing on the co-operation

and coordination problems that arise among members of the CRS, and the business mechanisms that the system has deliberately designed and implemented to address these problems. The final section presents the managerial implications of this research.

3.2 Co-operation and Coordination in Strategic Alliances

Firms form alliances when the benefits of doing so are greater than the costs. This action, however, requires firms to give up some of their autonomy and to work together. By combining their resources and capabilities, and exploiting synergies, business partners can achieve their mutual strategic objectives more effectively than if each were to work alone. At the same time, a situation of mutual interdependence is created, as each firm depends on its partners to achieve its goals for the alliance. As a result, each firm needs to take into account how its partners may respond to its behaviour and how these responses will affect the outcome of the alliance for the firm.

While mutual co-operation among partners is required for the potential of an alliance to be realized, co-operative behaviour is not automatic. Hindrances to the adoption of co-operative behaviour come from two sources, depending on the economics of the alliance – i.e., co-operation problems among partners for alliances that exhibit Prisoners' Dilemma-type payoffs, and coordination problems due to uncertainty about other partners' co-operative actions for alliances that exhibit coordination game-type payoffs (Gulati, Khanna, and Nohria, 1994). This section describes these co-operation and coordination problems, and reviews potential solutions identified in the business and economics literatures.

3.2.1 Co-operation and Coordination Problems

Co-operation problems. Most of the studies that used a game theoretic framework to capture the mutual interdependence (i.e., the payoff a firm gets depends on its own actions and on its partners' actions) that characterizes interactions among firms in strategic alliances have argued that the economics of alliances are represented by Prisoners' Dilemma-type payoffs (Hennart, 1991; Parkhe, 1993; Parkhe, Rosenthal, and Chandran, 1993; Zeng and Chen, 2003). For instance, Hennart (1991) shows that, as resources are committed to an alliance, each party has an incentive to cheat to gain at the others' expense. Parkhe (1993) argues, "... alliances are voluntary interfirm

co-operative agreements, often characterized by inherent instability arising from uncertainty regarding a partner's future behaviour ..." (p. 794) which creates "a situation isomorphous to the game of Prisoners' Dilemma" (p. 796). Parkhe, Rosenthal, and Chandran (1993) conclude from a survey of executives that many strategic alliances exhibit Prisoners' Dilemma-type payoffs.

To better understand how interactions among firms in alliances can be captured in Prisoners' Dilemma-like games, assume that an alliance requires both a tangible investment and some unobservable effort from each partner. Each partner can co-operate by contributing both the tangible investment and the unobservable effort, or they can defect by renegeing on their tangible investment commitments or shirking on their unobservable investments. In a Prisoners' Dilemma-type situation, the structure of the payoffs is such that if all partners co-operate (i.e., universal co-operation), they have a greater payoff than if none of them co-operates (i.e., universal defection). However, if one of them does not co-operate while the others do (i.e., single defection), the non-co-operative partner receives the highest possible payoff while the co-operative partners lose out. Thus, it always pays for a firm to defect, regardless of what its partners do. Put in game theory terms, defection is the dominant strategy. However, if all do so, all are worse off than if they had co-operated.

Table 3.1 shows a numerical example for a two-player Prisoners' Dilemma. The payoffs are as follows: if both firms A and B co-operate, each receives a payoff of 8. If both firms defect, each receives a payoff of 5. If one firm co-operates while the other defects, the former receives a payoff of 2 while the latter obtains 10.¹ Both firms prefer to defect, regardless of what the other firm does, since defecting yields a payoff of 10 instead of 8 if the other firm co-operates, and 5 instead of 2 if the other firm defects. Of course, if both firms defect, then both end up with 5 instead of 8. The (defect, defect) outcome is characterized as the Nash equilibrium, since defection is the optimal response to whatever the other firm is doing.

¹By convention, the Prisoners' Dilemma matrix is symmetric; however, as Axelrod (1984, p. 17) notes, the payoffs for A and B need not be comparable or symmetric.

Table 3.1: Payoffs in a Prisoners' Dilemma Situation

		Firm A	
		Co-operate	Defect
Firm B	Co-operate	(8, 8)	(10, 2)
	Defect	(2, 10)	(5, 5)

In sum, a short-term individual partner's self-interested choice, albeit rational, will lead to a long-term alliance failure, which then poses a dilemma for each of the partners – partners of an alliance face a conflict between maximizing their own self-interest (i.e., defection to appropriate a larger share of the pie) and maximizing the interests of the alliance as a whole (i.e., co-operation with the others for the long-term benefit of all). That is, from a game-theoretic perspective, the problem of co-operation is one of incentive alignment between the individual and the group. Thus, co-operative behaviour can be fostered through an appropriate design of the incentive structure.

The co-operative literature (e.g., Nilsson, 1996) provides an alternative explanation for the emergence of co-operative behaviour. In particular, members' co-operative values (i.e., part of being a co-operative member is to work together with the others for the common benefit of all), it is argued, act as a catalyst for the emergence of co-operative behaviour in co-operatives. From this perspective, co-operative behaviour may be viewed as a form of identity and therefore can be fostered by inducing individuals to absorb co-operative values in their norm system. Part of the analysis that follows examines the extent to which these two mechanisms – the incentive structure and identity – have been used to promote effective co-operation among the members of the CRS.

Coordination problems. A limited number of studies (e.g., Gulati, Khanna, and Nohria, 1994) view alliances as coordination games – in fact, Gulati, Khanna, and Nohria's (1994) discussion suggests that they have an assurance game in mind. The feature that distinguishes this coordination game from the Prisoners' Dilemma game is that defection is no longer a dominant strategy; it is best for a firm to co-operate when its partners co-operate and to defect when its partners defect. Universal co-operation, the outcome under which partners get a higher payoff,

is now a possible equilibrium. The other possible equilibrium, however, is the one in which all partners defect – universal defection.

Table 3.2 shows a numerical example for a two-player coordination (assurance) game. Note that the payoffs in this game are the same as those in the Prisoners' Dilemma game, except for the 10 payoff that is lowered to 6. In this game, defection is only better if the other firm is expected to defect. Also, choosing to co-operate is better than choosing to defect (it yields 8 instead of 6) if the other firm chooses to co-operate. Of the two equilibria, both firms prefer the one in which they both co-operate (they get 8 rather than 5), but choosing to co-operate is riskier than defecting since it may pay 2, while defection guarantees at least 5. The question that arises is: will firms risk earning a lower payoff to benefit the alliance? That is, will they coordinate on the better equilibrium in which they both co-operate?

Table 3.2: Payoffs in a Coordination (Assurance) Game Situation

		Firm A	
		Co-operate	Defect
Firm B	Co-operate	(8, 8)	(6, 2)
	Defect	(2, 6)	(5, 5)

Harsanyi and Selten (1988) convincingly argue that the dominant payoff outcome, universal co-operation, is a natural focal point in coordination games. That is, the payoff dominance of the co-operative strategy creates mutually consistent beliefs among players about others' co-operative actions and the efficient equilibrium will emerge (with consistent beliefs, players believe that all other players will select the co-operative strategy because the latter also believe that everyone else will do the same). However, there is experimental evidence that coordination failure – a situation in which players unilaterally make actions that lead to the inefficient equilibrium being played – often occurs in the absence of pre-play communication (van Huyck, Battalio, and Beil, 1990; Cooper et al., 1992).

While players are better off in the universal co-operation equilibrium relative to the universal defection equilibrium, choosing to co-operate is riskier than defecting – a player may end up earning the lowest possible payoff by co-operating if the others defect, while defection guaran-

tees at least the universal defection payoff (Cooper, 1999). Thus, the fear that others may not contribute towards joint alliance interests may prevent individual partners from engaging in co-operative actions to achieve the preferred outcome. Each partner's expectation regarding other partners' behaviour is thus a critical determinant of their own contribution in alliances that exhibit coordination game-type payoffs. What is required for coordination on the efficient outcome to be achieved is that each partner's belief about others' intentions to follow the efficiency rule (select the strategy associated with the most efficient outcome) is mutually understood. Indeed, the experimental economics literature shows that uncertainty about others' rationality (i.e., the decision rules that others are likely to use) can be a key constraint to successful coordination (Camerer and Knez, 1997; Gulati, Khanna, and Nohria, 1994; Knez and Camerer, 1994; van Huyck, Battalio, and Beil, 1990). Moreover, behavioural economists have modeled coordination problems where the players are unaware of how their actions are interdependent, but discover them through an iterative, bounded rational learning process (Camerer, 2003).

In sum, coordination problems refer to the difficulties of aligning actions across interdependent firms. Unlike co-operation problems, which arise from a dilemma over acting individually versus collectively, coordination problems arise due to the lack of shared and accurate knowledge about how others will behave.

3.2.2 Potential Solutions

The business and economics literatures have suggested a number of potential solutions to the co-operation (Prisoners' Dilemma) and coordination problems. This section briefly describes those solutions. Generally, the solutions to the co-operation problem involve mechanisms that transform the firms' payoff function so that collective and individual goals are aligned, the solutions to the coordination problem involve mechanisms that transform expectations.

3.2.2.1 Solutions to the Co-operation Problem

As regards the solutions to the co-operation problem, a distinction is often made between structural and motivational solutions. The first of these will be examined immediately below, followed by an examination of motivational solutions.

Structural solutions involve changing the fundamental structure of the situation (“the rules of the game”), so that the dilemma is either modified or entirely eliminated. They include mechanisms such as: a) changing the payoff structure, b) monitoring, c) providing selective incentives, d) reducing group size, and e) drawing boundaries around the collective good.

Payoff structure. Prisoners’ Dilemma research indicates that co-operation can be enhanced by increasing payoffs for co-operation or decreasing payoffs for defection (Dawes, 1980).² As Oye (1986) suggested, two possible situations may arise. One situation is when shifts in preferences transform the situation from one class of game into another, fundamentally altering the character of the relationship. For instance, the relationship structure may be transformed from that of a Prisoners’ Dilemma to that of a less conflictual game – assurance game – or to that of a co-operation game. The other situation is when the Prisoners’ Dilemma nature of the situation is maintained and only payoff differences change. In particular, if all partners can gain a bigger benefit when they pool their resources than when they are on their own (i.e., if the difference between the payoff from universal co-operation and the payoff from universal defection is larger), they will be more likely to co-operate. Moreover, partners will be more willing to co-operate if little benefit is associated with the single defection behaviour (i.e., if the difference between the payoff from single defection and the payoff from universal co-operation is smaller) and little risk is involved in the single co-operation situation (i.e., if the difference between the payoff from single defection and the payoff from single co-operation is smaller).

Monitoring. To the extent that information asymmetry (e.g., information regarding the unobservable effort that partners may need to contribute to an alliance) exists in a relationship, it is possible for a party to defect without being detected. Monitoring of either a partner’s behaviour or its outcomes can overcome this problem (Celly and Frazier, 1996). There are at least two different reasons that monitoring may reduce defective actions. First, from a behavioural perspective, the monitoring process itself may place uncomfortable social pressure on a party and thereby increase motivation to co-operate with the others for their mutual benefit (Murry and Heide, 1998). Second, from an economic perspective, monitoring increases the ability to detect defective actions, and ultimately the ability to match rewards and sanctions to the partner’s behaviour.

Selective incentives. As Dawes (1980) pointed out, one of the big challenges in *N*-person dilemmas is that it is often not possible to directly affect others’ outcomes and hence shape

²Exogenous events may also cause such changes in the payoff structure.

their behaviour. If co-operators could be rewarded for their action and defectors punished, even large-scale dilemmas could be solved. Indeed, one of Olson's (1965) key conclusions was the necessity of using selective incentives in encouraging co-operation. As the name suggests, selective incentives are additional incentives that distinguish between individuals who contribute to the common interests of the group (collective good) and those who do not. These incentives are used to punish those who fail to contribute their fair share to the collective good (i.e., sanctions) or to reward those who act in the group interest (i.e., rewards).

Olson (1965) provided two examples for the general concept of selective incentives. One example is represented by social incentives such as friendship, prestige, and respect. Social sanctions (e.g., ostracism) and social rewards (e.g., social acceptance) can motivate group members to do their part toward achieving the group goal. The second example is represented by "by-product" benefits, as described by the by-product theory. According to Olson's (1965) by-product theory, a separate excludable private good is given as an inducement to contributing towards a non-excludable collective good. That is, the by-product theory proposes tying access to a private good with resource contributions needed to supply non-excludable collective goods.

Group size. Numerous studies have found that co-operation declines as group size increases (e.g., Bonacich et al., 1976; Hamburger, Guyer, and Fox, 1975; Komorita and Lapworth, 1982). Increasing group size may make it harder to shape others' behaviour and make it easier to defect anonymously (Dawes, 1980). The costs of organizing can also increase as group size grows – i.e., groups can find it harder to communicate and coordinate their actions (Olson, 1965). These studies suggest that co-operation can be made more likely by reducing group size.

Boundaries. When players face the dilemma of how much to take from a collective good so that it continues to exist, the solution is to draw some kind of boundary around the collective good. Hardin (1968) argued for the establishment of an external authority to regulate who has access to the collective good or how players are to withdraw resources from the collective good.

In contrast to structural solutions, **motivational solutions** focus on changing partners' perceptions of the social environment (e.g., expectations of other partners' behaviour; feelings of group identity, trust) and therefore their motivation for co-operation. These solutions include mechanisms such as: a) selecting the "right" partners, b) establishing long-term goals or "extending the shadow of the future", c) improving communication, and d) fostering a group identity among partners.

Selection. Perhaps the most straightforward way of managing opportunism is to select exchange partners a priori that are not opportunistically inclined or are inherently co-operative with respect to a particular task (Orbell and Dawes, 1993).

Long time horizons. Experimental research has shown that the longer people interact in a Prisoners' Dilemma, the more likely they are to co-operate (Murnighan and Roth, 1983; Rapoport and Chammah, 1965). The influence of such a time horizon on co-operative behaviour has also been observed in firm-union relationships (Das and Teng, 1998). Moreover, people tend to co-operate more when they do not know that it is the last trial of the game than when they have such knowledge (Andreoni and Miller, 1993).

There are several potential explanations for why longer time horizons can be effective in enhancing co-operation among partners. First, longer time horizons allow partners to realize the importance of co-operation through the experience of the undesirable consequences of defection (Pruitt and Kimmel, 1977). In other words, it takes time for all partners to fully understand that they are in a dilemma situation. Second, a longer time horizon provides more opportunities to develop trust among partners. As pointed out by Gulati (1995, 1998), trust develops over time as a consequence of opportunities to share information and learn about each partner's tendency toward trustworthy behaviour. To the extent that people gain reputations for co-operation/trust, the risk of co-operating with them declines and this encourages co-operative strategies. Third, in a long-term relationship, partners are more likely to have opportunities to reciprocate other partners' behaviour (Parkhe, 1993). A typical example of reciprocal behaviour is represented by the tit-for-tat (TFT) strategy, which consists of starting with co-operation and then being responsive to other partners' behaviour so as to "reward" co-operation by co-operation and "punish" defection by defection (Axelrod, 1984). Through such expectations of reciprocity – and the anticipated gains from co-operation versus defection – the future casts a shadow back upon the present, affecting current behaviour patterns. This bond between the future benefits a firm anticipates and its present actions is called the "shadow of the future". Thus, a longer shadow of the future enhances co-operation by increasing the net present value of a co-operative strategy relative to the net present value of a defective strategy.

Aside from long time horizons, important elements of relationships that fortify reciprocal behaviour and make the shadow of the future an effective promoter of co-operation are frequency of interaction and behavioural transparency (Axelrod and Keohane, 1986). Making interactions frequent means little time passes between assessments of the outcomes of an alliance, so the next

move becomes more important than it would be otherwise (Axelrod, 1984). As the importance of the next move grows, payoffs from mutual co-operation are subject to a lower discount rate, temptation to cheat is reduced, and co-operation becomes easier, since partners know that an exploitative move can be met with a reciprocal defection in the next stage (Schelling, 1960). But for any given frequency of interaction, effective reciprocity strategies like TFT require a high behavioural transparency, which refers to the speed and reliability with which partners learn about others' actions. If cheating cannot reliably be detected in a timely fashion, beliefs get separated from reality and the link between current actions and future consequences is cut off.

Communication. Research has shown that allowing face-to-face communication increases cooperation significantly in Prisoners' Dilemma situations (Bouas and Komorita, 1996; Chen, 1996; Dawes, McTavish, and Shaklee, 1977; Kerr and Kaufman-Gilliland, 1994). Moreover, studies of the effect of other forms of communication (e.g., written message only) also showed considerably increased co-operation (e.g., Chen and Komorita, 1994). The communication effect is also well accepted in the alliance literature (Doz, 1996; Kanter, 1994).

The Prisoners' Dilemma literature provides a number of potential explanations for the communication effect. First, group discussion of the dilemma helps people understand the nature of the dilemma better, so that all realize the negative consequences associated with universal defection and the positive outcomes of universal co-operation (Dawes, 1980). Second, discussing the dilemma provides information on what choices others in the group say they are willing to make, thus establishing group norms and introducing conformity pressures in favour of collective choices (Deutsch and Gerard, 1955).³ Third, discussion and interaction fosters trust among group members. Talking about decisions may cause group members to believe that others are committed to making co-operative choices, and enhanced trust, in turn, reduces the perceived risk involved in making co-operative choices oneself (Messick and Brewer, 1983). Fourth, group discussion fosters group identity. In fact, Dawes (1991) argued that the most important effect of communication comes from eliciting group identity.

Group identity. Making group identity salient has been shown to increase co-operation in Prisoners' Dilemma situations (Brewer and Kramer, 1986; Kramer and Brewer, 1984, 1986). One explanation for the identity effect is that group identity creates a sense of cohesion that increases the probability group members will take group interest into account when making their own decisions (Dawes, Van de Kragt, and Orbell, 1988). Along the same lines, Kramer (1991) argued

³However, research indicates that whether a co-operative norm will increase co-operative or defecting choices depends on how much a member identifies with the group (Chen, 1997).

that through identification, a member's identity becomes coupled with the group. This coupling process increases the member's concern for the well-being of the group and, consequently, the willingness to co-operate with other group members.

However, Karp et al. (1993) argued that the effect of group identity stems from a belief in the interdependencies of group members and expectations of reciprocity among the members. That is, it is the belief in future reciprocal exchanges between members, they argue, that moderates the temptation to defect and encourages co-operation. The expectation of in-group reciprocity seems to serve as a very deep heuristic that shapes people's strategic decisions (Brewer, 1981).

It must be noted that, although researchers found that members who highly identified with their group tended to contribute more towards the group goal, the high contribution was often the result of the interaction between strong group identity and some other factor, such as perceived group consensus (Bouas and Komorita, 1996; Chen, 1996; Kerr and Kaufman-Gilliland, 1994). These results suggest that group identity may be necessary, but not sufficient, to induce co-operation in Prisoners' Dilemma situations. One effective way to build identity with the group is to make all group members aware of inter-group competition, so as to create the feeling that all members within the group share a common fate (Tajfel and Turner, 1979).

3.2.2.2 Solutions to the Coordination Problem

Potential solutions to the coordination problem, as identified in the business and economics literatures, include: a) improving communication among partners, b) providing leadership to create a belief structure that substitutes for common knowledge, c) establishing long time horizons, and d) inducing a group identity among partners.

Communication. Experimental research has shown that non-binding pre-play communication can mitigate coordination failure. For instance, Cooper et al. (1992, 1994) experimentally evaluated the effect of 'cheap talk' under one-way communication and under two-way communication in the context of an assurance game. They found that with no communication, coordination failure was universal (the efficient equilibrium was never reached). With one-way communication, coordination substantially improved (the efficient equilibrium was reached about 50 percent of the times), while two-way communication almost completely eliminated coordination failures.

There are several potential explanations for how communication helps partners to recover from mistakes and coordinate for a more optimal solution. First, communication permits the development of social capital and trust among partners (Gulati, 1998). Second, by allowing partners an opportunity to announce their intentions, communication can focus partners' beliefs

on the efficient equilibrium outcome (Cooper et al., 1994).⁴ Third, communication facilitates a flow of information, which can clarify expectations and causal connections between individual actions and group outcomes, and also enhance joint creation of routines (Kogut, 2000; Thorelli, 1986).

Leadership. In situations in which players cannot communicate by exchanging 'cheap talk' at reasonable cost, leadership has been argued to help solve problems of moving from an inferior to an efficient equilibrium by influencing 'in the right way' the beliefs held by players (Foss, 2001). That is, the leader needs to make players choose beliefs that will pick out the co-operative solution.

For instance, the leader may have privileged information about some state of nature that perturbs the underlying game. Because the leader's own payoffs are usually tied to the payoffs of his followers (and they know this), they are actually prepared to believe and follow him. The leader's announcement of what strategy should be followed is thus effective in resolving the underlying coordination problem because it creates a belief structure that substitutes for common knowledge about payoffs and strategies. The leader's announcement on the optimality of the co-operative strategy creates the belief dynamic that transforms the situation from one in which everybody knows that the co-operative strategy is efficient to the situation in which everybody knows this and knows that everybody else knows it. That is, the announcement leads to a situation when players have commonly known and identical beliefs about all other players' co-operative strategies.

In sum, the leader may help in convincing players that there are gains from coordination on the efficient equilibrium and in establishing common knowledge (or an approximation in terms of common beliefs) among players. How does the leader accomplish this? Social practices such as face-to-face contact and various kinds of social gatherings are examples of mechanisms that can be used to instill common knowledge among players (Foss, 2001).

Long time horizons. Experimental evidence (e.g., Berninghaus and Ehrhart, 1998) shows that large numbers of repetitions of a period coordination game favour the efficient equilibrium outcome. One explanation for why longer time horizons can solve coordination failures is that players realize they have much to gain by coordinating on the efficient equilibrium, and are more patient and tolerant in seeking coordination on the efficient equilibrium when they expect more

⁴Messages influence beliefs to the extent that they are credible (Cooper et al., 1994).

repetitions yet to come. That is, players are more willing to sacrifice payoff at the outset when the sacrifice has a longer payout period.

Another and related explanation is that repeated interactions in similar situations will strengthen a group member's confidence that other members will select the efficient action (Camerer and Knez, 1996). Repeated interactions allow partners to develop multiple communication links, as well as shared values and norms that serve to make the actions of others more predictable. As well, through repeated interactions in roughly similar situations, in-group members develop a common understanding of which actions should be selected.

Group identity. Fostering a group identity has been argued to solve coordination failure through various means. First, identification with a group increases trust in the other group members – i.e., members of a group are more likely to expect their fellow group members to co-operate and, hence, are able to coordinate their expectation on the efficient (co-operative) outcome (Brewer, 1979). Second, identification with the group may induce a sense of confidence that in-group members see the world as they do (Camerer and Knez, 1996). Third, identification leads to internalization of, and adherence to, group norms (Ashforth and Mael, 1989). To the extent that the group develops co-operative norms, identification with the group facilitates members' coordination on the efficient outcome by promoting co-operative expectations, since the norms of the group govern each member's actions and their expectations concerning actions selected by the other group members.

In conclusion, coordination problems, which are rooted in the riskiness of coordination on the efficient equilibrium, are solved through the effect that communication, leadership, long time horizons and repeated interactions, and group identity have on increasing players' knowledge about how their actions are interdependent and on building their confidence that others will choose the co-operative strategy.

The next section draws upon a case study of the CRS to provide examples of the mechanisms that can be used to implement these theoretical solutions to co-operation and coordination problems in a business setting.

3.3 Co-operation and Coordination in the Co-operative Retailing System

3.3.1 Research Method

A case study method was used to examine the co-operation and coordination problems that arise among members of the CRS, as well as the manner with which they have been dealt.

Qualitative research methods – e.g., case study – have been recommended when addressing strategy questions that require an in-depth understanding of complex phenomena, such as the co-operation and coordination issues facing the CRS, from the perspectives of those who are living them – the managers (Barr, 2004). The data for this study was derived from two sources – interviews and the analysis of various documents – and was collected between March and July 2008.

A total of ten semi-structured interviews were conducted with managers and elected members of the Board of Directors of FCL, Calgary Co-op, and Saskatoon Co-op. Calgary Co-op (Calgary, Alberta) is the largest retail co-operative in the CRS and in North America (Canadian Co-operative Association, 2009), with annual sales of just over \$1 billion in 2009 (Calgary Co-operative Association Ltd., 2010). It accounts for a significant share of FCL's sales – for instance, in 2008, Calgary Co-op accounted for 25 percent of FCL's food sales. Based in Calgary, Alberta, Calgary Co-op currently operates 23 retail shopping centres, 27 gas bars, 18 liquor stores, seven travel offices, and two home health care locations. Saskatoon Co-op (Saskatoon, Saskatchewan) is the third largest retail co-operative in the CRS, after Calgary Co-op (Calgary, Alberta) and Red River Co-op (Winnipeg, Manitoba), with annual sales of \$266.6 million in 2009. Saskatoon Co-op operates three retail shopping centres, 12 gas bars, two home centres, one agro-centre, and two travel offices. Out of the ten interviewees, eight had been with the CRS for more than three decades and could thus offer a first-hand perspective on the strategies that the CRS has used to achieve co-operation and coordination following the financial crisis of the early 1980s.

An extensive review of the literature focusing on the co-operation and coordination problems in vertical marketing systems in general, as well as on the behaviour of the CRS, was undertaken in order to develop the interview guide (refer to Appendices A and B for copies of the Semi-Structured Interview Guides utilized with managers and board members of FCL, and Calgary and Saskatoon Co-ops, respectively). The questions included in the guide were supplemented with ones that seemed fruitful to pursue during the interview. All interviews were conducted in person, with each interview taking between one and two hours. Apart from the interviews, informal discussions were also held with retail co-operatives delegates at the 2008 FCL Annual General Meeting and at the 2008 Co-op Marketing Expo.

The second source of data was obtained from extensive documentary evidence. Access was gained to the FCL Annual Reports for the period 1976-2009 and to the FCL weekly Bulletin for Co-op General Managers for the period 2007-2008. The broad range of documentary evidence

and interview data provided alternative views of the co-operation and coordination problems that arise within the CRS, as well as of the mechanisms that have been used to deal with those problems, and helped provide a critical perspective to the events.

3.3.2 Co-operation Problems in the Co-operative Retailing System

Interviews with CRS executives and documentary evidence revealed at least three forms of opportunistic behaviour by the retails: (1) decision to shirk on quality maintenance of the Co-op brand name; (2) decision to purchase from outside suppliers instead of patronizing FCL; and (3) decision to over-expand through loans that retails guaranteed with their shares in FCL.

First, the Co-op brand name is a signal to customers of the quality of the products and services that retail co-operatives offer and, as such, is the major strategic asset that differentiates retail co-operatives in the CRS from their competitors.⁵ However, the collective good nature of the Co-op brand name means its full benefits cannot be internalized by each retail. In particular, while retail co-operatives receive the benefit in their local market of brand quality maintenance, they cannot capture the benefits that accrue to others. As a result, each retail co-operative has an incentive to free ride on the efforts of other retail co-operatives, and to consequently under-develop and under-maintain the Co-op brand name. This opportunistic behaviour will create spillover effects that are experienced by all retail co-operatives in the CRS – customers that have a bad experience in one Co-op store are likely to believe that other Co-op stores will provide a similar bad experience. In short, the private benefit to maintaining the quality of the brand name is less than the benefit to the CRS. If quality control decisions are made independently, retail co-operatives will be worse off than if they had co-operated to develop and maintain the Co-op brand name.

