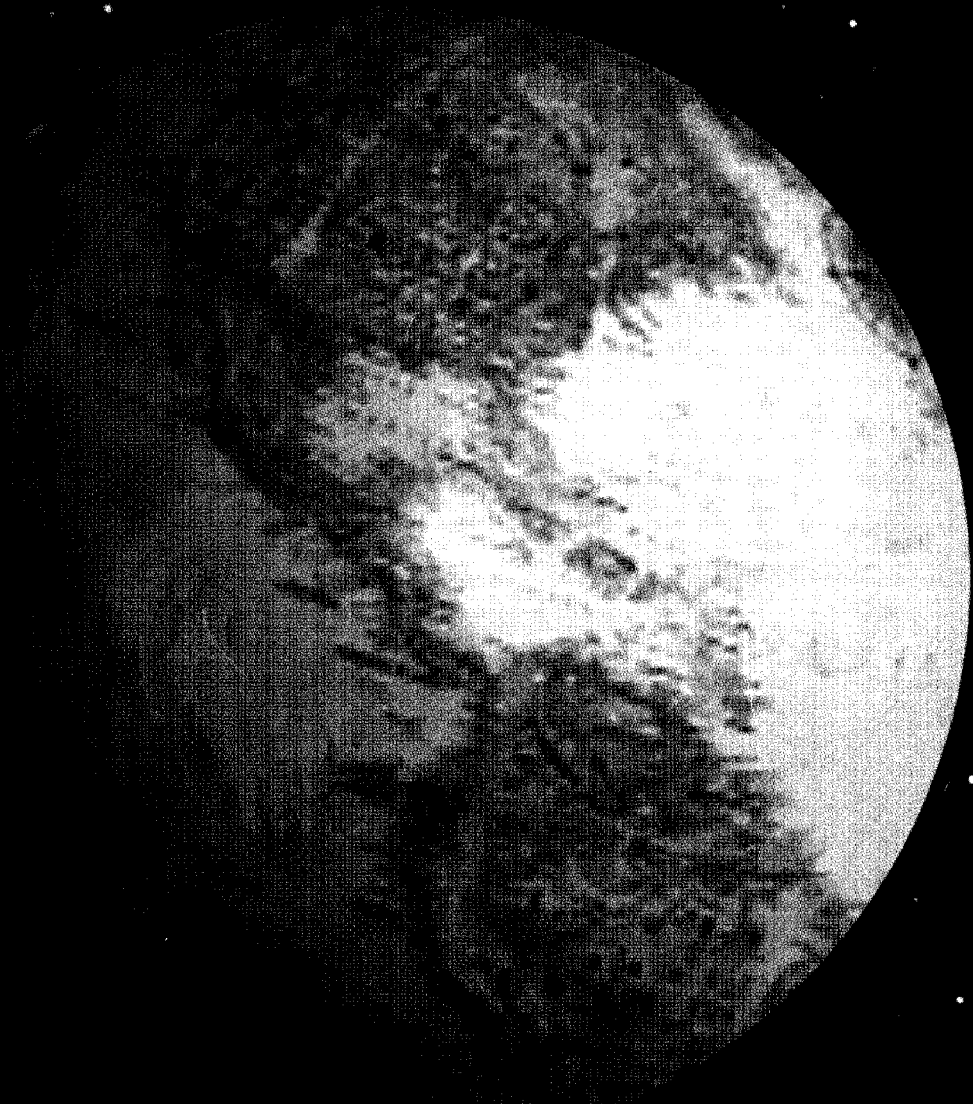


CANADA / CARIBBEAN BUSINESS :



Opportunities and Challenges for Management

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3.1 COOPERATIVE MARKETING: EFFICIENCY CONDITIONS FOR ALLIANCES

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COOPERATIVE MARKETING

Differentiated Marketing

Producer and marketing cooperatives have a long tradition in the Caribbean region (Develtere 1990; Mendes 1994). As a countervailing power to large producers, many small firms, particularly in the banana and coffee industries, have been able to maintain their independence only by joining marketing cooperatives, in order to serve overseas markets.

