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PROPERTIES OF COMPETING ORGANIZATIONS

by

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## PROPERTIES OF COMPETING ORGANIZATIONS

Pradip N. Khandwalla\*

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## AN OVERVIEW

Competition is a pervasive feature of all societies in which the desired things of life are provided by alternative sources. The need to withstand competition must inevitably affect the structure and functioning of competing organizations, for competition makes multiple demands on the organization: for quick, well-coordinated adaptation to the competitive moves of rivals; for creative and innovative moves to gain an edge over rivals; for efficiency in operations; for protecting the organization from future depredations.

The following points are developed in the paper :

- 1) Unless there is inescapable or potential conflict of interest between a set of rival organizations, competitive conduct is unlikely. Competitive conduct is therefore a property of those rival organizations that have a zero sum or variable sum structure to their relations, that is, have a competitive structure of relations.
- 2) Unlike several other features of the environment, competition is partly a decision variable for the managements of organizations with a competitive structure of relations. The form and the intensity of competitive conduct are shaped importantly by the strategic and tactical choices that competing organizations make. To some extent one can foresee the sequence of interactive moves that may be unleashed by a competitive move, and so the decision maker has, within limits, the freedom to have or not to have or have some other sequence of moves and counter-moves.
- 3) There are several determinants of the intensity of inter-organizational rivalry, such as number, size distribution, value homogeneity, and coordination of competing organizations and the organization and sophistication of their clientele. These determinants of rivalry are shaped in turn by other factors. If the existence of competitive conduct is a property of a competitive structure of relations, the different intensities of rivalrous conduct are each a property of different clusters of the determinants of rivalry, such as those identified in the economic literature as market structures.
- 4) Competitive conduct takes several forms, for example, price competition, advertising and promotion, research and development, vertical integration, and diversification. What form competitive conduct will take is partly determined by factors such as market concentration, excess capacity, product differentiation, technological opportunity, and barriers to entry. It is also, of course, determined by the preferences of key decision makers in the competing organizations. The form that competitive conduct takes has important administrative consequences. The strategies of competing organizations,

as well as the administrative arrangements these entail, are therefore partially at least the properties of the domain's structural properties like market concentration, product differentiation, excess capacity etc. that importantly embellish the underlying zero sum or variable sum structure of relations.

- 5) The intensity of competition, too, has important administrative consequences, particularly with regards to top level goals, management ideology, administrative and external strategy, organizational structure, and organizational functioning.

In short, the structural properties of a competitive domain, interacting with (and partially determining) the operating orientations of key decision makers in the organizations constituting the competitive domain, give a distinctive form (or forms) to the member organizations.

#### THE CONCEPT OF COMPETITION

Among social scientists, economists and political scientists have paid much attention to competition between organizations. Both have generally seen competition as being an engine of social good. In the case of firms, competition is supposed to lead to greater allocational efficiency, possibly also to greater operating efficiency. In the cases of political parties, competition between them is supposed to lead to better representation of the wishes of the electorate in the decisions of the polity and a more alert executive branch. Certainly, competition in the "market place" for goods, services and votes is a basic tenet of the dominant political and economic ideology of western democracies.

Adam Smith conceived of competition as an independent striving for patronage by sellers (1976). Such a view of competition is needlessly circumscribed. Organizations compete not only for patronage but also for the means (raw materials, inputs, equipment, labor, managers, etc.) by which to produce the goods or services needed to secure patronage. In more recent times, economists have viewed competition as rivalry in the market place (e.g. Phillips, 1962, Scherer, 1970). As Scherer puts it, "...we adopt the term 'rivalry' to characterize much of the activity businessmen commonly call 'competition'. The essence of rivalry is a striving for potentially incompatible positions..... combined with a clear awareness by the parties involved that the positions they seek to attain may be incompatible". (ibid, p.9).

This view of competition is a behavioural, psychological view, for it emphasizes a certain kind of striving or behavior, and also an awareness of possible consequences of such striving.<sup>2</sup> But the definition also hints at a certain structure in the relationship that may be best described as one of at least potential negative interdependence. In other words, one organization's gain could be the loss of a rival and vice-versa. In the familiar language of game theory, the relationship may be a zero-sum relationship or, at best, a variable sum relationship (Von Neumann and Morgenstern, 1944, Luce and Raiffa, 1957; for a game theoretic view of competition see Henderson, 1954, Shubik, 1959). Figures 1 and 2 illustrate the essential structure of zero sum and variable sum relationships.

No collusion is possible in a zero-sum game (Figure 1). The best strategy that can be followed is one of minimizing the maximum regret for the range of available alternatives. Competition for market share has this structure, since one competitor's gain is the other's loss. Collusion is possible in a variable sum game (Figure 2). If the two rivals collude, as by fixing prices, or by dividing up territory, or by limiting advertising expenditures, or by forming a coalition government etc., they can do better than a minimax solution. But a good deal of mutual trust is necessary because if one party acts according to the agreement and the other does not, the latter makes a windfall gain. As Scherer (1970, pp. 142-145) points out, in a variable sum structure, collusion is facilitated by (a) complete and immediate access to crucial information and the possibility of exchanging information; (b) a continuous rather than sporadic rivalry - there is greater motivation to come to terms with one another when rivalry is a day-by-day business than when it is a sporadic or one-shot effort (for experimental evidence, see Lave, 1962; Fouraker and Siegel, 1963; Dolbear et al., 1968).

A zero sum or variable sum structure of relations is also possible between organizations that do not compete, such as buyers and sellers or unions and managements. Therefore, a competitive structure of relations exists not only when the relations are zero sum or variable sum, but the relations are between actual or potential rivals. In other words, the competing organizations are alternative suppliers of substitute products or services and/or are alternate users of the same or similar enough inputs.

Economists, of course, have primarily been concerned about competition between firms. But a very wide range of organizations competes. Political parties compete for votes and power; unions for membership and monopoly in bargaining with employers; departments of government compete for funds; universities for prize faculty and students; and hospitals for public or private funding, doctors, and patients. Indeed, it is difficult to think of a type of organization that experiences no competition. The heart of the economic problem is many claimants on limited resources (Robbins, 1936). To the extent that organizations are institutionalized means for making these claims, every organization is generally in competition with every other organization.

Figure 1The Perceived Pay-off Structure of a Zero-Sum Game

		<u>Competitor 2</u>	
		Alternative 1	Alternative 2
Competitor 1	Alternative 1	<u>5, -5</u>	7, -7
	Alternative 2	-10, 10	-4, 4

The first number in each cell is the pay-off of competitor 1; the second figure, of competitor 2.

The summed pay-off for any cell is zero.

The minimax regret solution is both competitors taking alternative 1. Competition between firms for market share, competition between political parties for share of votes or between unions for share of membership or between government departments for share of the budget has this form.

Figure 2

The Perceived Pay-off Structure of a Variable Sum Game  
 (Prisoners Dilemma)

		<u>Competitor 2</u>	
		Alternative 1	Alternative 2
Competitor 1	Alternative 1	10, 12	-4, 15
	Alternative 2	15, -3	6, 8

The pay-offs for any cell do not sum to zero. The minimax regret solution is both picking alternative 2. However, both can do better if they each pick alternative 1. But this requires mutual trust and collaboration. Competition for profit often has this structure. So has competition between rival factions for power.



However, the intensity of competition of any one organization with numbers of the organizational universe is likely to be highly variable, being particularly intense where it perceives its relations with another organization or a set of other organizations that is/are rivals for acquiring inputs or disposal of outputs to be approximately of the type depicted in Figures 1 or 2 and not particularly intense otherwise.

#### COMPETITION AS AN ENVIRONMENTAL VARIABLE

In recent years, organization theorists have emphasised the distinction between the organization and its environment (e.g. Burns and Stalker, 1961; Lawrence and Lorsch, 1967; Thompson, 1967). They (contingency theorists especially) generally argue that since as a living system the organization is dependent on the environment for survival (Miller, 1955; Katz and Kahn, 1966), variations in the properties of the environment must necessitate corresponding variations in the properties of the organization. For an organization, the environment is the given; the organization's structure is the variable.

Competition illustrates the limitations of this perspective. As far as the organization is concerned, competition is both a parameter and a variable, a feature of the environment as well as a property of the organization. For, competition often is what the rival organizations choose it to be. If they choose to cut prices, competition will be fierce; if they choose to collude instead, there may be no price competition. In this respect, competition differs from several other environmental variables. The legal structure of a society is pretty much of a constraint for the average organization. Not so, or not necessarily so, the form and intensity of competition. The organization creates part of the competition it confronts. This is especially so in what economists term oligopolistic situations, that is, in situations where a few organizations are in rivalry with one another (e.g. Fellner, 1949). In these situations (a quite common type of situation, certainly in the industrial sphere, Henderson, 1954; Kayser and Turner, 1959) the acts of any one competitor may trigger collusive or competitive behavior on the part of the others. A common example is that of price leadership in an industry. During the early part of this century, for instance, Reynolds, the largest firm in the U.S. cigarette industry, use generally the price leader. However, in 1921, when American Tobacco cut its prices, Reynolds retaliated, and a price war broke out despite the generally non-competitive traditions (price wise) in this industry. The experience was apparently highly unsettling, and American Tobacco thereafter followed the price leads of Reynolds (Scherer, 1970, p. 166).

## FORMS OF COMPETITION

Competition is not demonstrated to be a unitary concept, as some organization theorists seem to have assumed (Negandhi and Prasad, 1971, Pfeffer and Leblebici, 1973). It has a multi-dimensional form. Following Chamberlin (1933), economists generally distinguish between price, promotional, and product competitions. In the marketing literature, competition in channels of distribution and in after sales service is additionally considered, (e.g. Otteson, Panschar, Patterson, 1964). Competition for market share is a rather ubiquitous reality of modern business and of political parties.

One can readily think of other forms such as competition for factors of production (equipment, labor, technical manpower, competent managers, raw materials, location, etc.). In fact, the variety in forms of competition is likely to match the variety in the goals that organizations pursue that involve some conflict of interests with outside entities and the variety of the means by which these goals may be accomplished in the acquisition of which, too, the organization comes into conflict with outside entities.

There is no reason why all of these various forms should be interrelated, although some undoubtedly are. Also it may be that all of these forms affect organizations in some common ways. But this seems improbable. Khandwella, for example, has reported that price, marketing, and product competitions have somewhat different impacts on the structure of top management control in manufacturing organizations (1973 b), and that partially non-overlapping sets of activities acquire strategic importance at high levels of these competitions (1976 b).

## DETERMINANTS OF COMPETITIVE CONDUCT

Game theorists (e.g. Shubik, 1959; Schelling, 1960), economists (e.g. Cournot, 1963; Chamberlin, 1933; Henderson, 1954; Phillips, 1962), Political scientists (e.g. Gatlin, 1968), and experimental social psychologists (e.g. Deutsch, 1949, Sherif, 1967), have attempted to shed light on the determinants of competitive or rivalrous conduct. Amongst these, the propositions developed by Almarin Phillips, an economist well-versed in the contributions of the behavioural sciences, appear to have the greatest generality, certainly for firms, but also other organizational forms (Phillips, 1962, pp. 25-35). Slightly adapted for applicability to most organizational forms, they are stated below.

1. Rivalry varies in intensity with the number of rival organizations. more numerous the rivals, the more difficult it is for any one to see the consequences of its actions on the others, and the more difficult it is any kind of coordination of their actions. This therefore can lead to intense rivalry. If, on the other hand, there are few organizations so each organization can anticipate to some extent the retaliatory actions of the others following its competitive moves, this perception of interdependent action may chill the competitive spirit, and increase the motivation the part of rivals to coordinate their activities. If this

coordination is realized, rivalrous behavior may get reduced.