A retail general manager, speaking about the importance of retail co-operatives contributing to the quality maintenance of the Co-op brand name, stated: “Our co-op is surrounded by lots of small retails within 25 miles of the city and when one of those co-ops does not follow the same programs, then customers, who support both our co-op and the neighbouring retails, do not get the connection that all co-ops are the same. And if they do badly in one small retail, it affects our membership here in our co-op. So, customers perceive us to be the same; they know we are two separate companies, but they want that continuity. And when one of them does not follow the

⁵See Norton (1988) for a discussion on the role of the brand name in differentiating outlets in a franchise system from outlets in other franchise systems or independent businesses in the same industry.

programs, it makes customers start doubting the whole system. Customers lose that trust level we have built up.”

Retail co-operatives also have the freedom to purchase from other suppliers besides their wholesaler. This gives each of them an incentive to operate outside the system when they receive better offers. This opportunistic behaviour negates the economies of scale and countervailing power the CRS could provide if it had access to all the business of the local retails. As a result, the total system profits will be smaller than what the CRS could generate if retails were to operate inside the system.

This form of opportunism was a real issue in the CRS in the late 1970s and during the 1980s. In the early 1980s, FCL distinguished between active and inactive (in terms of purchasing from FCL) members (FCL, 1981; 1982) and strongly encouraged those members unlikely to become active to terminate their membership (FCL, 1981). Moreover, in 1986, the FCL Board’s Membership Committee raised the question of whether retail co-operatives should be required to achieve a minimum level of purchases to qualify for payment of expenses for delegates attending the FCL Annual Meeting. In 1989, participants at the FCL Annual Meeting adopted a bylaw amendment that required retails to purchase at least 50,000 dollars of goods before FCL would provide expense allowances and per diems for their delegates.

The third form of opportunism that was mentioned in the interviews was the over-expansion by retail co-operatives in the late 1970s and early 1980s through loans that retails guaranteed with their shares in FCL. Each retail co-operative believed that if it was to experience financial hardship, then the other retails would bail it out. A FCL manager of the day recalls: “There was a mindset in the system ... that as long as there was any money available anywhere ... there never would be a time when a retail co-op would be allowed to disintegrate”(as cited in Fairbairn, 2003, p. 39). As a consequence, the retails collectively took on a debt level that could not be supported by the system; the magnitude of this debt almost drove the entire system to bankruptcy in the early 1980s.

The story of the financial crisis that the CRS experienced in the early 1980s was described by Fairbairn (2003). As Fairbairn outlines, the negative real interest rates and high consumer demand of the 1970s encouraged retail co-operatives to borrow money and build expensive malls, using their shares in FCL as collateral for their loans. Retail long-term debt had increased 272 percent over the period from 1974 to 1981. In 1982, retails had only 32 percent member equity – that is, the consumer-members’ stake in the retails was less than one third of the assets, with the rest

being covered by loans taken on by the co-operative, by accounts owed to the co-operative, and the like. By the time the malls were built and stocked in the early 1980s, the recession had hit and retailers were faced with high interest rates and decreased demand, along with tough competition on the food side from new warehouse-style discount retailers (e.g., Superstore and Save-On-Foods). Since they could not get the sales volume to cover their high-interest-rate loans, retail co-operatives increasingly called for higher cash repayments and more financial assistance from FCL, as well as more loans to be guaranteed by FCL. But the recession also hit the wholesaler, whose earnings dropped almost 80 percent in 1982. FCL was thus unable to help all the retailers and the CRS was on the brink of collapse. One FCL board member of the day recalls: “As high interest rates hit at that time, a lot of those loans became very dicey as to whether they could be repaid. Federated had so many liens – liens against the shares – had they all been called, or gone bad, the entire CRS would have collapsed” (as cited in Fairbairn, 2003, p. 29).

3.3.3 Coordination Problems in the Co-operative Retailing System

Retail co-operatives face a coordination issue when they decide whether to adopt the various marketing programs that FCL puts forward. Membership in the CRS allows retailers to talk with a ‘louder voice’ in the marketplace by leveraging each other’s market presence. However, a consistent image is required across the CRS for this benefit to be realized.⁶ That is, retail co-operatives across the CRS need to have similar product selection and quality, look similar in terms of store layout, décor, and signage, and have a common approach to advertising, pricing, and merchandising. One retail general manager acknowledged the problem: “Since the 1980s, we [retail co-operatives] all tried to share the same kind of banner and programs and flyers so that we look alike. When one of the co-ops flies a different logo, it really hurts the rest of us because we do not have a connection that all the co-ops are the same, that you can get the same things in the same stores. When they fly their own logo, customers sometimes think: is their gas the same or why are they different from the rest?” To facilitate a consistent image across the CRS, FCL has developed a wide range of programs for the retailers – e.g., the common flyer program, the unique price management system, the Co-op[®] product programs, and programs regarding store décor, signage, and merchandising.

⁶Retail store image has been defined in the marketing literature as the complex of a consumer’s perceptions of a store on a number of different attributes such as merchandise, price, advertising, personal selling and sales incentive programs, physical facilities, store atmosphere and customer service, among others (Bloemer and de Ruyter, 1997; Lindquist, 1974).

Until the early 1980s, each retail co-operative in the CRS had its own weekly grocery store flyer. To facilitate a common approach to advertising across the CRS, FCL developed the *common flyer program* in the early 1980s. FCL plans the layout and composition of a store flyer that all retail co-operatives in the CRS can use to feature grocery promotions and price discounts.⁷

As well, up until early 2008, each retail co-operative in the CRS ran its own price management system. To help coordinate pricing across the CRS, FCL developed the *unique price management system* in 2008. Instead of having each retail store hire an individual to run a pricing system, FCL appointed a team of five people to manage the pricing for the retails. This team works with the retails to come up with a pricing strategy for their community that works best. Also, FCL pays retails in various areas to do the price checks for them. Thus, as a price change comes through on a product (i.e., as a result of increases or decreases in competitors' and/or suppliers' prices) and based on the strategy a particular retail has in place, the FCL team suggests a retail price for that store.⁸

The *Co-op*[®] *product programs* aim to ensure that retail co-operatives in the CRS carry the same private label products. FCL develops Co-op label products that all retail co-operatives in the CRS can use to differentiate their products from competitors' products and build consumer loyalty.

The *programs regarding store décor, signage, and merchandising* are meant to provide similar physical facilities across the CRS. FCL develops interior store fit out and sign packages, directional signs, menus, department signs, banners and stands, as well as merchandising fixtures and merchandising aids that all retails in the CRS can use.

However, the benefits from being able to market as a system do not ensure coordinated action by the retails in adopting the various marketing programs. For instance, retail co-operatives struggle between their individual identity and the system identity. One retail general manager explains: "We want to be part of the big system, we want to have the same logo, we want to be successful, yet, at the same time, we struggle to be – we are a little bit – different." The desire to promote their local identity can provide retails with incentives to develop their own store flyer, private label product, or store décor and signage to meet the needs of their local consumers. Also, the desire to gain market share could make retails reject the unique price management system so that they could undercut their competitors' prices. Thus, retails' decision to adopt

⁷A smaller version of this flyer (i.e., pantry flyer) is developed for the small retail stores.

⁸Nevertheless, retails can overrun this price in certain situations – e.g., when they are doing an in-store special or when they have an overstock.

the various marketing programs depends on whether retailers understand the interdependence that characterizes their actions and on expectations about others' intentions to adopt those programs.

As a result, there is a need for FCL to foster coordination among retailers in adopting its programs if a consistent high-quality shopping experience is to be provided to customers across the CRS. FCL's CEO explains: "What we are trying to do every day, no matter where the retail co-op may be located, is that – the public can expect certain things from the Co-op store, whether that is a food store, whether that is a home center, whether that is an agro center, whether that is a gas bar or a convenience store, you name it – when they go into one here, they are going to have a certain type of experience, and we want to get to the point where they feel when they go into that one over there, there will have to be some consistency; they will get the same type of experience. From that perspective, we are trying to get people [retail co-operatives] to be on the same page today and every day."

3.3.4 Achieving Co-operation and Coordination in the Co-operative Retailing System

Interviews and documentary evidence suggest that FCL has used a wide variety of mechanisms to promote co-operation and coordination among retailers over the last 25 years. The financial crisis that the CRS experienced in the early 1980s created an opportunity for FCL to take a leading role in the system. In 1982 the crisis was dire and immediate, allowing no time for long-term strategies. A FCL senior manager recalls: "There was no tomorrow. It had to be done today, and there was no time for any more task forces or any more committees" (as cited in Fairbairn, 2003, p. 38). Since the retailers had the debts, FCL had to be the source of the initiative to respond to the crisis. FCL had an overview of the problems, given its direct ties with each retail co-operative; it also could not exist in isolation, since without the retailers, FCL could not make any money.

Because FCL did not have enough money to pull all retailers out of their problems, they decided to help those co-operatives that would allow the total system to survive, while closing others. However, FCL would not provide the retailers with direct financial assistance or any other help unless the retailers adopted FCL's recommendations. These included: closing inefficient departments; selling assets; reducing costs in every area possible, including layoffs, salary freezes, and rollbacks; controlling inventories and accounts receivable; and avoiding all but emergency capital expenditures. FCL also worked closely with the retailers to improve their operations, finances, and human resources. When FCL's plan led to tangible improvements taking place in the activity of insolvent retailers and the system as a whole year by year, FCL gained retailers' credibility and was accepted as the leader of the CRS.

Today the CRS is a strong business organization. Figure 3.1 illustrates the evolution of FCL's real sales and net savings over the 1976-2009 period. As shown in Figure 3.1, FCL went from being on the brink of financial collapse in the early 1980s to record sales and profits year after year during the 1990s and 2000s. The 2008-2009 economic recession that affected retail businesses across Canada generated a decline in FCL's sales and net savings in 2009 compared to the record year of 2008. However, the CRS came through the recession quite strong. The strategies that FCL has put in place to promote effective co-operation and coordination among retails correspond to the solutions to co-operation and coordination problems suggested in the economics and business literatures, and reviewed in Section 2.2 of this paper. The next two sections describe these strategies.

Insert Figure 3.1 about here.

3.3.4.1 Strategies for Achieving Co-operation

Table 3.3 summarizes the strategies that FCL has used to promote robust co-operation among retails. These strategies, as suggested in the business and economics literatures, include: a) mechanisms for changing the payoff structure, b) mechanisms for providing selective incentives, c) monitoring mechanisms, d) selection mechanisms, e) communication mechanisms, f) mechanisms for reducing group size, g) mechanisms for creating group identity, h) mechanisms for increasing the time horizon, and i) mechanisms for drawing boundaries around the collective good.

Mechanisms for changing the payoff structure. Perhaps the most obvious way to enhance co-operation among retails in patronizing their wholesaler is to increase their payoffs for operating inside the system. FCL has used the common flyer program, the patronage refund system, and the discount and rebate program to do just that. The *common flyer program*, described earlier, requires retails to inform FCL on the quantity they need of each of the grocery items included in the ad three months out and FCL then conducts the negotiations with suppliers on behalf of all the retails. FCL negotiates not only a price for the product, but also an advertising program, as suppliers are keen to have their brands featured in the store flyer. As a result, retails benefit not only from volume rebate dollars, but also from advertising dollars, when they purchase groceries through FCL.

Table 3.3: Mechanisms for Achieving Co-operation in the Co-operative Retailing System

Solutions	Co-operation Problems	
	Shirking on quality maintenance of the Co-op brand name	Over-expanding through loans guaranteed with shares in FCL
Payoff structure	Common flyer program; Patronage refund system; Discount and rebate program	
Selective - incentives	Subsidy programs; Ag Team program; Succession planning	Subsidy programs; Ag Team program; Reaching out programs; Support services; Succession planning
Monitoring	Retail advisors; Store checklists and customer checks	Price management system; Retail advisors
Selection	Assistance with general manager hiring; Succession planning	Assistance with general manager hiring; Succession planning
Communication	Group training programs; Commodity clinics; U.S. tours; Trade shows; EMC; Meetings	Group training programs; Commodity clinics; U.S. tours; Trade shows; EMC; Meetings
Group size	District and regional organization of the CRS	District and regional organization of the CRS

Table 3.4: Mechanisms for Achieving Co-operation in the Co-operative Retailing System (Continued)

Solutions	Co-operation Problems	
	Shirking on quality maintenance of the Co-op brand name	Over-expanding through loans guaranteed with shares in FCL
Group identity	Group training programs; Co-mmodity clinics; U.S. tours; Trade shows; EMC; Meetings; Succession planning; Marketing programs	Group training programs; Co-mmodity clinics; U.S. tours; Trade shows; EMC; Meetings; Succession planning; Marketing programs
Long time horizons	Patronage refund system	Patronage refund system
Boundaries		Each retail made responsible for own debt

As well, retails receive *patronage refunds* when they do business with their wholesaler. In particular, FCL uses the patronage refund system to distribute part of their net savings to member retails in proportion to their patronage. Patronage refunds can be significant – e.g., in 2008, the patronage refund rates varied from a low of 5.3 percent on groceries to a high of 12.4 cents a litre on fuel – providing retails with strong incentives to co-operate in dealing with their wholesaler. That is, the more retails purchase through FCL, the more economies of scale FCL can achieve, and the more patronage refunds retails can enjoy.

Moreover, retails receive *discounts and rebates* when they purchase petroleum products from FCL. Unlike the patronage refunds, the discounts and rebates are given at the time of purchase, and are used to effectively reduce retails' costs in certain markets and to allow them match their competitors' prices. A senior FCL manager explained: "Individually, we would be crushed by the competition if we did not have an overall CRS program to help retails in the event of price wars. If a retail was on its own, with no system support, and once the competition knew that (which would not take very long), all that the competition would have to do in each little community is drop the price and put the pressure on until that retail went out of business because they could not afford to stay in it anymore. Then, they could effectively come back with their price in this community and move on to the next one. Over time, we would simply be out of business." Through the support it provides in situations of price wars, the discount and rebate program increases retails' payoffs from purchasing petroleum products from FCL.

Mechanisms for providing selective incentives. Selective incentives represent another and related strategy that has been used to encourage co-operation among retails in patronizing their wholesaler, and in developing and maintaining the Co-op brand name. FCL has used subsidy programs, the Ag Team program, reaching out programs, a wide range of support services, and succession planning to reward those retails that contribute to the common interests of the system – the competitiveness of FCL and the quality of the Co-op brand name – by patronizing their wholesaler and contributing to the quality maintenance of the Co-op brand name, respectively.

As regards *subsidy programs*, FCL provides a subsidy of 50 percent of the total cost of petroleum assets (e.g., pumps, tanks, lines) to any retail co-operative that wishes to upgrade or expand its gas bar, bulk plant, or card lock, or to build a new one. In addition to the grant, FCL also finances the other 50 percent of the cost interest free over a 25-month period and assists retails in the construction of the project. However, to have access to these programs, retails must purchase their petroleum products from FCL and keep their standards up in terms of store quality

and service. That is, the grants and interest-free loans, and the assistance in project execution are private benefits given to the retailers as an inducement to contributing towards collective benefits – the competitiveness of FCL and the quality of the Co-op brand name.

The *Ag Team program* is another example of tying retailers' access to a private benefit – in this case, marketing funds – with contributions needed to supply collective benefits – the competitiveness of FCL and the quality of the Co-op brand name. The Ag Team program involves suppliers and retail co-operatives working together through FCL. By taking part in the Ag Team, suppliers receive input from the retailers as to what is required by the end user and are able to develop the best programs for them. Because suppliers value the marketing opportunities that the Ag Team program creates for them, they are motivated to contribute funds that FCL can distribute to the retailers. However, to be part of the Ag Team and to participate in marketing funds, retailers must purchase crop supplies through FCL and meet certain requirements with respect to their facilities, the training of their staff, customer contact and customer files. Thus, the Ag Team program enhances co-operation among retailers in patronizing FCL, and in preserving and promoting the Co-op brand name.

Also, to support local marketing and sales activities for seed and farm equipment product lines, FCL provides retailers with *reaching out funds* that are made available by suppliers. Because payments are based on retailers' fall buyfarm bookings with FCL, the reaching out funds can be viewed as a private benefit given to retailers as an inducement to contributing toward a collective benefit – the competitiveness of FCL.

Moreover, FCL provides the retailers with a wide range of *support services*, including human resource support (i.e., assistance with general manager hiring, and training for managers, board members, and staff), assistance in merchandising and operations, and audit and accounting services, at a cost that is less than what could be obtained elsewhere. However, to have access to these services, retailers must patronize FCL. FCL's CEO explains: "We [FCL] provide just a whole myriad of services in behind. If one [retail co-operative] wants to go elsewhere, those services are no longer available to you. Now, if you come back, we will provide them again. But that is all part of the parcel or the package. And that is why I think retailers stay with us – it is we have got so many of those programs in place and they recognize the value of those things. Where else would they get it? You can go to another wholesaler, for example, and buy, but that is all you are going to do because you are just going to buy that item. But there is no other support services

...” These support services thus encourage retailers to patronize FCL for the long-term benefit of the system.

Succession planning (i.e., smaller-retail competent general managers who act to achieve the common interest of the CRS are promoted to larger retailers), by giving small-retail managers an opportunity to move up through the system, also provides private benefits to retailers in the CRS. In particular, it makes small retail co-operatives more attractive to outside managers (prospective candidates) relative to stores in other retail chains and gives large retail co-operatives a proven set of candidates. However, to take part in succession planning, retailers need to co-operate with the others in patronizing their wholesaler, and in developing and maintaining the Co-op brand name.

Monitoring mechanisms. Effective implementation of these selective incentive mechanisms requires that FCL can distinguish between retailers that contribute to the common interest of the system and those that do not. FCL has used the price management system, retail advisors, store checklists and customer checks to monitor retailers’ behaviour. The *price management system*, which is meant to coordinate pricing across the CRS, also allows FCL to detect whether retailers purchase from outside suppliers. A senior FCL manager explains: “We [FCL] will know if they [retail co-operatives] are selling stuff they are not supposed to, because it will give us a report saying: here is items that are not authorized to sell in the stores.” The *retail advisors* that FCL has appointed to assist retailers in merchandising and operations also play a monitoring role in the CRS. By getting directly involved in multiple aspects of retailers’ activity, as well as in discussions at board and general manager level, retail advisors are able to detect whether retailers shirk on quality maintenance of the Co-op brand name or purchase from outside suppliers instead of patronizing FCL. In the words of the Vice-President Retail Operations of FCL: “Retail advisors are really the eyes and ears out there for the region managers ... and it is usually through them that we [FCL] get the feedback.” Moreover, FCL runs *store checklists and customer checks* to monitor how retailers maintain their facilities and the quality of the service they give to their customers. Monitoring may also place uncomfortable social pressure on retailers and thereby increase their motivation to co-operate with the others for their mutual benefit.

Selection mechanisms. A more straightforward strategy than monitoring retailers’ behaviour to detect defective actions is to select retail general managers a priori that are inherently co-operative. Assistance with general manager hiring and succession planning are two mechanisms

that FCL has used to attract and retain those managers with a co-operative orientation in the CRS.

In particular, FCL's *assistance with general manager hiring* involves all the stages of the hiring process from reviewing the position description and making recommendations on the kind of skills to be required from a candidate to getting involved in the actual interview. Through this process, FCL aims to ensure not only that the managers that are being hired are good professionals, but also that they have a perspective on the entire system – i.e., they see themselves as part of the CRS and not just the manager of a particular retail co-operative – and will likely co-operate with the other retails for the common benefit of all. Moreover, the *succession planning* process, which allows an opportunity for smaller-retail general managers who act in the common interest of the system to be promoted to larger retails, contributes to retaining those managers with a co-operative orientation in the CRS.

Communication mechanisms. Like other organizations, FCL has created numerous opportunities for communication among retails to promote co-operation in the CRS. FCL encourages communication among retails when they provide *training* to retail managers and board members, or organize *commodity clinics* to show retail managers and staff how to merchandise their products effectively. Twice a year, FCL takes five retail general managers on four-day *tours* to successful food stores in Southern California. Retails also interact and communicate with each other during the *buymarts* and *Marketing Expos* that FCL organizes every year and every five years, respectively. The *EMC*, which consists of retail managers elected by their fellow general managers in each of FCL's six regions, and the CEO of Calgary Co-op, is another important venue for communication among retails. An interface between retail co-operatives and FCL, the members of the EMC meet to look at particular programs that FCL brings forward, discuss them with each other, and provide feedback to FCL's senior management on how to enhance the programs. Finally, retails meet at the district level in June of every year (i.e., *spring district meetings*), at the regional level in November (i.e., *fall regional meetings*), and then as a total membership at the *Annual Meeting of FCL* in March. The spring district meetings allow for discussion of local or district issues, while the fall regional meetings allow for identification of regional differences of opinion (including opinions on FCL's new programs), which could be sorted out prior to the Annual Meeting of delegates (each retail elects a number of delegates, up to a maximum of six, according to the retail's patronage in FCL) in March. Moreover, retail managers communicate during the meetings they themselves organize and to which they invite

FCL personnel – the two key examples are the *Fairmont Conference*, which is organized annually by the Co-operative Managers' Association, and the annual *Co-operative Financial Managers' Association Meeting*.

Communication is expected to enhance co-operation among retails by ensuring that each retail has the same understanding of the dilemma that they collectively face, helping retails see the whole picture (both advantages and disadvantages) of co-operation and defection, and reinforcing the desirable outcome of universal co-operation (i.e., CRS success) and the undesirable outcome of universal defection (i.e., CRS failure). For instance, FCL often reviews the history of the financial crisis that the CRS experienced in the early 1980s. By emphasizing the cause of the crisis – i.e., defective behaviour by retail co-operatives – FCL makes the new retail decision-makers conscious of the negative consequences of defective actions and of the importance of working together with the other retails for the long-term benefit of all.

Discussion of the dilemma may also provide retail decision-makers with information on what choices other retail decision-makers in the CRS say they are willing to make, thus establishing group norms and conformity pressures in favour of co-operative choices. Alternatively, talking about decisions may cause retail decision-makers to believe that others are committed to make co-operative choices. Enhanced trust, in turn, reduces the perceived risk involved in making co-operative choices oneself, hence, fostering co-operation among retails.

Mechanisms for reducing group size. Communication among the 264 retail co-operatives is made easier by the *district and regional organization of the CRS*. In particular, the 264 retail co-operatives in the CRS have been divided into 15 electoral districts to facilitate the democratic decision-making process through which retails influence the way FCL is run, and the type of goods and services offered. In turn, the 15 districts have been organized into six regions – i.e., the Winnipeg region, which also takes in part of Ontario, the Regina region, the Saskatoon region, the Calgary region, the Edmonton region, and the British Columbia region. Thus, before meeting on a total membership basis to make decisions, retails meet at the district and regional level. Apart from making it easier for the retails to communicate, the *district and regional organization of the CRS* is expected to enhance co-operation among retails by also increasing the visibility of individual actions and enabling the districts and regions to use social inducements to enhance collective actions.

Mechanisms for creating group identity. A less obvious strategy that FCL has used to promote co-operation among retails is to foster a system identity among them. The communication

mechanisms described earlier and the succession planning system that FCL uses are mechanisms that induce retail co-operatives to identify with the system. They do this by exposing retail managers and directors to a system-wide perspective. For instance, one manager who joined the *EMC* when fairly new in the job, speaking about the EMC, stated: “Talk about an eye-opening experience. You had to go to Saskatoon and sit on a panel with the managers with lots of years of experience and dialogue with the CEO and the vice-presidents ... It is ... an eye-opening experience of being in a big picture” (as cited in Fairbairn, 2003, p. 138). Also, the Director and Board Chair of Calgary Co-op explained how the *Annual Meeting of FCL* is an effective mechanism for enhancing a common understanding among delegates that they are part of a larger group – the CRS: “When I first got elected, there was a little bit of an anti-Federated sentiment because we just understood that they are our wholesaler and we are Calgary Co-op. I do not know if a lot of us understood what the big picture was. Then I went to one of FCL’s Annual General Meetings and that was just kind of like: wow, we are part of this whole bigger picture ...” Moreover, the *succession planning system* gives retail general managers a system-wide perspective. Stated an experienced retail general manager: “General managers have moved around lots; like myself – this is the eighth time I have moved in 30 years. And we understand that this whole thing [the CRS] is the same.”

The communication mechanisms contribute to the creation of a shared identity among retailers also by providing them with an opportunity to socialize and network. For instance, the CEO of Calgary Co-op, speaking about the *Fairmont Conference*, said: “Apart from the work that happens, the opportunity to network with other general managers and the CEO of FCL is important. As a young general manager, you feel that you are the only manager that has ever had retail problems. At my first conference in 1991, I had the opportunity to sit with the CEO of Calgary Co-op at that time. It was a great learning opportunity to talk to him and other seasoned general managers around the table. I found out that I was not the first person to experience retail problems. I received some advice and a few phone numbers so that I could call them. That was important to me; it made me feel like I belonged.” Having met people face-to-face, having chatted with them after hours, managers feel free to phone each other for advice, to talk through issues. Through this process, these meetings induce retail general managers to feel a oneness with or a belongingness to the system. Moreover, entertainment is an important part of the meetings and trade shows. By allowing retail co-operatives and FCL to come together in a social setting, meetings and trade shows contribute to creating and nurturing a sense of “groupness” among

them. For instance, the Vice-President Retail Operations of FCL, who chairs the *Co-op Expo*, indicated: “The Marketing Expo has been one of the strongest team-building relationship-forming parts of our organization.” This is confirmed by the general manager of one of the major retail co-operatives in the CRS, who indicated that “the Expos bring everybody together and they make you feel like you are part of a bigger system.”

Finally, the communication mechanisms foster a common identity among retails by allowing them to discover that they all face similar problems (e.g., they compete against the same competitors). Speaking about the *group training programs*, a senior CRS person indicated: “When the Board of Directors from Saskatoon Co-op gets mixed into a training course with other Boards of Directors from other retails, it really opens your eyes up saying: yes, we are big, but we have got the same problems that Colonsay Co-op has got.” When retails understand that they share a common fate, it is expected that they more strongly identify with each other. Indeed, when asked what contributed to the creation of a shared identity among retails, the CEO of Calgary Co-op stated: “I believe our system has come a long way in terms of communicating more openly both the good news and the bad news. I think the more that we communicate, the stronger that identity grows.”

Coordinated action by the retails in adopting the various marketing programs that FCL puts forward also contributes to the creation of a shared identity among them. The *programs regarding store layout, signage and décor* contribute to the creation of a physical identity across the CRS. Moreover, when retails share the same (*computer*) *pricing system, store flyer, and private label products*, it is expected that they get a sense of being part of a system.

This sense of shared identity is expected to enhance co-operation among retails by creating a sense of cohesion that increases the probability system members will take the common interest of the CRS into account when making their own decision. Alternatively, strong identification with the CRS is expected to lead to the coupling of a retail’s identity with the system. This coupling process, in turn, increases the retail’s concern for the success of the CRS and, consequently, the willingness to co-operate with the other system members. For instance, the CEO of Calgary Co-op remarked: “When you look at where the CRS came from back in the early 1980s to where we are today, our success could not have happened without working together for the benefit of all.” Indeed, this CEO thinks of Calgary Co-op as a member of the CRS and perceives the success of the system as Calgary Co-op’s. Through this process, identification with the CRS leads retails to work together for their mutual benefit. Finally, identification with the system may

increase retailers' awareness of their interdependencies and strengthen their expectations of future interactions. These expectations likely moderate retailers' temptation to defect and encourage co-operation.

Mechanisms for increasing the time horizon. By their nature, interactions among retail co-operatives in the CRS are repetitive. Retailers have joined the CRS to gain countervailing power against their suppliers, and to benefit from economies of scale in warehousing, transportation, promotion and other marketing functions. Moreover, once a retail co-operative joins the CRS and contributes its share of investment in FCL, it cannot costlessly withdraw from membership. Only under certain circumstances and with the approval of FCL's Board of Directors may retail member shares in FCL be redeemed. As a result, a situation of repeated interactions emerges among retailers.