The growing *differentiation* of most consumer markets requires a finely tuned market segmentation and the development of a marketing mix that targets the correct segments for each supplier. This is the case particularly for markets such as processed high-quality agricultural goods and tourism services. Economic success for the region depends crucially on achieving larger shares of local value added, which in turn requires going beyond the production of primary commodities or semi-finished goods and exporting marketable high-quality products. Similarly, the differentiation of tourism markets, both in terms of generating countries and of styles of tourism, together with electronic distribution systems such as the Internet, permits producers to achieve a higher value added by shifting the focus of distribution from tour operators to the final customer. In both cases, however, the costs of developing and implementing differentiated marketing strategies and of entering new markets (multi-target-group communications, multi-channel distribution, etc.) often exceed the limited marketing budgets of small and medium-sized Caribbean firms. On the other hand, the creation of international brands, effective advertising, research and development, or the achievement of product standards are expensive and accessible to small producers only if costs are shared.

Characteristics of Cooperatives

Marketing cooperatives are distinguished by the following characteristics:

- a. voluntariness of cooperation (alliance);
- b. independence of partners in the cooperative (principals);

- c. cooperation on the same level in the value chain (horizontal cooperation);
- d. contracting out of certain marketing functions by assigning them to an institution (agent) or by purchasing them from external sources (make-or-buy decision);
- e. joint production of marketing services (quality standards, sales promotion, export logistics, channel management, etc.) through vertical (forward) integration;
- f. risk sharing among partners under one of several possible legal constructions;
- g. establishment of the cooperation not by way of the market, but by contract;
- h. management of the cooperation by democratic decision procedures.

Cooperation in this sense can be defined as "coordination effected through mutual forbearance" (Buckley/ Casson 1988), where coordination leads to a Pareto improvement in the allocation of productive resources such that no one is made worse-off and the position of at least one party is improved.

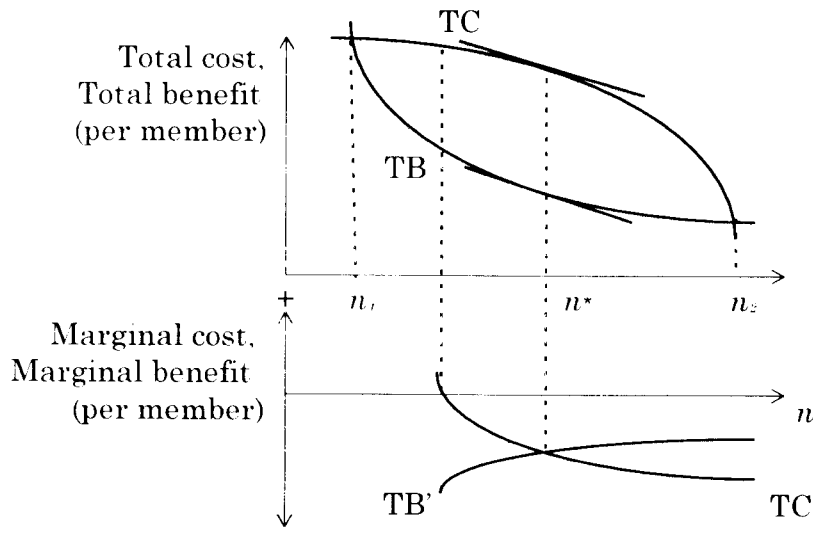
COOPERATIVES AS CLUBS

Marketing cooperatives in this sense can be conceived of as *clubs* as defined in public finance (Buchanan 1965). They are horizontal clubs organized to accomplish vertical integration. They provide non-rival (or only partially rival) services that can be used by several members and that permit imposition of an exclusion mechanism. The individual benefit of each member generally decreases as the number of members increases above a certain level.