No very definitive evidence has been advanced or theory proposed for predicting why, in an area of activity, there may be few or many rivals. However, economies of scale (both of production and distribution), barriers to entry, and differentiation in the preferences of clients may be important explanatory variables.

If economies of scale are relatively large, an industry is likely to consist of only a few large organizations. This may be one explanation why, given the enormous expense of electioneering, there are only a few political parties in the U.S. In the industrial sphere, the minimum optimal scale of operations per plant varies greatly between industries (Bain, 1956, pp.71-86). Bain estimated it to be 10% of national capacity for primary copper refining versus 0.1% to 0.5% for flour milling. No wonder that there are a great many flour millers and very few copper refiners. High barriers to entry, due to brand loyalty in favour of current producers, or due to high capital costs, or due to heavy patent protection, or due to government legislation, are likely to inhibit the entry of new firms and therefore keep the number of rivals low. On the other hand, differentiation in the preferences of clients (what is known as a segmented market) is likely to imply numerous rivals, each catering to a narrow but partially overlapping segment of the total market. This is the classic condition of monopolistic competition (Chamberlin, 1933). In the political sphere, too, multiple parties become viable if there is a great deal of societal heterogeneity (Gatlin, 1968).

2. Rivalry varies in intensity with the degree of equality in the size of the rivals.

Roughly equal market shares (or shares of votes, funds, etc.) would tend to induce greater rivalry than a situation where one or a few organizations dominate the market. This is because where everyone is an equal, there is no natural leader to coordinate the actions of the group, but where there is one or a few clear leaders by virtue of their size (Scherer, 1970, p. 167), or resources, or otherwise, leader-follower relations can be established, and some form of coordination of the actions of the rival organizations becomes possible.

A number of factors may account for skewness in the size (or power) distribution of rivals. Economies of scale may be one factor. If economies of scale (of production and distribution) differ as between the different market segments in an industry, different sizes will be optimal for these segments, so that size distribution will tend to be asymmetrical. In the automobile industry, for example, the production of cars is subject to very large scale economies, but not repairs and servicing. Hence, the size distribution is highly asymmetrical. Mergers may also lead to asymmetrical size distribution in the industry, especially if some members

of the industry have a strong "urge to merge" and others do not. Government policies may, by discriminating against or favoring the largest firms in an industry in awarding contracts, affect the size distribution in the industry (Scherer, 1970, pp. 122-125).

Stochastic processes may be a powerful factor explaining asymmetry in size distribution. Gibrat's law of proportionate growth predicts that even if all firms in an industry have the same growth parameters (mean and variance), the size distribution of firms will asymptote to a lognormal distribution (for a demonstration through simulation, see Scherer, 1970, p.126). The lognormal distribution implies a skewed size distribution, that is, a distribution in which a few organizations have much larger sizes than others, even if initially they all had the same sizes (Gibrat, 1931; Simon and Bonini, 1958). Indeed, the larger the variance of growth rates in an industry, the more asymmetrical is likely to be the size distribution due to the operation of chance factors (Scherer, 1970, p. 129). Thus, a high growth, high risk industry like electronics, other things being equal, is likely to get concentrated faster and to a greater degree than a low growth, low risk industry such as the dairy industry.

Apart from the growth phase of the industry which makes for high and variable growth rates, other factors may affect the variability of growth rates in an industry. A rapid rate of technological innovation may increase this variability since all innovators are not equally lucky or successful. (Scherer, *ibid*, p.129, p. 374). Scherer also identifies heavy advertising as a factor making for variable growth rates and therefore a skewed size distribution (*ibid*, p. 129, p. 342-3). He argues that heavy advertising tends to make brand market shares unstable, and therefore leads to variable growth rates. The evidence for this is, however, mixed (see Weiss, 1963 for supporting evidence, but Gort, 1963, for somewhat contrary evidence). However, Mann, Henning and Meehan Jr. (1967) found fairly strong correlations between advertising outlays per sales dollar and four-digit concentration ratios for 42 firms in 14 advertising-prone four-digit industries.

3. Rivalry varies with the heterogeneity in the value systems of the rivals. The more homogeneous the values held by organizations in an industry, as in the case of banking, the greater is the ease and frequency of inter-organizational communication, and the greater therefore is the resolution of inter-organizational conflict, and indeed, the greater may be inter-organizational collaboration. The degree of rivalry is likely to be more intense between polarized parties as in Italy or France than in the two great parties of the American middle class.

The homogeneity of the value system in turn is likely to depend upon a number of factors. One factor is barriers to entry. The more difficult it is for other organizations to get into an industry or a sphere of activity, the easier it may be to maintain a homogeneous value system. Homogeneous value systems may also tend to crystallise if a very similar technologies are utilized in an industry (Marx, tr. 1912; Perrow, 1970, ch.3), and organizations have similar cost and demand functions.

The higher the rate of innovation of new products and processes in an industry, and the greater the variety in the products and services offered by an industry, the more likely it is that member organizations will hold differing values and goals. Strong variation in the personality characteristics of the inter-organizational elites is also likely to be a factor making for heterogeneity in value systems. Industries or spheres of activity that are not close preserves of a class or a community are likely to experience greater rivalry than those that are. Unless convulsed by recent major technological or market changes, old industries are likely to exhibit a greater homogeneity of values (through the force of traditions) than younger industries (Khandwalla, 1976, ch. 8).

4. Rivalry within a group of organizations varies directly as the efficiency of the organization of outside pressure groups. The more organized and centrally coordinated the outside pressure groups such labor unions, the government, buyers, and suppliers are the more will they be able to induce rivalrous conduct in the industry. However, this is an unstable situation. As Galbraith would argue (1956, pp. 113-120), countervailing forces will be set up in the industry to counteract organized pressure upon it, and this will limit competition within it. Industry wide bargaining in many industries is an example of the manufacturers banding together to match the power of organized labor. Even in government sealed bid contracts, it has been observed in the electrical equipment industry that collusive practices tended to develop to match the monopoly power of the government (Smith, 1961). Hence, the proposition has dubious validity, especially over a time period that permits competing organizations to respond collectively to outside organized forces.

5. Rivalry varies inversely as the formality (i.e. the explicit nature) of the interfirm organization in the industry. This formality can range from the formal and legal cartelization of the industry as in the case of some German cartels and international shipping conferences (Miller, 1962) to a legally unenforceable "gentleman's" agreement to limit price competition, such as was the case with the steel industry in the U.S. employing the basic point system for this purpose (Adams, 1961, ch.5). to no such collusive agreements at all. To the extent that collusion is unenforceable at law, it is likely to break down during the periods of stress, such as declining demand as in a recession, especially when unit costs of production differ as between firms in an industry.

Besides these five propositions of Phillips, one is tempted to make a sixth proposition:

6. Rivalry varies directly as the sophistication of the industry's clientele. If the industry's clients are sophisticated, with professional mechanisms available to them to evaluate the claims of the rival sellers, the chances are that the sellers will have to compete harder to dispose off their products or services profitably. On the other hand, if the clients are relatively naive, it will be easier for the sellers to differentiate their offerings artificially and so carve out semi-monopolistic niches for themselves.

It should be noted that there is a distinction between how organized outside pressure groups are and how sophisticated individual clients of the industry are. If outside pressure groups are organized, that is, centrally coordinated, then political and economic power is massed against the industry, the survival and well-being of the industry as a whole is at stake, and the industry as a whole reacts to the threat by centrally coordinating the activities of its members. This lowers rivalry between the latter. But if outside pressure groups remain fragmented and yet sophisticated enough to evaluate the claims of individual sellers, then the response is not likely to be central coordination of the actions of sellers, but more vigorous efforts on the part of individual sellers to market their wares. The emphasis shifts from manipulating the naive to persuading the knowledgeable, and this is likely to imply lower prices and better quality of the products or services offered.

Generally speaking, clientele consisting largely of organizations is likely to be more sophisticated than clientele largely consisting of individuals. Thus, rivalry on this account is likely to be greater among sellers of capital goods and producer goods than among retailers of consumer goods. By way of analogy with respect to service organizations, rivalry between say political parties is likely to be greater on this account were they to compete for the patronage of institutions and organized pressure groups rather than the patronage of the citizenry.

The more literate the clients, the more sophisticated they are likely to be. The less benign the economic conditions the more carefully clientele is likely to place its patronage. The cost of the product or service offered by the industry may also be a factor: clients tend to be more careful about expensive items than relatively cheap ones, more careful in buying cars than in buying combs.

#### MARKET STRUCTURES AND DEGREE OF RIVALRY

Having listed some propositions relating to the degree of rivalry within a group of organizations whose relations inter se are approximately as depicted in Figures 1 or 2, it might be useful to assess the possible degree of rivalry in the major market structures identified by economists. Since these market structures are widely believed by economists to

be structural measures of competition, the degree of rivalry associated with each such structure can be viewed as a behavioral property of the organizations within that structure.

The following major structures have been identified:

1. Atomistic structure with no product differentiation. Many small suppliers supplying a homogeneous product or service. Grain growers are an example. This structure has been called a purely competitive structure (Marshall, 1920).
2. Atomistic structure with product differentiation. Many small suppliers supplying a differentiated product or service. A differentiated product or service is one that has been differentiated in the mind of the client due to actual or imaginary qualitative differences. That is to say, due to differences in physical properties, geographic location, subjectively perceived differences, etc., one organization's products or services, are clearly preferred by some clients over those of rivals at a given price (Scherer, 1970, p. 10). This structure was identified as monopolistic competition by Chamberlin (1933).
3. High market concentration (that is, a large share of the market controlled by few firms) with no product differentiation. This is approximately what Kaysen and Turner (1959) have described as a Type I oligopoly.
4. High market concentration with product differentiation. This may be called the differentiated Type I oligopoly.
5. Moderate market concentration (that is, a moderate share of the market controlled by the largest firms) with no product differentiation. Kaysen and Turner (1959) describe this as Type II oligopoly.
6. Moderate market concentration with a differentiated product, which may be described as a differentiated Type II oligopoly.
7. Monopoly or a single supplier.

In Table 1, the propositions of Phillips have been applied to each of these structures in order to deduce the degree of rivalry or competitive conduct within it.