The *patronage refund system* further raises retailers' costs of withdrawing from membership in the CRS and increases the time horizon over which retailers are likely to interact. As mentioned earlier, FCL uses the patronage refund system to distribute part of their net savings to retail co-operatives in proportion to their patronage. However, only a certain share (e.g., 81 percent in 2008) of the patronage refunds is returned to retailers in cash, the rest being allocated to them in the form of additional equity in FCL. This patronage allocation adds to the retailers' initial investment in FCL, hence increasing the amount of money a retailer would forfeit should it decide to step out. Moreover, FCL uses the retained savings to develop new programs for the retailers or reinvests them to grow the business. The retained savings, together with the return on their investment, are sunk costs for the retailers that choose to step out from the CRS. The significant amount of retained savings (e.g., \$221.8 million of the \$755.5 million net savings in 2008) and the high rate of return on their investment provides retailers with strong incentives to continue their membership in the CRS into the future.

Repeated interactions are expected to enhance co-operation in the CRS by providing retailers with knowledge about the strategies that others adopt, and thus, allowing retailers to signal consistent co-operation. As retailers gain reputations for trustworthiness, the risk of co-operating with them declines and this encourages co-operative strategies.

The reinvestment of retained savings, however, plays a particularly important role in promoting robust co-operation in the CRS. For instance, some of the most important investments that FCL has made since the early 1980s were targeted at growing the petroleum operations, which have been a strength for the CRS. These investments included a long stream of expansions at the

Co-op Refinery (owned by an FCL subsidiary) and the NewGrade Energy Inc. upgrader. Interest in the future potential benefits to be generated by these investments (e.g., new efficiencies from the refinery's larger production volume, extra earnings for the refinery from upgrading heavy crude oil to the light, sweet crude it uses in production) has provided retailers with incentives to co-operate in patronizing FCL for their petroleum purchases, and in preserving and promoting the Co-op brand name, in order to maximize investment performance. Apart from establishing long term goals among retailers, these investments are expected to also promote trust by signalling calculations of payoffs from universal co-operation stretching well into the future.

Mechanisms for drawing boundaries around the collective good. These mechanisms were specifically targeted at resolving the problem of over-expansion by retail co-operatives with loans guaranteed with their shares in FCL. The lack of well-defined property rights over the solvency of the CRS was the cause of the over-expansion by retail co-operatives in the late 1970s and early 1980s. In particular, because retail co-operatives could borrow as much money as they needed to build new stores and could guarantee their loans with their shares in FCL, each retail co-operative viewed the solvency of the CRS as a resource that could be exploited. As a result, each of the retailers took on a debt level that together could not be supported by the CRS; the magnitude of this debt almost drove the entire system to bankruptcy in 1982. To avoid such a situation from happening again, FCL made each retailer responsible for its debt. That is, credit was no longer a common pool good that retailers could exploit. The critical situation that the whole CRS found itself in when the financial crisis hit in 1982 fostered the retailers' willingness to accept FCL's decision.

3.3.4.2 Strategies for Achieving Coordination

The strategies that FCL has used to foster coordinated action by the retailers in adopting the various programs that are meant to ensure a common approach to marketing across the CRS are summarized in Table 3.4. These strategies, as suggested in the business and economics literatures, include: a) communication mechanisms, b) leadership mechanisms, c) mechanisms for increasing the time horizon, and d) mechanisms for creating group identity.

Table 3.5: Mechanisms for Achieving Coordination in the Co-operative Retailing System

Solutions	Coordination Problems		
Advertising	Pricing	Production of Co-op [®] products	Store décor, signage, and merchandising
Communi- cation	Group training programs; Commodity clinics; U.S. tours; Trade shows; EMC; Meetings		
Leadership	Newsletters	Newsletters; Marketing Expos	Newsletters; Marketing Expos; U.S. tours
Long time horizons	Patronage refund system		
Group identity	Group training programs; Commodity clinics; U.S. tours; Trade shows; EMC; Meetings; Succession planning		

Communication mechanisms. Improving communication among partners is perhaps the most widely recommended remedy to coordination failure. The same communication mechanisms that are used to enhance co-operation in the CRS also foster coordinated action by the retailers through a number of different avenues. First, communication potentially helps retailers understand the interdependence that characterizes their actions – e.g., when retailers adopt the same programs, a consistent image is created across the CRS and retailers can leverage the market presence of each; also, the more retailers adopt a program, the lower the costs or the larger the benefits of being on that program. Second, by allowing retailers an opportunity to announce their intentions of adopting a program, communication can focus retailers’ beliefs on the efficient equilibrium. Third, discussion and debate of the marketing programs facilitate a flow of information that can help retailers understand others’ decision rules and thus form more accurate expectations about others’ intentions to adopt those programs.

Leadership mechanisms. Along with creating numerous opportunities for communication among retailers, FCL also provided the leadership needed to promote coordination among them. Through mechanisms such as U.S. tours, Marketing Expos, and newsletters, FCL aims to convince retailers that there are gains from coordination in adopting its programs and to make retailers believe that all other retailers will adopt the programs.

In particular, the *tours to the U.S.* that FCL organizes are meant to enhance retailers’ understanding of why it is optimal to adopt the programs regarding store décor, signage, merchandising fixtures and merchandising aids, since most of these programs are inspired by the practice of successful U.S. retailers. These tours not only give retail general managers a good exposure to what successful retailers are actually doing, but they also give them a chance to interact directly with managers and staff in those stores about what they see going on. Despite the fact that only five managers go on a tour, the information on the benefits of adopting FCL’s programs spreads across the whole CRS as these managers share their experiences. The CEO of FCL explains the process: “Those five managers talk to their fellow managers and it just spreads. There is nothing like a fellow manager talking to you: I was down in Phoenix and I went to Whole Foods and I saw them do this or I saw them do that. You know ... it really does work. Even if you are a little skeptical about Federated, you are going to really believe in your fellow manager.” Then, FCL has used the *Marketing Expos* to launch new Co-op® products, new interior décor packages for the retailers, new sign programs, and new ways that retailers could merchandise their products. To convince retailers that there are gains in adopting those programs, FCL invites industry ex-

perts and motivational speakers that present current industry and product trends driving sales and profitability. Finally, FCL uses the weekly *Bulletin for Co-op General Managers* and the monthly *President's Newsletter* to promote new marketing programs, and to inform retail general managers and directors about the benefits to the retails of adopting those programs. Overall, these leadership mechanisms are expected to enhance coordination among retails in adopting the various marketing programs that FCL develops for them by creating common knowledge – i.e., they lead to a situation when retails think that adopting those programs is efficient and believe that all other retails think the same.

Mechanisms for increasing the time horizon. The previous section described how FCL has used the *patronage refund system* (i.e., patronage refunds and retained savings) to increase the time horizon over which retails are likely to interact and, thus, promote co-operation in the CRS. The long time horizon that characterizes interactions among retail co-operatives in the CRS is expected to also enhance their coordination in adopting FCL's marketing programs. When retails expect to interact well into the future, they realize they have much to gain by coordinating in adopting the unique price management system, for instance, and are more patient and tolerant in seeking coordination in adopting it. In addition, repeated interactions in similar situations (e.g., when retails consider whether or not to adopt the various store décor, signage, and merchandising programs that FCL periodically puts forward) strengthen a retail's confidence that other retails will adopt the programs. Through repeated interactions in fairly similar situations, retails develop a common understanding of which strategies should be selected.

Mechanisms for creating group identity. As described in the previous section, *enhanced communication and interaction* among retail co-operatives in the CRS is by far the most effective way to build identity with the system. A strong system identity is expected to foster coordinated action by the retails in adopting the various marketing programs in two ways. Identification with the CRS is expected to increase retails' trust in the other system members. That is, retails that identify strongly with the CRS are more likely to expect the other retails in the system to cooperate and, hence, are able to coordinate their expectations on the efficient outcome – adoption of FCL's marketing programs. Identification with the CRS may also induce a sense of confidence among retails that the others have a similar view of the world and will also choose to adopt the programs.

3.4 Concluding Discussion

With more and more firms involved in strategic alliances, there is a growing recognition of the need for an understanding of how alliances can be effectively managed to foster co-operation and coordination among business partners (e.g., Culpan, 2009; Zeng and Chen, 2003). While much of the published research considers the factors that may foster co-operation and coordination in inter-firm relationships, the literature is short on the actual procedures that firms can use. This paper, based on a case study of the CRS, provides examples of the mechanisms that can be used to implement these theoretical solutions in a business setting. In particular, the paper presents practical ways for alliances to alter partner firms' payoffs, to provide private rewards, to monitor behaviour, to establish long term goals among partners, to build high group identification within the alliance, and to focus partners' beliefs on the efficient outcomes.

A common feature of all the co-operation and coordination mechanisms used in the CRS is that they involve some private economic benefit for the retailers. For instance, retail advisors, who play a monitoring role in the CRS, provide retailers with sufficient improvements in operational efficiency (e.g., through market intelligence, dealing with problem managers, hiring new management), that the retailers are prepared to accept the oversight that the advisors are also carrying out. Similarly, retailers willingly go on study trips to the U.S., which have been shown to foster retailers' identification with the CRS and to focus retailers' beliefs on the adoption of FCL's marketing programs, because they are paid for by FCL. As a result, the successful solution of the co-operation and coordination problems in alliances requires not only that a dedicated strategic alliance function exists, as argued by Dyer et al. (2001), but also that this alliance management body has the ability to accumulate the resources needed to develop mechanisms that alter partners' incentives.

The various strategies undertaken by FCL can be understood to be solutions to the second-order dilemma problem that has been identified in collective action problems (Ostrom, 1990). The second-order problem arises as a result of attempts to solve the original collective action problem. For instance, one first-order solution to free rider problems is the use of a selective incentive system. However, the provision of these selective incentives requires resources, which the various players are likely to be reluctant to provide because of a second-order free rider problem – since the players can enjoy the benefits of a selective incentive system without contributing to its provision, the system may not be provided. Another solution to collective action problems is to have the individual players turn over authority to a single central decision maker. This strategy,

however, is also subject to a second-order dilemma – what entices the individual players to abide by the decisions made on their behalf.

This study shows that FCL has addressed these second-order dilemma problems by creating a number of resource generating opportunities. Through the patronage refund system, FCL retains part of the benefits that retail co-operatives collectively generate as the CRS. The resources that it retains can then be used to provide selective incentives and to build identity. FCL also uses the scale of the CRS to attract resources from suppliers – i.e., suppliers value the marketing opportunities that the CRS offers and are willing to contribute marketing funds and to pay to participate in the Co-op Expo, which is a significant identity building exercise for the CRS. Furthermore, FCL has found ways to make retailers voluntarily contribute resources. For instance, FCL organizes the Marketing Expo exclusively for the retailers and the system suppliers. This exclusivity makes the Expo attractive to the retailers, which are thus willing to pay to participate in it.

Another important finding is that successful alliance management mechanisms are deeply integrated into the partners' marketing and operational activities. In addition to exchanging the goods and services required in retail operations, these activities are also used to manage relationships to counter opportunistic behaviour and to facilitate the development of a common perspective. The integration of alliance management mechanisms into day-to-day operations keeps the cost of managing the alliance to a minimum and is also more likely to generate retail acceptance.

Moreover, and this is critical, the integration of these mechanisms into the operational activities means that the costs and benefits of participating in activities that encourage co-operation and coordination are immediately apparent to local managers in straightforward and easy to understand financial terms. This financial impact creates an obvious incentive for managers to participate. In addition, the presence of a clear financial impact may give managers greater power in their relationship with boards. Because local boards are often the ones pushing for greater autonomy or more local control, giving managers greater power may be advantageous in promoting co-operation and coordination.

The analysis in this paper also suggests that the use of single, stand-alone mechanisms to deal with co-operation and coordination problems is not common. Instead, firms use a number of mechanisms to tackle the problems, suggesting that these problems are both important to business success and difficult to address. A particularly important finding from the CRS case is

that achieving coordination in some areas of the alliance activity can enhance co-operation in others. For instance, when retail co-operatives coordinate in the adoption of the common flyer program to create a consistent approach to advertising across the CRS, they are able to participate in marketing funds, which provide them with incentives to co-operate in patronizing FCL. Since coordination problems are less conflictual than co-operation problems, business partners may consider focusing their efforts on coordination first, which in turn can foster co-operation.

Finally, the results indicate that firms use a combination of economic and non-economic mechanisms to deter partner opportunism and to overcome coordination failure. The non-economic (behavioural) factors appear to be complementary to the economic ones – i.e., fostering partner firms' identification with the group appears to have greater success when paired with economic incentives such as the patronage refund system (and vice-versa). A more in-depth analysis of this relationship between the economic and non-economic mechanisms is a subject for further study.

References

- Andreoni, J. and J. Miller (1993), Rational Co-operation in the Finitely Repeated Prisoners' Dilemma: Experimental Evidence, *Economic Journal*, 103: 570-585.
- Arend, R.J. (2009), Reputation for Cooperation: Contingent Benefits in Alliance Activity, *Strategic Management Journal*, 30: 371-385.
- Arend, R.J. and D.A. Seale (2005), Modeling Alliance Activity: An Iterated Prisoners' Dilemma with Exit Option, *Strategic Management Journal*, 26: 1057-1074.
- Arnold, S.J., R.V. Kozinets, and J.M. Handelman (2001), Hometown Ideology and Retailer Legitimation: The Institutional Semiotics of Wal-Mart Flyers, *Journal of Retailing*, 77: 243-271.
- Axelrod, R. (1984), *The Evolution of Co-operation*, New York: Basic Books.
- Axelrod, R. and R.O. Keohane (1986), Achieving Co-operation Under Anarchy: Strategies and Institutions, in K.A. Oye (Ed.), *Co-operation Under Anarchy*, Princeton, NJ: Princeton University Press.
- Barr, P. (2004), Current and Potential Importance of Qualitative Methods in Strategy Research, in D.J. Ketchen Jr. and D.D. Bergh (Eds.), *Research Methodology in Strategy and Management*, Amsterdam, The Netherlands: Elsevier, 1: 165-188.
- Berninghaus, S.K. and K.-M. Ehrhart (1998), Time Horizon and Equilibrium Selection in Tacit Coordination Games: Experimental Results, *Journal of Economic Behaviour and Organization*, 37: 231-248.
- Bonacich, P., G. Shure, J. Kahan, and R. Meeker (1976), Co-operation and Group Size in the N-Person Prisoners' Dilemma, *Journal of Conflict Resolution*, 20: 687-706.
- Bloemer, J. and K. de Ruyter (1998), On the Relationship Between Store Image, Store Satisfaction and Store Loyalty, *European Journal of Marketing*, 32(5/6): 499-513.
- Bouas, K.S. and S.S. Komorita (1996), Group Discussion and Co-operation in Social Dilemmas, *Personality and Social Psychology Bulletin*, 22: 1144-1150.
- Brewer, M.B. (1979), In-Group Bias in the Minimal Inter-Group Situation: A Cognitive-Motivational Analysis, *Psychological Bulletin*, 86: 307-324.
- Brewer, M.B. (1981), Ethnocentrism and Its Role in Interpersonal Trust, in M. Brewer and B. Collins (Eds.), *Scientific Inquiry and the Social Sciences*, San Francisco: Jossey-Bass, 345-360.

- Brewer, M.B. and R.M. Kramer (1986), Choice Behaviour in Social Dilemmas: Effects of Social Identity, Group Size, and Decision Framing, *Journal of Personality and Social Psychology*, 50: 543-549.
- Browning, L.D., J.M. Beyer, and J.C. Shetler (1995), Building Co-operation in a Competitive Industry: SEMATECH and the Semiconductor Industry, *Academy of Management Journal*, 38(1): 113-151.
- Bucklin, L.P. and S. Sengupta (1993), Organizing Successful Co-Marketing Alliances, *Journal of Marketing*, 57 (April): 32-46.
- Burton, S., D.R. Lichtenstein, and R.G. Netemeyer (1999), Exposure to Store Flyers and Increased Purchases in Retail Supermarkets, *Journal of Advertising Research*, 39: 7-15.
- Calgary Co-operative Association Ltd. (2010), *2009 Annual Report*, available online at http://www.calgarycoop.com/about_us/news_room/publications.php.
- Camerer, C. (2003), *Behavioural Game Theory*, Princeton, NJ: Russel Sage Foundation.
- Camerer, C. and M. Knez (1996), Coordination, Organizational Boundaries and Fads in Business Practices, *Industrial and Corporate Change*, 5: 89-112.
- Camerer, C. and M. Knez (1997), Coordination in Organizations: A Game Theoretic Perspective, in Z. Shapira (Ed.), *Organizational Decision Making*, Cambridge, UK: Cambridge University Press, 158-188.
- Celly, K.S. and G.L. Frazier (1996), Outcome-Based and Behaviour-Based Coordination Efforts in Channel Relationships, *Journal of Marketing Research*, 33(2): 200-210.
- Chen, X.P. (1996), The Group-Based Binding Pledge as a Solution to Public Goods Problems, *Organizational Behaviour and Human Decision Processes*, 66: 192-202.
- Chen, X.P. (1997), The Effects of Past Group Performance and the Provision of Public Goods: Perceived Criticality, Group Identity, and Conformity, presented at the *Annual Conference of the Judgment and Decision Making Society*, Philadelphia.
- Chen, X.P. and S.S. Komorita (1994), The Effects of Communication and Commitment in a Public Goods Social Dilemma, *Organizational Behaviour and Human Decision Processes*, 60: 367-386.
- Cooper, R. (1999), *Coordination Games: Complementarities and Macroeconomics*, Cambridge, UK: Cambridge University Press.
- Cooper, R., D.V. DeJong, R. Forsythe, and T.W. Ross (1992), Communication in Coordination Games, *Quarterly Journal of Economics*, 107: 739-771.

- Cooper, R., D.V. DeJong, R. Forsythe, and T.W. Ross (1994), Alternative Institutions for Resolving Coordination Problems: Experimental Evidence on Forward Induction and Pre-Play Communication, in J. Friedman (Ed.), *Problems of Coordination in Economic Activity*, Norwell, MA: Kluwer, 129-146.
- Culpan, R. (2009), A Fresh Look at Strategic Alliances: Research Issues and Future Directions, *International Journal of Strategic Business Alliances*, 1(1): 4-23.
- Das, T.K. and B.S. Teng (2000), Instabilities of Strategic Alliances: An internal Tensions Perspective, *Organization Science*, 11(1): 77-101.
- Das, T.K. and B.S. Teng (1998), Between Trust and Control: Developing Confidence in Partner Co-operation in Alliances, *Academy of Management Review*, 23(3): 491-512.
- Dawes, R.M. (1980), Social Dilemmas, *Annual Review of Psychology*, 31: 169-193.
- Dawes, R.M. (1991), Social Dilemmas, Economic Self-Interest, and Evolutionary Theory, in D.R. Brown and J.E.K. Smith (Eds.), *Frontiers of Mathematical Psychology: Essays in Honour of Clyde Coombs*, New York: Springer-Verlag, 53-79.
- Dawes, R.M., J. McTavish, and H. Shaklee (1977), Behaviour, Communication and Assumptions About Other People's Behaviour in a Commons Dilemma Situation, *Journal of Personality and Social Psychology*, 35: 1-11.
- Dawes, R.M., A.J.C. Van de Kragt, and J.M. Orbell (1988), Not Me or Thee, but We: The Importance of Group Identity in Eliciting Co-operation in Dilemma Situations: Experimental Manipulations, *Acta Psychologica*, 68: 83-98.
- Deutsch, M. and H. Gerard (1955), A Study of Normative and Informational Social Influences Upon Individual Judgment, *Journal of Abnormal and Social Psychology*, 51: 629-636.
- Doz, Y.L. (1996), The Evolution of Co-operation in Strategic Alliances: Initial Conditions or Learning Processes? *Strategic Management Journal*, 17(Summer Special Issue): 55-83.
- Dyer, J.H., P. Kale, and H. Singh (2001), How to Make Strategic Alliances Work, *MIT Sloan Management Review*, 42(4): 37-43.
- Dyer, J.H. and K. Nobeoka (2000), Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case, *Strategic Management Journal*, 21(3): 345-367.
- Fairbairn, B. (2003), *Living the Dream: Membership and Marketing in the Co-operative Retailing System*, University of Saskatchewan, Centre for the Study of Co-operatives.
- Federated Co-operatives Ltd. (1977-2010), *Annual Report 1976-2009*.

- Foss, N. (2001), Leadership, Beliefs and Coordination: An Explorative Discussion, *Industrial and Corporate Change*, 10(2): 357-388.
- Gijsbrechts, E., K. Campo, and T. Goossens (2003), The Impact of Store Flyers on Store Traffic and Store Sales: A Geo-Marketing Approach, *Journal of Retailing*, 79: 1-16.
- Gulati, R. (1995), Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances, *Academy of Management Journal*, 38(1): 85-113.
- Gulati, R. (1998), Alliances and Networks, *Strategic Management Journal*, 19: 293-317.
- Gulati, R., T. Khanna, and N. Nohria (1994), Unilateral Commitments and the Importance of Process in Alliances, *Sloan Management Review*, Spring: 61-69.
- Gulati, R., P.R. Lawrence, and P. Puranam (2005), Adaptation in Vertical Relationships: Beyond Incentive Conflict, *Strategic Management Journal*, 26: 415-440.
- Gulati, R. and H. Singh (1998), The Architecture of Co-operation: Managing Coordination Costs and Appropriation Concerns in Strategic Alliances, *Administrative Science Quarterly*, 43: 781-814.
- Hagedoorn, J. (2002), Inter-firm R&D Partnerships: An Overview of Major Trends and Patterns Since 1960, *Research Policy*, 31(4): 477-492.
- Hamburger, H., M. Guyer, and J. Fox (1975), Group Size and Co-operation, *Journal of Conflict Resolution*, 19: 503-531.
- Harbison, J.R. and P. Pekar Jr. (1998), *Smart Alliances: A Practical Guide to Repeatable Success (A Strategy & Business Book)*, San Francisco, CA: Booz Allen and Hamilton (Jossey-Bass).
- Hardin, G. (1968), The Tragedy of the Commons, *Science*, 162: 1243-1248.
- Harrigan, K.R. (1988), Joint Ventures and Competitive Strategy, *Strategic Management Journal*, 9(2): 123-139.
- Harrison, J.S., M.A. Hitt, R.E. Hoskisson, and R.D. Ireland (2001), Resource Complementarity in Business Combinations: Extending the Logic to Organizational Alliances, *Journal of Management*, 27: 679-690.
- Harsanyi, J. and R. Selten (1988), *A General Theory of Equilibrium Selection in Games*, Cambridge, Mass.: MIT Press.
- Hennart, J.F. (1991), The Transaction Costs Theory of Joint Ventures, *Management Science*, 37: 483-497.

- Hogeland, J.A. (2002), *The Changing Federated Relationship between Local and Regional Co-operatives*, RBS Research Report 190, Washington D.C.: Rural Business Co-operative Service, United States Department of Agriculture.
- Kale, P., H. Dyer and H. Singh (2002), Alliance Capability, Stock Market Response, and Long-Term Alliance Success: The Role of the Alliance Function, *Strategic Management Journal*, 23(8): 747-767.
- Kanter, R.M. (1994), Collaborative Advantage, *Harvard Business Review*, 72(4): 96-108.
- Karp, D., N. Jin, T. Yamagishi, and H. Shinotsuka (1993), Raising the Minimum in the Minimal Group Paradigm, *Japanese Journal of Experimental Social Psychology*, 32: 231-240.
- Kerr, N.L. and C.M. Kaufman-Gilliland (1994), Communication, Commitment, and Co-operation in Social Dilemmas, *Journal of Personality and Social Psychology*, 66: 513-529.
- Knez, M. and C. Camerer (1994), Creating Expectational Assets in the Laboratory: Coordination in 'Weakest-Link' Games, *Strategic Management Journal*, 15(8): 101-119.
- Kogut, B. (2000), The Network as Knowledge: Generative Rules and the Emergence of Structure, *Strategic Management Journal*, 21(3): 405-425.
- Komorita, S.S. and C.W. Lapworth (1982), Co-operative Choice Among Individuals Versus Groups in an N-Person Dilemma Situation, *Journal of Personality and Social Psychology*, 42: 487-496.
- Kramer, R.M. (1991), Inter-Group Relations and Organizational Dilemmas: The Role of Categorization Processes, in B.M. Staw and L.L. Cummings (Eds.), *Research in Organizational Behaviour*, Greenwich, CT: JAI, 13: 191-227.
- Kramer, R.M. and M.B. Brewer (1984), Effects of Group Identity on Resource Use in a Simulated Commons Dilemma, *Journal of Personality and Social Psychology*, 46: 1044-1056.
- Kramer, R.M. and M.B. Brewer (1986), Social Group Identity and the Emergence of Co-operation in Resource Conservation Dilemmas, in H.A.M. Wilke, D.M. Messik, and C. Rutte (Eds.), *Experimental Social Dilemmas*, Frankfurt: Verlag Peter Lang, 205-234.
- Langfield-Smith, K. and M.R. Greenwood (1998), Developing Co-operative Buyer-Supplier Relationships: A Case Study of Toyota, *Journal of Management Studies*, 35(3): 331-353.
- Lindquist, J.D. (1974), Meaning of Image: Survey of Empirical and Hypothetical Evidence, *Journal of Retailing*, 50: 29-38.
- Lorange, P. and J. Roos (1993), *Strategic Alliances: Formation, Implementation and Evolution*, Cambridge, MA: Blackwell Publishers.

- Messick, D.M. and M.B. Brewer (1983), Solving Social Dilemmas: A Review, *Review of Personality and Social Psychology*, 4: 11-44.
- Miranda, M.J. and L. Kónya (2007), Directing Store Flyers to the Appropriate Audience, *Journal of Retailing and Consumer Services*, 14(3): 175-181.
- Murnighan, J.K. and A.E. Roth (1983), Expecting Continued Play in Prisoners' Dilemma Games, *Journal of Conflict Resolution*, 27(2): 279-300.
- Murry, J.P. and J.B. Heide (1998), Managing Promotion Program Participation Within Manufacturer-Retailer Relationship, *Journal of Marketing*, 62(January): 58-69.
- Nilsson, J. (1996), The Nature of Co-operative Values and Principles: Transaction Cost Theoretical Explanations, *Annals of Public and Co-operative Economics*, 67(4): 633-653.
- Norton, S.W. (1988), Franchising, Brand Name Capital, and the Entrepreneurial Capacity Problem, *Strategic Management Journal*, 9: 105-114.
- Olson, M. (1965), *The Logic of Collective Action: Public Goods and the Theory of Groups*, Cambridge, MA: Harvard University Press.
- Orbell, J.M. and R.M. Dawes (1993), Social Welfare, Co-operators' Advantage, and the Option of Not Playing the Game, *American Sociological Review*, 58(December): 787-800.
- Ostrom, E. (1990), *Governing the Commons*, New York: Cambridge University Press.
- Oye, K.A. (1986), *Co-operation Under Anarchy*, Princeton, NJ: Princeton University Press.
- Park, S.H. and G.R. Ungson (2001), Interfirm Rivalry and Managerial Complexity: A Conceptual Framework of Alliance Failure, *Organization Science*, 12(1): 37-53.
- Parkhe, A. (1993), Strategic Alliance Structuring: A Game Theoretic and Transaction Cost Examination of Interfirm Cooperation, *Academy of Management Journal*, 36: 794-829.
- Parkhe, A., E.C. Rosenthal, and R. Chandran (1993), Prisoners' Dilemma Payoff Structure in Interfirm Strategic Alliances: An Empirical Test, *Omega*, 21(5): 531-539.
- Pekar, P. Jr. and R. Allio (1994), Making Alliances Work – Guidelines for Success, *Long Range Planning*, 27(4): 54-65.
- Pruitt, D. and M. Kimmel (1977), Twenty Years of Experimental Gaming: Critiques, Synthesis and Suggestions for the Future, *Annual Review of Psychology*, 28: 363-392.
- Rapoport, A. and A. Chammah (1965), *Prisoners' Dilemma*, Ann Arbor: University of Michigan Press.
- Rubin, P.H. (1978), The Theory of the Firm and the Structure of the Franchise Contract, *Journal of Law and Economics*, 21(1): 223-233.