Given a particular tariff structure, a firm will join a cooperative if its increase in net income at least equals the membership fee. With increasing membership, the benefit of members will rise since more can be produced and costs can be spread over a larger base. However, every cooperative is faced with resource constraints, since it has a limited labor capacity, a tight marketing budget, or works on a small and highly contested market segment. Beyond a certain group size, congestion will therefore be experienced, and every additional member will decrease the incumbent members' benefits. Total costs can still be divided by more members, but beyond a certain threshold the decrease in costs will be outweighed by the decrease in benefits experienced by group members. Though membership fees may have decreased, the opportunity costs of membership have then increased, for it would already be more economical to produce the same marketing services alone or to start a new cooperative.¹ For a given level of marketing services, individual marginal costs will thus always be negative and will asymptotically approach zero (Figure 1).

1. This case is examined for standard-setting alliances in Axelrod/Mitchell/Thomas/Bennett/Bruderer 1995.

Figure 1: Optimum club size at given level of club goods



The utility to firm i of joining marketing cooperative A , is then

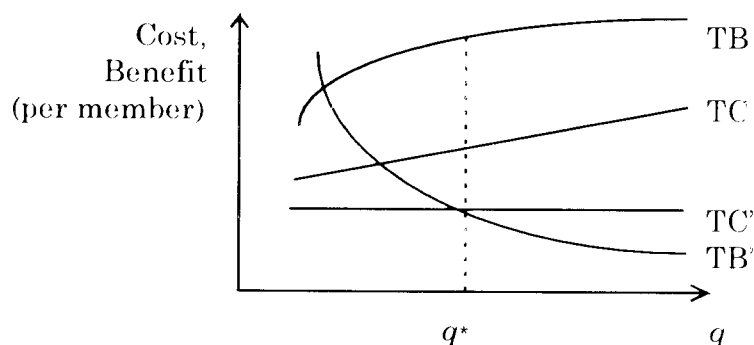
$$U_i(A) = \sum_{j \in A} s_j - \left[\alpha \sum_{j \in B} s_j + (\alpha + \beta) \sum_{j \in C} s_j \right] \quad (1)$$

where s_j is the size of firm j , and B and C form a partition of alliance A into close and distant rivals of i , depending on the degree of specialization on the respective market segment (i.e., $A = B + C$ and $B \cap C = \emptyset$). The parameter α measures the disincentive to ally, as represented by the opportunity costs more specialized firms will incur by giving up individual marketing efforts. In this analysis, α may be limited to positive values ($\alpha > 0$), ruling out cases in which two firms are drawn together just by their rivalry over a market segment. The parameter β measures the additional disincentive to ally with close rivals, where this parameter can be defined by the degree of specialization on a market segment (e.g., sales on the segment in relation to total sales of the firm) or by the market share held. It may be assumed that $\beta > 0$ because competition with close rivals is more intense than with distant rivals.

For two partitions of an alliance, the predicted configurations are simply the Nash equilibria, i.e. those sets of alliances for which no single firm has an incentive to switch to another group. For any alliance, the optimum group size is then given where a member's increase in benefits equals his decrease in costs (Buchanan 1965). The optimum n^* will thus be reached where the average net benefit of members (i.e. the difference between individual benefits and individual costs) is maximized. A market segment is then optimally exhausted for each member. Below this level, a member's net benefit will decline; above this level, his net benefit will also decline.

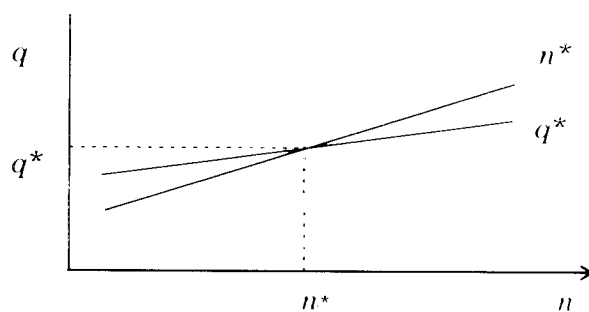
For a given club size, one can establish the optimum quantity of marketing services and derive, for different production levels, a demand schedule from membership size (Figure 2).

Figure 2: Optimum production level at given membership size



Both problems may now be solved simultaneously. The 'global' optimum may then be identified at the intersection of the two demand curves (Figure 3).