TABLE 1

MARKET STRUCTURES AND INTENSITY OF RIVALRY

Market Structure	Structural Characteristics	Resulting Interfirm Rivalry	Comments
1. Pure Competition (many relatively small firms selling a homogeneous product). Examples: lumber industry, farm products, coal	1. Large number of sellers	High	Rivalry between organizations is likely to be generally very high unless prevented or curbed by governmental action
	2. Symmetrical size distribution of sellers	High	
	3. Generally homogeneous values in industry because of product homogeneity	Low	
	4. Organization of outside forces not known		
	5. Generally weak regulatory structure in industry unless industry is cartellised by law	High unless prices and output regulated under the law	
	6. Clients often quite sophisticated, generally being other organizations rather than naive consumers	High generally	
2. Monopolistic Competition (many relatively small firms selling a differentiated product) Examples: Footwear, clothing	1. Many sellers	High	Rivalry is likely to be generally high
	2. Symmetrical size distribution	High	
	3. Somewhat heterogeneous values because of product differentiation	Fairly High	



Market Structure	Structural Characteristics	Resulting Interfirm Rivalry	Comments
	4. Organization of outside forces not known		
	5. Generally weak or non-existent regulatory structure in industry	High	
	6. Sophistication of clients generally low because most are consumers	Low	
3. Type II Oligopoly (a relatively modest share of market controlled by largest firms) with <u>Homogeneous</u> product. Examples: steel, oil, chemicals.	1. Fairly large number of sellers	Moderately high	Generally, probably fairly low rivalry
	2. Somewhat asymmetrical size distribution	Moderately Low	unless varying unit costs in the industry
	3. Fairly high homogeneity of values	Low	destablize industry
	4. Strength of organization of outside forces unknown		wide cooperation in recessions (Scherer, 1970, p. 140)
	5. Fairly strong regulatory structure, for example through price leadership and industry association "guidelines"	Fairly low	
	6. Fairly sophisticated clientele, since they are mostly likely to be other organizations.	Fairly high	

Market Structure	Structural Characteristics	Resulting Interfirm Rivalry	Comments
4. Type II Oligopoly with Differentiated Product. Examples: drugs, data processing, machinery	1. Fairly large number of sellers	Moderately high	Generally probably fairly high rivalry especially if unit costs of production vary from firm to firm.
	2. Somewhat asymmetrical	Moderately low	
	3. Fairly heterogeneous values	High	
	4. Strength of organization of outside forces unknown		
	5. Regulatory structure of industry likely to be somewhat weak because of product differentiation	Fairly high	
	6. Fairly sophisticated clientele, being mostly other organizations	Fairly high	
5. Type I Oligopoly (few large sellers controlling a large share of the market) with a <u>Homogeneous</u> Product. Examples: aluminium, nickel	1. Few sellers	Low	fairly low rivalry generally unless unit costs markedly differ from firm to firm
	2. Fairly symmetrical size distribution	Fairly high	
	3. Highly homogeneous values	Low	
	4. Unknown strength of outside forces		
	5. Strong regulatory structure in the industry due to price leadership, "traditions", strong industry association	Low	

Market Structure	Structural Characteristics	Resulting Interfirm Rivalry	Comments
	6. Sophisticated clientele, being mostly other organizations	High	
6. Type I Oligopoly and a <u>Differentiated</u> Product. Examples: cigarette industry, automobile manufacturing, highly specialized machinery	1. Few sellers 2. Fairly symmetrical size distribution 3. Somewhat heterogeneous values due to product differentiation 4. Unknown strength of outside forces 5. Fairly weak regulatory structure in the industry due to product differentiation 6. Clientele varies from naive to highly sophisticated	Low Fairly high Fairly high Fairly high Variable	Fairly high rivalry especially if unit costs vary from firm to firm and clientele is sophisticated
7. Monopoly			Monopolistic behaviour often constrained by government and curbed by countervailing outside forces

It is unlikely, however, that the consequences of the general degree of rivalry will be identical for all firms in the industry. The relatively large firm in an industry (with or without product differentiation) is likely to be more impervious to competitive pressures than the relatively small firm in the same industry because of the former's larger resources and greater control over prices. A study of large firms by Shepherd (1972) indicates that the market share of a firm is strongly and positively related to profitability even when residual market concentration, size of the firm, its growth rate, and advertising intensity are controlled for. Thus, the prediction of competitive pressure on the individual organization and its competitive response to this pressure within a given market structure should be raised if the organization is relatively small, and lowered if it is relatively large.

Table 2 furnishes some empirical support for the preceding speculations. The table shows data gathered by the author from the senior management of a sample of Canadian firms. The data were gathered by means of a questionnaire. The respondents were asked to rate the intensity of each of: price competition, promotional and distributional competition, and product competition in their industry. They also rated the attention the firm's top management paid to each one of these in view of its impact on the long range profitability and growth of the firm. The perceived intensity of each competition was weighted by the rated attention the top management paid to it to derive a measure of the competitive pressure each competition exerted on the firm. The scores for the three forms of competition were summed to derive an index of pressure on the firm stemming from competition in its principal markets. (See Appendix for operational definition, reliability, etc.). The index distribution was trichotomized. Thirty-four firms were in the top third of the index and 27 firms in the bottom third of the index.<sup>3</sup> These 61 firms were classified into two sets of industries: industries that, based on the analysis in Table 1, had high predicted rivalry, and industries that had low predicted rivalry. They were also classified by whether the firm was one of the four largest in its principal industry or not (as indicated by the respondents). The identification of the type of market structure was done on a best judgement basis with the help of two economists and an accountant with wide experience of Canadian industry.

Table 1 predicts that industries with an atomistic or monopolistic competition structure or a type I or II oligopoly structure with differentiated products would tend to be characterized by greater rivalry than industries that are monopolies or Type I or II oligopolies with homogeneous products. Table 2 shows that 71% of the firms in the high predicted rivalry industries reported high competitive pressure while only 29% of these firms reported low comparative pressure; and 65% of the firms in the low predicted rivalry industries reported

TABLE 2

PREDICTED DEGREE OF RIVALRY IN INDUSTRY, RELATIVE SIZE OF THE FIRM, AND REPORTED COMPETITIVE PRESSURE ON THE FIRM

		Thirty-four Reported High Competitive Pressure Firms	Twenty-seven Reported Low Competitive Pressure Firms
	N		
I	<u>High and Low Predicted Rivalry Industries</u>		
	Firms in high predicted rivalry industries - Type I and II differentiated oligopolies, monopolistic competition, pure competition	25 (71%)	10 (29%)
	(software data processing, printing and publishing merchandising, trust and loan, property development, brand foodstuffs, transportation and storage, broadcasting, consulting engineering, textiles, home electrical appliances, tires, banking and inland shipping).		
	Firms in low predicted rivalry industries - Type I and II undifferentiated oligopolies and monopolies.	9 (35%)	17 (65%)
	(meat packing, chemicals, oil and gas, flour milling, construction materials, fish processing, gas distribution, logging equipment, metal powders, dairy products, lumber and saw mill, refractories, electrical transformers, non-ferrous metals, railway, telephone, a minority language monopoly newspaper)		
II	<u>Firm's Relative Size in Industry</u>		
	One of the 4 largest in industry	10 (48%)	11 (52%)
	Not one of the 4 largest in industry	24 (60%)	16 (40%)

low competitive pressure while only 35% of them reported high competitive pressure. The table also shows that while relatively large size did not earn much of a respite from competitive pressure, relatively small size distinctively invited it. Thus, competitive conduct is very likely to be induced by competitive structures, and may therefore be said to be a property of the organizations operating in such structures.

The number of organizations in an industry or activity domain, their size distribution, interorganizational similarity in values, formality of a coordinative interorganizational organization, the organization and sophistication of outside forces may well be the proximate determinants also of competition between organizations of other types, such as political parties, unions, universities, hospitals, etc. Such factors as barriers to entry, economies of scale, government policies, product or service differentiation, rate of innovation, growth, and heterogeneity of client values may, as in the case of firms, be the more ultimate determinants of competition between organizations of other types. It is tempting to so assume. But we simply do not know at the moment whether the assumption is well-founded or not. Gatlin's work on party competition in North Carolina suggests that it may be well-founded at least for political parties in respect of client heterogeneity (in Crotty, 1968, pp. 217-245). He found support for his hypothesis that the intensity of inter-party competition is positively related to environmental heterogeneity since "variations in party competition are a function of environmental group and class conflict as mobilized through the activities of party organizations" (ibid, p. 218). One may speculate that in types of organizations that must compete with one another for survival, that is, whose relations with other rival organizations have the structure shown in Figures 1 or 2, the foregoing may indeed be the determinants of how fiercely they compete. One may also speculate that the same determinants of rivalry between firms may also be operative where the performance of the organizations is clearly identifiable, measureable, and comparable, as in the case of political parties and unions. In such cases, the clients have a basis for choosing between organizations offering similar services, and that triggers competition between the organizations for securing patronage. Where the organizations' performance is not clearly identifiable, measurable, and comparable, as in the case of hospitals and government agencies, clients may not be able to discriminate well between organizations, and the administrators of these organizations may not perceive their relations with other organizations as having zero sum or variable sum structure depicted in Figures 1 and 2.

So far, we have indicated the degree of rivalry associated with each of several market structures (perhaps it may be more appropriate to call them domain structures in view of our attempt to talk about all organizational forms, not just business firms). Let us now see the different forms this rivalry takes, the associated market structures, and the possible administrative consequences of these forms of competitive conduct. These different forms of rivalrous conduct and their possible

administrative consequences may be considered as properties of competing organizations to the extent that the structure of competitive relations within each associated market structure has at the minimum the form shown in Figure 1 or 2.

#### DOMAIN STRUCTURE AND COMPETITIVE CONDUCT OF ORGANIZATIONS

There is a very large empirical and analytical literature on the relationship between market structure and what industrial economists term market conduct. The latter encompasses advertising, research and development, vertical integration, diversification, competitive or collusive pricing, price stabilization through output, inventory, and order backlog policies, etc. For greater generality, we prefer to call these activities domain-related activities, the domain being roughly synonymous with the organization's input and output markets. We shall in the main focus on the empirical rather than the analytical literature, for the latter is rather heavily grounded in simplifying assumptions such as about profit maximization not generally acceptable to organization theorists (see for example, Simon, 1959) and the heavy use of mathematics that does not lend itself to brief summarising. For recent examples of analytical efforts, see Bhagwati, 1970; Sandmo, 1971; Kamien and Schwartz, 1972; Cyert and De Groot, 1973; etc.

Several caveats need to be borne in mind in a review of the industrial organization or market structure - market conduct empirical literature:

1. Our unit of analysis is the organization. In much of the structure-conduct literature, the industry rather than the individual firm is the unit of analysis. Inter-firm differences within an industry tend to be ignored.
2. Our concern is with organizations in general, not just with business firms. The structure-conduct literature is wholly centered on business firms. There may be unique institutional aspects of the corporation that may limit the generalizability of findings pertaining to it to other organizational types. The profit motive and private ownership may be two of these institutional aspects that in conjunction are almost never found in other organizational forms. Measurability of performance is another feature that distinguishes the firm from many other organizational forms. We simply do not have a clear idea how far these and other institutional aspects limit the generalizability of the findings on business firms to other types of organizations.<sup>4</sup>
3. In the industrial organization literature, the two most commonly utilized measures of market structure are market concentration (the share of the top four or eight firms in an industry's sales) and the extent of barriers to new entry into the industry. There is no very persuasive evidence that as market concentration increases there is a monotonic decrease in competition. While an unconcentrated industry may be highly competitive and a monopoly not competitive at all, there is little theoretical or empirical reason to justify the assumption that, say, an industry with a

concentration ratio of 40% is more competitive than one with a ratio of 50%. Added to that is the problem of using census data on industries. The published data in the U.S. employ a very high level of aggregation. Concentration data are not commonly available at the four-digit industry level. But a four-digit industry is often not an industry at all but a number of industries that may or may not be closely related in the sense of having high cross-elasticities of demand (see Scherer, 1970, pp.52-57 for a discussion of other limitations). Barriers to entry are difficult to estimate accurately. When they have been estimated (e.g. Bain, 1956; Mann, 1966), the level of aggregation is quite high. Besides, high barriers may prevent entry, but do they necessarily dampen competition among existing firms? As against these problems, there is evidence that market concentration as measured and used is positively correlated with profitability (Bain, 1951; Weiss, 1963; Collins and Preston, 1969, etc.), and so is the height of the barrier to entry (Bain, 1956; Mann, 1966; George, 1968).