- Sammer, J. (2006), Alliances: How To Get Desired Outcomes, *Business Finance*, 12(4): 38-40.
- Saskatchewan Business Magazine, *2008 Saskatchewan's Top 100 Companies*, available online at <http://sasktop100.ca/>
- Schelling, T.C. (1960), *The Strategy of Conflict*, Cambridge, MA: Harvard University Press.
- Schiffrin, M. (2001), Partner or Perish, *Forbes*, 21 May: 26-28.
- Shimp, T.A. (1997), *Promotion Management and Marketing Communications*, Second Edition, Hinsdale, IL: Dryden.
- Spekman, R.E., T.M. Forbes III, L.A. Isabella, and T.C. MacAvoy (1998), Alliance Management: A View from the Past and a Look to the Future, *Journal of Management Studies*, 35(6): 747-772.
- Stern, L.W., A.I. El-Ansary, and A. Coughlan (1996), *Marketing Channels*, Englewood, NJ: Prentice-Hall.
- Tajfel, H. and J. Turner (1979), An Integrative Theory of Inter-Group Conflict, in W. Austin and S. Worchel (Eds.), *The Social Psychology of Inter-Group Relations*, Monterey, CA: Brooks/Cole, 33-47.
- Thorelli, H.B. (1986), Networks: Between Markets and Hierarchies, *Strategic Management Journal*, 7(1): 37-51.
- van Huyck, J., R.C. Battalio, and R.O. Beil (1990), Tacit Coordination Games, Strategic Uncertainty, and Coordination Failure, *American Economic Review*, 80(1): 234-249.
- Volle, P. (1997), Some Perspectives of Retailers' Promotion Planning, *Decisions Marketing*, 12: 39-46.
- Zaheer, A. and G.E. Bell (2005), Benefiting from Network Position: Firm Capabilities, Structural Holes, and Performance, *Strategic Management Journal*, 26(9): 809-825.
- Zeng, M. and X.P. Chen (2003), Achieving Co-operation in Multiparty Alliances: A Social Dilemma Approach to Partnership Management, *The Academy of Management Review*, 29(4): 587-605.
- Zeuli, K. and J. Foltz (2005), *Managerial Incentives, Moral Hazard, and Structural Change in Agricultural Co-operatives*, Selected paper at the American Agricultural Economics Association Annual Meeting, Providence, Rhode Island, July 24-27.

Appendices

Appendix A: Interview Guide – Questions for Discussion with Federated Co-operatives Ltd.'s Managers and Board Members

1. Please describe FCL and the CRS.
 - What are the goals and values that characterize FCL?
 - What is special about FCL compared to other wholesalers?
 - What role does FCL play in the CRS?
2. A system is defined as a set of interdependent entities whose actions affect each other. Do you think this definition applies to the CRS? Why? Can you think of situations when your action influenced others in the System and vice-versa?
3. What are the key coordination issues that arise in the CRS in purchasing, distribution, marketing, and innovation?
4. What impact does a lack of coordination have on System performance? How important is opportunism by local retail co-operatives?
5. How is opportunism and lack of coordination minimized within the CRS? Does identity play a role in addressing these problems?
 - Describe the degree to which local retail co-operatives and FCL identify with the CRS.
 - How does this identification affect behaviour?
 - Does FCL do anything to create and maintain identity within the System?
 - Please discuss the role of the Executive Management Committee, the Marketing Expo, and the Fairmont Conference.
 - How does FCL use its store design service and its marketing promotions to foster identification of local retail co-operatives with the CRS?
 - What is the role of the heavy oil upgrader and oil refinery in inducing identification of local retail co-operatives with the CRS?

- What is the role of the manager development system in fostering identification of local retail co-operatives with FCL?
 - Please elaborate on the role of the patronage refund and the finance from within programs in inducing identification of local retail co-operatives with the CRS.
 - How is FCL encouraging local retail co-operatives to work together?
 - Is there a conflict between the CRS identity and identities at the local retail level? If so, how does FCL deal with it?
 - What other mechanisms and incentives does FCL use to counteract opportunism and coordination problems within the CRS?
6. What are the main factors that lead local retail co-operatives to patronize FCL? Do they feel an obligation to be loyal to the CRS? Why?
 7. Do the local retail co-operatives face pressure to purchase from other wholesalers besides FCL to reduce their acquisition costs?
 8. Please describe your relationship with the local retail co-operatives.
 - What is the nature and content of the communication between FCL and local retail co-operatives?
 - Do local retail co-operatives accept FCL's corporate stores as legitimate? Why?
 - How do local retail co-operatives view the fact that FCL supplies independent retailers (i.e., their competition)?
 9. Please discuss the implications you think the financial crisis in the early 1980s had on the relationships among members of the CRS?
 10. Please describe FCL's approach to innovation.
 - How important is innovation? Why?
 - What are some of the most important innovations that FCL initiated in the last years? What was their source?
 - How did local retail co-operatives deal with these innovations?
 - How does FCL promote innovation within the System?

11. Experts are increasingly saying that organizations must be centralized to survive. What would you tell them?

Appendix B: Interview Guide – Questions for Discussion with Managers and Board Members of the Calgary and Saskatoon Co-operatives

1. What are the goals and values that characterize your co-operative?
 - What is special about your co-operative compared to other retail stores? (*only for board members*)
2. How long have you been in your position?
 - Do you have prior co-op experience?
 - Please describe your background. (*only for board members*)
 - Do you have experience outside the CRS? What are the main differences between working in the CRS and outside? (*only for managers*)
 - Do you work with the aim of being promoted to FCL's management team? (*only for managers*)
3. A system is defined as a set of interdependent entities whose actions affect each other. Do you think this definition applies to the CRS? Why? Can you think of situations when your action influenced others in the System and vice-versa?
4. What are the key coordination issues that arise in the CRS in purchasing, distribution, marketing, and innovation? What impact does a lack of coordination have on System performance?
5. How is opportunism and lack of coordination minimized within the CRS? Does identity play a role in addressing these problems?
 - Describe the degree to which local retail co-operatives and FCL identify with the CRS.
 - How does this identification affect behaviour?
 - How is identity created and maintained within the CRS?

- Please discuss the role of the Executive Management Committee, the Marketing Expo, and the Fairmont Conference.
 - How does FCL use its store design service and its marketing promotions to foster identification of local retail co-operatives with the CRS?
 - What is the role of the heavy oil upgrader and oil refinery in inducing identification of local retail co-operatives with the CRS?
 - What is the role of the manager development system in fostering identification of local retail co-operatives with FCL?
 - Please elaborate on the role of the patronage refund and the finance from within programs in inducing identification of local retail co-operatives with the CRS.
 - How is FCL encouraging local retail co-operatives to work together?
 - Is there a conflict between the CRS identity and identities at the local retail level? If so, how is it resolved?
 - What other mechanisms and incentives are used to counteract opportunism and co-ordination problems within the CRS?
6. How do you characterize your co-operative's competitive environment?
- What was your co-operative's share of the consumer retail market in 2007?
 - Who are your biggest competitors?
 - How do you deal with this competition?
7. Are you facing pressure to purchase from other wholesalers besides FCL to reduce acquisition costs?
8. What are the main factors that determine your decision to patronize FCL? Do you feel an obligation to be loyal to the CRS? Why or why not?*(only for managers)*
9. Please describe your relationship with FCL.
- Is your co-operative loyal to FCL/CRS? Why or why not? *(only for board members)*
 - What is the nature and content of communication between your co-operative and FCL?

- What tensions exist between your co-operative and FCL in terms of pricing and distribution?
- How do you find FCL's policies and programs? Do you feel that FCL is serving and supporting you? If yes, on which basis?
- Are you concerned with competition coming from FCL's corporate stores or with FCL supplying competition? Why or why not?

10. Please describe your relationship with other retail co-operatives.

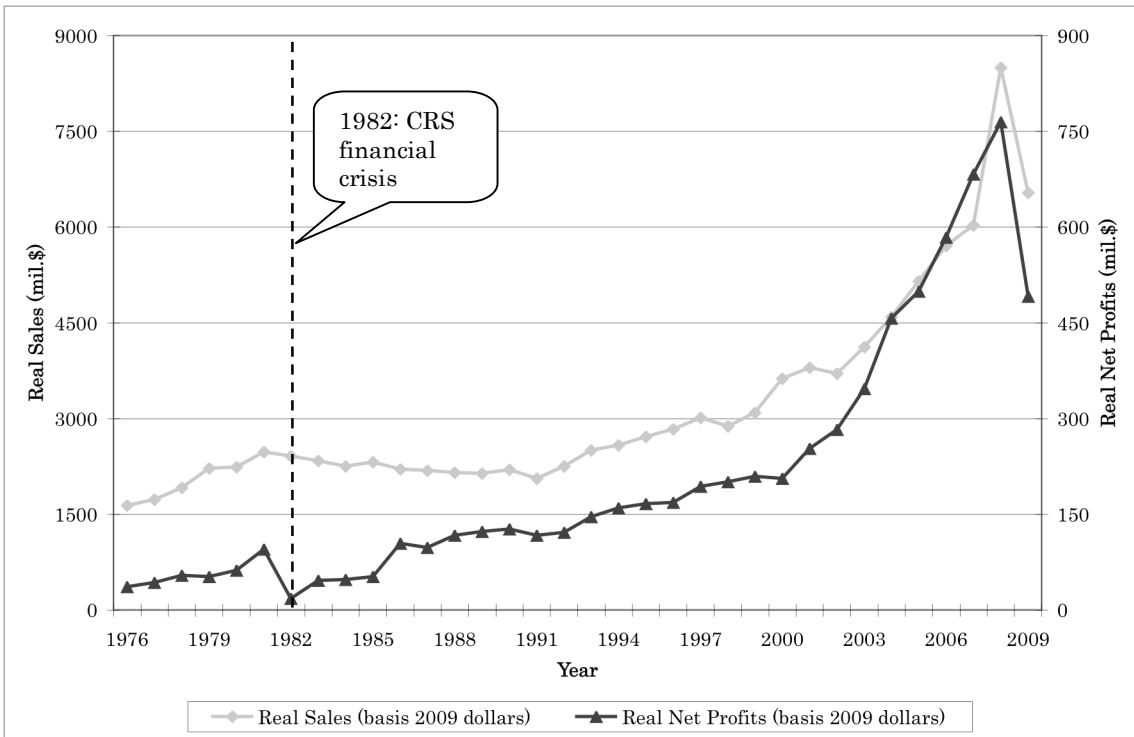
- What is the nature and content of communication between your co-operative and other co-operatives in the CRS?
- Please describe activities that you undertake in co-operation with other retail co-operatives (i.e., shared innovations).

11. Please describe your co-operative's approach to innovation.

- How important is innovation? Why?
- What are the most recent innovations that your co-operative initiated? What was their source?
- How do you encourage innovation at your co-operative?

12. Please discuss the implications you think the financial crisis in the early 1980s had on the relationships among members of the CRS?

13. Experts are increasingly saying that organizations must be centralized to survive. What would you tell them?



Source: Author's own calculations based on data from the FCL Annual Reports 1976-2009.

Figure 3.1: Evolution of Federated Co-operatives Ltd.'s Sales and Net Profits, 1976-2009 (2009 Constant Dollars)

Chapter 4

Essay Two: Identity and Strategic Network Management

4.1 Introduction

Business organizations today are increasingly forming partnerships with suppliers, buyers, and even competitors in order to achieve sustainable competitive advantage (Hoskisson et al., 2008). For instance, global competition requires firms to increase their operational efficiency. Moreover, customers demand quality products at competitive prices, as well as shorter and more flexible delivery times. To meet these demands, firms are increasingly creating streamlined supplier networks where each member specializes in the activities where it has a strong core competence (Christopher, 2005). Furthermore, the globalization of markets also makes it more difficult for firms to get access to end customers, enhancing the position of distributors. To reach global customers, producer firms are increasingly building distributor partnerships where the access and information about the end customers are shared between the producer and the distribution network (Gummesson, 2008). Lastly, firms enter into co-operative relationships with their competitors to benefit from economies of scale in joint purchasing, marketing, distribution, and/or research, to establish industry standards, to gain market power (reduce industry over-capacity), to enter new product or geographic markets rapidly, to gain access to know-how located outside of their boundaries, or to share the risks for activities that are beyond their own scope or capabilities (Hoskisson et al., 2008).

Despite their increasing popularity, many co-operative strategies fail (Das and Teng, 2000; Hambrick et al., 2001; Ireland, Hitt, and Vaidyanath, 2002). One reason is the inherent tendency of business partners to behave opportunistically (Hoskisson et al., 2008; Ireland, Hitt, and

Vaidyanath, 2002; Parkhe, 1993). Firms have a common interest in the partnership because of reciprocal interdependencies. However, they retain autonomy in pursuing individual interests. Thus, despite the fact that each needs the others to advance their individual interests, each business partner has an incentive to act opportunistically to maximize its own gains at the expense of others. This incentive can lead to actions that are individually rational, yet produce a collectively suboptimal outcome – a situation isomorphous to the game of prisoner’s dilemma.

The economics and business strategy literature has focused on monitoring defection and matching rewards and sanctions to the partner’s behaviour (e.g., Wathne and Heide, 2000), as well as selecting the “right” partners (e.g., Hitt et al., 2000; Reuer, 1999), as strategies that firms can use to manage opportunistic behaviour by their partners. However, there is a growing body of literature that suggests firms can use identity to manage their strategic partnerships – i.e., firms can stimulate their business partners to behave co-operatively by inducing them to identify with the group (Corsten, Kucza, and Peyinghaus, 2006; Dyer and Nobeoka, 2000; Johnson, Korsgaard, and Sapienza, 2002; Ring and Van de Ven, 1994).

In a conceptual study of how co-operative inter-organizational relationships emerge, grow, and dissolve over time, Ring and Van de Ven (1994) assume that identification plays a critical role in the formation and maintenance of such relationships. This assumption is supported by Johnson, Korsgaard, and Sapienza (2002) in the context of international joint ventures (IJVs). Based on the findings of a survey of IJV managers, the authors argue that IJV managers’ stronger identification with the IJV than with the parent firms limits the threat that IJV managers adopt strategies that would allow one parent firm to exploit the IJV at the other parents’ expense. Dyer and Nobeoka (2000) undertake a case study of Toyota’s production network (i.e., Toyota and its suppliers). Interviews with both Toyota and supplier executives and archival data reveal that the creation of a “strong network identity” enhances network-level knowledge sharing processes by motivating network members to participate and openly share valuable knowledge without spillover effects and by preventing free riders. Finally, Corsten, Kucza, and Peyinghaus (2006) conduct a survey of supplier firms’ managers in the German-speaking automotive industry. The survey results show that the level of suppliers’ identification with the customer’s organization has a positive effect on the quality of collaboration within the buyer-supplier relationship.

That identity can influence economic outcomes has been shown formally by Akerlof and Kranton (2000, 2005). In their work, the authors analyze the behavioural consequences that arise if we take into account one’s desire to act in compliance with one’s own identity. In their

first paper, Akerlof and Kranton (2000) incorporate identity into a game-theoretic model to explain gender discrimination in the workplace, poverty and social exclusion, and the household division of labour, phenomena that the standard economic model has difficulty explaining. In their more recent paper, Akerlof and Kranton (2005) construct a principal-agent model that incorporates identity and show that if an agent identifies with a principal, the resulting (intrinsic) motivation will suffice to sustain a high effort level.

The purpose of this paper is to examine, both theoretically and empirically, how identity can be used to deter opportunism in strategic networks. The analysis proceeds as follows. Section two draws upon social identity theory to explain how identification with a strategic group can enhance co-operation among member-firms and, hence, how the core firm in a strategic network can promote robust co-operation among network members by inducing them to identify with the network. In section three, the concept of identity is incorporated into a two-stage economic model of behaviour to show that opportunism can be managed in strategic networks if members' identity does play a role in their decision-making. In the first stage, the core firm in a strategic network acts to establish co-operation among network members as a key aspect of the network identity and to foster members' identification with the network. In the second stage, members choose between co-operation and defection, based on both material and identity payoffs associated with each strategy. Section four provides empirical evidence from the Co-operative Retailing System (CRS) (a network of about 264 retail co-operatives and their wholesaler, Federated Co-operatives Ltd., FCL) that identity has successfully been used, together with economic mechanisms, to manage opportunism in the network. It also provides examples of the mechanisms that FCL, as the core firm, has used to manage the identity of the retails. Most of the information in this section is based on the results of in-depth interviews with senior management (CEO), board members, and managers of particular divisions of FCL, Calgary Co-op (the largest retail co-operative in the CRS) and Saskatoon Co-op (the third-largest retail co-operative in the CRS), and on documentary evidence. Section five concludes the paper.

4.2 Identification and Co-operation

This section draws upon social identity theory (Tajfel and Turner, 1985; Peteraf and Shanley, 1997) to explain how firms' identification with a strategic group can enhance inter-firm co-operation and, hence, how identity can be used as a strategic network management tool. Because the process of identification of a firm with a strategic group is directly analogous to the process

of identification of an individual with a social group, the concepts of identity and identification at individual and group level are discussed first, followed by a discussion of the concepts of identity and identification at inter-organizational level. But before explaining how identity can foster co-operation, this section provides a clarification of the concept of co-operation and co-operative behaviour.

4.2.1 The Nature of Co-operation

The standard game-theoretical view of co-operative behaviour is that interdependent players choose the strategy that maximizes joint gains rather than acting opportunistically to maximize their own gains (Axelrod, 1984; Luce and Raiffa, 1957). Seen from this perspective, co-operative behaviour focuses on the outcome – i.e., maximization of joint interests.

In co-operatives (recall that the CRS is a network of retail co-operatives), the term co-operative behaviour has a slightly different connotation. Co-operative behaviour in the co-operative literature is referred to as co-operative members working together to achieve mutual gains (Craig, 1993). From this perspective, the focus is on both the outcome (i.e., maximization of joint interests) and the motivation of the behaviour leading to this outcome.

More formally, in game-theoretic settings, players choose to co-operate when the pecuniary benefits from doing so exceed the benefits from behaving opportunistically. In contrast, in co-operatives, the term co-operative behaviour suggests that members choose not to act opportunistically both for pecuniary reasons and because there is a set of values that constrain their behaviour – i.e., part of being a co-operative member is to work together with the others for the common benefit of all.¹

Another way of expressing this idea is that part of the identity of a co-operative member could be a predilection to behave non-opportunistically. If this dual sense of the term co-operative behaviour is at work in the CRS, then it suggests that it may have an initial advantage at using identity to promote robust co-operation among network members compared to other forms of networks. Part of the analysis that follows examines the extent to which this motivational tendency to co-operate is present.

¹Nilsson (1996) argued that members' co-operative values act as a catalyst for the emergence of co-operative behaviour in co-operatives.

4.2.2 Identity and Identification at Individual and Group Level

According to social identity theory, an individual's identity is comprised of a personal identity encompassing those characteristics that differentiate the self from all others and a social identity encompassing those characteristics that reflect assimilation to others or significant social groups (Tajfel and Turner, 1985). Social identification is thus defined as the perception of oneness with or belongingness to a social group (Ashforth and Mael, 1989).

To explain the process of an individual's identification with a group, social identity theory invokes the operation of self-categorization (social categorization of self) processes. Social categorization (Turner, 1985; Turner et al., 1987) is a cognitive process by which people construct social categories in terms of prototypes (i.e., stereotypical and normative attributes) and assign the self and others to the contextually relevant category. Prototypes are typically not checklists of attributes but, rather fuzzy sets that capture the context-dependent features of group membership, often in the form of representations of exemplary members (actual group members who best embody the group) or ideal types (an abstraction of group features) (Hogg and Terry, 2000). Prototypes maximize similarities within and differences between groups, thus defining groups as distinct entities. Social categorization of self and others into in-group and out-group depends on the perceived similarity of the target to the relevant in-group or out-group prototype (Hogg and Terry, 2000). This implies that social identification occurs depending on the extent to which self is perceived to be similar to a group prototype.

It is assumed that people have a basic need to see themselves in a positive light in relation to relevant others – i.e., people strive to maintain and enhance a positive self-esteem (Abrams and Hogg, 1988; Rubin and Hewstone, 1998). In addition, social identity theory assumes that people partly derive their self-concept from group memberships. As a result, people will more likely identify with groups that satisfy their need for positive self-esteem, providing a positive feedback on the self-concept, especially in comparison with relevant out-groups (Abrams and Hogg, 1988).

In addition to being motivated by the need for positive self-esteem, social identification is also motivated by a need to reduce subjective uncertainty about one's perceptions, attitudes, and behaviours and, ultimately, one's self-concept and place within the social world (Hogg, in press; Hogg and Mullin, 1999). Social categorization of self accentuates people's perceived similarity to the in-group prototype. As a result, people are perceived as, are reacted to, and act as embodiments of the relevant in-group prototype rather than as unique individuals – a process of

depersonalization. Social identification reduces uncertainty by depersonalizing self-conception and cognitively assimilating self to the in-group prototype that describes and prescribes perceptions, attitudes, and behaviours.

Identification has the potential to promote co-operation among members of a social group through three distinct avenues. First, it is assumed that, in depersonalizing the self, identification also depersonalizes self-interest, transforming differing personal self-interests into a collective we-group interest and creating a co-operative orientation within the group (Turner, 1999).

Second, identification leads to the creation of depersonalized or group-based trust – trust based on information regarding a trustee’s membership in a social category rather than direct experience (Brewer, 1981). There are at least two reasons why membership in a salient category can provide a basis for presumptive trust. First, shared membership in a given category can serve as a “rule for defining the boundaries of low-risk inter-personal trust that bypasses the need for personal knowledge and the costs of negotiating reciprocity” when interacting with other members of that category (Brewer 1981, p. 356). Second, because of the cognitive consequences of categorization and in-group bias, individuals tend to attribute positive characteristics such as trustworthiness, honesty, and co-operativeness to other in-group members (Brewer, 1996). As a consequence, individuals may confer a depersonalized trust on other in-group members that is based simply on awareness of their shared category membership. Trust based on group identification enhances co-operation because it reduces the fear that other group members will exploit co-operation by failing to reciprocate.

Third, through depersonalization of self, identification leads to internalization of, and adherence to, group values and norms (Ashforth and Mael, 1989). To the extent that the group develops co-operative norms, identification with the group will prompt members to behave co-operatively. Through depersonalization of self, social identification engenders the attribution of prototypical characteristics, including norms regarding attitudes and behaviours, of the in-group to the self. This will affect behaviour in that any norm-breaking act will be accompanied by a certain disutility. That is, when an individual chooses to behave in a way that is incompatible with (or threatens) his overall perception of self-integrity – his identity – he suffers a loss in utility. In terms of Akerlof and Kranton (2000, 2005), this loss in utility is due to a loss in identity (i.e., identity cost). This identity cost then reduces an individual’s incentive to deviate from the in-group norms. The strength of this effect, however, will depend on the context and structural salience of group membership (i.e., how salient norms are in a given context) and on the strength

of identification with the group (i.e., the strength of the internalized norms) (Doosje, Ellemers, and Spears, 1999).

4.2.3 Identity and Identification at the Inter-Organizational Level

An individual's identity is directly analogous to a firm's identity, which comprises its organizational identity, built on firm-specific attributes, and a group-level identity that is built on attributes common to group members (Peteraf and Shanley, 1997). For firms to identify with a group, it is necessary that a *cognitive group* exists (Peteraf and Shanley, 1997). That is, identification requires a common understanding among firms that a group exists. Once firms perceive a group, then they have "identified" its attributes and membership (Peteraf and Shanley, 1997).

At the most basic level, *cognitive groups* arise as a byproduct of the categorization processes that managers employ in scanning and making sense of their competitive environment (Peteraf and Shanley, 1997). These categorization processes are similar to the social categorization processes that occur at the individual level. Instead of comparing all pairs of firms with respect to all possible attributes, managers code the similarities and differences between organizations in a summary way, by clustering attributes that co-occur across an organizational field into general categories, and assign their organization and others' to the relevant category (Porac, Thomas, and Emme, 1987; Porac et al., 1995; Reger and Huff, 1993; Rosch, 1978). Grouping firms cognitively allows managers to reduce uncertainty and cope with bounded rationality by restricting their attention to limited neighbourhoods of action (Levinthal and March, 1993).

However, Peteraf and Shanley (1997) argue that these categorization processes are insufficient to explain groups of organizations that can affect firm behaviours. Instead, the authors suggest that social learning processes – i.e., the processes of observing competitor behaviour and utilizing the observations to inform current strategy – promote the development of cognitive strategic groups through two interrelated processes. First, social learning guides the categorization processes that managers use to cognitively order their environment by focusing managers' attention upon those firms that provide the most potential for co-operation (Peteraf and Shanley, 1997). Second, social learning enhances the reliability of a firm's judgments about other firms and the potential for co-operation with those firms, reducing a firm's transaction costs and promoting continued exchange and co-operation with those firms (Peteraf and Shanley, 1997). Social learning processes thus give shape to a *cognitive group* and lead to a collective understanding and appreciation of the group's attributes.

Similar to an individual's motivation to identify with a social group, firms will identify with high-status groups as a means to enhance their own firm-level organizational identity and image (Peteraf and Shanley, 1997). By becoming part of a high-status group, firms may enjoy prestige that extends beyond that of their own organization. As well, firms will identify with a group when the association clarifies their relationship with the broader business environment (Peteraf and Shanley, 1997).

Firms obviously do not have cognitive abilities. Thus, the cognitive processes involved in the identification of a firm with a strategic group are represented by the cognitive capabilities of the CEO, for the case of small firms led by a single top decision-maker, or of the top management team as a collective actor, for the case of large firms characterized by collective decision-making. The top management team may be characterized as a collective actor with cognitive capabilities if group-level processes (Larson and Christensen, 1993) allow team members to reconcile their cognitive differences and make decisions in a relatively unified and consistent manner. Peteraf and Shanley (1997) argue that it is even more reasonable to view the firm as a collective cognitive actor when the top management team is relatively homogeneous (i.e., when the team members have spent most of their careers with the firm or when they share common experience through training programs or the like) or when there is continuity of management. Finally, the existence of a "dominant managerial logic" (Bettis and Prahalad, 1995; Prahalad and Bettis, 1986) – a knowledge structure that develops over time out of the cumulative effect of a firm's strategic decisions and allows top management teams to act in a unified manner and to make consistent decisions – also supports the approach of the firm as a collective cognitive actor.

Identification with a strategic group has the potential to promote co-operation among member-firms through avenues similar to those discussed at individual and group level. In particular, inter-organizational identification induces firms to substitute group interests for own interests (Peteraf and Shanley, 1997). As well, identification induces firms to assess the reliability of members and their potential for future co-operation in terms of group experiences and norms rather than in terms of past dyadic relationships (Peteraf and Shanley, 1997). Members may be seen as reliable (or at least predictable) because they are group members and not because of a particular history of reliability in past interactions (similar to the concept of depersonalized trust). Finally, identification leads to internalization by members of group norms and values, which may include co-operative norms (Peteraf and Shanley, 1997).