Figure 3: 'Global' optimum of club size and production volume



EFFICIENCY AND OPTIMALITY CONDITIONS

The different degrees of success of marketing cooperatives raise the question of efficiency conditions for inter-firm cooperation. Economic efficiency requires that the input factors are utilized to produce a given level of output at the minimum cost or, vice versa, that it no longer be possible to produce a larger output at the given cost. Cooperation within a marketing group is therefore efficient if it maximizes the total output of the cooperative.

In general, public finance shows that three conditions have to be met by policies on pricing, output, and membership to ensure efficiency (see Sandler/Tschirhart 1980):

- a. input factors (capital, labor) need to be provided until the summed marginal benefits to members from reducing the congestion costs are equal to the marginal cost of provision (*provision condition*);
- b. an efficient fee (toll) equates a member's marginal benefit from use with the marginal congestion costs that might be imposed on other members (*utilization condition*);
- c. new members should be added until the net benefits from membership (through cost reductions to others) equal the congestion costs imposed on others by that member's use of services (*membership condition*).

Efficient production of marketing services in this sense, however, does not entail *optimality* of the distribution of the output. The distribution would be *Pareto optimal* if it were no longer possible to increase the benefit of one member without decreasing the benefit of some other member. It is evident that the question of optimality arises only if the production output is efficient, since it would otherwise be possible to increase total production output and thereby decrease the benefits of all members alike. An optimal situation is therefore necessarily efficient, without an efficient situation having to be optimal.

This distinction is important for analyzing inter-firm cooperation. The question of efficiency relates to the total group and provides an indicator for the economic use of resources for attaining a maximum output of marketing services. The question of optimality, on the other hand, hinges on the relationship between the group and its members, particularly on the distribution of costs and benefits of cooperation among all members. Pareto optimality requires not only an efficient production of marketing services such as catalogues, representation at trade fairs, or a common web site, but also the complete payout of the output (contracts, reservations or sales generated) to all members. Since members face the decision of performing certain marketing efforts jointly or not, it is crucial to them not only that the alliance produces a higher return than all members separately could have done but that no member is worse off than had he invested the same resources into his own marketing measures.

In light of the general conditions (a) to (c) above, the following criteria define *necessary conditions* for the efficiency of marketing cooperation.

Marketing cooperatives produce marketing services efficiently (or optimally) if

- C1. their membership structure shows a maximum homogeneity with regard to
 - C1.1. *firm sizes*;
 - C1.2. *competitive market positions (market shares)*;
 - C1.3. *degrees of specialization on the markets or segments concerned*;
 - C1.4. *production and distribution levels*;

- C1.5. costs of decision, control and distribution in the group (*transaction costs*);
- C2. the degree of homogeneity does not reduce *economies of scale* and *scope*;
- C3. the *marginal productivity of factor inputs* is greater in the case of joint production than in the case of individual production of comparable marketing services;
- C4. they have an *efficient tariff structure* which exhibits a maximum individuality where
 - C4.1. the *accession fee* should at least equal the opportunity cost of the secession of an incumbent member;
 - C4.2. the *membership fee* should cover the differential rents from cooperation expected by individual members;
 - C4.3. the *user fee* should at least equal the marginal congestion costs imposed on other members;
- C5. these services are produced in the *total group*;
- C6. an *optimum membership (group) size* has been reached.

TEAM PRODUCTION

The cooperation of firms within marketing groups relies, in most cases, on *team production*. Individually identifiable inputs, in the form of membership dues or of labor, produce an output of marketing services which can no longer be individualized (see Alchian/Demsetz 1972). Only a part of the total income generated by a cooperative can be paid out to individual members according to their factor inputs or to any other criterion.² The larger part usually is a club good such that all members can benefit from it to some extent, this extent being dependent on the level of congestion within the alliance. A marketing cooperative that operates a hotel reservation system produces clearly identifiable services for each member, viz. hotel bookings. On the other hand, the creation of a brand 'Blue Mountain Coffee', the production of a hotel catalogue, the arrangement of a common booth at a trade exhibition, and practically all other measures of joint sales promotion and distribution are not individually attributable services. Only in exceptional cases will it be possible to prove how many additional units sold were generated by participation in the cooperative. Generally, marketing cooperatives will provide both services individually attributable to members and group-specific public goods (i.e. club goods) such as joint

