

Strategic Groups: Theory, Research and Taxonomy

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Summary

This paper discusses the concept of strategic groups, focusing upon the importance of intra-industry strategic groupings in understanding differences across firms within an industry. The problems involved in identifying strategic groups within industries are examined through a comprehensive review of recent studies. It is demonstrated that much of the research has used surrogates for elements of a firm's strategic direction, e.g. vertical integration, product range, R & D expenditure, to suggest bases by which creative and sustainable groups are formed. The authors argue that certain theoretical concepts such as mobility barriers, isolating mechanisms and controllable variables provide much firmer bases for identifying strategic groups within industries. Thus, taxonomies for understanding the nature of strategic group formulation can be developed. Implications of the strategic group concept for such strategic issues as the structure-performance linkage, firm mobility, patterns of rivalry, industry evolution and firm growth are then examined. The paper concludes by indicating fruitful directions for strategic group research in the context of the strategic management field.

FIRMS, INDUSTRIES AND MARKETS

There has been much controversy and discussion in the literature of industrial organization about whether the firm or industry, or some other intra-industry group stratification, is the appropriate unit for analysis. Recent developments in oligopoly theory have done much to resurrect interest in analysis at the firm level by concentrating on interactions in markets where one firm's action affects its rivals. Such theoretical developments have filled the 'gaping hole' left by economists' traditional focus on the two polar cases of pure competition and pure monopoly. However, the indeterminacy of the oligopolistic game within the traditional constrained optimization, static equilibrium framework has made it difficult to drive the analysis towards any useful conclusion.

Most large firms are multiproduct, sell in more than one market and have grown by diversification. The industry as conventionally understood produces a range of different products, all of which are not close substitutes, and uses a variety of technical production processes. It therefore becomes unclear where the boundaries of the industry should be drawn. However, two criteria are commonly used to define these boundaries: markets and technologies. The *market* criterion is used to include within a specific industry those

products which are sufficiently similar as to be close substitutes in the eye of the buyer, the similarity being the familiar cross-elasticity of demand. The *technological* criterion (e.g. Andrews, 1951) focuses upon the classification of industries according to their similarity of processes. Breaks in the chain of cross-elasticities of supply (rather than demand) are examined.

The purpose of this paper is to re-examine these issues. In particular, a concept of a finer grouping than the industry has recently become popular (Porter, 1980). This appears to be a supply side concept in that it seeks to identify groupings or structures *within* industries, but it is in fact based on the observed similarity of behaviour of firms. These groups are called *strategic groups* because of the criteria by which they are observed. The strategic choices on which they are based are essentially long-term in nature and costly to reverse, and result in relatively tightly drawn group structures within the more loosely drawn industry structure of conventional theory. If such groups exist they will clearly have implications for the patterns of competition within industries, will contribute to our understanding of oligopolistic interdependence, and may enrich the structure-conduct-performance paradigm of industrial organization theory. For the business policy researcher and for the business strategist, strategic groups offer a distinctive slant on the identification of relative competitive position and suggest a systematic and comprehensive way of conducting a strengths and weaknesses analysis in terms of the framework of relative competitive advantage.

LITERATURE REVIEW

The main studies in the area of strategic groups are summarized in Table 1 and discussed in the following paragraphs.

The term 'strategic groups' was coined by Michael S. Hunt in his doctoral dissertation (1972) to contribute to his explanation of the performance of the 'white goods' industry in the 1960s. Hunt observed that there were three sources of asymmetry between firms within the 'white goods' industry: the extent of vertical integration, degree of product diversification and differences in product differentiation. This asymmetry resulted in four *strategic groups*: (i) full-line national manufacturers' brand producers, (ii) part-line national manufacturers' brand producers, (iii) private brand producers and (iv) national retailers. His rationale for this grouping was that it 'minimised economic asymmetry within each group' (Hunt, 1972: 57). He argued that the problems facing the potential entrant differed depending on which group he intended to enter, and Hunt therefore attempted to isolate 'barriers to entry to each strategic group' in a descriptive vein.

Howard H. Newman (1973), in his doctoral dissertation, applied the same principles in a statistical examination of 34 four-digit 'producer-goods' industries, all of which were related to 'chemical processes'. Michael E. Porter (1973) also analysed statistically a sample of 38 three-digit 'consumer-goods' industries in his doctoral dissertation.

While Hunt focused on strategic differences among competitors in their principal markets and delineated groups according to asymmetry (homogeneity) of operations within the same basic businesses, Newman asserted that strategic groups can also be 'defined and identified by the relationship between the industry at hand and the activities carried out by its member firms outside that industry' (Newman, 1978: 418). It follows at once, he said, that those firms sharing the same basic business can be placed in the same strategic group, while firms operating in the industry but having their principal business in a different industry form a

Table 1. Strategic groups: previous studies

Study	Industry	Basis for strategic group formation
Hunt (1972)	'White goods'	Product line basis —degree of product diversification —differences in product differentiation —extent of vertical integration
Newman (1973, 1978)	34 four-digit 'producer goods' industries: chemical processes	Degree of vertical integration
Porter (1973)	38 three-digit 'consumer goods' industries	Relative size of firm —leader/follower classification
Hatten (1974), Hatten and Schendel (1977)	Brewing industry	Manufacturing variables —number, age, capital intensity of plants Marketing variables —number of brands, price and receivables/sales Structural variables —eight-firm concentration ratio —firm size
Hatten, Schendel and Cooper (1978)	Brewing industry	Manufacturing, marketing and financial variables (leverage, merger/acquisition behavior)
Harrigan (1980)	Declining industries: receiving tubes synthetic soda ash baby foods acetylene percolator cigar leather tanners rayon	Dimensions of firms' strategic posture; strategic mapping used to identify groups
Caves and Pugel (1980)	U.S. manufacturing industry—sample	Relative size of firm
Oster (1982)	19 consumer goods industries from Compustat	Product strategy —Advertising/sales ratio
Ramsler (1982)	Banking industry —100 largest non-U.S. banks	Product market differentiation, size, geographic scope
Ryans and Wittink (1985)	Airline industry	Financial strategy clustering of residuals from capital asset pricing model (security returns)