4.2.4 Identity as a Strategic Network Management Tool

Since identification with a strategic group can enhance co-operation among group members, firms can potentially use identity to manage their strategic partnerships – i.e., firms can stimulate their business partners to behave co-operatively by inducing them to identify with the group. In particular, the firm that has the most to gain from the partnership may find it profitable to invest in the identity of its partners. Alternatively, all firms involved in the partnership may choose to contribute to the creation of a collective identity among their partners. Finally, the core firm in a strategic network may act to foster member-firms' identification with the network to reduce opportunism.

This paper considers the case of a strategic network that uses identity to deter opportunism by network members and focuses on internalization of network norms by those firms that identify with the network. Gulati, Nohria, and Zaheer (2000) regard strategic networks as composed of enduring inter-organizational ties that are of strategic significance for the firms entering them. While they may take different forms – e.g., strategic alliances, joint ventures, long-term buyer-supplier partnerships – strategic networks share a governance function performed by expert head firms (Inzerelli, 1990), powerful lead firms (Lorenzoni and Ornati, 1988), or strategic hubs or centres (Lorenzoni and Baden-Fuller, 1995; Dyer and Nobeoka, 2000). As Human and Provan (2000) have noted, these core firms are often large pre-existing organizations, such as a central buyer or supplier, which act as the focal point and are chiefly responsible for managing the network.

Social identity theory suggests that the core firm in a strategic network can act to foster members' identification with the network and to establish co-operation among members as a key aspect of the network identity as one way to reduce opportunism in the network. The core firm can induce members to identify with the network by promoting the development of a *cognitive group* (i.e., a common understanding among network members that they form a strategic group), and by emphasizing the attractive attributes of the network and how members' affiliation with the network clarifies their relationship to the broader business environment. Those firms (CEOs and top management teams) that identify with the network will incur an identity cost when they choose to break the network norm – i.e., co-operation with the other network members. This identity cost will reduce the payoffs associated with defection and, implicitly, members' incentive to defect.

4.3 Theoretical Model

This section develops an economic model of behaviour that shows how the core firm in a strategic network can use identity to manage opportunism by network members. Consider a two-stage game with $n+1$ firms (i.e., a core firm and n network members). In the first stage of the game, the core firm acts to establish co-operation among members as a key aspect of the network identity and to foster members' identification with the network. The intensity with which the core firm manages members' identity is denoted by θ , with $\theta \geq 0$. The costs of identity management incurred by the core firm comprise a fixed cost and a variable cost (which depends on the intensity of identity management).

The variable cost includes both the direct cost of the activities that are meant to establish co-operative norms and induce members to identify with the network, and the indirect cost associated with the negative consequences of a strong network identity. In particular, strong identification with the network is likely to lead to reduced flexibility, strategic myopia, and sub-optimizing behaviour by network members, which will affect the profitability of the members and, consequently, the profitability of the core firm. In their study on strategic groups, Peteraf and Shanley (1997) argue that strong identification with the group leads top managers to internalize and adhere to the group norms, as well as to adopt the set routines that develop to guide behaviours within the group. As a result, the group may suffer from an increased resistance to change and an inability to adapt to new conditions. As well, strong identification with the group may excessively focus the attention of members on the group and away from outside competitors with the end result of making members vulnerable to unexpected competitive attacks from outside the group (Peteraf and Shanley, 1997). Finally, a strong group identity may stimulate members to emphasize imitation over differentiation even when potential gains from differentiation may be greater (Peteraf and Shanley, 1997).

It is assumed that the mechanisms for identity management cannot be targeted at specific members, so that the intensity of identity management is the same for all network members. Thus, the costs to the core firm for inducing members to identify with the network are:

$$C(\theta) = \begin{cases} 0 & \text{if } \theta = 0 \\ c_f + c_v\theta & \text{if } \theta > 0 \end{cases} \quad (1)$$

where c_f is the fixed cost and c_v the marginal cost.

In the second stage, the n members choose between co-operation (seek mutual gains at the expense of short-term self-interest) and defection (seek individual gains at the expense of long-term mutual benefit) based on both material and identity payoffs associated with each strategy. For simplicity, each member is assumed to be interchangeable with each other member with respect to material payoffs, so that the material payoffs are identical across network members. A member's material payoff is strictly a function of the strategy played and the number of other members who co-operate, denoted by n_c (where $n_c = 0, \dots, n-1$). It is assumed that an added act of co-operation increases the material payoffs of co-operators and defectors alike by a constant amount, a , regardless of how many members have chosen to co-operate. Also, the cost of effort e is assumed to be the same for all members that choose to co-operate, with $e > 0$.

Thus, a member's material payoff U_m when n_c other members co-operate is given by $U_m^c = (n_c + 1)a - e$ when a member chooses to co-operate and $U_m^d = n_c a$ when a member chooses to defect. To ensure that defection is the dominant strategy when members' identity is not taken into account, it is assumed that $e > a$. The difference $(e - a)$ represents a member's incentive to defect (temptation). With $e > a$, each member is better off defecting than co-operating, regardless of what others do. As well, in order for universal co-operation to be pareto superior to universal defection, it is assumed that $(na - e) > 0$.

The identity payoff U_i represents the (dis)utility that members who identify with the network experience when they choose to defect. Because the norm for network members is to work together with the others for the benefit of all, identification with the network will lead to a loss in utility (i.e., identity cost) when members choose to break the norm (to defect) – i.e., $U_i^d \leq 0$. When members follow the network norm (co-operate), they do not incur any loss in utility – i.e., $U_i^c = 0$.

A member's identity payoff from defection U_i^d is the product of the intensity of identity management by the core firm θ and the member's propensity to identify with the network λ – i.e., $U_i^d = -\theta\lambda$. Network members are assumed to exhibit different propensities to identify with the network, as a result of top managers being different in the personality traits (co-operative versus individualistic), and the length of tenure and intensity of exposure to the network, as well as of members having different expected identity gains (reputation improvements) from identification with the network. Members are uniformly distributed with respect to λ with unit density $f(\lambda) = 1$ in the interval $\lambda \in [\underline{\lambda}, \bar{\lambda}]$. As a result, the disutility of diverging from the ideal behaviour varies across members. That is, for given θ , members characterized by large values

of λ (close to $\bar{\lambda}$) experience larger utility losses than members characterized by small values of λ (close to $\underline{\lambda}$) when they choose to defect.

Assuming that the material and identity payoffs are additive – i.e., $U = U_m + U_i$ – the total payoffs associated with each strategy are given as shown in Table 4.1.

Table 4.1: Network Members’ Material, Identity, and Total Payoffs

Strategy	Payoffs		
	Material	Identity	Total
Co-operation	$(n_c + 1)a - e$	0	$(n_c + 1)a - e$
Defection	$n_c a$	$-\theta\lambda$	$n_c a - \theta\lambda$

Table 4.1 captures the idea that identity reduces the payoff associated with defection and the magnitude of this effect varies across members, depending on their propensity to identify with the network. Figure 4.1 depicts the total payoffs to network members. The horizontal axis measures the differentiating member characteristic λ , while members’ total payoffs are measured on the vertical axis. The line AA'' represents the total payoffs from defection for members with different values of λ , while the line BB' graphs the total payoffs from co-operation for each of the members. The downward slope of AA'' indicates that the individualized cost of breaking the network norm increases with λ . Note that the line AA' represents the total payoffs from defection when identity is not considered. When identity is incorporated into the model, defection is no longer a dominant strategy, as those members characterized by high propensity to identify with the network are better off co-operating than defecting.

Insert Figure 4.1 about here.

4.3.1 Analytical Solution

The solution to this game is found by backward induction. The second stage of the game in which network members choose between co-operation and defection based on material and identity payoffs is examined first, followed by the first stage in which the core firm optimizes the intensity of identity management based on the benefits it gets from inducing co-operation among network members and the costs associated with managing members’ identity.

4.3.1.1 Stage 2 – The Member’s Choice Between Co-operation and Defection

A member prefers co-operation to defection if total payoffs from co-operation exceed total payoffs from defection. Thus, a member will co-operate if the following relationship between the identity cost and the incentive to defect holds:

$$\theta\lambda \geq (e - a). \quad (2)$$

Therefore, the critical level of the propensity to identify with the network at which co-operation replaces defection (i.e., the switching value) is

$$\lambda_{SW} = \frac{e - a}{\theta}. \quad (3)$$

Members whose propensity to identify with the network is lower than λ_{SW} (i.e., members located to the left of λ_{SW} in Figure 4.1) will choose to defect, while those whose propensity to identify with the network is higher than λ_{SW} (i.e., members located to the right of λ_{SW} in Figure 4.1) will choose to co-operate. Since network members are uniformly distributed with respect to the differentiating characteristic λ , λ_{SW} also determines the rate of defection that occurs among members for a given level of θ (i.e., $x = F(\lambda_{SW}) = \lambda_{SW}$), where $F(\lambda_{SW})$ is the cumulative distribution function for the uniform distribution. The rate of co-operation among members is given by $1 - x = 1 - \lambda_{SW}$.

4.3.1.2 Stage 1 – The Optimum Intensity of Identity Management

The benefit to the core firm from inducing co-operation among network members is assumed to be a linear function of the number of members who choose to engage in co-operative behaviour – i.e.,

$$B(\theta) = \delta[1 - x(\theta)]n, \quad (4)$$

with $\delta > 0$ (i.e., δ is the core firm’s benefit multiplier). However, the core firm has to incur costs, as described by equation (1), to induce co-operation among network members. Thus, the core firm’s problem is to choose the intensity of identity management that maximizes net benefits – i.e., the benefits to the core firm when members co-operate net of the cost of managing members’ identity

$$\max_{\theta} NB = \delta[1 - x(\theta)]n - (c_f + c_v\theta). \quad (5)$$

In particular, the core firm maximizes NB by using θ to influence the rate of defection among network members x . It is assumed that the core firm knows the switching value of λ and the functional form of F , so that it correctly perceives the members' response function

$$x(\theta) = \begin{cases} 1 & \text{if } (e - a) > \theta \geq 0 \\ (e - a)/\theta & \text{if } \theta \geq (e - a) > 0 \end{cases} \quad (6)$$

Substituting equation (6) into equation (5) and taking $\theta > 0$ gives the following optimization problem

$$\max_{\theta} NB = \delta \left[1 - \frac{(e - a)}{\theta} \right] n - (c_f + c_v \theta). \quad (15)$$

The first-order condition for a maximum is

$$\frac{dNB}{d\theta} = \frac{\delta(e - a)n}{\theta^2} - c_v = 0. \quad (7)$$

Thus

$$\theta^* = \left[\frac{\delta(e - a)n}{c_v} \right]^{1/2} \quad (8)$$

$$x^* = \left[\frac{(e - a)c_v}{\delta n} \right]^{1/2} \quad (9)$$

$$NB^* = \delta n - 2[\delta(e - a)nc_v]^{1/2} - c_f. \quad (10)$$

The intensity of identity management varies directly with the core firm's benefit multiplier, the number of network members, and the members' incentive to defect. Obviously, it varies inversely with the marginal cost of identity management.

The second-order condition for a maximum is

$$\frac{d^2 NB}{d\theta^2} = -\frac{2\delta(e - a)n}{\theta^3} < 0.$$

This condition is always satisfied given the inequalities specified earlier.

Figure 4.2 presents a graphical representation of the model. The upper quadrant represents the benefits and costs to the core firm as a function of the intensity of identity management θ , while the lower quadrant illustrates the corresponding marginal benefits and marginal costs. For $\theta < (e - a)$, the marginal benefit of identity management is zero because the identity cost does not exceed the incentive to defect, even for the members with the highest propensity to

identify with the network (i.e., the members with the largest λ s). Once $\theta > (e - a)$, some of the members begin to co-operate and positive marginal benefits are obtained. However, these marginal benefits are continuously diminishing because identity management cannot be targeted just on the marginal members involved; as the intensity of identity management increases, more and more of the impact is felt by members who are already co-operating, and less and less by those that are not co-operating.

Insert Figure 4.2 about here.

The intensity of identity management that induces all the members to co-operate and maximizes the core firm's benefits is θ_{max} . However, the costs of undertaking θ_{max} are also high and the marginal cost of identity management exceeds the marginal benefit at this point. The equilibrium level of the intensity of identity management is θ^* , for which the marginal cost of identity management equals the marginal benefit.

The model in this section indicates that stable co-operation can be promoted in strategic networks by managing the identity of network members. Managing the identity of network members means creating a cost of deviating from the behaviour prescribed by the group. When members identify strongly with their network, they lose utility if they do not act according to the perceived network norm. This identity cost changes the incentive structure of the game, reducing or even eliminating members' incentives for opportunistic behaviour. Members' heterogeneity with respect to their propensity to identify with the network and, implicitly, their identity cost from defection creates the potential for opportunism to be managed.

The next section provides empirical evidence from the CRS that identity has successfully been used to deter opportunism in the network and presents the most important mechanisms that FCL, as the core firm, has used to manage the identity of member retailers.

4.4 Identification and Co-operation in the Co-operative Retailing System

The Co-operative Retailing System (CRS) is a network of about 264 retail co-operatives spread across Manitoba, Saskatchewan, Alberta, and British Columbia that own and operate their wholesaler, Federated Co-operatives Ltd. (FCL). Affiliation with the CRS allows retail co-operatives to strengthen their bargaining position relative to manufacturers through centralized negotiation, and to achieve economies of scale and efficiencies by pooling resources in transportation, promotion, and other marketing functions (e.g., price management, the development of private label

products). As well, retail co-operatives can benefit from sharing their experience on what does and does not work, including sharing of successful marketing ideas.

However, these benefits do not ensure co-operation among retails in the CRS. Retail co-operatives are locally owned businesses, independent from each other and from FCL. Owned and controlled by local consumers in the community it serves, each retail co-operative is interested in maximizing benefits to its consumer-members. Thus, retails' autonomy in pursuing individual goals gives each one of them an incentive to behave opportunistically in order to appropriate a larger share of the benefit they collectively generate by working as the CRS.²

4.4.1 Opportunism in the Co-operative Retailing System

Interviews with CRS executives conducted during April-July 2008 (Chapter 3, Section 3.1) revealed at least three forms of opportunistic behaviour by the retails: (1) decision to shirk on quality maintenance of the Co-op brand name; (2) decision to purchase from outside suppliers instead of patronizing FCL; and (3) decision to over-expand through loans that retails guaranteed with their shares in FCL.

First, the Co-op brand name is a signal to customers of the quality of the products and services that retail co-operatives offer and, as such, is the major strategic asset that differentiates retail co-operatives in the CRS from their competitors.³ However, the collective good nature of the Co-op brand name means its full benefits cannot be internalized by each retail. In particular, while retail co-operatives receive the benefit in their local market of brand quality maintenance, they cannot capture the benefits that accrue to others. As a result, each retail co-operative has an incentive to free ride on the efforts of other retail co-operatives, and to consequently under-develop and under-maintain the Co-op brand name. This opportunistic behaviour will create spillover effects that are experienced by all retail co-operatives in the CRS – customers that have a bad experience in one Co-op store are likely to believe that other Co-op stores will provide a similar bad experience. In short, the private benefit to maintaining the quality of the brand name is less than the benefit to the CRS. If quality control decisions are made independently, retail co-operatives will be worse off than if they had co-operated to develop and maintain the Co-op brand name.

²A number of authors (e.g., Cobia, 1989; Hogeland, 2002; O'Flanagan and Taliento, 2004; Zeuli and Foltz, 2005) have documented the opportunism and coordination problems that inherently arise in federated systems, such as the CRS, and have the potential to negate the benefits that a federated system can provide. These problems, it is argued, are severe enough that federated systems are viewed to be inherently inefficient and unstable.

³See Norton (1988) for a discussion on the role of the brand name in differentiating outlets in a franchise system from outlets in other franchise systems or independent businesses in the same industry.

A retail general manager, speaking about the importance of retail co-operatives contributing to the quality maintenance of the Co-op brand name, stated: “Our co-op is surrounded by lots of small retails within 25 miles of the city and when one of those co-ops does not follow the same programs, then customers, who support both our co-op and the neighbouring retails, do not get the connection that all co-ops are the same. And if they do badly in one small retail, it affects our membership here in our co-op. So, customers perceive us to being the same; they know we are two separate companies, but they want that continuity. And when one of them does not follow the programs, it makes customers start doubting the whole system. Customers lose that trust level we have built up.”

Retail co-operatives also have the freedom to purchase from other suppliers besides their wholesaler. This gives each of them an incentive to operate outside the system when they receive better offers. This opportunistic behaviour negates the economies of scale and countervailing power the CRS could provide if it had access to all the business of the local retails. As a result, the total system profits will be smaller than what the CRS could generate if retails were to operate inside the system.

This form of opportunism was a real issue in the CRS in the late 1970s and during the 1980s. In the early 1980s, FCL distinguished between active and inactive (in terms of purchasing from FCL) members (FCL, 1981; 1982) and strongly encouraged those members unlikely to become active to terminate their membership (FCL, 1981). Moreover, in 1986, the FCL Board’s Membership Committee raised the question of whether retail co-operatives should be required to achieve a minimum level of purchases to qualify for payment of expenses for delegates attending the FCL Annual Meeting. In 1989, participants at the FCL Annual Meeting adopted a bylaw amendment that required retails to purchase at least 50,000 dollars of goods before FCL would provide expense allowances and per diems for their delegates.

The third form of opportunism that was mentioned in the interviews was the over-expansion by retail co-operatives in the late 1970s and early 1980s through loans that retails guaranteed with their shares in FCL. Each retail co-operative believed that if it was to experience financial hardship, then the other retails would bail it out. A FCL manager of the day recalls: “There was a mindset in the system ... that as long as there was any money available anywhere ... there never would be a time when a retail co-op would be allowed to disintegrate”(as cited in Fairbairn, 2003, p. 39). As a consequence, the retails collectively took on a debt level that could not be supported

by the system; the magnitude of this debt almost drove the entire system to bankruptcy in the early 1980s.

The story of the financial crisis that the CRS experienced in the early 1980s was described by Fairbairn (2003). As Fairbairn outlines, the negative real interest rates and high consumer demand of the 1970s encouraged retail co-operatives to borrow money and build expensive malls, using their shares in FCL as collateral for their loans. Retail long-term debt had increased 272 percent over the period from 1974 to 1981. In 1982, retails had only 32 percent member equity – that is, the consumer-members’ stake in the retails was less than one third of the assets, with the rest being covered by loans taken on by the co-operative, by accounts owed to the co-operative, and the like. By the time the malls were built and stocked in the early 1980s, the recession had hit and retails were faced with high interest rates and decreased demand, along with tough competition on the food side from new warehouse-style discount retailers (e.g., Superstore and Save-On-Foods). Since they could not get the sales volume to cover their high-interest-rate loans, retail co-operatives increasingly called for higher cash repayments and more financial assistance from FCL, as well as more loans to be guaranteed by FCL. But the recession also hit the wholesaler, whose earnings dropped almost 80 percent in 1982. FCL was thus unable to help all the retails and the CRS was on the brink of collapse. One FCL board member of the day recalls: “As high interest rates hit at that time, a lot of those loans became very dicey as to whether they could be repaid. Federated had so many liens – liens against the shares – had they all been called, or gone bad, the entire CRS would have collapsed” (as cited in Fairbairn, 2003, p. 29).

4.4.2 Management of Opportunism

Interviews and documentary evidence (Chapter 3, Section 3.1) suggest that FCL, as the core firm in the CRS, has used a combination of economic and identity mechanisms to promote robust co-operation among retails over the last 25 years. The financial crisis that the CRS experienced in the early 1980s created an opportunity for FCL to take a leading role in the system. In 1982 the crisis was dire and immediate, allowing no time for long-term strategies. A FCL senior manager recalls: “There was no tomorrow. It had to be done today, and there was no time for any more task forces or any more committees” (as cited in Fairbairn, 2003, p. 38). While there were the retails that had the debts, FCL had to be the source of the initiative to respond to the crisis for two reasons. First, FCL had the overview of the problems, given its direct ties with each retail co-operative. Second, FCL could not exist in isolation; without the retails, FCL could not make any money.

Because FCL did not have enough money to pull all retailers out of their problems, they decided to help those co-operatives that would allow the total system to survive, while closing others. However, FCL would not provide the retailers with direct financial assistance or any other help unless they adopted FCL's recommendations, which included: closing inefficient departments, selling assets, reducing costs in every area possible, including layoffs, salary freezes, and roll-backs, controlling inventories and accounts receivable, and avoiding all but emergency capital expenditures. Also, FCL worked closely with the retailers to improve their operations, finances, and human resources. When FCL's plan led to tangible improvements taking place in the activity of insolvent retailers and the system as a whole year by year, FCL gained retailers' credibility and was accepted as the leader of the CRS.

While FCL plays the leading role in the CRS, it is important to acknowledge that the CRS is not a totally top-down driven system. Rather, the retailers influence the decisions that FCL makes through their representatives on FCL's Board of Directors and their delegates to FCL's Annual General Meeting, among other avenues. Ketilson (1988, 1991) documented the existence within the CRS of countervailing power which enables the retailers to not only maintain control over their organizational decision making, but also have input into FCL's decisions.

Today the CRS is a strong organization. With sales of \$6.5 billion and net profits of \$491.6 million, FCL was the second largest business in Saskatchewan (Saskatchewan Business Magazine) in 2009. FCL's success has been shared with the member retailers – Calgary Co-op, for instance, is the largest retail co-operative in North America (Canadian Co-operative Association, 2009). Calgary Co-op generated just over \$1 billion in annual sales in 2009, a slight decrease from the record sales of \$1.05 billion in 2008 (Calgary Co-operative Association Ltd., 2010).

4.4.2.1 Economic Mechanisms

The two most important economic mechanisms that FCL has used to deter opportunism by the retailers are the patronage refund system and the marketing programs that FCL develops for the retailers. FCL uses the *patronage refund system* to distribute part of their net savings to member retailers in proportion to their patronage. Patronage refunds can be significant – e.g., in 2008, the patronage refund rates varied from a low of 5.3 percent on groceries to a high of 12.4 cents a liter on fuel – providing retailers with strong incentives to operate inside the system. That is, the more retailers purchase through FCL, the more economies of scale FCL can achieve, and the more patronage refunds retailers can enjoy.

As regards *marketing programs*, the Ag Team program in crop supplies is one of the most effective marketing programs that FCL has developed for the retails. The Ag Team program involves suppliers and retail co-operatives working together through FCL. By taking part in the Ag Team, suppliers receive input from retail co-operatives as to what is required by the end users and are able to develop the best programs for them. More importantly, the Ag Team program allows retails to participate in marketing funds, which are provided by suppliers, when they purchase crop supplies through FCL, thus providing retails with incentives to operate inside the system. Moreover, to be part of the Ag Team and to participate in marketing funds, retail co-operatives need to meet certain requirements (with respect to their facilities, the training of their staff, customer service etc.), which are meant to preserve and promote the Co-op brand name. A senior FCL management person indicated: “In doing all of these things, retails get the training and do it right so, when you go from one retail to the next, we also want to be consistent. We want to market as a whole co-op and if you go to retail A in the crop supply business, you can expect the same thing if you go to retail B.”

4.4.2.2 Identity Mechanisms

Identity management has also been an important tool that FCL has used to promote robust co-operation among retails after the financial crisis in the early 1980s. First, FCL established co-operation among retail co-operatives as a key aspect of the CRS identity. Prior to the crisis, individualistic norms prevailed in the CRS – i.e., individual success was seen as a good way to achieve high status for the system. For instance, retail co-operatives could borrow as much money as they needed to build new stores and could guarantee their loans with their shares in FCL without considering how their actions affected the others in the system. After the crisis, FCL acted to create a sense among the retails that each one’s success was inexorably linked to the success of the others and, therefore, it was better for the retails to work with the group rather than working individually.

Second, FCL acted to foster retails’ identification with the system. This was clearly stated by the Vice-President Retail Operations of FCL who said: “I have always been a very strong promoter, and have been since the early 1980s when you could see the need was there, that we really are one system. I do not care where you work in our organization, what position you have in our organization, it is called the Co-operative Retailing System. And I just happen to work in the wholesale part of that system, other people work in the retail part, ... , but we are all

employees of the Co-operative Retailing System. And as long as we always keep the focus on that, I do not think there is anybody that could really knock us down.”

That retail co-operatives identify strongly with the CRS and, therefore, are motivated to co-operate with the other system members is clearly suggested by the CEO of Calgary Co-op, the largest retail co-operative in the CRS: “When you look at where the CRS came from back in the early 1980s to where we are today, our success could not have happened without working together for the benefit of all.” Indeed, this CEO thinks of Calgary Co-op as a member of the CRS and perceives the success of the system as Calgary Co-op’s. Through this process, identification with the CRS leads retailers to work together for their mutual benefit. This sense of a shared identity that induces co-operation among retail co-operatives is revealed by what another retail general manager stated: “We [retail general managers] are empire builders, but we very much stick together. Like a football team – everybody wants to win the trophy or the exceptional player award, but we understand that we have to play together as a team.”

The main mechanisms that FCL has used to establish co-operation among retail co-operatives as a key aspect of the CRS identity and to foster retailers’ identification with the system are: (a) the Marketing Expo; (b) the FCL Annual General Meeting; (c) the FCL Bulletin for Co-op General Managers; (d) subsidy programs; and (e) succession planning and relocation of retail general managers.

Since 1988, FCL has held a *Marketing Expo* every five years in which they invite their retail co-operatives and all the CRS product and service suppliers. The Expos are unique to the CRS – the other major retail systems do not have anything comparable – and play a number of different roles. One important role is to focus the attention of the CRS members on marketing – the CRS realized in the early 1980s that they had to market their way out of their financial crisis. Thus, FCL has used the Expos to launch new marketing programs, new interior décor packages for the retailers, new store equipment, and new ways that retailers could merchandise their products.

The Expos are also designed to promote the development of a *cognitive group* – i.e., to show member-retails that they belong to a much larger group, the CRS. In particular, the Expos involve much more than just the showcasing of goods and services and the featuring of industry experts and motivational speakers. For instance, a key event of the Expo is a private performance by a major music group to which only Expo participants are invited. Thus, the Expos are an opportunity for retail co-operatives and FCL, along with suppliers, to come together in a social setting, thus, creating and nurturing a sense of “groupness” among them. The Vice-President

Retail Operations of FCL, who chairs the Co-op Expo, indicated: “The Marketing Expo has been one of the strongest team-building relationship-forming parts of our organization.” This is confirmed by the general manager of one of the major retail co-operatives in the CRS, who indicated that “the Expos bring everybody together and they make you feel like you are part of a bigger system.”

Finally, the Expos are aimed at creating co-operative norms within the system. FCL organizes each Marketing Expo around a theme – i.e., “the Marketing Expo” (1988), “winning together in a changing world” (1993), “surfing 2000” (1998), “the magic of retailing” (2003) and “marketing kaleidoscope... the endless possibilities of retailing” (2008). These slogans were printed on all the materials (e.g., posters, banners, post card invitations, tote bags etc.) used at the Expo. Given the challenges the CRS faced in the 1980s, it is not surprising that the slogan developed for the 1988 Expo drove home the idea of marketing, given its importance in the CRS’s revitalization strategy. By 1993, the slogan “winning together in a changing world” signaled a shift in focus to the idea that co-operation among the members of the CRS would create benefits for everyone.

While an effective mechanism for managing the identity of member-retails, the Expos do not directly cost FCL much money as the costs are covered primarily by the system suppliers themselves, who are eager to have access to the system.

The *FCL Annual General Meeting* of all the CRS delegates (each retail elects a number of delegates, up to a maximum of six, according to the retail’s patronage in FCL) is a place where the retails provide FCL with feedback on the types of programs that FCL puts forward and raise concerns about the kind of leadership that FCL provides to the system. The fact that the retails are autonomous entities means that they do not have to just accept whatever program that FCL comes up with if that program does not meet their needs. Instead, FCL needs to have retails buy-into the programs it develops and knowing what types of programs retails actually need is critical to getting that buy-in from them.