2. A production function $x = f(y_1, y_2)$ where x represents the output of marketing services and y_n represents the set of factor inputs (such as membership fees and labor) is a *team production function* if

$$\frac{\partial^2 x}{\partial y_1 \partial y_2} = \frac{\partial^2 x}{\partial y_2 \partial x_1} \neq 0,$$

i.e. if the marginal productivity of a factor depends also on the input quantity of the other factor and the function thus expresses indivisibility of production.

sales promotion. More often than not, some services, such as public relations activities for a tourism destination or a brand, will also have positive external effects, i.e. provide benefits for non-members. In such cases there is an incentive to shirk, with its ensuing tendency towards inefficiency. Most management problems of marketing cooperatives arise from difficulties of metering the individual contributions and payouts and of internalizing the positive external effects of jointly produced services. These problems are exacerbated if output is divided equally, i.e. if team production occurs in a *partnership*, such as is often the case in group practices of lawyers or accountants (see Farrell/Scotchmer 1988; Gaynor/Pauly 1990). The tendency to minimize own inputs, which has been described as the problem of moral hazard in cooperatives and particularly in partnerships, results from an inadequate incentive structure for members (see Holmström 1982; Gaynor/Gertler 1995).

NECESSARY CONDITIONS

Homogeneity

Synergetic effects of cooperation can only be expected to occur among firms which are very similar in their *production characteristics* and *market positions*. If the spread in firm sizes and degrees of specialization on particular markets or segments becomes too large, the smaller and less specialized firms will profit from an economic (Paretian) rent, i.e. a benefit in excess of their opportunity costs of marketing individually and the costs of remaining in the alliance. Every cooperative of unequal members is confronted with an "exploitation of the large by the small" (Olson 1965, 29). The smaller and less specialized firms, the marginal suppliers in a group, will then be induced to rent-seeking behavior which, as is known from welfare economics, always leads to a diminution of the total income of the cooperative. Firms which are better equipped to serve a particular target market should therefore not subsidize free-riders which have a lower aptitude for this market (see also Farrell/Scotchmer 1988).³

3. In a model formulation, the criterion of homogeneity may be expressed as follows: If each member of a co-operative N exhibits a degree of aptitude a^i for a certain market segment, the benefit achieved by N will be the product of the profits, $\pi(|N|)$, and the sum of the degrees of aptitude, $\sum a^i$, where $|N|$ expresses group size. Since the benefit of a member in partnerships equals the average return of the group, we can assume that $m(|N|) = \pi(|N|) / |N|$ such that the average return is $(|N|)^{-1} \sum a^i$. The benefit of each member having a degree of aptitude a^* for a certain market segment is then

$$m(|N|) \int_0^1 a dF(a) + a^* g$$

where $F(a)$ is the distribution of members' degrees of aptitude and g is the number of unit sales a member could achieve on this segment prior to joining N . Pioneers can thus exhaust a segment alone until a group of competitors is formed. Negative values for g express the (sunk) search costs of the pioneer.

The maximum homogeneity among members that is required for maximum efficiency in cooperation not only refers to firm size (C1.1.) but also - and even more importantly - to the competitive position on the special market segment concerned (C1.2., C1.3.). A hotel which derives 60 per cent of its turnover from golfers and therefore also provides all facilities and services expected by these guests should not cooperate with hotels which, as one of several segments, also target golfers without, however, being able to offer the same standard. The more specialized and better equipped firm would, particularly in the production of non-attributable club goods, set the pace in the cooperation without receiving corresponding benefits. The less specialized firm, on the other hand, would profit from the former's positive external effects within the group, thus giving rise to inefficiencies in team production. This can only be counterbalanced by admitting proportionality of returns (see also Roy 1981, 260ff.). Equal sharing generally implies economic inefficiency.