—contd

Study	Industry	Basis for strategic group formation
Baird and Sudharsan (1983)	Office equipment/ electronic computing	Financial Strategy variables —Leverage, current ratio, return on assets, dividend payment ratio, times interest earned, size
Primeaux (1985)	Textiles Petroleum	Size Investment behavior
Howell and Frazier (1983)	Medical supply and equipment	Customer groups served Customer needs served (due to Abell, 1980)
Hayes, Spence and Marks (1983)	Investment banking	Logit analysis involving match between characteristics of investment bank and characteristics of individual customers; four main groupings identified
Hergert (1983)	2450 SBUs representing 50 industries; broad sample of US manufacturing industry	Mix of variables (i) Advertising/sales (ii) R & D/sales (iii) Assets/sales (iv) Business unit sales/parent sales (v) Market share
Dess and Davis (1984)	Paints and allied products	A range of 21 marketing variables
Hawes and Crittenden (1984)	Supermarkets	Marketing strategy variables (i) Target market (ii) Product (iii) Promotion (iv) Price (v) Buying (vi) Display
Lahti (1983)	Finnish knitwear industry, 1969–1981	Size: small, medium, large Nature of the product group
Hatten and Hatten (1985)	Brewing	Marketing strategy variables (i) Price (ii) Advertising (iii) Number of brands (iv) National relative market share

different group. To a substantial degree, therefore, strategic groups ‘turn out to be defined by their differing degrees of vertical integration with the market in question’ (Newman, 1978: 419). His analysis showed ‘that differing base industries and patterns of vertical integration sufficed to stratify rival sellers into subgroups’, but, as he himself pointed out, it left ‘open the question of what other operational factors may prove sufficient both theoretically and empirically for distinguishing them’ (Newman, 1978: 425).

Porter (1973) proceeded by ‘using the relative size of a firm in its industry as a proxy for

its strategic group membership', dividing firms in each industry into two categories defined as industry *leaders* and *followers*. He argued that:

The leader/follower dichotomy may be particularly apt for dichotomizing strategic groups in a sample restricted to consumer goods industries [because] while the configuration of strategic groups will vary from industry to industry, the leader group should encompass those strategic groups in the industry which are characterised by strategies potentially achieving economies of scale in production technology, vertical integration, captive distribution, in-house repair and service facilities, national advertising, and so on if these economies exist in the industry. The leader group should also encompass strategic groups with broad product lines and large sales forces. The follower group, on the other hand, is likely to encompass strategic groups composed of firms following specialist or narrow-line strategies, regional strategies, non-integrated strategies and so on. Thus the leader/follower distinction captures some of the variance among strategic groups (Porter 1979: 220–221).

Caves and Pugel (1980) follow Porter (1973, 1979) in using firm size as an indicator of strategic group membership. They found that small firms were more profitable in some of the industries which they studied.

Kenneth J. Hatten, in his doctoral dissertation (1974) on the US brewing industry 1952–1971, paid great attention to the methodology for establishing intra-group homogeneity and variance between groups. He argued that the earlier researchers (Hunt, Newman, Porter) had focused on groups, not on firms, and in spite of considerable attention to the assumption of homogeneity within an industry across firms, they had not tested for homogeneity on a firm-by-firm basis. Hatten therefore began with case studies of firms in the brewing industry, from which he concluded that brewers competed by allocating resources to two principal functional areas: manufacturing and marketing. He therefore specified an eight-variable model, relating return on equity (performance) to three manufacturing variables (number, age and capital intensity of plants), three marketing variables (number of brands, price and receivables/sales) and two structural variables (eight-firm concentration ratio and firm size).

His first step in the statistical analysis was to develop disparate internally homogeneous groups. He argued that:

The process must begin with an untested assumption: since the current state of art in statistical theory cannot cope with simultaneous non-homogeneity across firms (sections) and across time, a decision must be made to assume homogeneity over time or across sections. Since our interest was the firm and because it seemed more likely that the brewing industry would be homogeneous across time, the research began with that assumption, (Hatten and Schendel, 1977: 101).

He believed that it was difficult to decide which firms to group together (because one firm may be homogeneous with one or more other firms) although it could be done in accord with *a priori* theory using criteria such as size (as Porter did) or types of market served. He resolved this problem by using a cluster programme to determine the distance between firms. Then he conducted a regression analysis which demonstrated that important differences existed between the pooled estimates (the industry model) and the estimates

normally made on the clusters (the disparate but internally homogeneous groups). The next step was to relax the assumption about industry homogeneity across time. The main problem was then to select the appropriate breakpoint (year); for this a content analysis of the industry served as a guide.