Bearing in mind these qualifications, let us turn to forms of competitive conduct, their possible structural determinants, and the likely administrative or internal consequences of each form of competitive conduct.

Competitive pricing: Price competition is highly visible. It is also quite painful, since even a small reduction in price multiplied by the total quantity sold can amount to a very large loss of revenue.<sup>5</sup> Few forms of competitive conduct are as disliked by businessmen as price cutting. No wonder they strive mightily to avoid it. Apart from conspiratorial or contractual price fixing, price leadership and administered prices are other means for regulating price competition.

Whether an organization is a cooperative pricer or a competitive pricer is likely to depend on the kind of domain structure it is in. Scherer summarizes well the properties of the market structure that affect price rivalry in an industry (1970, p.212):

"...cooperation to hold prices above the competitive level is less likely to be successful, the less concentrated an industry is; the larger the competitive fringe is; the more heterogeneous, complex, and changing the products supplied are; the higher the ratio of fixed or overhead to total costs is; the more depressed business conditions are; the more dependent the industry is on large, infrequent orders; the more opportunities there are for under-the-counter price shading; and the more relations among company executives are marred by distrust and animosity".



If price competition is relatively suppressed, as it often is in highly concentrated industries, fluctuations in industry demand will (in the absence of cartallisation) tend to result in large fluctuations in the inventories and in the backlog of orders, rather than in price variations. In these industries, during recessions, prices and production may not move down by very much, but inventories will accumulate and the backlog of orders will get depleted. In a boom, prices and output will not rise very much, but inventories will be run down and the excess demand will be absorbed in a build up of order backlogs. This way, in concentrated industries, a relative smoothening of production and price stability are achieved over the period of the business cycle.

If price competition is not suppressed, as usually is the case in relatively unconcentrated industries, fluctuations in industry demand will tend to result in large price variations (Fujino, 1960; Zarnowitz, 1962; Mills, 1962; Scherer, 1970, pp. 154-155). The administrative consequences are likely to be a greater long-term production planning and inventory control costs. In unconcentrated industries, the planning horizon is likely to be more short term since price and output fluctuations are not controllable variables.

Advertising and promotion: Advertising is an important competitive tool. Unlike price cutting, it is more difficult for oligopolists to regulate it, because, as Scherer points out (1970, p. 335), price cuts can usually be matched instantly, whereas it takes much longer to retaliate to a heavy advertising campaign. During this time lag, the initiator gains market share and profits at the expense of his competitors. The fear of being left behind by rivals provokes an advertising race. In addition, it is not easy to counteract completely the advertising campaign of a competitor. The outcome of an advertising campaign is unpredictable. If price competition is suppressed through common consent, oligopolists might bare their claws through promotional competition. Thus, for a variety of reasons, where the structure of relations between firms is competitive (Figures 1 and 2), advertising is likely to be intense.

The nature of the customer is likely to determine the level of advertising effort by competitors. Where customers are relatively ignorant or impressionable, as in the case of consumer goods industries, advertising expenditure per unit of sales are likely to be high. Where customers are relatively sophisticated, as in the case of capital and producer goods industries, advertising expenditures per unit of sales are likely to be low, although the promotional effort is likely to be intense and sophisticated. Given the type of customer (sophisticated - naive), the intensity of advertising is likely to depend upon a number of structural factors. One factor is market concentration. Within limits, the higher the market concentration, the more likely is perception of a zero sum structure of relations between competitors with regards market shares, and therefore the greater the incentive to engage in advertising rivalry. There is evidence of a modest positive relationship between market concentration and advertising intensity (Telser, 1964; Elsee, 1966; Mann, Henning, and Meehan, Jr., 1967).

Excess capacity in industry is likely to accentuate a perception of zero-sum relations among rivals, and therefore raise advertising rivalry. Innovation of new products may also initiate heavy advertising campaigns. Thus, competing organizations may be heavy advertisers if their customers are naive rather than sophisticated, if the industry is at least moderately rather than infinitesimally concentrated, if there is excess capacity, and if there are numerous innovations of new products. Empirical evidence in support of these conjectures is, however, not abundant.

One may also conjecture on the administrative consequences of advertising and promotion. The higher it is, the more the internal power balance in the organization is likely to shift to those with strong marketing values. Rather than structure, order, efficiency, the prevailing values are likely to become flexibility, public and human relations, creativity, etc.

Diversification: Gort, in a study of 111 American manufacturing firms, found that diversification was positively associated with market concentration in the primary industry of the firm (1962, pp. 135-143). Diversification was measured by computing the percentage of the firm's total manufacturing payroll outside its primary industry class. Apparently, high concentration makes it difficult for the firm to expand in traditional product lines without treading on the toes of its major rivals. So it chooses to move into greener pastures. Apparently, it is the fear of potential competition with major rivals rather than actual competition that is a cause of firms getting diversified.

Diversification in turn has a major administrative consequence, namely divisionalization (Chandler, 1962). Thus, if the organization responds to competition or threat of competition by diversifying its activities, at senior management levels it tends to acquire a divisional structure.

Vertical integration: Vertical integration is the acquisition of control over sources of supplies (backward or upstream integration) and channels of distribution (forward or downstream integration). Besides being a tool for reducing costs of production, vertical integration is known to be a powerful competitive tool (Hulton, 1962; Gort, 1962; Comanor, 1967 a). As Scherer points out (1970, p.70), backward integration can "ensure that supplies of raw materials will be available in time of shortage and protect the firm from a price squeeze by monopolistic suppliers. Downstream integration gives the firm greater control over its markets, lessening the probability, among other things, of foreclosure (being shut out from the market) by powerful buyers or middlemen.... Firms integrated vertically may keep raw materials out of rival hands, or foreclose markets to rivals, or establish a vertical price structure (relating raw material to intermediate and end product prices) which squeezes profit margins of the less integrated competitor". Thus, vertical integration is a defensive as well as a potentially offensive competitive tool.

Khandwalla (1970) found that his measure of price, distributive, and product competition as rated by the presidents of 72 U.S. manufacturing firms was moderately but significantly correlated with the degree to which the firm was vertically integrated as reported by these presidents. Vertical integration had a similar modest but significant positive association with firm size (Gort, 1962, too had found a similar association). The positive association between competition and vertical integration remained significant even after controlling for firm size. Thus, at least for manufacturing firms, vertical integration is a response to competitive pressures.

When an organization gets vertically integrated in response to competition, the organizational consequences of vertical integration may be greater decentralization of decision making at top levels of management (Khandwalla, 1974 a, pp. 77-80, 88). This may be because vertical integration gets the organization involved in a number of other activities besides its primary activities. This is likely to overload the top management, thus necessitating considerable delegation of authority. Partly to counteract organizational differentiation due to decentralization and partly to ensure coordination between the work and material flows that are characteristic of vertically integrated organizations, the latter adopt sophisticated control systems (Khandwalla, *ibid*, pp. 77-80, 88). Thus, if an organization responds to competitive pressures by getting vertically integrated, it may also tend to get decentralized at top management levels and acquire a sophisticated control system.

R. & D. and technological innovation: There are two broad categories of innovation, one of new products or services, the other of new operating processes. Firms apparently expend the vast bulk of their innovation effort in improving their products rather than their operating processes (Business Week, May 7, 1966, pp. 164-165). This implies that the higher the rate of innovation of new processes in industries using these products.

There is a tendency in the industrial organization literature to confuse technological innovation with research and development effort (e.g. Horowitz, 1962; Phillips, 1966; Scherer, 1967; Comanor, 1967 b). High research and development effort may imply a high rate of technological innovation, but a high rate of technological innovation may not imply an expensive research and development effort. In the field of services and consumer goods like clothing and cosmetics, many innovations can arise from a few fertile minds and relatively minor developmental efforts. Thus, as between industries, rates of research and development expenditures may sometimes be more a measure of the capital intensity of innovations (that is, of the minimum expenditure needed on the average to produce an innovation) than of the rate of innovation.

Research and development is a potent competitive tool. In a questionnaire and interview study of the factors that play an important part in research and development decisions of 91 large corporations holding 30% of all U.S. corporate patents in 1956, a large majority emphasized that competitive leadership or remaining competitively viable was the most important factor, rather than patent protection (Scherer, Herstein, Dreyfoos et al, 1959, pp. 107, 118, and 149).

As far as research and development is concerned, the magnitude of the effort has been found to be associated with market concentration (Phillips, 1966; Scherer, 1967; Comanor, 1967 b). However, when technological opportunity or the industry's potential for making innovations (usually subjectively estimated) is controlled for, the positive association between market concentration in the industry and research and development effort in the industry is weaker (Scherer, 1970, pp. 374-5). Moreover, the association between market concentration and research and development effort was stronger in industries with low potential for making innovations (the older, more traditional industries) than in industries with high potential for making innovations (the younger, more science based industries) (Scherer, 1967; Comanor, 1967 b). The findings seem to suggest that in the traditional industries, when competition is low, the surplus profits of an organization are partially absorbed in prestigious research and development efforts; and/or to develop products to exploit markets less subject to oligopolistic constraints. In the younger, growing, scientific knowledge based industries, research and development is more certainly a competitive tool, a necessity for tapping the many growth opportunities and for hedging against obsolescence. The discretionary spending power that monopoly offers is less of a potent determinant of research and development activity. Thus, in traditional industries, the presence of research and development effort may imply an attempt at escape from oligopolistic constraints, or a management ego trip, and the absence of research and development effort may be a response to competitive pressures. In young, dynamic industries, the presence of research and development effort may be a response to competitive pressures.

Like market concentration, barriers to entry into the industry are widely regarded by economists as a negative measure of competition in the industry. Comanor's work suggests that moderate barriers to entry into the industry are associated with a relatively higher research and development effort in the industry than either low or high barriers to entry (1967). His findings suggest that research and development expenditures may be too risky (because of uncertain future returns) under highly competitive structures, and not needed under low competition structures.

If an organization responds to competitive pressures by undertaking research and development, some important administrative consequences may follow. It is likely that research and development activity will reinforce technocratic, management science oriented values in top management (Khandwalla, 1974b, p.19). Substantial efforts will be devoted to market research, forecasting and the like in order to allocate the research and development dollars more efficiently and also to identify market opportunities for the developed products (Cooper and Khandwalla, 1975). If research and development is an organizational response to competition, then what Braybrooke and Lindblom have termed as the rational-deductive ideal (1963, p.9) and what writers on marketing have called the market oriented firm (Cotler, 1972, Ch. 1-3) may be attendant organizational consequences. In addition, due to the need to develop and market the complex products resulting from research and development effort, the organization would tend to get a divisional, even a matrix structure (Galbraith, 1971). Conversely, in circumstances in which abstinence from research and development is a response to competitive pressures, the opposite administrative consequences are likely: a reinforcement of seat-of-the-pants style of management, an operating rather than a marketing orientation, and possibly, unless the organization is diversified, a functional departmentalized structure.

Each of the competitive strategies we have considered (competitive pricing, advertising and promotion, diversification, vertical integration, research and development, and abstinence from research and development) may be thought of as properties of competing organizations. Table 3 lists them along with structural conditions in the market that may increase the probability that these competitive strategies will be used. The table also lists possible administrative consequences of the use of these strategies.

TABLE 3

COMPETITIVE STRATEGIES, CONGENIAL DOMAIN STRUCTURES, AND  
ADMINISTRATIVE CONSEQUENCES OF COMPETITIVE STRATEGIES.