Marketing cooperatives in the present sense are forms of horizontal cooperation, particular services often being contracted out to (vertically integrated) alliances. Members are located on an equal level in the chain of production and distribution and therefore do not comprise both producers, wholesalers and retailers (C1.4.). This requirement may, however, be violated in groups where, for example, coffee growers and processors or golf clubs and hotels cooperate. Friction between primary and secondary suppliers is not uncommon. A coffee processing plant or a golf hotel may serve as retailer for the products of the primary supplier, i.e. a coffee farmer or a golf club, without the latter having to pay for the positive external effects received from this sales promotion. Primary suppliers may eventually withdraw from the cooperation, since promotion is financed by the subsequent members in the chain of production and distribution.

The efficiency of cooperatives hinges upon decisions about production, distribution and control being taken at low costs (C1.5.). The more principal-agents problems are encountered in a cooperative, the higher the *transaction costs* of decision making are likely to be. Principals with similar organizational structures, with similar managerial competence, and with a similar cost-benefit ratio ensuing from the cooperation, are therefore likely to reduce transaction costs and thus to permit a higher efficiency of the group.

Homogeneity of membership structure has been shown to be a necessary condition the efficiency of clubs in which costs are shared equally (see Porter/Scully 1987; Farrell/Scotchmer 1988). For equal sharing prevents economies of scale except by sharing with less able firms; size cannot be achieved without heterogeneity. More often than not, membership fees do not or cannot depend on the degree of benefit achieved by each member: "sleeping" members subsidize the active ones. This, in turn, implies an equal distribution of costs even in those cases where membership are graduated according to firm size. Thus C1.1. still holds true.

More homogeneous groups also have an advantage in creating *brands*. In order to give their members a competitive advantage on the market, cooperatives often create brands easily recognizable by brand names and trademarks (e.g., 'Blue Mountain Coffee'). Branding strategies hinge upon a homogeneous and consistent standard of quality, which can more readily be achieved by firms with similar production characteristics (see Axelrod/Mitchell/Thomas/Bennett/Bruderer 1995).

On the other hand, criteria of homogeneity lead to economies of scale often being under-exploited (see Farrell/Scotchmer 1988). Moreover, maximum homogeneity must not preclude economies of scope arising from the differential (and complementary) specialization of members on various segments of a jointly served market (C2.). Gains from greater homogeneity thus have to be balanced, at the margin, with possible losses deriving from competencies within the alliance.

Supersummativity and Subadditivity

Team production, e.g. for the creation and introduction of brands, requires that joint input factors yield a larger output than the mere sum of products of the individual inputs in terms of funds or labor. The criterion of *supersummativity* requires that the marginal productivity of factor inputs must be greater in the case of team production than in that of individual production of comparable marketing services (C3.). If the benefits from integration to firms i and j are denoted as $\beta(i)$ and $\beta(j)$, respectively, the two have an incentive to join a cooperative if $\beta(i \cup j) > \beta(j) + \beta(i)$, and if $\beta(i \cup j) > 0$ (see Pauly 1967). Conversely, the cost function for producing the service is sub-additive, i.e. there are economies in the provision of marketing services to a larger membership base (see Staatz 1983).⁴

In view of the increasing differentiation of consumer markets, C3. imposes a limit on the number of new marketing cooperatives a market will support. The costs of targeting and penetrating certain segments generally increase as segments are defined more specifically and their size decreases (see Porter/Scully 1988). In the highly differentiated tourism market, hoteliers in Jamaica that jointly want to develop and market ecotourism products for Dutch guests, will likely find that costs are too high in relation to the possible commercial benefits for a marketing cooperative to be organized around this particular segment alone.

4. Subadditivity obtains if, for any non-overlapping subsets S and T in the set N ($S, T \subseteq N, S \cap T = \emptyset$):

$$C(q^{s+t}) \leq C(q^s) + C(q^t) ,$$

where $C(q^a)$ is the cost of providing the quantity of services q^a to alliance a .

Fees

Efficiency of cooperation requires that differential rents that some members receive be compensated by differential contributions. For alliances with heterogeneous membership, the tariff structure therefore has to be individualized in order to provide the appropriate signals of incentive or deterrence for each potential or actual member. Firms may not only seek rents from cooperation; they also have higher and lower utilization rates. This suggests a *two-part pricing* scheme with a basic membership fee and a user fee.