Hatten and Schendel's (1977) conclusion was that 'attention to homogeneity' revealed information that would otherwise be obfuscated: thus they believed they had discovered a useful methodology for isolating strategic groups. They also argued that the identification of strategic groups could help management evaluate proposed strategies and check the usefulness of conventional wisdom in specific competitive situations (Hatten *et al.*, 1978: 592). They stressed that:

The notion of strategy leads to the expectation that, within a given industry or set of markets, different competitors with different resources should choose different means to attain their ends. Among other indications, this suggests that industry level models and indiscriminate pooling of data can produce results that are easily misled if used at the firm level. It also suggests that in the real world there really are different ways of 'skinning a cat', the firm too quick to copy a successful competitor, one which tries to emulate its competitors without careful thought, may overlook its own capabilities and work against its strengths (Hatten *et al.*, 1978: 608).

One of the limitations of the Hatten study was that it was confined to firms competing in the same environment, namely the brewing industry. This industry was selected to control the product-market variable (diversification) at a low and non-significant level. With all chosen firms being undiversified, single-business units, the study was perforce reduced to one of 'business strategy' (strategy variables concerned with operations) and not 'corporate strategy' encompassing product-market and geographical diversification, and horizontal and vertical integration.

Harrigan (1980), in a landmark study, analysed strategic groups in seven declining industries—namely, receiving tubes, synthetic soda ash, baby foods, acetylene, coffee percolators, cigars and leather tanners. She used Porter's (1980, 1982) strategic mapping approach to identify groups based upon dimensions of firms' strategic posture.

Oster (1982) used one element of firm's conduct, product strategy, as the basis for group differentiation. She argued that there may be persistent differences across firms in terms of advertising strategies (as measured by the advertising to sales ratio). She assigned firms to strategic groups in an industry in a given year (Oster, 1982: 378) based upon whether its advertising to sales ratio was (1) below or above the industry average for that year, (2) in the bottom versus the top of the industry distribution for that year. She also examined the extent of stability in these differences over time in order to understand processes of group change. She concluded that while the identification of strategic groups is a judgemental process it does enrich our understanding of the workings of some consumer goods industries. For example, she found that it is the long-term durability of a firm's advertising investment strategy which maintains the group structure. This is consistent with the notion of advertising as a strong entry deterrent and barrier to mobility within consumer goods industries.

Ryans and Wittink (1985) use finance theory and the capital asset pricing model as their framework for group identification. They argue that if two or more firms are in the same strategic group, then their stock prices should tend to move together. They qualify this

argument by stressing that it is more likely to hold for industries in which the participants are essentially one-industry firms and over a sufficiently long time-period so that particular internal or external industry differences do not have a disproportionate effect on security prices. They studied the airline industry and showed that the trunk airlines grouped together. Regional or intra-state airlines had no consistent overall clustering pattern but tended to group most frequently with another similar airline.

Baird and Sudharsan (1983) used a three-mode factor analysis to cluster participants in the office equipment/electronic computing industry according to certain financial accounting variables such as leverage and return on assets. They identify several different and rather stable groups in this industry which appear to differ with respect to their financial policies and strategies.

Primeaux (1985) hypothesized that investment behavior (measured by net capital expenditures) may be an important variable by which the life cycle stage of an industry may be identified. He links the life cycle and strategic group concepts and shows that strategic groupings, using a relative size measure, for particular industries are related to the industry life cycle stage. Primeaux compares his strategic group method with Porter's (1973, 1979) approach in relation to the textile and petroleum industries. While Primeaux's results appear to be superior for the petroleum industry, Porter's results are better for the textile industry. Primeaux concludes, *inter alia*, that current research has not determined the most appropriate approach for determining strategic group membership and that future research must concentrate upon finding reliable and consistent approaches for strategic group identification.

Howell and Frazier (1983) use Abell's (1980) criteria for business definition to form strategic groups in the hospital supply industry. Using the degree of scope and differentiation on customer groups and needs dimensions, they conceptualize strategic groups in terms of traditional marketing decisions and variables. They conclude that these marketing strategy variables have an important impact on the firm's strategic choice and positioning.

Ramsler (1982), and Hayes, Spence and Marks (1983), have focused their attention upon strategic groups in the banking industry. Ramsler's study, which takes a more global industry focus, attempts to form strategic groupings amongst those major non-U.S. banks with a presence (or anticipated presence) in the U.S. market. He tested the validity of strategic groupings derived from a statistical cluster analysis by analysing whether they explained decisions to enter the U.S. market made by the non-U.S. banks in his sample. He found that banks belonging to the same strategic grouping tended to adopt similar strategies in entering the U.S. banking industry.

Hayes, Spence and Marks (1983) attempted to form groups in the investment banking industry by using logit analysis to match strategic characteristics of the banks with characteristics required by customers of those banks. Their study was based on extensive, detailed knowledge of and research in the industry, thus enabling the choice of a rich set of variables for identifying strategic groups. They found four major groups which were quite distinct from the groupings obtained from conventional industry wisdom.

Hergert's comprehensive study (1983) proposed a means for analytically determining the incidence of strategic groups and for analysing the determinants of strategic groups. He also examined the implications of strategic groups for industry profitability. His sample of 50 industries drawn from the Compustat database falls into seven broad categories: chemicals and allied products, rubber and plastic products, leather products, electric and electronic equipment, transportation equipment, instruments and related products, and miscellaneous

manufacturing. Hergert shows not only that groups exist (and never more than four in any of the industries in his sample) but that their emergence can be linked to specific market characteristics. In particular, he states that the extent of managerial input, buyer diversity, product complexity, market growth, and stage of the product life cycle all seem to play a significant role in determining the incidence of groups. He also found that the characteristics of strategic group structure can be shown to affect market performance through intra-group rivalry (cf. Caves and Pugel, 1980).