Competitive Strategy	Congenial Conditions of Domain Structure	Possible Administrative Consequences of Competitive Strategy
Competitive pricing	<ol style="list-style-type: none"> <li>1. Atomistic structure with and without product differentiation</li> <li>2. High overheads</li> <li>3. Recession</li> <li>4. Large, infrequent orders</li> <li>5. Opportunities for secret prices shading</li> <li>6. Distrustful relations among corporate executives of different firms</li> </ol>	Short-term planning orientation in the organization
Advertising and promotion	<ol style="list-style-type: none"> <li>1. Naive rather than sophisticated clients</li> <li>2. Monopolistic competition, Type I or II differentiated oligopoly</li> <li>3. Excess capacity in the industry</li> <li>4. Innovation of new products</li> <li>5. Moderate to high market concentration</li> </ol>	Greater prevalence of marketing supportive values in the organization - flexibility, public image awareness, human relations, creativity, etc.
Diversification	<ol style="list-style-type: none"> <li>1. Type I oligopoly in the organization's primary sphere of activity</li> </ol>	Divisionalization
Vertical integration	<ol style="list-style-type: none"> <li>1. A market structure that leads to high levels of price, promotion, and product competition (Monopolistic competition, Type I or II differentiated oligopoly).</li> </ol>	Decentralization of authority at top levels of management, sophisticated control system to coordinate operations

Competitive Strategy	Congenial Conditions of Domain Structure	Possible Administrative Consequences of Competitive Strategy
Research and development	<ol style="list-style-type: none"> <li>1. High technological opportunity (industry's potential for making innovations)</li> <li>2. Low technological opportunity <u>and</u> high market concentration</li> <li>3. Moderate rather than high or low barriers to entry.</li> </ol>	<p>Reinforcement of technocratic, management science oriented values in top management. Market orientation, matrix, divisional organizational structure</p>
Abstinence from research and development	<ol style="list-style-type: none"> <li>1. Low technological opportunity <u>and</u> low market concentration</li> <li>2. Low barriers to entry</li> </ol>	<p>Reinforcement of seat-of-the-pants style of management, an operating rather than a marketing orientation, and possibly a functionally departmentalized structure.</p>

EMPIRICAL STUDIES OF THE INTERNAL, ADMINISTRATIVE CONSEQUENCES  
OF COMPETITION

The literature here is distressingly sparse. It is however, rich in the diversity of research settings. Sherif (1967) noted some of the consequences of sports competition between organization like groups of boys in a camp. Rose (1955) examined the effects of competition and conflict on 91 voluntary associations. Williamson (1963) studied managerial compensation under conditions of organizational slack arising out of the corporation being in a relatively non-competitive environment. Nagandhi and Prasad (1971) tried to relate weakness of competition with structural variables in a cross-cultural study of business firms. Crotty (1968) related inter-party competition to the organizational structures of two political parties in North Carolina. Pfaffer and Leblebici (1973) sought to relate competitiveness of the organization's environment with the organization's structure in a study of 38 manufacturing firms. Khandwalla (1970, 1973a, 1973b, 1973c, 1974b, 1975, 1975a, 1976b) explored a somewhat more variegated terrain in a study of 72 to 96 U.S. manufacturing firms and another of 103 Canadian firms. Pennings (1975) reported relationships between number of competitors, knowledge about competition, organizational intelligence, and a number of internal power and influence variables for a sample of 40 branch offices of a national brokerage company. Let us briefly review these studies in some detail, for they are much richer in the administrative implications of competition than a review of the industrial organization literature. The unit of analysis is the organization, not the industry, the coverage is wider than that of just business firms, and the measures of competition are often perceived behavioural measures rather than "objective" structural measures.

In a study that has become a classic in the social psychology literature, Sherif (1951, reprinted in Sherif, 1967), studied the behaviour of competing groups of boys at a summer camp in Northern Connecticut. After an initial period of spontaneous groupings on the basis of personal inclinations and interests, the boys were assigned to two similar experimental groups. Efforts were made to develop these as in-groups, that is to say, to secure a class identification of the members with their group. In the third stage, the groups were made to compete with one another in a number of sports events. The structure of relations was designed to be a zero sum one (see Figure 1), since one group would win and the other would lose the sports contest. It is best to summarise the results in Sherif's own words (ibid, 1967, p. 419) :

In brief, the consequences of the inter-group relations in competitive situations and in frustrating situations which members of one group perceived as coming from the other group were:

- (1) to solidify the in-group belongingness and solidarity, to enhance in-group democracy, and to strengthen in-group friendships;
- (2) to generate and increase out-group hostility, to produce derogatory name-calling which came close to standardizing of negative stereotypes in relation to the out-group (i.e. rudiments of prejudice).



The study suggests two administrative consequences of competition, one structural, and the other affective. The structural consequence is more democratic, participatory decision making. The affective consequence of competition is polarized feelings - strong positive feelings towards fellow organizational members and the organization as an abstract entity, and strong negative feelings towards the "enemy".

Rose (1955) conducted structured interviews with the chief executive officers of 91 voluntary associations in Minneapolis-St. Paul area. The primary functions of 24 organizations were reportedly opposed by other groups in the area ("associations with opposers"). In the case of 48 organizations the interviewees mentioned the existence of other groups with similar primary functions. These 48 organizations were called "associations with competitors but not opposers". The remaining 19 were categorized as "associations with opposers, 20 out of the 24 organizations has "competitors". Without further information, it is not possible to know whether the relations of the organizations opposing them or pursuing similar goals were of the zero sum variety (Figure 1), or variable sum variety (Figure 2), or neither.

While Rose reports a number of findings, the ones that seem to be the strongest are the following :

- (1) Voluntary associations with opposers and/or competitors tended to pursue secondary functions much more actively than the associations with neither opposers nor competitors. As a consequence, perhaps, their executives tended to meet oftener.
- (2) The associations with opposers and/or competitors appeared to have more bureaucratic features than those without opposers and competitors. For example, a substantially larger percentage of the latter had no paid staff members nor a filing system.
- (3) The associations with opposers and/or competitors appeared to be more dynamic than the ones without opposers and competitors. A much larger percentage of the former categories reported taking up new activities after inception than the associations without opposers and competitors. A much larger percentage of the latter reported no change in the techniques of working toward group goals.
- (4) A notably larger percentage of associations with opposers and/or competitors reported fair to strong leadership influence on members.

Although it is not clear that Rose is measuring rivalry, assuming that he is, his findings suggest that competition tends to diversify an organization's activities, make its structure and functioning more bureaucratic, make its administrators more dynamic, increase their power, and induce a greater degree of joint or participative decision making on their part.

Oliver Williamson has argued (1963) that managers have a preference for certain classes of expenditures. These principally are their salaries and perquisites ("managerial emoluments") and the size of their staff. Increases in the size of the staff can, he argued, be a springboard for increases in the manager's salary, perquisites, job security, power, prestige, etc.. Excess profits gained through the monopoly power of the firm are likely to be absorbed in costs as increased managerial emoluments and managerial staffs. Thus, the more benign the environment, that is, the more monopoly power the firm has, the larger will be managerial staff (beyond its marginal productivity) and the higher will be managerial emoluments (beyond the managers' marginal productivity). The argument is essentially the same as that of Cyert and March (1963), who have argued that in good times organizational slack, which they define as payments to members of the ruling coalition in excess of the payments required to maintain the coalition (ibid, p.36), gets built up, and gets squeezed out in bad times.

Williamson tested his hypothesis with data from the two largest firms from each of 26 industries, since as he put it, "it is in the larger corporation that manifestations of discretionary behavior are alleged to be important, and as complete data are most readily available among larger industrial firms than their smaller counterparts" (ibid, p.1041). The statistical tests were cross-sectional, and covered the years 1953, 1957, and 1961. His dependent variable was the compensation of the firm's chief executive. Two of the four independent variables were inverse measures of competition, namely the concentration ratio in the industry (the share of market of the four largest firms), and the height of barriers to entry into the industry (Bain, 1956). Administrative, general, and selling expense, presumed to be a measure of the size of staff, was the third independent variable. The composition of the board was the fourth independent variable. Though 52 firms were chosen for analysis, data on only between 25 and 30 firms were actually utilized in testing the hypothesis "largely due to the lack of estimates on the condition of entry for many of the industries" represented in the sample (ibid, p. 1044).

Regression analysis indicated that administrative, general, and selling expense was positively and significantly associated with the chief executive's compensation for all three years (1953, 1957, 1961). So was market concentration. Composition of the board was not significantly associated with the chief executive's compensation, though the betas were positive for all three years. The term for barriers was positively associated with the chief executive's compensation for all three years, but its beta was significant only in two years.

Some comments on the results are in order. Williamson reports a strong correlation of .75 between log size of firm and log "staff" expense (ibid, p. 1043). Thus, it is likely that the size of the firm might be a predictor of the compensation of the chief executive. If managing a large firm is a more complex affair than managing a small firm,

and if executive compensation is tied to how complex the executive's job is, then one may postulate a somewhat different chain of reasoning than the one proposed by Williamson: large size increases the complexity of the decision making process, thereby requiring additional staff to assist in decision making and the hiring of highly paid executives with special talents for managing large, complex enterprises. Indeed, there is evidence that size and staffing are fairly strongly correlated (Pugh et al, 1969; Child and Mansfield, 1972).

Additionally, it is not clear why "staff" should show a positive association with the chief executive's compensation when competition is controlled for through the concentration ratio and barriers to entry terms in the regression. It is the absence of competition that is supposed to lead to excess profits that in turn are utilized to build up "staff" that in turn provides the excuse for higher managerial remuneration. If the source of the chain reaction is controlled for, there should be no association between the remaining terms. The fact that "staff" is strongly associated with compensation despite controlling for the degree of competition indicates that the reasons for the association may be different from those advanced by Williamson. Indeed, when a measure of the firm's profitability was introduced into the regression, its beta was significant and positive for only one of the three years and negative in another year! The concentration ratio and the entry-barriers variables retained their original sign and statistical significance in every year (Williamson, pp. 1046-7).

Particularly interesting is the positive association between market concentration and executive compensation even after controlling for the firm's profitability. This could be because market concentration is associated with research and development effort in the industry (Phillips, 1966; Scherer, 1967; Comanor, 1957). Since large scale research and development implies high technological sophistication, the suggestion again is that the complexity of operations of the enterprise leads to highly paid executives rather than a managerial conspiracy to defraud the stockholders. Of course, these two alternate rationales for high executive compensation are not necessarily mutually exclusive. Williamson's data, however, provide little help in assessing the relative merits of the two.

Crotty (1968) studied the effects of party competition on the organizational practices of the Democratic and the Republican parties in North Carolina. The data were gathered through a mail survey of 195 (100 Democratic, 95 Republican) county chairmen in North Carolina, and were supplemented through personal interviews, attendance at meetings, reference to published materials, etc. (ibid, p. 250). The response rate to the questionnaire was 88% (ibid, p.41). The measure of party competition was "based on the winning party's margin of victory for three levels of competition - county, state and national - at the last election at which the offices (sheriff, state representative, state

senator, governor, and president).... were contested... The mean victory percentages for the offices used in the index were computed and the counties were then grouped into high competition (34) and low competition (66) categories, depending on whether the mean percentage of the county's vote came within 10 percentage points of an even division" (ibid, p.258). Thus, the closer the vote, the greater was deemed to be the inter-party competition in the county (analogous to the Phillips (1962) proposition, reviewed earlier, that the more symmetrical the market shares, the greater the rivalry).