The *membership fee* should compensate for the different degrees of benefit members derive from the cooperation. The criterion to be applied here is the opportunity cost of producing the same marketing services individually. Firms with a higher aptitude for a particular market segment should pay a relatively lower fee than firms which have a lower aptitude to exhaust this segment on their own and will therefore profit more from cooperation. It is a primary task for the management of a cooperative to develop objective standards for the different degrees to which members are expected to benefit and to develop a tariff structure on the basis of these standards (C4.2.).

Members who are market leaders in a particular segment would have to pay no membership fee at all or, in extreme cases, should receive a payment from the cooperative in order to remain within the alliance. This latter case would arise if a member has such a strong position in a particular market segment that his benefits from membership are relatively small whilst all other members benefit from the market leader's participation. This member should then be compensated for the losses in income he encounters by sharing some of his strong market position and for having enabled the cooperative to achieve a position which it would not have achieved alone.

User fees should be such that the marginal benefit a member receives from an additional utilization of a club good is offset by the additional congestion cost for other members (see Scotchmer 1985). User fees should therefore equal these marginal congestion costs, even though in practice they may be difficult to establish (C4.3.). Given a heterogeneous membership structure, they will vary greatly between members. By proxy for a complicated procedure of ascertaining individual marginal congestion costs, an easily available measure such as the variable costs of providing marketing services for every member will often be chosen.

Where marketing cooperatives spend the larger parts of their budgets on fixed costs such as staff and only the smaller part on operative marketing such as the production of catalogues, the placement of advertisements or the participation in trade shows, only these costs are directly attributable to members. In such cases efficiency is enhanced by levying user fees which divide fixed costs among members according to some criterion and by charging additional variable costs as direct project fees. Fixed costs can be divided according to some supply-side characteristic such as production

capacity (machine hours, number of hotel rooms etc.) or, most ideally and given the availability of data, according to the degree of specialization on the segment concerned. User fees would then reflect the direct opportunity costs of utilizing a service. This method further compensates for internal subsidies among members.

For membership to remain attractive, membership and user fees together must be lower than the costs of producing the same marketing services independently of the alliance.

At any given time, the costs of starting the cooperation, of researching the market, of providing marketing tools, of public relations measures and the like will have to be regarded as sunk costs. On a going concern basis, new members will thus benefit from services the costs of which they no longer have to bear. In order to deter speculative timing of accession, it becomes necessary to extend the usual two-part tariff system into a *three-part tariff structure*.

As a type of license fee, accession fees should compensate incumbent members for the cost incurred by the experience curve of the group (see also Staatz 1983, 1087). As a minimum, the accession fee should equal the opportunity cost of the secession of an (average) incumbent member (C4.1).⁵ Joining a cooperative should cost a firm just as much as the value of the experience and the contributions are deemed to be that an incumbent member has invested into the alliance. This principle requires nothing but the common practice of establishing the costs of buying a company on the basis of the value both of its assets and its goodwill.

Group Structure and Size

The optimal size of a cooperative depends on the relation between the average and the marginal cost for providing a club good. If there is no rivalry in consumption, marginal costs will equal zero, and average costs will necessarily be higher. It follows from this argument that a marketing cooperative is only performing efficiently if it includes all N , for an optimum $n^* < N$ can only occur if, beyond a certain group size, marginal costs are increasing, so that the marginal cost curve intersects the average cost curve. This is tantamount to requiring that services be produced in the *total group* (C5). It has to be avoided that alliances contain a more stable core of members which are more suited for cooperating on a market since this invites rent-seeking behavior by the less-suited members, which in turn is a breeding ground of economic inefficiency (Cornes/Sandler 1986, 170ff.). Consequently, there must not be more attractive coalitions for members by leaving the cooperative or by setting up subgroups within it. Equation (1) imposes a limit to the number of partitions.

5. Pareto optimal distribution of the income generated by a co-operative requires that the decrease in net income caused by the secession of A equals the additional net income caused by the accession of B .