Lahti (1983) uses size of firm (as a measure of resources available and of product-market scope) as the major criterion of strategic group membership in a study of the Finnish knitwear industry. The key result in his analysis is that there are 'real' differences in the business definition, the functional strategies and economic performance of each size grouping and that these differences have meaningful strategic interpretations. For example, a small knitwear firm is generally constrained to stay in a given segment and to invest in production development.

Dess and Davis' (1984) study of the paint industry is interesting from a methodological viewpoint. Whereas most strategic group studies, particularly the data-driven variety, rely on a strategy definition of 'strategy as realizations' (i.e. outcomes), Dess and Davis focus on the concept of 'strategy as intentions'. Further, they make extensive use of perceptual data drawn from industry experts to identify strategic dimensions as variables which can subsequently be used in a multivariate analysis to identify strategic groups.

Both Hawes and Crittenden (1984) and Hatten and Hatten (1985) use marketing strategy variables to form groups in retailing and brewing industries. Hawes and Crittenden, using cluster analysis on their set of marketing variables, formed four strategic groupings for retailing strategies in the supermarket industry. They also found partial evidence of a relationship between strategic group membership and successful economic performance. Indeed, one of their strategic groups (aggressive initiators) consistently achieved above-average levels of success.

Hatten and Hatten (1985) further enrich the stream of studies in the brewing industry by adding both advertising and state-level market share data and data on Coors, Miller and Schaefer which were not represented in earlier studies in this industry. They conclude that the industry may be restructuring more dramatically than many observers believe. It appears to be evolving into a three-tiered structure, namely, Group I—Anheuser-Busch; Group II—Miller, Strohs-Schlitz, Pabst-Olympia, Coors, Heileman; and Group III—the rest. Market share and profit share also seem to be strongly correlated in this industry.

The state of the art

The studies discussed above and displayed in Table 1 have as their common theme the use of some form of strategic groups idea. They do, however, differ in terms of the purpose of the research, the nature and rules of evidence employed and, in particular, in their understanding and deployment of the strategic dimensions that lie behind the strategic groups concept.

The purposes of the studies reported are not surprisingly diverse. Many studies are concerned to link performance with group membership. Some of the more recent are concerned with issues of industry and firm evolution and the way in which the dynamics of group membership can contribute to the understanding of these.

However, there is a significant minority that emphasizes detailed knowledge and understanding of the industry context in specifying the variables. Relatively few address issues of competition and rivalry except as intervening variables 'solved out' in the reduced

form relationship between group structures and performance. There appears to have been slight attention from strategic management researchers to the contribution that strategic groups might make to the debates on strategy identification and typologies, to resource audit and strengths and weaknesses analyses, and to the concerns with strategy implementation.

Virtually all the studies use multivariate statistical techniques such as factor, cluster, and regression analyses. However, the drive for quantification does seem to have overshadowed the pressing, prior need to adequately specify the model and the variables being addressed. A minority of the studies do emphasize detailed knowledge and understanding of the industry context as a *necessary condition* (authors' emphasis) for variable specification.

The sharpest difference between existing studies arises from just this issue—the strategic dimensions chosen to define the strategic groups. At one extreme they are based on single measures, such as relative size, or relative performance. More common is the use of multiple measures. These, however, seem to be rather haphazardly selected from a mix of corporate strategy descriptors such as vertical integration and diversification, and from operational or functional strategies, such as R & D expenditure, advertising intensity and marketing channels. Nor is there evident any common understanding as to how these variables are to be measured. Some studies rely on very broad indicators of strategy outcomes which are widely available. Fewer researchers have chosen to build their own industry expertise from which variable identification and specification can proceed.

Not only are the appropriate rules of evidence unclear; confusion reigns about the underlying meaning of the term 'strategic group'. Some writers appeal to structural concepts such as size; others clearly choose performance characteristics whether expressed as profitability, market share, or leader/followers. Perhaps most common is the use of a 'conduct' concept reflecting a concern with the persistent omission of conduct from the structure-conduct-performance model. Economists use the term conduct to reflect observed behavior, but make little explicit attempt to structure the components of conduct according to some underlying logic in firm decision-making. Clearly there are unresolved issues of theory and of methodology, and we seek to address some of these in the rest of this paper.

Most studies are snapshots in time, except for Oster (1982) and Hergert (1983), who link strategic groups to product life cycle stages. None of the studies look at forecasting future strategic groups or even strategic directions which firms may pursue to anticipate the long-run evolution of industry structure.

However, the merit of these and other contributions is their recognition that differences between firms do exist, and that they are in part the deliberate outcome of decisions made by firms. Groupings are therefore seen as the result of strategic choices. However, many of the current studies (including a large number of those which could be described as being data-driven) raise the question of whether many of the factors which identify groups are in fact purposively manipulated by the organization. Borrowing from a biological perspective and an adaptive strategy viewpoint (Boulding, 1956; Pondy and Mitroff, 1979; Chaffee, 1983) it can be argued that group membership is merely an observable manifestation of viable niches in the environment and the organization's ability to adapt to them. Organizations which exhibit certain survival traits which *cannot* be known completely in advance, remain.