Crotty found that for both parties, high inter-party competition was associated with "high" bureaucratic party organization and low-inter-party competition was associated with "low" bureaucratic party organization (ibid, p.259, Table 3). A "high" or strong party organization was one in which (1) some of the county's precincts were actively organized; (2) the county chairman kept records for campaign and organizational purposes; (3) some of the precincts in the county maintained files, records, etc.; (4) the county committee of the party held four or more meetings in non-election years; and (5) all of the precincts in the county kept precinct records. It was considered "high" even if item (5) was absent. The "medium" strength party organization was one in which at least the first two items were to be found. The "low" strength party organization had none of these items or at most only the first one (ibid, p.300, Table A.5). The index of party organization thus had Guttman-scale properties. The coefficient of reproducibility was .91. Crotty's findings suggest that competition tends to impart bureaucratic properties (in Weber's (tr.1947) sense of the term) to the organization. It also tends to increase participative decision making (to the extent that holding of meetings by the county's committee can be so construed). And it tends to disperse geographically the organization's activities (to the extent that the active organization of precincts within a county can be so construed).

Negandhi and Prasad (1971) conducted a study of management practices in Argentine, Brazil, India, Phillipines, and Uruguay, comparing management practices of local companies with those of U.S. subsidiaries in the same business. The depth of inquiry and the scope of analysis were, however, greatest in the case of India (ibid, p.v). Some 154 companies, consisting of American subsidiaries, local companies, and U.S. parent companies agreed to cooperate in the study (ibid, p.31). However, the data on 92 of these are reported in the study. These 92 firms consist of 47 U.S. subsidiaries and 45 local firms. The information on management philosophies, processes, practices, and effectiveness was gathered through personal interviews. Some 570 personal interviews were conducted, 440 at upper and middle management levels. Structured and nonstructured interview guides were prepared, and seven investigators conducted these interviews in the five countries (ibid, p.31). The firms appear to be all manufacturing firms (ibid, p.32).

While much of their data and analysis seek to relate managerial philosophy to management planning, organizing, leading, and control activities, they report some hypotheses and data relevant to properties of competing organizations (see particularly chapter 10 of their book). Thus, they propose (ibid, p. 171) :

The greater the degree of competition, the greater will be the need for long-range planning by the individual firms.

As support, they indicate that 58% of the 570 executives interviewed mentioned lack of competition (seller's rather than buyer's market) as a factor (ibid, p.174, table 10.2). Presumably (but this is by no means clear) this means that 58% of the respondents indicated lack of competition as a factor inhibiting long range planning in their firms.

Another relevant proposition is (ibid, p.175) :

Companies in a relatively weak competitive market are more likely to be centralized than those within a relatively strong competitive market.

In a footnote (ibid, p.175) they indicate that the centralization-decentralization aspect refers only to routine day-to-day decision making, but that "Policy decision making may show almost reverse relationships". No data are cited from their study in support of this proposition.

A third proposition is (ibid, p.176) :

The weaker the competitive situation, the lesser the concern for quality or cost of products, and the lesser the comprehensive control devices employed by the firm.

Again, no data are cited from their study in support of this proposition.

In view of the absence of supporting data and of any sophisticated theoretical analysis by the authors in support of these predictions, the purported effects of competition probably are merely their intuitive judgements.

Preffer and Leblebici (1973) studied the effect of the competitiveness of an organization's environment on organizational structure. There was a sample of 38 small manufacturing firms operating in Illinois. Their data were gathered through a questionnaire filled out by the chief executive. Their data purport to be a test of their hypothesis that competition raises the need of management for internal control and coordination of operations. As they put it (ibid, p.270), "if the organization has some degree of control over its environment, so that its output can be disposed of regardless of cost or quality, then efficiency in operations is not as necessary, mistakes are not as important, and responsiveness to customer demands is also not vital.

On the other hand, an organization facing a highly competitive setting cannot afford to make many major mistakes, nor can it be substantially less efficient than its important competitors. The greater external pressure on an organization under conditions of competition leads to a demand for even more interlocking of organizational behaviors and more coordination and control within the organization". The degree of competition was operationally measured by a single question: "What is the extent of competition in your industry?" The ratings were secured on a 5-point scale ranging from "very high" to "very little competition". No tests of validity or reliability were reported.

The findings were somewhat disappointing. Only one correlation, that of the degree of competition with the extent to which decision procedures are well specified in advance, was significant at the 5% level (one tail). By way of contrast, the size of the organization (number of employees in the organization) was significantly correlated with three structural variables. Pfeffer and Leblebici purport to report the partial correlations of competition with structural variables holding size constant. But these make no sense. For example, the Spearman rank correlations of "frequency of reporting" with size and competition are respectively indicated to be .174 and .057 (ibid, Table 2). The Spearman rank correlation between size and competition is reported as -.01 (ibid, p.274). And yet, the partial correlation of competition with frequency of reporting, holding size constant, is reported as .421 (ibid, Table 2). The latter would imply a correlation of around -.90 between size and competition! In addition, their Table 2 indicates a negative correlation between competition and "percentage of oral communication in decision making", but the result is described as positive in the text (ibid, p.275):

Pfeffer and Leblebici go on to test their hunch that technological variables, such as production technology, the number of products, and the extent of product design and production process change affect structural variables more strongly in a non-competitive environment than in a competitive environment. Their argument is that technological forces have a greater chance to assert themselves in an environment without contrary pressures from competition. Due to the unreliable data analysis, it is difficult to deal seriously with the data relevant to the administrative consequences of the interaction between competition and technological variables.

Khandwalla has reported the structural and other consequences of perceived competitive pressure (1970, 1973a, 1973b, 1973c, 1976b). In these studies, though the original sample was 101 U.S. manufacturing firms (1970), his sample has ranged from 72 to 96 firms, depending upon the availability of complete information with respect to the variables under examination. The data were gathered through a structured questionnaire addressed to the presidents of these firms. The sample of firms was picked to represent a wide range of industrial characteristics. While the range of size was very great, the average annual firm sales were about \$ 50 millions.

Competitive pressure was measured through six scales. Three anchored scales measured the perceived intensity of price, distributive and product competitions in the industry. Three others measured the importance of each of these three to the top management in view of their impact on the firm's profitability. The rated intensity of each form of competition was multiplied with its rated importance to the top management to secure a measure of the pressure on the firm through that form of competition. An index of competitive pressure was secured by aggregating the scores for the three forms of competition. The reproducibility (see Nunnally, 1967, p.193, for the measure employed) of this index of competitive pressure was .50. Subsequent to securing the responses of the presidents, a questionnaire was sent to the responding firms' marketing executives incorporating questions on competition. The marketing executives of 34 firms responded. A comparison of the responses of the presidents with the marketing executives indicated fair to good agreement for the four measures of competition (all were statistically significant at the 5% level; three at the 1% level).

The findings may be summarised as follows:

1. Product and marketing competitions tended to accentuate the strategic, long term importance to top management of a number of modern management activities, particularly product development, forecasting of sales, formulation of marketing strategy, and hiring and firing of managerial personnel. Price competition tended to depress the strategic importance of two activities, the planning of long term investments and the hiring and firing of managerial personnel (Khandwalla, 1976b, Table 1). The activities were grouped under the functional staff areas of growth and financing, product development, marketing, and managerial personnel. The data indicated that price competition tends to depress the strategic importance of the growth and financing and managerial personnel areas, and marketing and product competitions tend to raise the importance of the product development, marketing, and managerial personnel areas. The data indicated that the market and administrative strategies of the top management are likely to get more comprehensive and therefore more complex as pressures from marketing and product competitions increase, and are likely to get less complex as pressures from price competition increase.

2. Overall competitive pressure is positively but only weakly to moderately associated with four dimensions of organizational structure (Khandwalla, 1973b). The four dimensions are: delegation of authority by the chief executive of the firm, selectivity in the delegation of authority by the chief executive, the use of sophisticated management controls, and selectivity in the use of management controls. Delegation of authority by the chief executive was measured by aggregating the ratings of the extent to which the firm's chief executive had delegated authority to his subordinates with respect to each of nine strategic areas of decision making. Selectivity in the delegation of authority was measured by computing, for each firm, the variance of

the ratings of delegation for the nine strategic areas. The use of sophisticated management controls was measured by aggregating the president's ratings of the extent of use of nine sophisticated controls. Selectivity in the use of controls was measured by computing for each firm, the variance of the ratings of the use of the nine controls.

The data suggested (ibid, 1973b, Table 1) that product competition had the largest positive (and significant) relationships with each of these four structural variables. Price competition was significantly positively associated with selectivity in the use of controls, and marketing competition with the use of controls.

Delegation of authority by the chief executive differentiates the organization, that is, permits differentiated structures to develop within the organization. The use of controls, especially the sophisticated variety, integrates the organization's activities. The data suggest therefore that competition for patronage generally, and product competition particularly, has the effect of making the organizational structure both more differentiated and more integrated, that is, more complex, at least as far as manufacturing organizations are concerned. They also tend to make for more eclectic differentiation and integration. This is likely to be because competition for patronage tends to make various demands on the organization: for more accurate information about the market, for creatively meeting the needs of the clients, for adapting quickly to changes in the rules of the market game, for internal coordination of operations, for efficiency in operations, for responding quickly and effectively to local pressures, for influencing the forces in the market, etc. Pulled in many different directions, the organization must develop uncertainty reduction structures, differentiation structures, and structures for integrating and coordinating the variety of its internal structures.

3. Khandwalla (1973a, 1973c) reported some interesting variations in the administrative responses of the firms he studied when they were dichotomized into 38 high profit and 41 low profit firms. The cut-off point was 12% return on shareholders' funds before taxes. While the group means of a number of administrative variables were about the same, competitive pressure was significantly and positively associated with participative management at top levels, vertical integration, delegation of authority by the chief executive, and functional departmentalization in the group of high profit firms. It was significantly associated with only one variable, the use of sophisticated controls, in the group of low profit firms. When the administrative variables were grouped as uncertainty reduction, differentiation and integration variables, it was found that the average correlations of competition with these three sets of variables were .27, .29, .32 respectively for the high profit group and .01, .00, .11 respectively for the low profit group



(ibid, 1973a, Figure 4; participative management which was treated as both an uncertainty reduction variable, and an integration variable, has been treated here as only an integration variable). To the extent that competition for patronage is a dynamic, diverse, complex phenomenon, the data suggest that a complex organizational structure that boasts uncertainty reduction mechanisms like vertical integration and intelligence gathering and processing staff services, differentiation mechanisms like decentralization of authority, divisionalization, and functional departmentalization, and integrative mechanisms like participative, team management and sophisticated control systems, is not only likely but may be desirable. Conversely, other things being equal, in the relative absence of competition for patronage, a complex structure is not only less likely but may be undesirable.

In a follow up study of 103 Canadian manufacturing as well as non-manufacturing firms, Khandwalla (1974b) reported that in a group of 57 high performance firms, competitive pressure was significantly and positively correlated with an organic style of top management, while in the residual group of 46 low performance organizations, there was a small negative correlation. Performance was measured objectively, in terms of not only the long term average profitability of the firm, but also the stability of profitability, and the growth rate of the firm's sales/revenues. Competitive pressure index included two more competitions besides price, distributive, and product competitions, the two being competition for technical personnel and competition for inputs (such as raw materials). The measure of competition therefore encompassed the factor as well as the product markets. The measure of organic style had several of the dimensions of organic management identified by Burns and Stalker (1961), namely, (1) loose, informal control of operations and dependence on informal relationships and the norm of cooperation; (2) emphasis on getting things done even if this meant disregarding formal procedures; (3) a tendency to adapt freely to changing circumstances without much concern for past practice; (4) support of situational expertise in decision making, even if this meant temporary devaluation of formal authority; (5) managerial styles permitted to range freely from the very formal to the very informal; and (6) open channels of communication with important information flowing quite freely throughout the organization. The scales were so anchored that a high aggregate score indicated an organic style and a low total score a mechanistic style.