The optimum group size is at the level of membership that equates the marginal reduction in service cost with the rising marginal congestion costs. At this point a member's increase in benefits equals his decrease in costs (C6.). Above and below this optimum, the alliance will produce inefficiently because some members will benefit disproportionately and others will bear disproportionate costs.

MANAGEMENT IMPLICATIONS

All other necessary conditions for the efficiency of cooperatives can, in a formal model, be derived from the criteria of maximum homogeneity and necessary heterogeneity (see Grassl 1997). It presents guidelines for the management of marketing cooperatives, some of which had already been known to precursors of modern-day alliances, such as the Rochdale Equitable Pioneers' Society, which was founded in England in 1844. The causes of failures of cooperatives usually can be traced back to the neglect of one or several of the following principles (see Roy 1981, 538 f.):

1. Management of marketing cooperatives is, more than anything else, management of *incentive structures* for members and potential members. Returns not attributable to members need to stand in an attractive relation to benefits from club goods.
2. *Entry conditions* have to be well-defined and strict and should target the aptitude of firms for the particular market concerned. Marketing cooperatives should not be vehicles by the help of which marginal firms establish a presence on segments on which they could otherwise not succeed (see also Bucklin/Sengupta 1993).
3. With increasing membership, *optimum group size* becomes a crucial issue. In larger alliances, the likelihood of uncooperative behavior increases just as much as the internal transaction costs of reaching decisions. The anonymity of larger alliances also fosters free-riding, shirking and rent-seeking behavior, all of which are sources of inefficiency.
4. A *power balance* within the alliance needs to be maintained, and members should exhibit maximum similarity in *management style* and *company culture* (see Bucklin/Sengupta 1993). Alliances are most efficient if they do not have members of strongly different size and market power (see Hamel/Doz/Prahalad 1989).
5. The absence of a control of cooperatives by the capital markets has to be offset by a strict *monitoring of management* by members in order to avoid principal-agents problems (see Porter/Scully 1987).

6. Benefits have to be *internalized* wherever possible. Club-specific services, particularly sales promotion and sales, have to be given absolute priority over services involving positive externalities from which also non-members benefit (see also Roy 1981, 291f.). It cannot be the task of a cooperative of Jamaican Blue Mountain coffee growers to promote coffee but only to promote and sell the Blue Mountain coffee its members produce.
7. Contrary to much common (and ideological) belief, the efficiency of cooperatives requires a maximum *individualization of contributions and benefits*. Members have to receive benefits in relation to their *individual contributions*, in terms of fees but also of market presence, to the cooperative. The one-member-one-vote rule generally leads to inefficiency or to a Pareto-inferior distribution (see Roy 1981, 251ff.; Staatz 1983). Rather, proportional voting rights may be used to counterbalance differential rents within an alliance (see Phillips 1953).
8. *Profit maximization*, not maximization of rents for members, has to be the first management objective. Marketing cooperatives are not separate entrepreneurial units but rather for-profit organizations through which entrepreneurial firms conduct part of their business (see Phillips 1953).
9. All *surplus* should be returned to members, the costs of managing the alliance being covered by fees.
10. Defining the *optimum degree of homogeneity* is a balancing at the margin that needs to be carefully expressed in fee structures.

In general, it is likely that the management of marketing cooperatives, like that of other types of business, will never fully achieve efficiency as defined under the conditions above and will have to rely on *second-best solutions*. However, by observing the management implications defined above efficiency gains and Pareto improvements can be expected.

Empirical research on Jamaican marketing cooperatives in the areas of agricultural commodities and of services shall validate these findings for the Caribbean region.

SUMMARY

Marketing cooperation is shown to be a case of team production, where the marketing services being produced largely have the properties of club goods. Efficiency and optimality conditions for inter-firm cooperation are then formulated within a comparative-static microeconomic model. These necessary conditions refer to membership structure, the productivity of factor inputs, tariffs for accession and

membership, and group size. Efficiency is enhanced by achieving a greater homogeneity among members, particularly in terms of market positions and degrees of specialization on the respective segments. The outputs of the cooperative have to be paid out to members in proportionality to their inputs and to the differential rents they receive through membership.

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