Many of these contributions deploy the group concept in pursuit of the explanation of the level and variation of profits within an industry. But a difficulty apparent is the *ad hoc* nature of the definition of strategic groups: product lines from Hunt; vertical integration

from Newman; relative size from Porter; product strategy from Oster; financial strategy from Ryans and Wittink, and Baird and Sudharsan; investment behavior from Primeaux; and marketing/business definition strategy from Howell and Frazier. The conclusions of these studies are arguably *sui generis* in nature. The required substantive contribution is the identification of variables or classes of variables that systematically affect profitability. Hatten paid attention to the methodological issues outlining a *process* by which homogeneity between firms could be tested. The issue of what dimensions to employ was resolved by case study analysis of the firms involved. If strategic groups are to be something more than an *ad hoc* construction which can conveniently soak up some of the variability in the dependent variables in our analyses of industries then we need a more careful specification of the sources of dissimilarity between firms. Ghazanfar, McGee and Thomas (1985) argue that careful industry studies are necessary prerequisites for making sense of complex industries. Following such studies theoretical taxonomies incorporating such concepts as *mobility barriers* (Caves and Porter, 1977) and *isolating mechanisms* (Rumelt, 1981) can be developed to identify appropriate strategic dimensions for forming strategic groups.

THEORY AND TAXONOMY

The natural way to assign firms to strategic groups is by reference to the characteristics of their strategies with group members displaying similar strategies, and differences between groups being relatively sharp. In Caves and Porter's (1977) words, 'firms within a group resemble one another closely and recognize their mutual dependence most sensitively'. This begs the important question of how to identify the range of strategies available to a firm.

In industrial organization theory the key characteristics of the structure of an industry are encapsulated in the idea of entry barriers, and market power is said to stem from the presence of structural or behavioral barriers to the entry of new competition. This argument applies also for strategic groups. A firm within a group makes strategic decisions which cannot readily be imitated by firms outside the group without substantial costs, significant elapsed time, or uncertainty about the outcome of those decisions. These barriers to casual imitation by firms outside the group, and the definition of group, require the existence of such barriers¹. Mobility barriers and the associated costs of mobility have become the accepted phraseology. Recognizing that these mobility barriers (or group-specific entry barriers) afford protection to group members, it is natural to envisage the key strategic variables as those which affect the height of mobility barriers².

Classification of groups by their mobility barriers (or through similar notions of idiosyncratic capital and isolating mechanisms) is an appealing idea which stresses the cost advantages enjoyed by group members and emphasizes the elapsed time as well as the investment expenditures required of would-be 'entrants' to overcome the barriers. Following the traditional exposition of entry barrier theory, mobility barriers represent for the group members an investment in a collective, sometimes intangible, capital asset whose benefits are shared out between group members. *Ex ante*, the investment decision is risky in so far as the costs are irrecoverable. Resale markets may exist for plant and equipment and

¹ See also the notion of 'uncertain inimitability' advanced by Lippman and Rumelt (1981).

² Rumelt (1981) goes further in explaining the uniqueness of firms by generalizing from mobility barriers to 'isolating mechanisms' and the notion of 'idiosyncratic capital'.

for investments in associated companies for example, but differentiation costs are not so easily recovered, nor are investments in R & D.

Mobility barriers can be expressed in the same form as conventional entry barriers; 'barriers to mobility between groups rest on the same structural features as barriers to entry into any group from the outside' (Caves and Porter, 1979). Thus the group counterpart expresses barriers either as absolute costs of movement from one group to another (becoming vertically integrated for example), or as the operating cost penalty relative to the incumbents that the entrant must face. In either case the present value of the incremental costs associated with a change of group membership detracts significantly from the profit margin available *before* taking into account any competitive reaction.

Sources of mobility barriers

Mobility barriers fall into three broad categories (see Table 2): market-related strategies, the characteristics of supply in the industry, and features specific to the ownership and management of the individual firm. These correspond broadly to differentiation strategies and cost-based strategies at the business unit level, and to characteristics of strategy at the corporate level. *Market*-related strategies include the product line, its width and scope; the

Table 2. Sources of mobility barriers

Market-related strategies	Industry supply characteristics	Characteristics of firms
Product line	Economies of scale:	Ownership
User technologies	production	Organization
Market segmentation	marketing	structure
Distribution channels	administration	Control systems
Brand names	Manufacturing processes	Management skills
Geographic coverage	R & D capability	Boundaries of firms
Selling systems	Marketing and distribution systems	—diversification
		—vertical integration
		Firm size
		Relationships with influence groups

geographical coverage of the market and the nature of market segments served; the channels of distribution employed and the relationships with buyers; the technologies embodied in the product; and the nature and type of branding and product differentiation in general. These are clearly decision variables for the firm; but more than this they represent strategic choices insofar as a competitive *riposte* requires an initial investment cost and some elapsed time before competition on equal terms becomes possible. Moreover, the 'investment' decision is risky in that it is not certain that equivalent or better market positioning can be acquired by the follower, or whether the market will respond to imitative strategies in the same way.

The characteristics of *supply* include the scale economies arising from size whether in production or in marketing or in administration; and the range of assets that could be invested in 'supply'—manufacturing capability, technological capability, marketing and distribution systems, and R & D expenditure. Scale effects are both conventional and familiar. More interesting, however, are the alternative investments in supply-side assets for

the firm. These can be difficult to define with precision (what is an R & D capability?) and thus can be difficult to copy, certainly in the short run. The idea of supply capabilities relates directly to the idea of cross-entry and crosselasticity of supply. Competition is often observed to spring from firms outside industry boundaries (e.g. Exxon entering the office automation industry) because these entrants possess the inherent capabilities to enter—for them the entry barriers are low—and moreover, they may have considerable latitude in their choice of entry point. The barriers to entry to the industry in general may be lower for some completely new entrants than the mobility barriers which impede the repositioning of incumbent firms. Whereas supply capabilities may be generally available at a price, mobility barriers arising from the nature of the firm itself rest additionally on characteristics internal to the firm and the nature of the corporate structure.