In his study of 103 Canadian firms, Khandwalla also found (1975a, Chapter 10) that competitive pressure was positively and significantly associated with high performance aspirations (high relative to rivals) on the part of the top management in respect of profitability, growth, solvency, employee morale, and public goodwill. This may be because high achievers may come to the fore in organizations experiencing intense rivalry, a point of considerable importance in economic development (McClelland, 1961). It may also be because key organizational goals achieve a transcendence, and their functional interrelationship is more clearly appreciated, in the stresses and strains of a competitive environment. It was also associated with a strongly market orientation, evidenced by the importance given to forecasting and market research (Cooper and Khandwalla, 1975).

Pennings (1975) has reported findings on 40 branch offices of a national brokerage company. Each of these 40 offices provided the same set of services, but the product mix varied somewhat as between the offices. All had the same formal organizational structure. In size they varied from 31 employees to 141 employees. Pennings employed a purposive, stratified sample of large and small, high and low performance branches of the company. The data were gathered from the salesman-brokers employed by the offices. In each office, part of the data was gathered from one group of brokers, and the other, partially overlapping part from another group of brokers. The correlations of scores on the portion of overlapping data were modest but significant. The reproducibility or reliability of multi-item measures was generally satisfactory. No checks on the validity of the variables were reported.

The primary measure of competition utilized was the number of competitors, presumably of the branch (the operational definition of number of competitors was not given). It should be remembered from our earlier discussion of the determinants of the intensity of rivalry that the number of competitors is only one of several determinants of the degree of rivalry. The number of competitors was significantly correlated with the power slope, a measure of how centralized the running of the office was. The number of competitors was correlated negatively, but not significantly, with a number of other organizational variables like lateral communication, vertical communication, participativeness, (market) meetings, total power or influence, and social inter-dependence. Generally speaking, competition, to the extent it was measured by the number of competitors, seemed to have the effect of making the organization more centralized, less democratic, and less organic, a finding not generally consistent with the studies discussed earlier.

Two other variables may fairly be said to be direct responses to competition. One was "knowledge about competition", a measure of how informed the brokers felt about the local competitors with respect to the latter's policies and strategies of selling, electronic and mechanical aids in selling, special services and facilities to attract new customers, activities of their research staff, activities of their planning staffs, and advertising and sales promotion. The other was the "quality of organizational intelligence", a measure of how much the broker-salesman learned about their local competitors from newspapers and financial magazines, attending local conferences and meetings, reading material put out by the research and planning staffs of competitors, friends working in the competing organizations, informal gatherings and gossip, customers visiting the broker's organization from competing organizations, and other sources. Knowledge about competition was strongly correlated (.75) with organizational intelligence. However, neither was correlated significantly with the number of competitors! This affects adversely the validity of treating the number of competitors as a measure of competition. Knowledge about competition was significantly

correlated with work specialization, and the correlations with power slope (centralization), total power (a measure of perceived equality of influence of the different organizational levels in the way the office is run), and social interdependence were sizeable and positive, but not significant. Quality of organizational intelligence was significantly correlated with power slope and social interdependence, and nearly significantly correlated with work specialization.

If one assumes that both knowledge about competition and the quality of organizational intelligence are partly at least uncertainty reduction mechanisms pressed into service in response to (unmeasured) competitive pressures, then other internal consequences of these latter seem to be a sharper vertical division of labor (between those who make decisions and those who carry them out), more functional and role specialization, and greater social interaction and interdependence at work. If we can think of specialization as a measure of organizational differentiation, social interdependence as a measure of organizational integration, and power slope or vertical specialization with respect to decision making as partly a measure of organizational differentiation (differentiation of power between the managers and the operatives) and partly a measure of organizational coordination or integration (through greater centralization of decision making), then the Pennings findings indicate that the greater the competitive pressure on the organization, the more uncertainty reduction, differentiation, and integration mechanisms does the organization tend to employ, a finding consistent with that of Khandwalla (1973c). Of course, it is worth stressing that Pennings did not measure competitive pressure on his sample of organizations, and we have assumed that the variation in knowledge about competition and in organizational intelligence is accounted for by unmeasured variation in competitive pressure on his organizations.

Table 4 provides a summary of the administrative consequences of competition as revealed by the review of empirical studies.

TABLE 4

SUMMARY OF THE ADMINISTRATIVE CONSEQUENCES OF COMPETITION  
REVEALED BY EMPIRICAL STUDIES

<u>Classes of Administrative Variables</u>	<u>Effect of Competition</u>
Top level goals for the organization	Aspirations with respect to a number of <u>organizational goals</u> rise (Khandwalla, 1976a). Managerial aspirations with respect to <u>personal goals</u> decline (Williamson, 1963)
Ideology of top management	Tends to become more organic in high performance organizations (Khandwalla, 1974b). Tends to become more market oriented (Cooper and Khandwalla, 1975).
Administrative and external strategy	Becomes more complex, in the sense that a large number of activities are perceived as strategically important (Khandwalla, 1976b).
Structure of the organization	Greater bureaucratization (Rose, 1955; Crotty, 1968; Pfeffer and Leblebici, 1973); more uncertainty reduction, differentiation, and integrative mechanisms (Khandwalla, 1973a, 1973c; Negandhi and Prasad, 1971; Pennings, 1975).
Functioning of the organization	More internally cohesive (Sheriff, 1951); more aggressive and dynamic (Rose, 1955; Crotty, 1968).

## SUMMARY, INTEGRATIVE MODEL AND CONCLUSIONS

Competition is rivalry in the domain of activities in which the organization operates, be they activities connected with the acquisition of resources by the organization or activities connected with the disposition of its outputs. Competition has a structural aspect and a behavioural aspect. The structural aspect relates to the degree of negative interdependence and the potential for cooperation rather than conflict, as shown in Figures 1 and 2 and amplified in the propositions of Phillips (1962). The form and intensity of competitive conduct is the behavioural aspect of competition. The structural aspect and the behavioural aspect are obviously related, as indicated by the propositions of Phillips (1962), but the relationship is likely to be stochastic in nature rather than being a deterministic one. This is because, given a domain structure, the organization often has a choice in the way it responds to it. Thus, for example, in highly concentrated industries with little product differentiation, while generally there may be parallel pricing, sometimes one may encounter a maverick price cutter. To a degree, the distinction between competition and organizational response to it is blurred because quite often competitive conduct is what rivals choose it to be.

We have viewed the degree of rivalry exhibited in a domain of activity as a consequence of the competitive structure of that domain. It is in this sense that the degree of rivalry is a property of competing organizations. Table 1 shows the predicted degree of rivalry to which an organization may be subjected to (and which in turn it may subject its rivals to) in each of the major market structures identified by economists. Atomistic, monopolistically competitive, and oligopolistic structures with differentiated products or services are likely to generate more rivalrous behaviour than oligopolistic structures with homogeneous products or services. Relatively smaller organizations within any given structure are likely to be subjected to, and possibly emit, more competitive conduct than relatively larger organizations in that structure. Some empirical support for these predictions is shown in Table 2.

Rivalrous conduct can take many forms, including price cutting, advertising and promotion, diversification, vertical integration, research and development and innovation. Table 3 summarises the likely relationships between these various forms of competitive conduct (which are clearly properties of competing organizations) and associated domain structures. It also indicates some of the administrative consequences of these forms of competitive conduct.

Several empirical studies of the administrative consequences of competition were reviewed. In some cases the measure of competition was a structural one (Sheriff, 1951; Rose, 1955; Williamson, 1963).

In other cases, it was a behavioral one (Pfeffer and Leblebici, 1973; Khandwalla, 1970, 1973a, 1973b, 1973c, 1974b, 1975, 1976a, 1976b). The evidence is summarised in Table 4. Competition seems to push the organization in a number of directions: Towards a more vigorous pursuit of the legitimate goals of the organization, greater flexibility among key decision makers, a more external relations orientation among them, a more complex survival and growth strategy, greater structural complexity as evidenced by a greater use of uncertainty reduction, differentiation, and integration mechanisms, greater bureaucratization, and possibly greater internal cohesion.

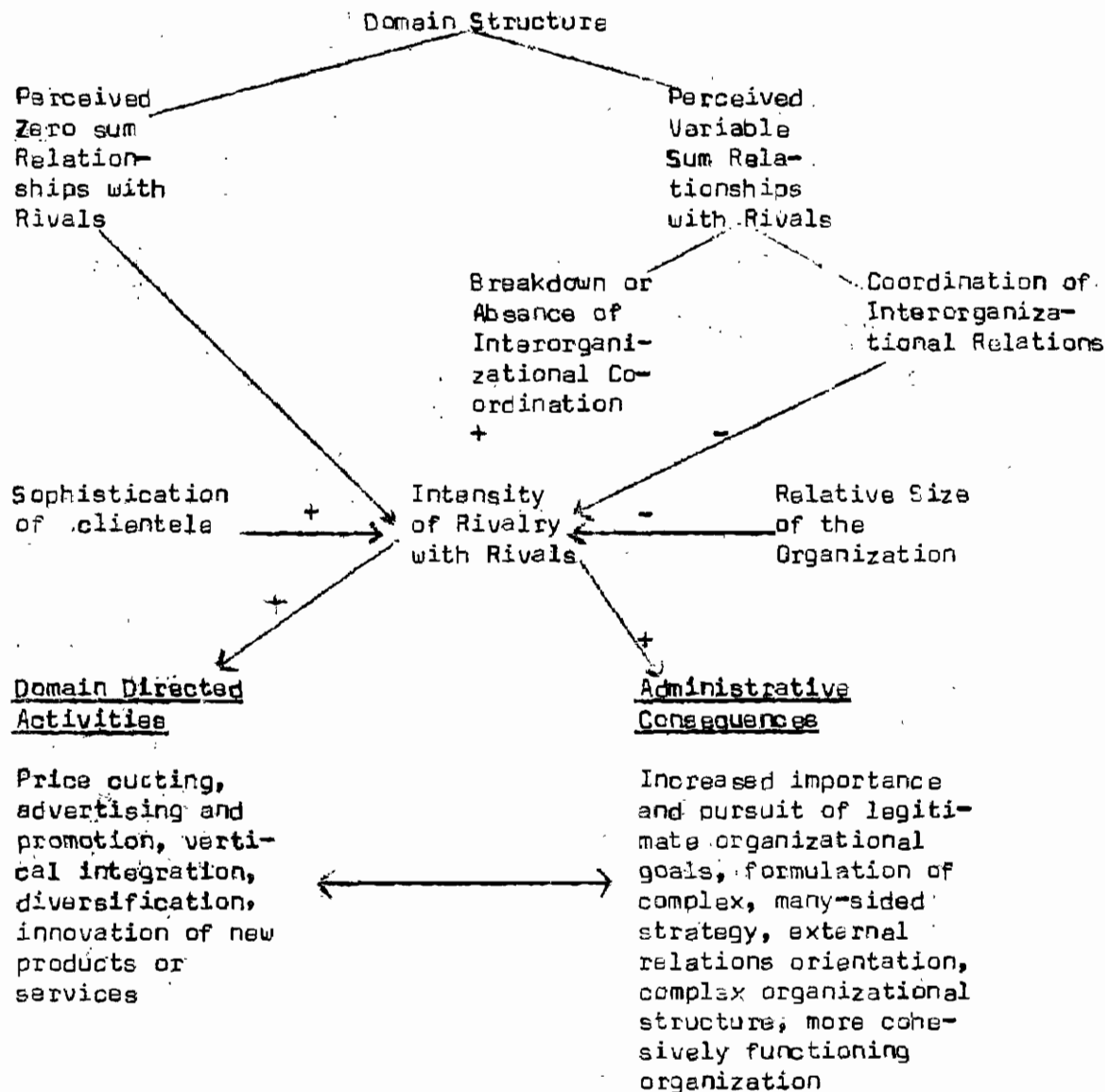
These various strands of information can be integrated into a model of the properties of a competing organization (see Figure 3). The structure of interorganizational relationships in the domain may approximate to either the zero sum variety (Figure 1), or the variable sum variety (Figure 2). If the relationships are of the zero sum variety, intense rivalry is likely. If it is of the variable sum variety (the prisoners' dilemma type), intense rivalry may or may not erupt depending upon whether the rival organizations are not or are able to coordinate their activities. They are not likely to be able to coordinate their activities if there are too many of them, if they have all roughly equal power, if their value systems are dissimilar, if their cost and demand functions are dissimilar, etc. Under opposite conditions they are likely to be able to coordinate their activities to eliminate "wasteful" competition. Rivalry is also likely to be exacerbated if the clientele is sophisticated.