The FCL Annual General Meeting also represents a good opportunity for interaction among retail co-operatives and an effective mechanism for enhancing a common understanding among delegates that they are part of a larger group – the CRS. As the Director and Board Chair of Calgary Co-op stated: “When I first got elected ... there was a little bit of an anti-Federated sentiment because we just understood that they are our wholesaler and we are Calgary Co-op. I do not know if a lot of us understood what the big picture was. Then I went to one of FCL’s

Annual General Meetings and that was just kind of like: wow, we are part of this whole bigger picture ...”

As well, the communication that takes place during these meetings is aimed at establishing co-operative norms within the system. FCL often reviews the history of the financial crisis that the CRS experienced in the early 1980s. By emphasizing the cause of the crisis – i.e., opportunistic behaviour by retail co-operatives – FCL makes the new retail decision-makers conscious of the importance of working together with the other retails for the long-term benefit of all.

The *Bulletin for Co-op General Managers* that FCL issues weekly is used to promote the new programs that FCL develops for the retails, and to provide the retail general managers with useful information on what their competition is doing and on changes in consumer preferences. The bulletin is also used to remind retail general managers of their membership in the CRS. For instance, FCL included the following note in the bulletin they issued the week following the 2008 Marketing Expo: “Once again we would like to express our thanks to retail co-operative general managers and their teams that attended Co-op Marketing Expo 2008. We hope that the presentations, seminars, and displays of product and equipment provided you and your teams with the knowledge to help keep us on the leading edge and make our System the top marketing and merchandising organization in Western Canada.”

To also induce retail general managers to believe that FCL and the other retails consider it a good thing to engage in co-operative behaviour, FCL uses the bulletin to share with them stories of retail co-operatives that help each other. For the same purpose, FCL includes a “Retirement Notice” section in this bulletin that reads like “... many thanks for your significant contribution to the CRS” every time that a retail general manager that was loyal to the system retires, along with a short description of that manager’s career within the CRS.

The *subsidy programs* that FCL has developed for the retails provide them with incentives to adopt similar store layouts and décors with the aim of enhancing the “visibility” of their affiliation with the system. In particular, FCL provides a subsidy of 50 percent of the total cost of petroleum assets to any retail co-operative that wishes to upgrade or expand its gas bar, bulk plant, or card lock, or to build a new one. In addition to the grant, FCL also finances the other 50 percent of the cost interest free over a 25-month period and assists retails in the construction of the project. However, to have access to these programs, retail co-operatives must build the gas bar, bulk plant or card lock according to what FCL calls “standard sites.” Not only do these programs make

retails' membership in the system accessible and salient, they also ensure maintenance of the Co-op brand.

Finally, FCL has established *succession planning* (i.e., managers of small retail co-operatives who are loyal to the system are promoted to larger retails) as one way to fill retail general manager positions that become open in the CRS. While increasing the attractiveness of the CRS to retail general managers, who thus have the opportunity of moving up through the system, succession planning also gives retail managers a system-wide perspective.⁴ In a similar vein, FCL has promoted *relocation* of managers of successful retail co-operatives to other retails within the CRS. One FCL manager indicated: "If you could jump up in a spaceship and look at the Co-operative Retailing System and the general manager movement, it will be just fascinating to see – it is just a network of people moving every few years allover." Not only does this system promote successful management practices within the CRS, it also changes mutual understandings regarding competitive dynamics and strategy among retails. A retail general manager stated: "General managers have moved around lots; like myself – this is the eighth time I have moved in 30 years. And we understand that this whole thing [the CRS] is the same."

Apart from these mechanisms that FCL uses to foster identification of retail co-operatives with the system, there are also meetings that retail managers organize and to which they invite FCL personnel – the two key examples are the Fairmont Conference and the Co-operative Financial Managers' Association Meeting. The *Fairmont Conference*, for instance, is organized annually by the Co-operative Managers' Association and is open to general managers of retails with more than five million dollars in annual sales. One function of the Fairmont Conference is to provide retail managers with formal training in marketing, leadership, and employee motivation, among other areas. The other function of the Fairmont Conference is to expose retail managers to a system-wide perspective, and to create mutual support and cohesion among them. Having met people face-to-face, having chatted with them after hours, managers feel freer to phone each other for advice, to talk through issues. The CEO of Calgary Co-op, speaking about the Fairmont Conference, said: "Apart from the work that happens, the opportunity to network with other general managers and the CEO of Federated is important. As a young general manager, you feel that you are the only manager that has ever had retail problems. At my first conference in 1991, I had the opportunity to sit with the CEO of Calgary Co-op at that time. It was a great

⁴Another implication of succession planning is that it makes retails' propensity to identify with the system endogenous. By retaining those managers with a co-operative orientation, succession planning increases the share of the retails characterized by high propensity to identify with the system.

learning opportunity to talk to him and other seasoned general managers around the table. I found out that I was not the first person to experience retail problems. I received some advice and a few phone numbers so that I could call them. That was important to me; it made me feel like I belonged.” Through this process, these meetings induce retail managers to feel a oneness with or a belongingness to the system.

Also, the *financial crisis* that the CRS experienced in the early 1980s played a significant role in the creation of a strong system identity. According to Albert and Whetten (1985), social identity is more salient when it is challenged. Threats to social identity will often prompt group members to ask themselves “who are we?” The crisis prompted all retail co-operatives to ask themselves who were they and what they wanted to be. Apart from making the interdependence that characterizes the members of the CRS salient, the financial crisis also made co-operation among retails a focal strategy and prompted retails to join forces. The CEO of Calgary Co-op, describing how the financial crisis influenced the behaviour of the CRS, said: “When you look back at what the CRS went through in the early 1980s, it was heart breaking because a number of co-ops did not survive. However, the tough economy was probably one of the best things that could have ever happened because I think there were a lot of co-operatives trying to do their own thing and there was not a lot of working together. Because of the economics of the day, it forced us to look at ourselves and say: how are we going to do this together? ... when everyone did look at themselves, they realized that we had gotten away from what made us strong – working together. I believe it is that time in the CRS’s history that goes a long way to helping us be in the position that we are in today.”

The *success of the CRS* nowadays reinforces retails’ identification with the system and provides them with even stronger incentives to co-operate in patronizing their wholesaler. The CEO of Calgary Co-op, who has a long tenure with the CRS, said: “I have had opportunities in my career to review what other retailers were paying for goods from other wholesalers. When I completed the review, there were some items that FCL was not the lowest price. Thirty years ago some retail people may have bought those items from the other wholesaler. I think that the mindset today is that we recognize that there is going to be some items that may be cheaper, but it is more than just a product and a price; it is about being part of a system that is very successful in Western Canada.” The positive feedback that membership in a successful group has on the retails’ identity and image eliminates any temptation to deal outside the system for bargains from suppliers.

Finally, it must be mentioned that apart from the economic and identity mechanisms that FCL has put in place to deter opportunism by the retail co-operatives, there have also been changes in the competitive environment that reduced retailers' incentives to act opportunistically. In particular, *consolidation in the food and petroleum industries* reduced retailers' incentive to purchase from outside suppliers, as they would have to patronize their competitors. As well, *increasing competition in retailing* reduced retailers' incentives to shirk on quality maintenance of the Co-op brand name, as retailers had to differentiate themselves through service and quality rather than through price. In this respect, the CEO of FCL said: "To my mind, that is what is going to differentiate us from the rest of the pack – service and more service and more service and a great shopping experience. Because as big as we are, we are very small when it comes to the other companies. So, if we wanted to go ahead and head on price, we were dead in water; we would not survive."

4.5 Conclusion

Firms are increasingly using co-operative strategies as a way to succeed in an ever changing and increasingly complex business environment. Co-operation amongst the partners is critical to the success of these partnerships. Following social identification theory, this paper argues that firms' identification with a strategic network leads to internalization of network norms. This normative frame of reference then affects behaviour in that any norm-breaking act will be accompanied by an identity cost. Thus, when the network develops co-operative norms, identification with the network creates an identity cost from defection that reduces the payoffs associated with defection and, implicitly, the firms' incentives to defect.

Building on this idea, the paper develops a two-stage economic model of behaviour to show how the core firm in a strategic network can use identity to deter opportunism by network members. In the first stage, the core firm acts to establish co-operation among network members as a key aspect of the network identity and to foster members' identification with the network. In the second stage, network members choose between co-operation and defection based on both material and identity payoffs associated with each strategy. Firms' heterogeneity with respect to their propensity to identify with the network and, implicitly, their identity cost from defection creates the potential for opportunism to be managed.

With this conceptual structure as background, the paper offers empirical support from the CRS for the argument that identity management can be used to promote effective co-operation in

strategic networks. Insights from in-depth interviews with decision-makers (mainly managers) in the CRS suggest that FCL, as the core firm, has acted to establish co-operation among retail co-operatives as a key aspect of the CRS identity – i.e., the need to work together with the other retailers for the common benefit of all has been made part of the basic identity of the members of the CRS – and to foster retailers' identification with the system.

An interesting finding from the interviews is that retail managers in the CRS are heterogeneous with respect to what motivates them to behave co-operatively – i.e., for some managers, it is the internalization of the co-operative norms that FCL created that drives their behaviour, while for others, it is the understanding that they are better off working with the group than working individually. That is, the former group of managers adopt the co-operative behaviour in a 'co-operative' sense, while the behaviour of the latter group can best be interpreted through a 'game-theoretic' lens. The existence of this latter group of managers may suggest that co-operative networks do not necessarily have an initial advantage at using identity to promote effective co-operation among network members compared to other forms of networks.

It must be noted though that co-operative board members have been under-represented in the interviews. If part of the identity of board members is a predilection to behave non-opportunistically (as it might reasonably be, since it might be expected that the more "co-operatively"-minded individuals are more likely to run for board office), more research on the perspective of the boards is needed before a conclusion can be drawn regarding any potential advantage that co-operative networks might have at using identity to deter member opportunism compared to other types of networks.

More generally, this paper, by incorporating the psychology (and sociology) of identity into an economic model of behaviour, contributes to an emerging view that non-economic (behavioural) factors are complementary to economic ones in the management of strategic partnerships. Firms need to use a combination of economic and non-economic mechanisms to deter partner opportunism and, thus, make their partnership a source of competitive advantage.

References

- Abrams, D. and M.A. Hogg (1988), Comments on the Motivational Status of Self-Esteem in Social Identity and Inter-group Discrimination, *European Journal of Social Psychology*, 18(4): 317-334.
- Akerlof, G.E. and R.E. Kranton (2000), Economics and Identity, *The Quarterly Journal of Economics*, 115(3): 715-753.
- Akerlof, G.E. and R.E. Kranton (2005), Identity and the Economics of Organizations, *Journal of Economic Perspectives*, 19(1): 9-32.
- Albert, S. and D.A. Whetten (1985), Organizational Identity, in L.L. Cummings and B.M. Staw (Eds.), *Research in Organizational Behaviour*, Greenwich, CT: JAI Press, 7: 263-296.
- Ashforth, B.E. and F. Mael (1989), Social Identity Theory and the Organization, *Academy of Management Review*, 14(1): 20-39.
- Axelrod, R. (1984), *The Evolution of Co-operation*, New York: Basic Books.
- Bettis, R.A. and C.K. Prahalad (1995), The Dominant Logic: Retrospective and Extension, *Strategic Management Journal*, 16(1): 5-14.
- Brewer, M.B. (1981), Ethnocentrism and Its Role in Inter-personal Trust, in M.B. Brewer and B.E. Collins (Eds.), *Scientific Inquiry and the Social Sciences*, New York: Jossey-Bass, p. 345-359.
- Brewer, M.B. (1996), In-group Favouritism: The Subtle Side of Inter-group Discrimination, in D.M. Messick and A. Tenbrunsel (Eds.), *Codes of Conduct: Behavioural Research and Business Ethics*, New York: Russel Sage Foundation, p. 160-171.
- Calgary Co-operative Association Ltd. (2010), *2009 Annual Report*, available online at http://www.calgarycoop.com/about_us/news_room/publications.php.
- Canadian Co-operative Association (2009), Calgary Co-op Sales Reach 1.05 Billion Dollars, *Co-operative News Briefs*, 10(4), February 19.
- Christopher, M. (2005), *Logistics and Supply Chain Management: Creating Value-Adding Networks*, Third Edition, Financial Times Prentice Hall.
- Cobia, D. (1989), *Co-operatives in Agriculture*, New Jersey: Prentice Hall.
- Corsten, D., G. Kucza and M. Peyinghaus (2006), The Influence of Power Relations on Inter-organizational Identification in Buyer-Supplier Relationships, in S. Klein and A. Poulmenakou (Eds.), *Managing Dynamic Networks: Organizational Perspectives of Technology Enabled Inter-firm Collaboration*, Springer: Berlin, Ch. 7: 167-209.

- Craig, J.G. (1993), *The Nature of Co-operation*, Montréal: Black Rose Books.
- Das, T.K. and B.-S. Teng (2000), Instabilities of Strategic Alliances: An Internal Tensions Perspective, *Organization Science*, 11(1): 77-101.
- Doosje, B., N. Ellemers, and R. Spears (1999), Commitment and Inter-group Behaviour, in N. Ellemers, R. Spears, and B. Doosje (Eds.), *Social Identity*, Oxford, England: Blackwell Publishers Ltd., Ch. 4: 84-106.
- Dyer, J.H. and K. Nobeoka (2000), Creating and Managing a High-Performance Knowledge-Sharing Network: The Toyota Case, *Strategic Management Journal*, 21(3): 345-367.
- Fairbairn, B. (2003), *Living the Dream: Membership and Marketing in the Co-operative Retailing System*, University of Saskatchewan, Centre for the Study of Co-operatives.
- Federated Co-operatives Ltd. (1981, 1982), *Annual Report 1980, 1981*.
- Gulati, R., N. Nohria, and A. Zaheer (2000), Strategic Networks, *Strategic Management Journal*, 21: 203-215.
- Gummesson, E. (2008), *Total Relationship Marketing: Marketing Management, Relationship Strategy and CRM Approaches for the Network Economy*, Third Edition, Oxford: Butterworth-Heinemann.
- Hambrick, D.C., J. Li, K. Xin, and A.S. Tsui (2001), Compositional Gaps and Downward Spirals in International Joint Venture Management Groups, *Strategic Management Journal*, 22(11): 1033-1053.
- Hitt, M.A., M.T. Dacin, E. Levitas, J.-L. Arregle, and A. Borza (2000), Partner Selection in Emerging and Developed Market Contexts: Resource-Based and Organizational Learning Perspectives, *Academy of Management Journal*, 43: 449-467.
- Hogeland, J.A. (2002), *The Changing Federated Relationship between Local and Regional Co-operatives*, RBS Research Report 190, Washington D.C.: Rural Business Co-operative Service, United States Department of Agriculture.
- Hogg, M.A. In press, Subjective Uncertainty Reduction Through Self-Categorization: A Motivational Theory of Social Identity Processes, *European Review of Social Psychology*.
- Hogg, M.A. and B.A. Mullin (1999), Joining Groups to Reduce Uncertainty: Subjective Uncertainty Reduction and Group Identification, in D. Abrams and M.A. Hogg (Eds.), *Social Identity and Social Cognition*, Oxford: Blackwell, p. 249-279.
- Hogg, M.A. and D.J. Terry (2000), Social Identity and Self-Categorization Processes in Organizational Contexts, *Academy of Management Review*, 25(1): 121-140.

- Hoskisson, R.E., M.A. Hitt, R.D. Ireland, and J.S. Harrison (2008), *Competing for Advantage*, Second Edition, Mason, OH: Thomson South-Western.
- Human, S.E. and K.G. Provan (2000), Legitimacy Building in the Evolution of Small Firm Multilateral Networks: A Comparative Study of Success and Demise, *Administrative Science Quarterly*, 45: 327-365.
- Inzerelli, G. (1990), The Italian Perspective: Flexible Organization and Social Management, *International Studies of Management and Organization*, 20: 6-21.
- Ireland, R.D., M.A. Hitt, and D. Vaidyanath (2002), Alliance Management as a Source of Competitive Advantage, *Journal of Management*, 28(3): 413-446.
- Johnson, J.P., M.A. Korsgaard and H.J. Sapienza (2002), Perceived Fairness, Decision Control, and Commitment in International Joint Venture Management Teams, *Strategic Management Journal*, 23(12): 1141-1160.
- Ketilson, L. Hammond (1988), *Strategy Formulation in Consumer Co-operatives: An Integrative Model of Organizational Ideology and Context*, Ph.D. thesis, University of Saskatchewan, Commerce.
- Ketilson, L. Hammond (1991), An Examination of the Use of Legitimate Power in Marketing Channels, *The International Review of Retail, Distribution and Consumer Research*, 1(5): 527-548.
- Larson, J. and C. Christensen (1993), Groups as Problem-Solving Units: Toward a New Meaning of Social Cognition, *British Journal of Social Psychology*, 32: 5-30.
- Levinthal, D. and J. March (1993), The Myopia of Learning, *Strategic Management Journal*, 14: 95-112.
- Lorenzoni, G. and C. Baden-Fuller (1995), Creating a Strategic Center to Manage a Web of Partners, *California Management Review*, 37(3): 146-163.
- Lorenzoni, G. and O.A. Ornati (1988), Constellations of Firms and New Ventures, *Journal of Business Venturing*, 3: 41-57.
- Luce, R.D. and H. Raiffa (1957), *Games and Decisions: Introduction and Critical Survey*, New York: Wiley.
- Nilsson, J. (1996), The Nature of Co-operative Values and Principles: Transaction Cost Theoretical Explanations, *Annals of Public and Co-operative Economics*, 67(4): 633-653.
- Norton, S.W. (1988), Franchising, Brand Name Capital, and the Entrepreneurial Capacity Problem, *Strategic Management Journal*, 9: 105-114.

- O'Flanagan, M. and L. Taliento (2004), Nonprofits: Ensuring that Bigger Is Better, *The McKinsey Quarterly*, 2: 113-122.
- Parkhe, A. (1993), Strategic Alliance Structuring: A Game Theoretic and Transaction Cost Examination of Inter-firm Co-operation, *Academy of Management Journal*, 36(4): 794-829.
- Peteraf, M. and M. Shanley (1997), Getting to Know You: A Theory of Strategic Group Identity, *Strategic Management Journal*, 18: 165-187.
- Prahalad, C.K. and R.A. Bettis (1986), The Dominant Logic: A New Linkage between Diversity and Performance, *Strategic Management Journal*, 7(6): 485-501.
- Porac, J., H. Thomas and B. Emme (1987), Understanding Strategists' Mental Models of Competition, in G.N. Johnson (Ed.), *Business Strategy and Retailing*, New York: Wiley, p. 59-79.
- Porac, J., H. Thomas, F. Wilson, D. Paton and A. Kanfer (1995), Rivalry and the Industry Model of Scottish Knitwear Producers, *Administrative Science Quarterly*, 40(2): 203-227.
- Reger, R.K. and A.S. Huff (1993), Strategic Groups: A Cognitive Perspective, *Strategic Management Journal*, 14(2): 103-123.
- Reuer, J.J. (1999), Collaborative Strategy: The Logic of Alliances, *The Financial Times*, Mastering Strategy, October 4: 12-13.
- Ring, P.S. and A.H. Van de Ven (1994), Developmental Processes of Co-operative Inter-Organizational Relationships, *Academy of Management Review*, 19(1): 90-118.
- Rosch, E. (1978), Principles of Categorization, in E. Rosch and B.B. Lloyd (Eds.), *Cognition and Categorization*, Hillsdale, NJ: Lawrence Erlbaum, p. 27-48.
- Rubin, P.H. (1978), The Theory of the Firm and the Structure of the Franchise Contract, *Journal of Law and Economics*, 21(1): 223-233.
- Rubin, M. and M. Hewstone (1998), Social Identity Theory's Self-Esteem Hypothesis: A Review and Some Suggestions for Clarification, *Personality and Social Psychology Review*, 2(1): 40-62.
- Saskatchewan Business Magazine, *2008 Saskatchewan's Top 100 Companies*, available online at <http://sasktop100.ca/>
- Tajfel, H. and J.C. Turner (1985), The Social Identity Theory of Inter-group Behaviour, in S. Worchel and W.G. Austin (Eds.), *Psychology of Inter-group Relations*, Second Edition, Chicago: Nelson-Hall, p. 7-24.

- Turner, J.C. (1985), Social Categorization and the Self-Concept: A Social Cognitive Theory of Group Behaviour, in E.J. Lawler (Ed.), *Advances in Group Processes*, Greenwich, CT: JAI Press, 2: 77-122.
- Turner, J.C. (1999), Some Current Issues in Research on Social Identity and Self-Categorization Theories, in N. Ellemers, R. Spears, and B. Doosje (Eds.), *Social Identity*, Oxford, England: Blackwell, Ch. 1: 6-34.
- Turner, J.C., M.A. Hogg, P.J. Oakes, S.D. Reichner, and M.S. Wetherell (1987), *Rediscovering the Social Group: A Self-Categorization Theory*, Oxford: Blackwell.
- Wathne, K.H. and J.B. Heide (2000), Opportunism in Interfirm Relationships: Forms, Outcomes, and Solutions, *Journal of Marketing*, 64 (October): 36-51.
- Zeuli, K. and J. Foltz (2005), *Managerial Incentives, Moral Hazard, and Structural Change in Agricultural Co-operatives*, Selected paper at the American Agricultural Economics Association Annual Meeting, Providence, Rhode Island, July 24-27.

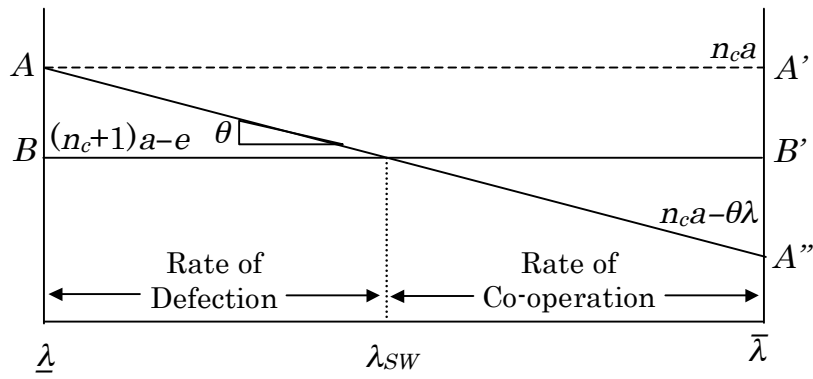


Figure 4.1: Members' Decisions

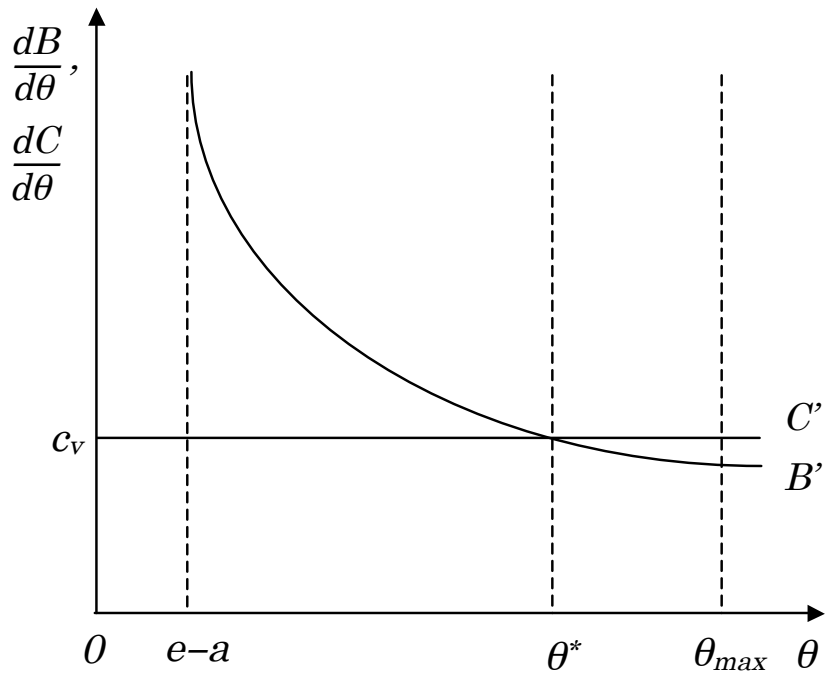
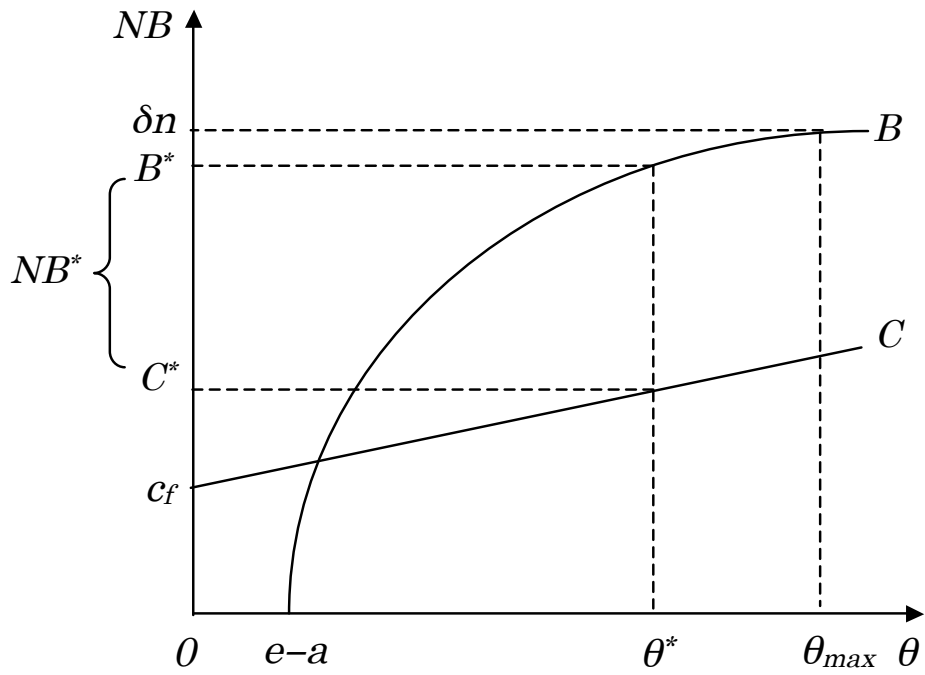


Figure 4.2: Determination of the Optimal Level of Identity Management

Chapter 5

Essay Three: Retained Patronage, Increasing Returns and Member Patronage

5.1 Introduction

Technological advances, the increasing globalization of markets, and the rising diversity and complexity of demand have stimulated a trend toward growth, conglomeration, and internationalization of business firms (Bloodgood, Sapienza, and Almeida, 1996; Davidsson, Achtenhagen, and Naldi, 2005). Growth allows firms to capture economies of scale by spreading fixed costs over a larger sales base (Kogut, 1985). This is especially critical in *R&D*-intensive industries that require firms to recoup *R&D* investments quickly, as the rapid pace of technological development increases the rate of obsolescence (Kobrin, 1991). As well, when growth is achieved through international expansion, firms locate in low-cost markets to reduce costs and develop a competitive advantage, as well as to secure critical resources (Jung, 1991). Moreover, growth through international expansion allows for better cross-subsidization, price discrimination and arbitrage potential with larger geographic scope (Contractor, Kundu, and Hsu, 2003). There is evidence that growth in sales and assets is positively correlated with firm profitability (Capon, Farley, and Hoenig, 1990; Cowling, 2004; Cox, Camp, and Ensley, 2002) – an objective pursued by both shareholders and managers in investor-owned firms.