The firm's organizational production function can be thought of as its organization structure and the skill of its management in employing it efficiently. Chandler (1962) pointed out the systematic relationship between strategic choices and organization structures, and Caves (1980) surveyed the reverse set of relationships which run from the firm's organizational structure to its market behavior. Management skills are intimately related to organization structure. It was Bower (1970) who highlighted the limitations on top management in formulating and implementing strategic choices.

Definitions and impetus in turn depend on the 'situational context' of . . . lower level decision makers. Context consists of organisation structure, meaning not only the organisation chart assignment of responsibilities and powers but also the organisation's system of measuring and rewarding performance (Caves, 1980).

These characteristics of structure, context and skill are not easy to measure, particularly on only superficial acquaintance with the units of analysis. Williamson's (1970) formulation of Chandler's analysis of the two prototype structures—the functional and divisional—supplemented by Wrigley (1970) and Rumelt (1974)—provides some guidelines for assessment. As Caves indicates, these contributions highlight the subjective and firm-specific nature of corporate structure, and the organizational mechanisms for maintaining control and direction.

The *boundaries of firms* can be a rich source of diversity within an industry. The basic characteristics are the nature (related versus unrelated) and extent of diversification, the extent of vertical integration, and the nature of contracts with supplying firms or with customers. Contracts, whether for technology or for materials and components requirements, can yield significant operating advantages although the time horizon over which these can be enjoyed may not always be very long. Licensee arrangements can confer temporary advantage but when regarded as a form of accelerated learning they can result in a more durable form of technology advantage. Where significant cost savings are available from vertically integrated systems then it is common to observe that the large firms in an industry are all vertically integrated, although the extent varies according to local circumstances (*viz.* the pulp and paper industry). However, smaller firms search for ways of offsetting the cost advantages of size, for example by providing high-quality, high-technology products to small insensitive segments of the market. Diversification may create cost savings, for example the management of brands and families of brands across related markets or the sharing of technologies across similar industrial processes. Of much debate has been the proposition that there are economies of management arising from diversified structures and from synergies due to pooling of talents on related problems.

Similarly diversification may reduce pockets of excess capacity in management and administration where management is purchased in indivisible lumps. Clearly, the extension or contraction of the firm's boundaries or any change in the nature of its contractual commitments requires time, is uncertain in its outcome, and is difficult to reverse. However, the boundary question is not merely one of unit costs, it is also one of risk. Conventional portfolio theory argues that the pooling of uncorrelated risks reduces overall risk. In spite of the dissimilar nature of securities markets and the opportunity sets for corporate or business units, it may be possible to see some significant risk reduction (e.g. lower risk of total default) from a diversified portfolio. This can be important in a number of ways. The perceived stakes may be quite different for diversified versus non-diversified companies and the nature of their strategic positioning may reflect this. The time horizon over which firms plan may differ and the initiatives they consider may also vary. In general, the objectives of firms with different boundaries may differ systematically, may be reflected in their competitive behavior, and could result in different kinds of cost structure.

Ownership enables us to distinguish clearly between firms. The obvious characteristics are extent of shareholding both privately held and publicly quoted; nature of shareholders—family influence, country of origin, multi-national, institutional holdings, and corporate interconnection; the nature of relationships with government—shareholding, long-term finance, subsidy or other favored treatment. Ownership matters because it affects the desired rate of return and the time horizon over which this is to be earned. Ownership may intrude on the celebrated divide between owners and managers in many more ways than conventional Anglo-American thought suggests. It can affect the definition of the business (using Abell's terminology), publicly owned industries in Europe being severely restricted in the diversification moves that they might consider. Cultural differences supported by different financial systems may result in much more broadly based, loosely held industrial groupings in Japan and West Germany, for example, than in the U.S.

To summarize, firm-specific sources of mobility barriers are: organizational structure and control systems, management skills and capabilities, the nature and extent of diversification and of vertical integration, and the nature of the firm's oversight and its connections with other power groups such as unions, consumer groups and regulators.

Mobility barriers are a corollary to the existence of strategic groups. They are factors which deter or inhibit the movement of a firm from one strategic position to another and, more generally, the expansion of firms in one group to a position held by another group. Therefore, a mobility barrier is essentially a limitation on replicability or imitation. It acts like an entry barrier, but it acts for a group within an industry rather than for the industry as a whole.

A group structuring carries no meaning without costs attached to the imitation of strategy by other firms. Mobility barriers thus reflect the decisions of firms and are a way of defining the set of key strategies available to a firm (see Table 2). The essential characteristic is relative cost advantages over all other competitors. The remedy for cost disadvantage of this kind probably involves investment expenditure on tangible or intangible assets with significant elapsed time before the investment comes to fruition. Moreover, the investment expenditures are irreversible to the extent that intangible assets are being acquired, and there will typically be considerable uncertainty attached to the outcome of the investment expenditures.

The similarities between mobility barriers and isolating mechanisms should be noted. The notion of *isolating mechanisms* generalizes the concept of mobility barriers and links it to unique firm characteristics such as the possession of idiosyncratic capital.

In essence, Rumelt argues that Table 3 represents a simple theory of strategy which he expresses in the following manner (Rumelt, 1981: 19).

A firm's strategy may be explained in terms of the unexpected events which created (or will create) potential rents together with the isolating mechanisms that (will) act to preserve them.

Table 3. Rumelt's isolating mechanisms

Elements of strategic position	
Sources of potential rents (unexpected events)	Isolating mechanisms
Changes in technology	Causal ambiguity
Changes in relative prices	Sunk costs and limited markets
Changes in consumer tastes	Switching and search costs
Changes in law, tax and regulation	Consumer and producer learning
Discoveries and inventions	Idiosyncratic investment
	Team embodied skills
	Unique resources
	Special information
	Patents and trademarks
	Reputation and image

Adapted from Rumelt (1981).