If the rivalry is intense, it will result in two sets of consequences. Firstly, the organization will tend to make some strategic, domain related moves, such as initiating or matching price cuts, vertical integration, diversification, introduction of new products or services, heavy advertising and promotion, etc. The relatively smaller organization will tend to feel the stings of competition more sharply and therefore will tend to react more actively. However, absolute smallness in size may, due to paucity of resources, make it difficult for the organization to be as aggressive as it might prefer to be, certainly with respect to heavy advertising, vertical integration, diversification, and innovation of new products or services, and may indeed function quite passively. The spirit may be strong, but the flesh may be quite weak.

The second set of consequences of intense rivalry will be internal to the organization. High achievers with high capability will tend to be vested with power and responsibility. Key decision makers will tend to focus more sharply and pursue more vigorously the legitimate goals of the organization, possibly at the expense of their personal goals. They will tend to develop more comprehensive, multiplex strategies.

Figure 3

THE DOMAIN STRUCTURE OF A COMPETING ORGANIZATION,  
COMPETITIVE CONDUCT, AND ADMINISTRATIVE CONSEQUENCES



Note: (1) The above model seems appropriate for organizations above some minimum size. Small organizations may simply not have the resources to engage in several domain directed activities.

(2) Plus sign implies convariation and negative sign implies inverse or negative convariation.

for coping with competition. They may practice an organic, flexible management style at least amongst themselves. They will tend to initiate uncertainty reduction, differentiation, and integration structures like a sophisticated domain oriented information system, divisionalization, decentralization of authority, functional specialization, the establishment of standard operating procedures for lower level management, sophisticated control systems, participatory decision making at the higher levels, etc.

Naturally, the domain related activities of the organization will influence its internal changes, and to some extent, the vice versa may also be true. Vertical integration and diversification, if pursued, will tend to cause the organization to get divisionalized and decentralized, and cause it to adopt a sophisticated control system and a team decision making structure at top levels to ensure proper coordination and control of the resulting diversity in activities. The decision to market new or improved products or services will tend to propel the organization towards setting up a sophisticated domain oriented information system. Heavy advertising and promotion will tend to make the top level decision makers marketing oriented. Conversely, internal changes like a sharpening of the organization's objectives and a more multiplex organizational strategy will in turn tend to make the organization reach for options like diversification, vertical integration, etc. Rather opposite will be the domain related and administrative consequences of low rivalry.

Finally, one may raise two questions : Is it "good" for the organization to be subject to competition? Is it "good" for society to have organizations subjected to competition? No definitive answers are available, of course, but some conjectures are worth making.

From the point of view of the organization, the "good" presumably represents desirable consequences for its long term viability and for those that are most intimately connected with it, such as its owners, its members, and also its clients. As far as owners are concerned, if profit is what they are looking for, it is not easy to see how competition will affect profits. Price competition may reduce profits but the initiatives that the organization takes as a result in the marketing of new products or services, in making its internal operations more efficient, in getting achievement oriented, resourceful individuals to occupy key positions etc., will tend to compensate for the erosion of profits due to price competition. Thus the net result is hard to predict.

As far as the clients of the organization are concerned, competition should generally result in their getting better products or services at less cost. But even this is not unambiguous. Pointless advertising competition for differentiating the products where no



differences objectively exist simply adds to the cost to the client without much benefit to him. In addition there is the temptation of fly-by-night operators palming off inferior products or services to the unwary customer in order to beat competition. One might conjecture that competition between organizations is good for their clients when the latter are well-informed and discriminating; under opposite conditions, the results are likely to be very mixed.

As far as the organization's members are concerned, competition is likely to engender an innovation-supportive organization. Those with a certain amount of tolerance for change and ambiguity, and an ability to update their technical and other skills are likely to find the environment congenial. Those with strong needs for stability, structure, order etc. are likely to find their skills progressively devalued and so might get quite unhappy. Thus, whether organizational members find life in a competitive organization satisfying or not will tend to depend on their personality structures.

As far as the viability of the organization is concerned, there is little question that except for small, vulnerable organizations that may perish in a competitive environment, competition forces the organization to build up some real strengths and adaptability. It professionalises its management, makes it more proactive, more aware of the opportunities and pitfalls of the environment in which the organization operates, more internally cohesive and collaborative, and thereby increases the capacity of the organization to withstand unexpected changes in the environment. In the author's study of Canadian firms mentioned earlier, of the firms experiencing strong competitive pressure, 34% had top managements that were moderately to strongly risk taking, organic, technocratic and long term planning oriented, and participative. Of the firms experiencing weak competitive pressure, only the top managements of 14% had such an orientation.<sup>6</sup>

Lastly, what good does rivalry among organizations do to society? First of all, it provides checks and balances to the power of organizations, and thus furthers libertarian ends. Competition among organizations provides an outlet for the ingenuity and creativity of the gifted, not to mention a constructive outlet for the energies of the aggressive or the vicious (Khandwalla, 1976c). But then competition is a two-edged sword which leaves many maimed and bleeding in its wake. Competition undoubtedly contributes to the frenetic, possibly insane pace of modern life, inundates the civilized with a multitude of advertised vulgarities. It is also, of course, a cornucopia of need satisfiers and stimulants.

Foot notes

- <sup>1</sup> Traditional economic analysis assumes away the issue of operating efficiency, since the firm is always supposed to be operating at its production possibility frontier, that is to say, at the highest attainable levels of efficiency consistent with the technology employed by the firm ( see for example Samuelson, 1967, ch. 27). However, several economists have discussed the possibility that operating efficiency is a decision variable, not a parameter (e.g. Liebenstein, 1966; Comanor and Liebenstein, 1969; Cyert and de Groot, 1973).
- <sup>2</sup> Note that such a view implies that what economists call perfect competition is not really competition at all. Under the rigorous assumptions of perfect competition no seller has any motivation to compete, that is, raise or cut price, increase or decrease marketing activities, differentiate his product. It is a situation of perfect inertia induced by the realization that nothing any seller can do can improve his lot. In point of fact, of course, even if there are many sellers and the product is relatively homogeneous, as say in wholesale trade, many competitive issues remain, such as operating efficiency, correct anticipation of price fluctuations, locational advantages, goodwill, reliability, etc. etc. Thus, an atomistic market structure is quite consistent with furiously competitive behaviour on the part of rivals.
- <sup>3</sup> The scores for the index of competitive pressure were trichotomized on the assumption that the underlying distribution was normal. Of the total of 96 Canadian firms for which data relating to industry affiliation were fully available, 34 were in the top third of the distribution, 35 in the middle third, and 27 in the bottom third, suggesting a reasonably normal distribution. The procedure of ignoring the firms in the middle third of the index resulted in data loss, but greatly cut down the probability of classifying a firm as experiencing a high (low) competitive pressure when in fact it was experiencing a low (high) competitive pressure. The mean competitive pressure score of the "high" group was 18.1 (standard deviation of 1.5); that of the "low" group was 9.5 (standard deviation of 2.5).
- <sup>4</sup> Indeed, the work of Hall, Haas, and Johnson (1967) suggests that organizational differences tend to be quite marked as between firms and other types of organization.
- <sup>5</sup> The actual loss of revenue will depend upon the price elasticity of demand. If it is high, there may be no loss of revenue at all, and in fact there may even be an increase.

<sup>6</sup> Strong competitive pressure firms were those that scored in the top third of the distribution of competitive pressure on the firm, while weak competitive pressure firms scored in the bottom third of the distribution. See Appendix for the operational definition of competitive pressure. For operational measures of risk taking, technocracy and planning (called "optimization" in the reference); organicity (called "flexibility" in the reference), and participation, see Khandwalla, 1976a, Appendix A. "Moderate to high" on these dimensions means scoring in the top two-thirds of the distribution of the scores of these dimensions.

## APPENDIX

Index of Competitive Pressure

Definition: Competitive pressure on the firm from price, marketing and product competition was defined as follows:

(a) There were three scales that measured the perceived intensity of each form of competition. The wording was:

How intense is each of the following in your main industry? Please circle the number in each scale that best approximates the actual conditions in it. If an item is not relevant to your industry, write N.A.

Competition in promotion, advertising, selling, distribution, etc. in main industry

Virtually none - a single seller in the market.	1	2	3	4	5	6	7	Extremely intense (e.g. cigarettes, cars, detergents, etc.)
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Competition in the quality and variety of products or services

Virtually none - a homogeneous product or service industry such as an electric utility	1	2	3	4	5	6	7	Extremely intense, such as the auto industry, textiles
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Price competition in industry

None, e.g. a monopoly	1	2	3	4	5	6	7	Extremely intense, "cut throat", as in discount retailing, garments, etc.
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(b) Three other scales measured the attention paid to these forms of competition by the firm's top management. The wording was:

How much attention does top management pay to the following characteristics of your main industry. In other words, considering their impact on long term profitability or growth how much importance does your top management attach to these aspects?

Competition in quality and variety of products or services

Little importance	1	2	3	4	5	6	7	Extreme importance
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## Price competition in the industry:

Little importance      1      2      3      4      5      6      7      Extreme importance

Competition in promotion, advertising, selling, distribution, etc.

Little importance      1      2      3      4      5      6      7      Extreme importance

(c) The rating of the intensity of a form of competition was multiplied by the rating of its importance. The positive square root of this product was taken to dampen the excessive variability in higher magnitude numbers. The three square roots were aggregated to secure an index of pressure on the firm through competition for patronage.

Reliability and Validity: In 60 out of the 103 Canadian firms which data were secured, two senior executives independently completed the questionnaire. The competitive pressure score of these 60 pairs of "experts" on their firms were correlated to serve as one crude measure of validity. The product moment correlation was .71 (N= 60). The average intercorrelation between the three items in the index of competitive pressure was .50, yielding a coefficient of reliability or reproducibility of .75. Besides, competitive pressure as measured was correlated significantly, as we should expect, with perceived environmental heterogeneity, as well as with perceived environmental hostility, and perceived environmental turbulence (for operational definitions of these three environmental measures, see Khandwalla, 1976a, Appendix A). Thus, as measured, both the validity and reliability of competitive pressure are quite satisfactory.

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