Co-operatives must also grow if they are to take advantage of new technologies, new opportunities for economies of scale, and increased efficiency, and thus to counteract the competitive pressure of investor-owned firms (Lerman and Parliament, 1993). Growth, in turn, requires financing which has long been cited as a problem for traditional co-operatives (Cook, 1995; Cook and Iliopoulos, 2000; Hansmann, 1996; Vitaliano, 1983). The financial constraints facing co-

operatives are largely related to the incentive system inherent in the vaguely defined property rights structure of co-operatives (Cook, 1995).

First, co-operatives have limited access to outside sources of finance – i.e., equity markets – because of restrictions on residual claims (Hart and Moore, 1996). Specifically, because the distribution of the co-operative’s net earnings (profits) is based on patronage and not investment, non-patrons have no motivation to invest in a co-operative. As a result, there are no secondary markets for co-operative stock, and co-operatives are restricted to raising equity from members who use the services of the co-operative.

Second, co-operative members themselves lack incentives to invest in its growth because of free rider, horizon, and portfolio problems (Cook, 1995). The *free rider problem* stems from the fact that a co-operative’s net earnings are distributed to members on the basis of patronage and not on the basis of the equity invested. Because future patrons can share in the benefits from investments to which they have not contributed, a disincentive is created for existing members to invest in their co-operative’s growth. While a decision not to invest benefits any co-operative member who adopts it in isolation, its adoption by the entire membership leads to the co-operative being unable to remain competitive and to continue serving its members.

The root cause of the *horizon problem* is the fact that residual claims of co-operatives are contingent rights to cash flows whose validity expires when a member ceases to patronize the organization. As argued by Vitaliano (1983): “Residual claimants can capture the benefits of investment decisions only over the time horizons of their expected membership in the organization (p. 1082).” Consequently, members are expected to favour investment projects that pay off over a short horizon. This horizon problem is accentuated by the free rider problem. Rey and Tirole (2007) argued that the ability of new members to free ride on the investment of established members further encourages short-termism in investment decisions. The horizon problem ultimately results in a disincentive for members to contribute to growth opportunities – i.e., to invest in long-term, strategic projects.

The *portfolio problem* also originates in the restriction of residual claims to the patron group in co-operatives. The lack of a trading system of residual claims prevents members from adjusting their co-operative asset portfolio to match their personal risk preferences. Therefore, members hold sub-optimal portfolios and those who are forced to accept more risk than they prefer will pressure co-operative decision-makers to rearrange the co-operative’s investment portfolio, even if the reduced risk portfolio means lower expected returns.

Traditionally, co-operatives have attempted to mitigate some of these investment problems by retaining a share of the earnings that are generated each year (Caves and Petersen, 1986; Corman and Fulton, 1990; Knoeber and Baumer, 1983; Royer, 1993). Importantly, however, the retention of patronage refunds and the growth of the co-operative determine the benefits members receive from the co-operative and thus influence members' desire to patronize the co-operative and to provide the funds for growth and expansion. Specifically, retained patronage refunds imply that members are deprived of an immediate benefit in the form of cash patronage payment. At the same time, however, if the co-operative invests the retained earnings wisely, then, as the co-operative grows and prospers, members benefit (in proportion to the amount of business carried out with the organization) by making their money available to the co-operative.

The objective of this paper is to examine the trade-off between the share of patronage refunds that is paid to members in cash and the share of patronage refunds that is retained and invested, so that co-operatives provide members with enough short-run benefits to encourage them to patronize their organization, while still retaining resources to invest in long-term growth. Specifically, the paper considers a group of N retail co-operatives that have formed their own co-operative wholesaler. The retails must decide whether to patronize their organization or an investor-owned firm (*IOF*) for their purchases of goods or services.¹ An important assumption of the analysis in this paper is that there are increasing returns in patronizing the co-operative wholesaler, which leads to the retails' decisions to do business with their organization to be complementary strategies. This, in turn, leads to multiple equilibria. Some of these equilibria exhibit high patronage and high investment, while others are characterized by low patronage and low investment. Retails' expectations about the actions of their counterparts are shown to play a critical role in determining the prevailing equilibrium. The paper shows that the retention of patronage refunds can be an effective way for co-operatives to raise growth capital, provided co-operatives are able to coordinate members' expectations on the efficient outcome and to mitigate the horizon problem.

The next section develops a game-theoretic model to analyze the interaction between member patronage and wholesaler investment. This is followed by a discussion of the results and their implications for the resolution of the financial constraints facing co-operatives.

¹That is, the paper considers an open membership co-operative, with co-operative members choosing to be or not to be active.

5.2 The Model

The interaction between member patronage and wholesaler investment can be modeled as a three-stage game. In stage 1, member retails choose between patronizing their wholesaler (Supplier C) and the IOF (Supplier I) based on the benefits they expect to obtain from patronizing each supplier at this stage of the game. In stage 2, the co-operative wholesaler determines the share of its stage 1 net earnings to be paid to member patrons in cash (and hence the share of net earnings to be invested), so that total benefits to its stage 1 member patrons in stages 1 and 3 are maximized. In stage 3, as in stage 1, member retails decide whether to patronize their wholesaler or the IOF based on the benefits they expect to obtain from patronizing each supplier at this stage of the game. Although the model shares similarities with the one in Giannakas and Fulton (2005), the situations modeled are quite different. While Giannakas and Fulton (2005) focus on the investment activity (and its impact on process innovation), this paper focuses on the interaction between member patronage and wholesaler investment.

Retails can benefit from price discounts when they do business with the IOF . However, retails are assumed to differ in their ability to negotiate price discounts as a result of differences in size and because retail managers have different negotiation skills. This differential bargaining ability is denoted by the variable λ . Retails are assumed to be uniformly distributed with respect to λ with unit density $f(\lambda) = 1$ in the interval $\lambda \in [0, 1]$. Thus, a retail with ability to negotiate λ receives the following net benefits from patronizing the IOF at stages 1 and 3 of the game:

$$NB_t^I = P_r - (P_w - \rho\lambda) = P_r - P_w + \rho\lambda$$

where t denotes the stage of the game, NB_t^I is the retail's net benefit from selling one unit of the good or service supplied by the IOF , P_r is the unit price that retails charge their individual members, P_w is the unit price the IOF charges the retails, and $\rho\lambda$ is the price discount a retail with ability to negotiate λ receives. Retails with low values of λ (i.e., weak ability to negotiate) receive small price discounts, while retails with large values of λ (i.e., strong ability to negotiate) receive large price discounts. The bargaining ability characteristic captures the retail's propensity to patronize the co-operative wholesaler, where a low λ translates into a high propensity to patronize the wholesaler and a high λ translates into a low propensity to patronize the wholesaler.

When retails patronize their co-operative wholesaler, they do not receive price discounts at the time of purchase. However, at the end of the year, the wholesaler returns (part of) its net earnings to member patrons in the form of cash patronage refunds, which in turn reduce the final

price paid by the retails. Thus, retails receive the following net benefits from patronizing their organization at stages 1 and 3 of the game:

$$NB_t^C = P_r - (P_w - R_t) = P_r - P_w + R_t$$

where t , P_r and P_w are as previously defined, NB_t^C is net benefit that accrues to the retails from selling one unit of the good or service supplied by the co-operative wholesaler, and R_t denotes the cash patronage refunds retails receive from their co-operative wholesaler. Note that the wholesaler is assumed to charge the retails the same unit price as that charged by the *IOF* – i.e., P_w .² As well, P_w is assumed to be fixed – i.e., there is no strategic interaction between the *IOF* and the co-operative wholesaler with regards to pricing. This assumption is made to allow a focus on the patronage issue. The relaxation of this assumption is the subject of future research. Finally, it is assumed that the wholesaler charges the same price to all retails, regardless of each retail's bargaining ability.³

Of the net earnings the co-operative wholesaler obtains in stage 1, only a share γ is paid to member patrons in cash, with the rest being retained and invested to improve the wholesaler's efficiency and, consequently, the patronage refunds that retails can enjoy in stage 3. Thus, the cash patronage refund that a retail receives in stage 1 is given by:

$$R_1 = \gamma(P_w - AC_1)$$

where AC_1 is the average cost the co-operative wholesaler incurs when supplying its member retails in stage 1.

The average cost of the wholesaler at each stage of the game $AC_t(n_t, K_t)$ is assumed to be a function of the share of member retails that patronize it, n_t , and of the stock of capital, K_t . In particular, the average cost is expected to decrease with the accumulation of capital – i.e., $\partial AC_t / \partial K_t < 0$. As well, it is assumed to be a decreasing and convex function of n – i.e., $\partial AC_t / \partial n_t < 0$ and $\partial^2 AC_t / \partial n_t^2 > 0$. That is, the average cost is high when few member retails

²Using evidence from federated regional co-operatives in the U.S., Hogeland (2002) explains that co-operatives want to prevent non-members from benefitting from the investment that co-operative members make in their organization and thus choose to charge prices similar to those of their *IOF* competitors and return the earnings to members in proportion to their patronage.

³A number of authors (e.g., Smith and Wallace, 1989; Staatz, 1983, 1987) have argued that co-operatives characterized by a heterogeneous membership need to use differential pricing to give everyone an incentive to patronize their organization. While the co-operative wholesaler could use differential pricing, it is unlikely that it could give larger retails the same price discounts as those provided by the *IOF*. Hogeland (2002) explains how their multi-product and multi-service orientation makes it difficult for co-operatives to achieve the critical mass and scale economies that would enable them to compete with the more efficient and focused suppliers. Let us consider the case when the price discounts provided by the co-operative wholesaler equal μ , while those provided by the *IOF* equal σ , with $\sigma > \mu$. It can be shown that this situation is equivalent to the one modeled in this paper, with $\sigma - \mu = \rho$.

do business with their wholesaler and low when the majority of member retails patronize their organization.

This assumption regarding the wholesaler's average cost leads to the retails' decisions to do business with their wholesaler to be complementary strategies. Specifically, when a retail patronizes the co-operative wholesaler, the wholesaler's average cost decreases, increasing the amount of patronage refunds that can be paid to member patrons and thus inducing other retails to patronize their wholesaler. Conversely, a retail's decision to do business with the *IOF* increases the average cost at which the wholesaler can supply its member retails and decreases the amount of patronage refunds that can be paid to member patrons, hence causing fewer retails to do business with their wholesaler.

The net benefits to the retails from patronizing their wholesaler in stage 1 are thus equal to:

$$NB_1^C = P_r - P_w + \gamma[P_w - AC_1(n_1, K_1)].$$

This can be rewritten as:

$$NB_1^C = P_r - (1 - \gamma)P_w - \gamma AC_1(n_1, K_1).$$

The wholesaler's stage 1 net earnings that are retained and invested, $(1 - \gamma)[P_w - AC_1(n_1, K_1)]$, increase the wholesaler's capital in stage 3. At the same time, however, the initial stock of capital K_1 is assumed to depreciate at a rate of δ . As a result, the stock of capital in stage 3 is given by:

$$K_3 = (1 - \delta)K_1 + (1 - \gamma)[P_w - AC_1(n_1, K_1)].$$

Assuming that the wholesaler pays all its stage 3 net earnings to member patrons in cash, the cash patronage refunds that retails receive in stage 3 are given by:

$$R_3 = P_w - AC_3(n_3, K_3),$$

while the net benefits from patronizing their wholesaler are equal to:

$$NB_3^C = P_r - P_w + [P_w - AC_3(n_3, K_3)].$$

This can be rewritten as:

$$NB_3^C = P_r - AC_3(n_3, K_3),$$

where $K_3 = (1 - \delta)K_1 + (1 - \gamma)[P_w - AC_1(n_1, K_1)]$, as defined above.

To avoid Nash equilibria involving non-credible strategies, the game is solved using backward induction (Gibbons, 1992).

Stage 3. The retails' problem at this stage is to decide whether to patronize their co-operative wholesaler or the *IOF* for their purchases of goods or services. A retail patronizes its wholesaler if the net benefits from doing so exceed the net benefits from patronizing the *IOF*, which requires

that the cash patronage refunds the wholesaler pays are greater than or equal to the price discounts the *IOF* provides – i.e.,

$$NB_3^C \geq NB_3^I \Leftrightarrow$$

$$[P_w - AC_3(n_3, K_3)] \geq \rho\lambda. \quad (1)$$

The retail characterized by $\tilde{\lambda}_3$ is indifferent between purchasing from the co-operative wholesaler or the *IOF*, where:

$$\tilde{\lambda}_3 = \frac{P_w - AC_3(n_3, K_3)}{\rho}. \quad (2)$$

The critical value $\tilde{\lambda}_3$ gives the value of λ at which member retails switch from patronizing their wholesaler to doing business with the *IOF*. Retails with a λ less than $\tilde{\lambda}_3$ patronize their wholesaler, while retails with a λ greater than $\tilde{\lambda}_3$ patronize the *IOF*. We call the function described by equation (2) the switching line.

In general, the percentage of member retails that patronize their wholesaler is given by the cumulative distribution of retails with respect to the bargaining ability characteristic at a given value of λ . Since member retails are uniformly distributed with respect to the differentiating characteristic λ , $\tilde{\lambda}_3$ also determines the percentage of retails that patronize their wholesaler at stage 3:

$$n_3 = H(\tilde{\lambda}_3) = \tilde{\lambda}_3. \quad (3)$$

We call the function described by equation (3) the propensity to patronize the co-operative wholesaler curve.

The percentage of member retails that patronize their wholesaler in equilibrium, n_3^* , is the solution of equations (2) and (3) – i.e.,

$$n_3^* = \frac{P_w - AC_3(n_3^*, K_3)}{\rho}. \quad (4)$$

Figure 5.1 presents a graphical representation of the solution to equation (4). The share of member retails that patronize the co-operative wholesaler in stage 3, n_3 , is measured on the horizontal axis, while the vertical axis measures the cash patronage refunds, $P_w - AC_3$, retails receive when they patronize their wholesaler in stage 3 and the price discounts, ρn_3 , they receive when they do business with the *IOF*. Since the average cost is a decreasing and convex function of the share of retails that patronize the co-operative wholesaler, the stage 3 patronage refunds,

$P_w - AC_3$, are an increasing and concave function of n_3 . The price discounts enjoyed by the retailers increase with an increase in retailers' ability to negotiate, λ , and are represented by the straight line that starts from the origin. The slope of this line is given by ρ .

Insert Figure 5.1 about here.

As Figure 5.1 illustrates, multiple equilibria are possible. With the average cost AC_3 dependent on n_3 , each retail's decision creates an externality. Although each member retail independently decides whether or not to patronize the co-operative wholesaler, the share of retailers that do business with their organization affects the wholesaler's average cost and, as a result, the proportion of retailers that patronize their wholesaler. The equilibrium that results depends on the expectations that member retailers have regarding how their counterparts are likely to behave.

In particular, if retailers lack confidence that their counterparts will patronize the co-operative wholesaler, then the outcome $n_{3_l}^*$ with few retailers doing business with their organization – the so-called 'bad' equilibrium – is likely to occur. That is, when member retailers do not expect others to patronize the co-operative wholesaler, the average cost at which the wholesaler can supply its members is expected to be large and the amount of patronage refunds the wholesaler can pay to member patrons is expected to be small. As a result, only few retailers – i.e., those retailers characterized by a weak ability to negotiate price discounts with the *IOF* – will likely choose to do business with the co-operative wholesaler to maximize their net benefits. Conversely, if retailers expect that other retailers are likely to patronize the co-operative wholesaler, then the outcome $n_{3_h}^*$ with most member retailers doing business with their organization – the so-called 'good' equilibrium – is likely to occur. That is, when member retailers expect others to do business with the co-operative wholesaler, the average cost at which the wholesaler can supply its members is expected to be small and the amount of patronage refunds the wholesaler can pay to member patrons is expected to be large. As a result, retailers will likely choose to patronize their wholesaler.

Of the two equilibria, $n_{3_l}^*$ is unstable, while $n_{3_h}^*$ is stable (Hoff and Stiglitz, 2002). Specifically, a perturbation at equilibrium $n_{3_l}^*$ that leads to an increase in the share of member retailers that patronize their wholesaler generates an increase in cash patronage refunds to a level at which even more retailers find it advantageous to do business with their organization. This means that an increase in the share of member retailers that patronize their wholesaler is self-sustained and the adjustments in response to the perturbation induce retailers to move away from the 'bad' equilibrium, $n_{3_l}^*$, and reach the 'good' equilibrium, $n_{3_h}^*$. However, once retailers reach the 'good'

equilibrium, they do not have the incentive to move away from it. Specifically, a perturbation at equilibrium $n_{3_h}^*$ that leads to an increase in the share of retails that patronize their organization generates an increase in the cash patronage refunds to a level at which less retails find it advantageous to do business with their wholesaler. Eventually, adjustments that result in fewer and fewer retails doing business with the co-operative wholesaler take place until $n_{3_h}^*$ is again reached.

More formally, an equilibrium is unstable if the switching line is steeper than the propensity to patronize the co-operative wholesaler curve at that point and stable if otherwise. With a slope of the propensity to patronize the co-operative wholesaler curve equal to one, the condition for an unstable equilibrium is given by

$$\partial \tilde{\lambda}_3(n_3^*) / \partial n_3^* > 1 \Leftrightarrow -\partial AC_3(n_3^*, K_3) / \partial n_3^* > \rho,$$

and the condition for a stable equilibrium is given by

$$\partial \tilde{\lambda}_3(n_3^*) / \partial n_3^* < 1 \Leftrightarrow -\partial AC_3(n_3^*, K_3) / \partial n_3^* < \rho.$$

These conditions hold at $n_3 = n_{3_l}^*$ and $n_3 = n_{3_h}^*$, respectively, as Figure 5.1 shows.

The idea of multiple equilibria in the presence of increasing returns is not new (e.g., Arthur, 1994; Cooper, 1999; Katz and Shapiro, 1985, 1986; and Moschini, Menapace, and Pick, 2008). Katz and Shapiro (1985, 1986) showed that a combination of network externalities and expectations could lead to multiple market-share equilibria. If, *ex ante*, sufficient numbers of consumers believe that a product will have a large share of the market, and if there are advantages to belonging to a prevalent product's network of users, then they will be willing to purchase this product, and the producer will be induced to put a large quantity on the market, fulfilling their beliefs. But the same statement could be made for a competing product. There are therefore multiple equilibria – that is, multiple sets of eventual Cournot-equilibrium market shares that fulfill prior expectations. In the coordination game literature, Cooper (1999) argued that the strategic complementarity of players' actions – which implies that there are advantages to 'going along' with other players taking similar action – is the root cause of multiple equilibria. More recently, Moschini, Menapace, and Pick (2008) showed that increasing returns to scale, at the industry level, in the promotion and certification of geographical indication (GI) products give rise to multiple equilibria – that is, multiple sets of equilibrium supply levels of GI-certified products and non-GI products. However, the models in these papers are static and while they allow us to locate and describe the various possible equilibria, they leave the question of how a particular equilibrium comes to be selected from the multiplicity of alternatives unanswered. Arthur (1994)

adopted a dynamic approach to the analysis of multiple equilibria under increasing returns and showed that ‘historical small events’ – those events or conditions that are outside the knowledge of the observer – cumulate to cause the system to gravitate toward the selected outcome rather than the others.

It is important to note that when ρ gets very large (e.g., ρ' in Figure 5.1), the discounts that retails enjoy when they do business with the *IOF* always exceed the patronage refunds the co-operative wholesaler can pay and, as a result, no retail chooses to patronize the wholesaler.

Stage 2. The wholesaler’s problem is to determine the share γ of its stage 1 net earnings that are to be paid to member patrons in cash and, consequently, the share $(1 - \gamma)$ of net earnings to be invested, so that total benefits to its stage 1 member patrons are maximized. Specifically, the wholesaler’s problem at the 2nd stage of the game can be expressed as:

$$\max_{\gamma} MB^T = MB_1 + \beta MB_{3/1} = [P_r - (1 - \gamma)P_w - \gamma AC_1(n_1, K_1)]n_1 + \beta [P_r - AC_3(n_3, K_3)]n_1, \quad (5)$$

where β is the rate at which the co-operative wholesaler discounts the benefits its stage 1 member patrons obtain in stage 3 from patronizing their organization, MB^T denotes the total benefits that accrue to stage 1 member patrons from patronizing the co-operative wholesaler in stages 1 and 3, MB_1 denotes the benefits that accrue to stage 1 member patrons in stage 1, and $MB_{3/1}$ denotes the benefits that accrue to stage 1 member patrons in stage 3. All other variables are as previously defined.

Solving the wholesaler’s problem results in:

$$\frac{\partial MB^T}{\partial \gamma} = [P_w - AC_1(n_1, K_1)] - \beta \frac{\partial AC_3(n_3, K_3)}{\partial \gamma}. \quad (6)$$

Note that the choice of γ depends on the percentage of member retails that patronize their wholesaler at stage 1, among other factors – i.e., $\gamma = \gamma(n_1)$.

The term $[P_w - AC_1(n_1, K_1)]$ represents the increase in the cash patronage refunds that a member patron receives in stage 1 when γ increases by one unit (providing a minimum number of retails – see n_1^{min} in Figure 5.2 – patronize the wholesaler in stage 1). That is, $[P_w - AC_1(n_1, K_1)]$ represents the marginal benefit of making cash patronage payments in the present.

The term $\beta[\partial AC_3(n_3, K_3)/\partial \gamma]$ represents the present value of the change in the stage 3 patronage refunds when γ changes by one unit. This term represents the present value of forgone stage 3 patronage refunds to member retails of making cash patronage payments in stage 1 (i.e.,

the cost to members in patronage of not investing to improve the wholesaler's efficiency). That is, $\beta[\partial AC_3(n_3, K_3)/\partial\gamma]$ represents the present value of the marginal cost of making cash patronage payments in the present.

Insert Figure 5.2 about here.

To further interpret this equation, consider the more likely case when $\partial AC_3(n_3, K_3)/\partial\gamma > 0$. There are three possible scenarios in this instance. One scenario is when the expression in equation (6) equals zero, in which case the problem has an interior solution – i.e., $0 < \gamma < 1$. The co-operative wholesaler chooses γ so that the marginal benefit of doing so equals the marginal cost.

The second scenario is when equation (6) is negative for all values of γ . In this case the optimal solution is $\gamma = 0$. This outcome occurs when the marginal benefits of cash patronage payments are small, when β is very large (i.e., when the co-operative wholesaler's board of directors highly values the future benefits from the investment of retained earnings), and/or when the cost to future patronage payments is large.

The third scenario is when equation (6) is positive for all values of γ . In this case the optimal solution is $\gamma = 1$. This outcome occurs when the marginal benefit is large, when β is very small (i.e., when the co-operative wholesaler's board of directors heavily discounts the future benefits from the investment of retained earnings as a result of pressure from the retails), and/or when the marginal cost of paying more cash patronage in the present period is very low.

The $\gamma = 1$ outcome also occurs in the unlikely case that AC_3 decreases when γ increases (i.e., when $\partial AC_3(n_3, K_3)/\partial\gamma < 0$). In this case the co-operative wholesaler maximizes the total benefits that accrue to its stage 1 member patrons by setting $\gamma = 1$.

To further understand the determination of γ , it is useful to examine how the wholesaler's average cost in stage 3 changes in response to a change in the share of cash patronage payment – i.e.,

$$\frac{\partial AC_3}{\partial\gamma} = \frac{\partial AC_3}{\partial n_3} \frac{\partial n_3}{\partial\gamma} + \frac{\partial AC_3}{\partial K_3} \frac{\partial K_3}{\partial\gamma}. \quad (7)$$

Recall that $\partial AC_3/\partial n_3 < 0$ and $\partial AC_3/\partial K_3 < 0$, and note that $\partial K_3/\partial\gamma = -[P_w - AC_1(n_1, K_1)] < 0$, providing a minimum number of retails (see n_1^{min} in Figure 5.2) patronize the wholesaler in stage 1.

As equation (7) shows, an increase in γ influences the wholesaler's average cost in stage 3 through two distinct avenues. First, since $\partial K_3/\partial\gamma < 0$, an increase in γ lowers the amount of money available for investment, hence causing an increase in AC_3 . The result is that the second term in equation (7) is positive. Second, a change in γ leads to a change in n_3 . Depending on what happens to stage 3 patronage, AC_3 will increase or decrease. Thus, the sign of the first term in equation (7) depends on the sign of $\partial n_3/\partial\gamma$.

To examine the sign of $\partial n_3/\partial\gamma$, totally differentiate equation (4) to get the following:

$$\text{sign}\left(\frac{dn_3}{d\gamma}\right) = \text{sign}\left[\frac{-\frac{\partial AC_3}{\partial K_3} \frac{\partial K_3}{\partial\gamma}}{\left(\rho + \frac{\partial AC_3}{\partial n_3}\right)}\right]. \quad (8)$$

Given that $\partial AC_3/\partial K_3 < 0$, $\partial K_3/\partial\gamma < 0$, and $\partial AC_3/\partial n_3 < 0$, $\text{sign}(dn_3/d\gamma)$ is negative when $-(\partial AC_3/\partial n_3) < \rho$. Under these conditions, the first term in equation (7) is positive. This, in turn, means that the entire expression in equation (7) is positive. Conversely, $\text{sign}(dn_3/d\gamma)$ is positive when $-(\partial AC_3/\partial n_3) > \rho$. As a result, the first term in equation (7) is negative and the sign of the entire expression in equation (7) depends on the relative size of the two terms. Specifically, $\partial AC_3/\partial\gamma$ is positive when the first term is smaller than the second term and negative when the first term is greater than the second term.

It is worth emphasizing that $-(\partial AC_3/\partial n_3)$ is the slope of the stage 3 patronage refund function (represented by $P_w - AC_3$ in Figure 5.1), while ρ is the slope of the price discount function (represented by ρn_3). Thus, when retailers coordinate on the 'good' equilibrium (i.e., when the slope of the stage 3 patronage refund function is less than the slope of the price discount function), an increase in γ leads to a fall in n_3 , along with a reduction in K_3 . As a result, AC_3 undoubtedly increases. However, when retailers coordinate on the 'bad' equilibrium (i.e., when the slope of the stage 3 patronage refund function is more than the slope of the price discount function), an increase in γ leads to an increase in n_3 , along with a reduction in K_3 . When the decrease in AC_3 due to the increase in n_3 is not sufficient to compensate for the increase in AC_3 due to the decrease in K_3 , AC_3 increases, though to a lesser extent than in the previous scenario. Conversely, when the decrease in AC_3 due to the increase in n_3 exceeds the increase in AC_3 due to the decrease in K_3 , AC_3 falls.

In sum, an increase in γ leads to an increase in AC_3 both when retailers coordinate on the 'good' equilibrium and when they coordinate on the 'bad' equilibrium. However, coordination on the 'bad' equilibrium is required for an increase in γ to lead to a fall in AC_3 . The fact that the

‘bad’ equilibrium is unstable (i.e., small disturbances can induce the retailers to move away from it) thus explains why it is unlikely to have $\partial AC_3(n_3, K_3)/\partial \gamma < 0$.

Stage 1. Again, retailers have to decide whether to patronize their wholesaler or the *IOF* for their purchases of goods or services. Since each retailer buys only one unit of the good or service from the co-operative wholesaler, a retailer’s decision in stage 1 has no impact on the benefits obtained by that retailer from patronizing the co-operative wholesaler in stage 3. As a result, retailers make the decision to do business with their wholesaler or the *IOF* based only on the benefits they expect to obtain from patronizing each supplier in stage 1.