Table 4. Possible strategy variables for defining strategic groups

Controllable variables	Strategy posture/strategy change variables
Marketing	Price, advertising and selling expenses, breadth of product-line, competitive positioning, product R & D
Production	Forward/backward integration; capacity utilization; cost structure; process R & D
Investment	Capital investment and its rate of change
Uncontrollable variables	
Environmental level	
Technology	
Macro-economy	
Legal and regulatory structures	

Adapted from Galbraith and Schendel (1983); Ackoff (1970); Dill (1958); Aldrich (1979).

Rumelt's *isolating mechanisms* therefore provide a basis for identifying groups on the basis of similar clusters of isolating mechanisms on the grounds that they are the phenomena which make competitive positions stable and defensible, given the uncertainty arising from unexpected changes in the environment. Recently Galbraith and Schendel (1983) also provided an extensive listing of strategy variables by which strategic groups may be defined (see Table 4).

IMPLICATIONS FOR FUTURE RESEARCH

The existence of strategic groups has a number of implications for industrial organization. In particular it may be of value in examining both the traditional theory of entry and

oligopoly theory. The generalization of entry barriers into mobility barriers allows a richer and more realistic portrayal of the process of entry and the motives for diversification (cross-entry) as well as providing a link with firm-level strategy formulation. It also offers an explanation for persistent intra-industry differences in profit rates. The nature of oligopolistic interdependence and rivalry is illuminated by the pattern of group memberships and its change over time. In addition, strategic groups have some interesting parallels with theories of the growth of the firm, notably those advanced by Penrose (1959) and Downie (1958).

The structure–performance link

The most obvious, although probably the least productive, field of application for the strategic group concept is the traditional market structure–performance link. It is now commonly observed that as it stands the structure–performance model is seriously deficient (see, for example, Hay and Morris, 1979: 226), and that more complex causal links need to be taken into account. Strategic groups may well contribute to these causal links. Further recent strategy research on diversity and firm performance (Rumelt, 1982; Christensen and Montgomery, 1981; Bettis and Hall, 1982) should also improve the specification of causal linkages.

The existence of group structures

The existing literature appears to justify the existence of group structures by its contribution to explaining differences in profit rates. However, it is appropriate to outline the main hypotheses and questions about the existence of group structures. First, sellers within an industry are likely to differ systematically in traits other than size, so that an industry contains groups of firms with distinctive assets and with different market behavior characteristics. Secondly, mobility barriers are a counterpart of group structures and are an extension of conventional ideas about entry barriers. Mobility barriers arise from strategic decisions and stem from three main sources: decisions about strategies in markets, decisions about methods of supply and the firm's asset configuration, and decisions about the boundaries and organization of the firm. Thirdly, isolating mechanisms provide clues about the individual firm's ability to exploit and imitate a strategy commensurate with its underlying skills and resources and protected by mobility barriers. Fourthly, how do strategic groups form? Are there systematic relationships between, for example, industry evolution, market growth, and the grouping patterns within an industry? Or, on the other hand are these patterns the result of initiatives taken by individual firms in response to their own opportunity costs independently of industry-wide trends?

Porter (1979) provides three explanations of the formation of strategic groups: (i) investments in building mobility barriers are risky and firms have different risk-aversion postures—this leads to different groups defined in terms of R & D and advertising outlays as defensive mobility barriers; (ii) business units which differ in their relation to a parent company may differ in goals in ways that lead to strategy differences; (iii) historical development of an industry (nature of demand, production, technology, product characteristics, etc.) bestows differential advantages/disadvantages on firms. A fourth possible explanation, relegated by Porter (1979: 217) to a footnote, is exogenous causes such as technological change.

Changes in the structure of the industry can either facilitate group formation, or work to homogenize groups. For example, technological changes or changes in buyer behavior can shift industry boundaries bringing entirely new strategic

groups into play in the industry by increasing or decreasing product substitutability and hence shifting relevant industry boundaries.

Porter merely hints at the effect of technical change on group formation. An equally important empirical question is whether technological changes impact differently on different strategic groups; *viz* does technological change affect the mobility barriers surrounding one group to a lesser or greater extent than the barriers (same or different barriers) surrounding another group? If so, does this differential impact explain performance? This question has not so far been addressed empirically although *a priori* it would be hypothesized that investments in R & D and engineering constitute significant mobility barriers in particular industries.

Entry theory and mobility of firms

There are some hypotheses about the process of entry which merit attention. First, the group-specific character of mobility barriers has strong implications for the entry of firms from outside the industry. In particular, the presence of groups raises the possibility of entry paths involving a sequence of moves before a settled position within the industry is achieved. Where capital requirements are large, firms will seek to minimize risk by indirect or circuitous moves which place only limited amounts of capital at risk at each stage. In general, entry will be aimed at a particular group or at the creation of a new group. Secondly, the queue of potential entrants to a group will generally consist of established firms in other industries, going firms in other groups, and entirely new firms. The position in the queue will depend on the structural mobility barriers as modified and extended by the incumbent firms' choice of barrier-raising investments. Thirdly, going firms outside the industry will be the major potential competitors for the oligopolistic core of dominant firms protected by product differentiation and absolute cost barriers. Correspondingly, new firms—the traditional entrant of Bainsian theory—will appear in the competitive fringe of oligopolistic markets. Fourthly, incumbent firms deter entry by investing in the creation of new mobility barriers.