A retailer patronizes the co-operative wholesaler if the net benefits from doing so exceed the net benefits from patronizing the *IOF*, which requires that the cash patronage refunds the wholesaler pays in stage 1 are greater than or equal to the price discounts the *IOF* provides – i.e.,

$$NB_1^C \geq NB_1^I \Leftrightarrow$$

$$\gamma(n_1)[P_w - AC_1(n_1, K_1)] \geq \rho\lambda. \quad (9)$$

Thus, the retailer characterized by $\tilde{\lambda}_1$ is indifferent between purchasing from the co-operative wholesaler or the *IOF*, where:

$$\tilde{\lambda}_1 = \frac{\gamma(n_1)[P_w - AC_1(n_1, K_1)]}{\rho}. \quad (10)$$

Since member retailers are uniformly distributed with respect to the differentiating characteristic λ , $\tilde{\lambda}_1$ also determines the percentage of member retailers that patronize their wholesaler at stage 1:

$$n_1 = H(\tilde{\lambda}_1) = \tilde{\lambda}_1. \quad (11)$$

The percentage of member retailers that patronize their wholesaler in equilibrium, n_1^* , is the solution of equations (10) and (11) – i.e.,

$$n_1^* = \frac{\gamma(n_1^*)[P_w - AC_1(n_1^*, K_1)]}{\rho}. \quad (12)$$

Again, multiple equilibria can emerge, as illustrated in Figure 5.3. Specifically, when retailers lack confidence that their counterparts will patronize the co-operative wholesaler in stage 1, the outcome n_{1-l}^* with few retailers patronizing their wholesaler – the ‘bad’ equilibrium – is likely to

emerge. Conversely, when there is an expectation by retailers that the others are likely to patronize the co-operative wholesaler, the equilibrium $n_{1_h}^*$ with most retailers doing business with their wholesaler – the ‘good’ equilibrium – is likely to occur. Retailers’ expectations about how their counterparts are likely to behave are thus crucial in determining the prevailing equilibrium.

Insert Figure 5.3 about here.

The outcome that emerges has implications for the wholesaler’s choice of γ in stage 2 and the retailers’ choice between patronizing their wholesaler and doing business with the *IOF* in stage 3. Specifically, when retailers coordinate on the ‘good’ equilibrium, the average cost of the wholesaler in stage 1 is low and the net earnings the wholesaler obtains are high. As a result, the co-operative wholesaler has an incentive to make large cash patronage payments to its stage 1 member patrons and also invest large amounts of money to increase its efficiency and the cash patronage refunds that member patrons receive in stage 3. This attracts even more business from the retailers and more funds that the wholesaler can allocate between cash patronage and investment in future periods.

Conversely, when retailers coordinate on the ‘bad’ equilibrium, the average cost the co-operative wholesaler incurs to supply its member retailers in stage 1 is high and the wholesaler’s net earnings are low. The result is that the wholesaler has an incentive to make small cash patronage payments to its stage 1 member patrons and small capital investments that are not sufficient to significantly increase its efficiency and the cash patronage refunds that member patrons receive in stage 3. Consequently, the wholesaler attracts less business from the retailers and generates less earnings that it can distribute between cash patronage and investment in future periods.

One implication of this result is that in order to encourage member retailers to patronize their organization and provide the funds for growth and expansion, the co-operative wholesaler has to induce retailers to believe that their counterparts will patronize their organization.

5.3 Discussion and Conclusion

Co-operatives need to find ways to mitigate the financial constraints they face to be able to make the necessary investments to grow and remain a viable organizational form. As the review at the beginning of this paper indicated, co-operative members lack incentives to invest in their organization’s growth because of free rider, horizon and portfolio problems. Traditionally, co-operatives have attempted to mitigate these investment problems by retaining a share of the

earnings that are generated each year. However, the retention of patronage refunds has the potential to create other problems – i.e., by depriving members of an immediate benefit in the form of cash patronage payment, retained patronage refunds may affect members’ desire to patronize their co-operative and provide the funds for growth and expansion.

One of the key results of the analysis in this paper is that increasing returns to scale in patronizing the co-operative create externalities that, in turn, are the source of multiple equilibria. Some of these equilibria are ones with high patronage and high investment (and hence greater benefits to members), while others exhibit low patronage and low investment (and hence lower benefits to members). As discussed earlier in the paper, co-operative members’ expectations about the actions of their counterparts are crucial in determining the prevailing equilibrium. Since moving from the ‘bad’ equilibria to the ‘good’ equilibria requires assurance and coordinated actions, the co-operative and its members can benefit from communication, education, and trust-building activities that can serve as coordinating mechanisms.

Analytical results also show that while the use of retained patronage refunds to finance growth is one way of addressing the financial constraints facing co-operatives, the persistence of the horizon problem further constrains the ability of the co-operative to raise capital. Better-quality and more focussed communication with members can help them recognize and value the future benefits from the investment of retained earnings and thus put less pressure on their boards to return most of the earnings in cash.

References

- Arthur, W.B. (1994), Competing Technologies, Increasing Returns, and Lock-In by Historical Small Events, in W.B. Arthur (Ed.), *Increasing Returns and Path Dependence in the Economy*, Ann Arbor: The University of Michigan Press, p. 13-33.
- Bloodgood, J.M., H.J. Sapienza, and J.G. Almeida (1996), The Internationalization of New High-Potential U.S. Ventures: Antecedents and Outcomes, *Entrepreneurship Theory and Practice*, 20: 61-75.
- Capon, N., J.U. Farley, and S. Hoenig (1990), Determinants of Financial Performance: A Meta-Analysis, *Management Science*, 36(10): 1143-1159.
- Caves, R.E. and B.C. Petersen (1986), Co-operatives' Tax "Advantages": Growth, Retained Earnings, and Equity Rotation, *American Journal of Agricultural Economics*, 68(2): 207-213.
- Contractor, F.J., S.K. Kundu, and C.-C. Hsu (2003), A Three-Stage Theory of International Expansion: The Link between Multinationality and Performance in the Service Sector, *Journal of International Business Studies*, 34(1): 5-18.
- Cook, M.L. (1995), The Future of U.S. Agricultural Co-operatives: A Neo-Institutional Approach, *American Journal of Agricultural Economics*, 77: 1153-1159.
- Cook, M.L. and C. Iliopoulos (2000), Ill-Defined Property Rights in Collective Action: The Case of U.S. Agricultural Co-operatives, in C. Menard (Ed.), *Institutions, Contracts and Organizations*, London, UK: Edward Elgar Publishing.
- Cooper, R. (1999), *Coordination Games: Complementarities and Macroeconomics*, Cambridge, MA: Cambridge University Press.
- Corman, J. and M. Fulton (1990), Patronage Allocation, Growth and Member Well-Being in Co-operatives, *Canadian Journal of Agricultural Economics*, 38(1): 45-66.
- Cowling, M. (2004), The Growth-Profit Nexus, *Small Business Economics*, 22(1): 1-9.
- Cox, L.W., S.M. Camp, and M.D. Ensley (2002), Does It Pay to Grow? The Impact of Growth on Profitability and Wealth Creation, Paper presented at the Babson College/Kauffman Foundation Entrepreneurship Research Conference, Boulder, Colorado.
- Davidsson, P., L. Achtenhagen, and L. Naldi (2005), Research on Small Firm Growth: A Review, Paper presented at the 35th European Institute of Small Business Conference, Barcelona, Spain.

- Giannakas, K. and M. Fulton (2005), Process Innovation Activity in a Mixed Oligopoly: The Role of Co-operatives, *American Journal of Agricultural Economics*, 87(2): 406-422.
- Gibbons, R. (1992), *Game Theory for Applied Economists*, Princeton, NJ: Princeton University Press.
- Hansmann, H. (1996), *The Ownership of Enterprise*, The Belknap Press of Harvard University Press.
- Hart, O.D. and J. Moore (1996), The Governance of Exchanges: Members' Co-operatives Versus Outside Ownership, *Oxford Review of Economic Policy*, 12: 53-69.
- Hoff, K. and J.E. Stiglitz (2002), After the Big Bang? Obstacles to the Emergence of the Rule of Law in Post-Communist Societies, National Bureau of Economic Research (NBER) Working Paper 9282, October.
- Hogeland, J.A. (2002), The Changing Federated Relationship Between Local and Regional Co-operatives, United States Department of Agriculture, Rural Business-Co-operative Service, RBS Research Report 190, August.
- Jung, Y. (1991), Multinationality and Profitability, *Journal of Business Research*, 23: 179-187.
- Katz, M. and C. Shapiro (1985), Network Externalities, Competition, and Compatibility, *American Economic Review*, 75: 424-440.
- Katz, M. and C. Shapiro (1986), Technology Adoption in the Presence of Network Externalities, *Journal of Political Economy*, 94: 822-841.
- Kobrin, S.J. (1991), An Empirical Analysis of the Determinants of Global Integration, *Strategic Management Journal*, 12:17-37.
- Kogut, B. (1985), Designing Global Strategies: Profiting from Operational Flexibility, *Sloan Management Review*, 26: 27-38.
- Knoeber, C.R. and D.L. Baumer (1983), Understanding Retained Patronage Refunds in Agricultural Co-operatives, *American Journal of Agricultural Economics*, 65(1): 30-37.
- Lerman, Z. and C. Parliament (1993), Financing Growth in Agricultural Co-operatives, *Review of Agricultural Economics*, 15(3): 431-441.
- Moschini, G., L. Menapace, and D. Pick (2008), Geographical Indications and the Competitive Provision of Quality in Agricultural Markets, *American Journal of Agricultural Economics*, 90(3): 794-812.
- Rey, P. and J. Tirole (2007), Financing and Access in Co-operatives, *International Journal of Industrial Organization*, 25:1061-1088.

- Royer, J.S. (1993), Patronage Refunds, Equity Retirement, and Growth in Farmer Co-operatives, *Agricultural Finance Review*, 53: 42-54.
- Smith, D.K. and H.N. Wallace (1989), Adapting Co-operative Policies to Succeed in Changing Food and Fiber Industries, Center for Co-operatives, University of California, Davis, Working Paper Series No. 3-A, July.
- Staatz, J.M. (1983), The Co-operative as a Coalition: A Game-Theoretic Approach, *American Journal of Agricultural Economics*, 65(5): 1084-1089.
- Staatz, J.M. (1987), A Game-Theoretic Analysis of Decision-Making in Farmer Co-operatives, in J.S. Royer (Ed.), *Co-operative Theory: New Approaches*, United States Department of Agriculture, Agricultural Co-operative Service, ACS Service Report No. 18.
- Vitaliano, P. (1983), Co-operative Enterprise: An Alternative Conceptual Basis for Analyzing a Complex Institution, *American Journal of Agricultural Economics*, 65: 1078-1083.

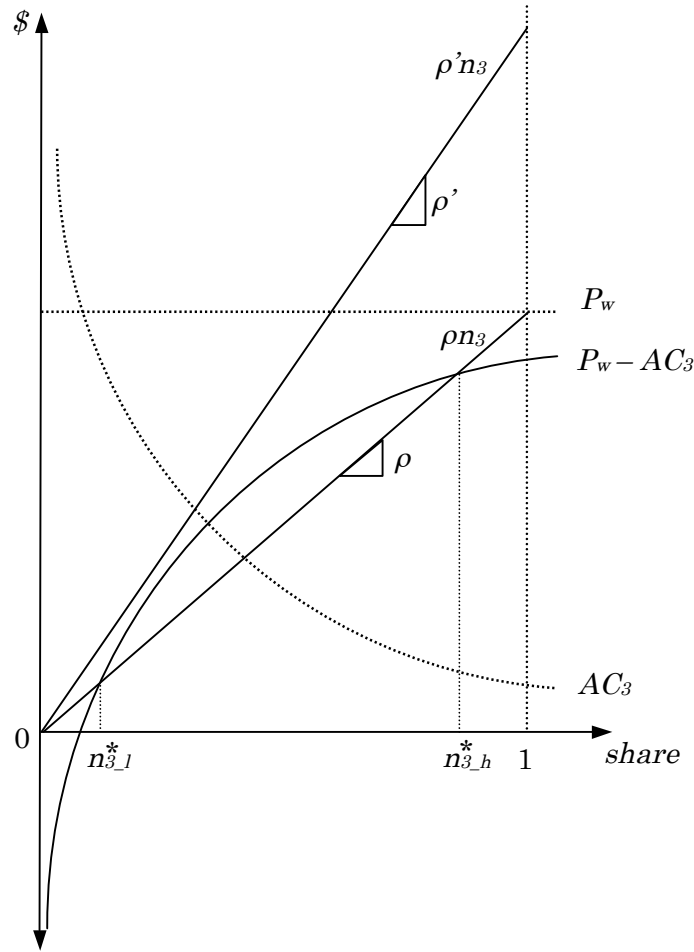


Figure 5.1: Retails' Decisions in Stage 3

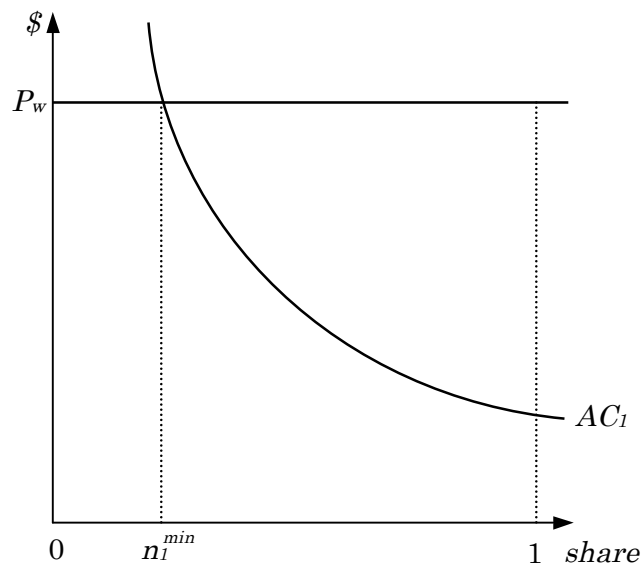


Figure 5.2: Minimum Number of Member Patrons in Stage 1

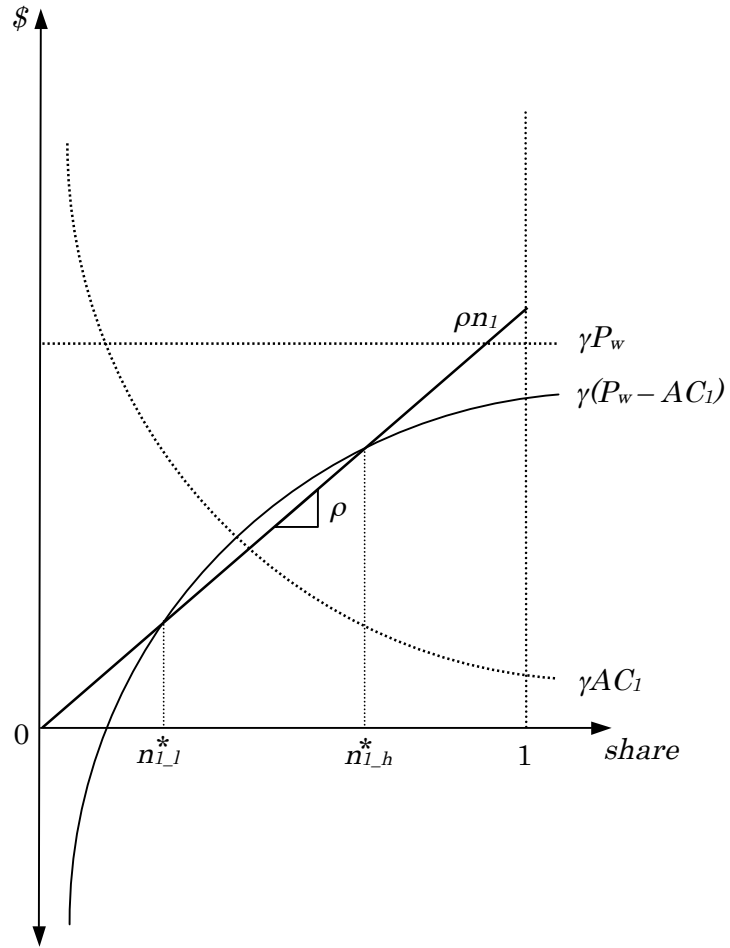


Figure 5.3: Retailers' Decisions in Stage 1

Chapter 6

Summary and Conclusions

The success of many inter-firm co-operative relationships depends on partners' ability to address the collective action – co-operation and coordination – problems they face. For instance, co-operation and coordination problems, it has been argued, are severe enough that federated co-operatives – associations of co-operative business firms – are viewed to be inherently inefficient and unstable (e.g., Cobia, 1989; Hogeland, 2002; Zeuli and Foltz, 2005). More generally, in the strategic alliance literature, alliance failure is often attributed to opportunistic (non-co-operative) behaviour by one or more of the partners (e.g., Park and Ungson, 2001; Parkhe, 1993; Zeng and Chen, 2003) and to coordination failure (e.g., Gulati, Lawrence, and Puranam, 2005; Park and Ungson, 2001).

This thesis, which consists of three self-contained essays, drew upon empirical evidence from the Co-operative Retailing System (CRS) – an association of 264 independent Western Canadian retail co-operatives and their wholesaler, Federated Co-operatives Ltd. (FCL) – to shed light on some of the strategies and mechanisms that federated co-operatives can use to achieve co-operation and coordination. Most of the findings from this study are also applicable to the relationships among partner firms in strategic alliances. The next section summarizes the thesis main findings and their implications for the effective management of inter-firm co-operative relationships.

6.1 Main Findings and Implications for Strategy

Previous research viewed alliances as either Prisoners' Dilemma games in which players face co-operation problems (Parkhe, Rosenthal, and Chandran, 1993; Zeng and Chen, 2003) or coordination games in which players are subject to coordination failure (Gulati, Khanna, and Nohria,

1994). A key finding from the case of the Co-operative Retailing System (CRS) is that business partners may face co-operation problems in some areas of the alliance activity and coordination problems in others. Moreover, the CRS case suggests that the use of single, stand-alone mechanisms to deal with co-operation and coordination problems is not common. Instead, firms use a number of mechanisms to tackle the problems, suggesting that these problems are both important to business success and difficult to address. Taken together, these results imply that business partners need to be aware of the complexity of the problems that characterize their relationships and need to develop a complex set of strategies and mechanisms to successfully address these problems.

In this regard, an important finding from the CRS case is that achieving coordination in some areas of the alliance activity can enhance co-operation in others. Since coordination problems are less conflictual than co-operation problems, business partners may consider focusing their efforts on coordination first, which in turn can foster co-operation.

Another interesting finding is that non-economic (behavioural) factors are complementary to the economic ones in enhancing co-operation and coordination in inter-firm relationships – i.e., fostering partner firms' identification with the group appears to have greater success when paired with economic incentives and vice-versa. As a result, firms need to use a combination of economic and non-economic mechanisms to deter partner opportunism and to overcome coordination failure. The high failure rate of strategic alliances and federated co-operatives may suggest that business partners are currently placing too much emphasis on the economic mechanisms for partnership management and little or no emphasis on the non-economic ones. The CRS case is particularly interesting from this point of view, since, to the outsider, Federated Co-operatives Ltd. (FCL) appears to be interested only in the bottom-line. Indeed, a focus to control costs is present at both the wholesale and retail levels. However, following the financial crisis of the early 1980s, FCL recognized the importance of a shared identity in fostering co-operation and coordination among retails and developed a wide range of mechanisms to induce retails to identify with the system, in addition to the economic mechanisms. These identity mechanisms, which include the succession planning system, group training programs, marketing programs, subsidy programs, a wide range of meetings, and newsletters and bulletins, were briefly described in Essay One and presented in more detail in Essay Two.

Business scholars (e.g., Dyer, Kale, and Singh, 2001) have argued for a need for alliances to create an alliance management body that develops strategies and mechanisms aimed at pro-

moting co-operation and coordination among alliance partners. The CRS case shows that these alliance management mechanisms are not automatically accepted by the otherwise autonomous alliance partners and the alliance management body needs to find ways to generate acceptance. The integration of alliance management mechanisms into the partners' marketing and operational activities may be one solution to this problem. As well, the CRS case shows that successful alliance management mechanisms involve some private economic benefit for the business partners, which requires that the alliance management body has the ability to create resource generating opportunities. Taken together, these results imply that effective alliance management requires the identification and solution of the second-order problems that arise among business partners, apart from the first-order (co-operation and coordination) problems.

6.2 Ideas for Future Research

There are several important dimensions in future research. One dimension is to collect empirical evidence on how identity influences decision making by retail managers in the CRS. While the qualitative interviews conducted for this study provided some evidence that identity is at work in fostering co-operation and coordination in the CRS, it would be interesting to explore how identity comes into play at the retail level. This could be done through further interviewing retail managers on the role that identity plays in their decisions to operate inside the system or to adopt the various marketing programs that FCL puts forward. Alternatively, stated preference methodology, such as conjoint analysis or discrete choice modelling, could be employed to examine retailers' heterogeneity with respect to the value they attach to the various programs that FCL uses to change retailers' material incentives and to alter their identity cost with the CRS.

Another dimension is to collect more evidence on the extent to which co-operation with the other retail co-operatives is part of the basic identity of retail co-operative board members. If this is the case, then boards, which need to be listened to and acknowledged by managers, represent another way of creating identity in co-operative networks. This may mean that co-operative networks do have an advantage at using identity to promote robust co-operation among network members compared to other types of networks.

A third dimension is to examine the role that a strong 'co-operative' identity can play in deterring member opportunism in 'co-operative' networks (i.e., networks of co-operative business firms). Essay Two empirically examined how FCL has created a 'system' identity to promote

robust co-operation among member retails. Also, the theoretical model developed in Essay Two is general and does not capture the specificities of co-operative networks.

While similar in many respects to investor-owned firms (*IOFs*) and other business entities, co-operatives are also different from these other organizations. The essence of a co-operative is perhaps best captured by the definition provided by the United States Department of Agriculture – i.e., a co-operative is an organization that is owned and controlled by patron members and operates for their benefit (USDA, 1995). A key element of this definition is the members' dual nature – they are both owners and users, investors and patrons. Members both provide capital to make investments and use the goods and services that are the result of these investments.

This dual role for members has some important ramifications for the way in which co-operatives operate – e.g., the objectives of co-operatives differ from the objectives of *IOFs*. Specifically, the foundational objective of an *IOF* is to maximize the shareholder profits (e.g., Grant, 2005). In contrast, while a co-operative might seek to maximize profits when the business is nascent, small, indebted or precarious in some way, this objective is only one of the many possible economic goals of co-operatives that have been suggested in the literature. LeVay (1983) and Sexton (1984) discuss the various objectives that have been put forward for co-operatives. For instance, marketing co-operatives may aim to maximize returns to members on the raw product that they supply from their farm business, while supply/consumer co-operatives' goal may be to minimize the cost to members of purchasing farm supplies/goods and services. Both marketing and supply/consumer co-operatives may aim to maximize membership or output subject to a no loss constraint, maximize dividend per unit of input/purchases, or secure stable prices over time.

In terms of the model in Essay Two, this means that in co-operative networks the members' material payoffs are represented by revenues/costs or dividends rather than profits as it is the case in networks of *IOFs*. Moreover, the objective of the core firm in co-operative networks is to maximize benefits to members (e.g., maximize revenues, minimize costs, or maximize dividends) rather than maximize its own profits as it is the case in networks of *IOFs*.

Also, an essential part of what a co-operative represents are the co-operative values and principles, which determine how the relationships between the members work, as well as those between the members and the co-operative (Nilsson, 1996). When shared among members, co-operative values have been argued to increase members' willingness to subordinate themselves to the common benefit and to show solidarity with each other. The fact that co-operative norms and values are part of a co-operative's identity may suggest that it may be easier for co-operative

networks to use identity to promote effective co-operation among network members compared to networks of *IOFs*.

A model of identity building capturing the key features of co-operative networks could be developed. Ultimately, the results from this model could be compared with the results from the model in Essay Two, which is applicable to identity building in networks of *IOFs*, to determine which type of network is likely to generate a higher level of member identification and co-operation.

A fourth dimension is to extend the model in Essay Three to take into account the strategic interaction between the co-operative wholesaler and the investor-owned firm with regards to pricing. The model in Essay Three assumed away this interaction to allow a focus on the patronage issue.

Finally, it would be interesting to endogenize the decisions in Essays Two and Three. Specifically, in Essay Two, the core firm in a strategic network/the co-operative wholesaler in a federated marketing system chooses the intensity at which it fosters members'/retail co-operatives' identification with the network so that the net benefits (i.e., the benefits to the core firm when members co-operate net of the cost of managing members' identity) it obtains are maximized. However, as Essay Three shows, the amount of funds that the co-operative wholesaler can invest in the identity of the retails depends on the degree of co-operation among retails in patronizing their organization. This, in turn, depends on the intensity of identity management by the co-operative wholesaler, which determines the identity cost that retails incur when they choose to defect (as argued in Essay Two) and the extent to which retails identify with the CRS and are thus likely to coordinate on the co-operative strategy (as argued in Essay One). A model capturing these dynamics could be developed.

References

- Cobia, D. (1989), *Co-operatives in Agriculture*, New Jersey: Prentice Hall.
- Dyer, J.H., P. Kale, and H. Singh (2001), How to Make Strategic Alliances Work, *MIT Sloan Management Review*, 42(4): 37-43.
- Grant, R.M. (2005), *Contemporary Strategy Analysis: Concepts, Techniques, Applications*, Fifth Edition, Cambridge, MA: Blackwell.
- Gulati, R., T. Khanna, and N. Nohria (1994), Unilateral Commitments and the Importance of Process in Alliances, *Sloan Management Review*, Spring: 61-69.
- Gulati, R., P.R. Lawrence, and P. Puranam (2005), Adaptation in Vertical Relationships: Beyond Incentive Conflict, *Strategic Management Journal*, 26: 415-440.
- Hogeland, J.A. (2002), *The Changing Federated Relationship between Local and Regional Co-operatives*, RBS Research Report 190, Washington, D.C.: Rural Business Co-operative Service, United States Department of Agriculture.
- LeVay, C. (1983), Agricultural Co-operative Theory: A Review, *Journal of Agricultural Economics*, 34: 1-44.
- Nilsson, J. (1996), The Nature of Co-operative Values and Principles: Transaction Cost Theoretical Explanations, *Annals of Public and Co-operative Economics*, 67(4): 633-653.
- Park, S.H. and G.R. Ungson (2001), Interfirm Rivalry and Managerial Complexity: A Conceptual Framework of Alliance Failure, *Organization Science*, 12(1): 37-53.
- Parkhe, A. (1993), Strategic Alliance Structuring: A Game Theoretic and Transaction Cost Examination of Interfirm Cooperation, *Academy of Management Journal*, 36: 794-829.
- Parkhe, A., E.C. Rosenthal, and R. Chandran (1993), Prisoners' Dilemma Payoff Structure in Interfirm Strategic Alliances: An Empirical Test, *Omega*, 21(5): 531-539.
- Sexton, R.J. (1984), Perspectives on the Development of the Economic Theory of Co-operatives, *Canadian Journal of Agricultural Economics*, 32: 423-436.
- United States Department of Agriculture (1995), *What Is a Co-operative?*, Rural Business and Co-operative Development Service, Co-operative Information Report 50, Washington, D.C., March, available online at <http://www.rurdev.usda.gov/rbs/pub/cir50.pdf>.
- Zeng, M. and X.P. Chen (2003), Achieving Co-operation in Multiparty Alliances: A Social Dilemma Approach to Partnership Management, *The Academy of Management Review*, 29(4): 587-605.

Zeuli, K. and J. Foltz (2005), *Managerial Incentives, Moral Hazard, and Structural Change in Agricultural Co-operatives*, Selected paper at the American Agricultural Economics Association Annual Meeting, Providence, Rhode Island, July 24-27.