The traditional theory of entry has a number of serious limitations. These difficulties arise from an over-narrow definition of 'entry'. Thus, Bain concentrates on entry by new firms. He neglects take-overs, cross-entry, vertical integration and additions to capacity by existing firms. The group concept allows a richer portrayal of the entry process from which it is possible to observe types of entrant, patterns and paths of entry, the effect of entry on the evolution of the industry, entry deterrence behavior and the manner in which cross-entry spurs the parallel development of separate industries.

Patterns of entry

In traditional oligopoly theory goal congruence among firms is assumed even when the problems and costs of communication and the detection of cheating are discussed, (Stigler, 1964). By contrast, the strategic groups thesis argues that not only may there be very little goal congruence to start with, but that other differences (e.g. customers, suppliers, distribution channels) which contribute to strategic grouping within the same industry make the formation of oligopolistic consensus even more difficult. As asymmetry increases, in other words as the number of observable strategic groups increases, collusion becomes all the more improbable. The industry becomes segmented but does not disappear because cross-elasticities of substitution between products remain unchanged. Oligopolistic interdependence and homogeneity of firms become recognizable not at the industry level but at the strategic group level.

Understanding of the patterns of rivalry between groups is not greatly advanced by the weak assertion that it all depends on market interdependence. Where groups are defined by market-related characteristics such as product line or distribution channels, then market interdependence is likely to be lower rather than higher. Where group configurations arise from non-market sources then the potential for market overlap will be that much greater.

In general, however, oligopoly theory has lacked a 'realistic' testable framework within which patterns of rivalry can be observed over time. The various theories have been unique constructs and the multitude of case studies have lacked generality. Strategic group analysis conducted longitudinally may provide us with a framework to allow the categorization of strategic changes, an objective analysis of the position of a firm within an industry and a way of assessing industry evolution. The prospect, however, merely tantalizes. Group analysis requires further taxonomy development before group structures can be compared intertemporally. Strategic groups like game theory remain an elegant and inspired form of language, but we should be aware of the empty boxes within the matrices.

The principal hypotheses that merit attention are: group members are likely to respond in similar ways to disturbances from outside the group; the effect of groups on rivalry may depend upon the number and size distribution of groups and on the market interdependence between groups; and firms within a given group can recognize mutual dependence and coordinate their behavior more effectively than can firms in different groups.

The theory of growth of the firm

Strategic group analysis has interesting parallels with the theory of growth of the firm as first articulated by Downie, Penrose and Marris more than 20 years ago. Downie sought to explain the sources of efficiency dispersion within an industry, the consequences for competition and the role of innovation in the competitive process. His contribution was to link growth of the firm and profitability, and to put growth firmly in the context of the competitive process in which he had a clear place for oligopolistic interdependence. Downie's view of the innovation mechanism has been criticized for its apparent unreality in ascribing innovation to the less efficient firms, but it requires only to add mobility barriers and patterns of cross-entry to recover his basic results.

'Distinctive competence' is a phrase much used by policy analysts. It is usually taken to refer to those unique and distinctive features of an organization which can be translated into a competitive advantage in the market. The thrust of the Penrose argument is that certain organizational and managerial characteristics facilitate successful corporate strategy initiatives and the subsequent development of corporate structures.

From this background it is possible to pose various hypotheses: strategic groups may stimulate the examination of the interrelation between business units, their corporate parents and their corporate siblings in analysing the evolution of industries; strategic groups provide a means for analysing changes in industry structure over time and can provide predictions of the mechanisms by which structural change will take place; changes in strategic groupings and in mobility barriers can eventually be brought about by rates of profit which differ systematically between groups.

CONCLUSIONS

The theory of strategic groups and associated mobility barriers is related to the structure of industries and the strategic behavior of firms within their industries. The group concept

appears to be a supply-side concept insofar as it defines structures within industries, but is in all its essentials a behavior or conduct concept fitting neatly between the supply idea of an industry and the demand idea of a market. The defining characteristics of strategic groups arise from the nature of the mobility barriers and isolating mechanisms which protect the groups. The three sources of mobility barriers are market-related strategies, general supply characteristics of the industry and the organizational and boundary choices of the firm—each of them being decision variables for the firm.

Strategic groups posed a number of interesting research challenges. The first and the most obvious one is the contribution they make to the market structure-performance link. Of more promise are other areas: the existence and evolution of group structures and their relationship to the evolution of industries, their contribution to the theory of entry, the queue of potential entrants and the alternative entry paths, the patterns of rivalry in oligopolistic markets and our understanding of the growth and evolutionary patterns of firms.

The emergence of the strategic group concept and the increasing research attention being paid to the boundary areas between industrial organization, strategic marketing, administrative behavior and strategic management suggests closer attention to the firm as the unit of analysis. The difficulty of applying rigorous research techniques in the area of strategic decision-making is extreme. The problems of controlling for exogenous variables, the lack of comparability among the units of analysis and the disparate nature of these units, and the changing nature of opportunity sets and the environment generally restricts the ability of researchers to make causal connections between sets of variables. All these problems are compounded by the lack of suitable data bases for research³. There may well be a continuing trend towards in-depth studies of firms and their industry settings in an attempt to apply control procedures to fewer variables and to explore the character and texture of strategic choices in ways impossible for statistical analysis to achieve. The effect of strategic groups is to restore strategic decisions to the centre of the structure and performance arena and to re-emphasize the firm as an important unit of analysis.

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³ Honorable exceptions to this are the PIMS Program of the Strategic Planning Institute, and the Program for Industry and Company Analysis (PICA) at Harvard.

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