COMPETITOR RECOGNITION BY MANAGERIAL PERCEPTION

- A Case in the UK Computer Industry

FAN YING
Lecturer in International Marketing
Durham University Business School
Mill Hill Lane, DH1 3LB
Durham, UK
Tel. 091-3744770
Fax: 3743748
Telex: 537351 DURLIBG

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ABSTRACT

This paper presents a practical alternative to the clustering technique in strategic group analysis. Using managerial perception as the input, it studies the competitor recognition in the UK computer industry. An analytical framework and the concept of competitive matrix have been developed. Two hypotheses on perceived competition have also been tested. It is argued that firms formulate their competitive strategies on the basis of perceived competition rather than on the conventionally defined industry. The competitive grouping which combines the concept of strategic groups and market segmentation, provides a useful means to conduct such analysis.

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INTRODUCTION

A strategic group is a grouping of firms which follow the same or similar strategies. In recent years, strategic group theory has become a popular tool for both academic researchers and practical strategists in analysing the competitive structure of industries (for a full review, see McGee and Thomas, and Porter)[1]. In the conventional research on strategic groups, cluster analysis has been a dominant methodology to form groups[2]. However, there exist major problems with the clustering techniques[3]. First, researchers have used no "a priori" rationale for defining strategic groups and therefore have relied on mathematically formed groups[4]. The number and membership of the strategic groups to be formed remain unknown before the cluster analysis and the group structures formed may not be the same as those pre-defined. Secondly, with only one exception, the research by Fombrun and Zajac[5], strategic groups identified by cluster analysis in most studies have not been checked for validity with management but remained as academic inventions.

Some authors have suggested alternative ways for studying groupings in the industry. For example, Gripsrud and Gronhaug[6] developed competitor groups based on the owners' perceptions of their competitors. While Porac et al[7] in their study of Scottish knitwear industry, proposed the concept of the "primary competitive group" -a collection of firms who define each other as rivals. In this paper, perception by the management in the UK computer industry will be used as the input to address the grouping problems.

COMPETITIVE POSITIONING

In the industrial organisation literature, industry structure is described in terms of basic elements such as concentration, entry barriers and product differentiation[8]. It is now widely accepted that firms' conduct (strategic behaviour or competitive movement) also has impact on the structure. This strategic behaviour is determined by the perceptions that management have of environment, competition and customers. The rationale for linking managerial perception to strategy formulation is that strategy is not just a function of the environment in which firms compete, but also a function of internal perceptions of the management, as well as the strategic initiative based on such perceptions. There is little doubt that the strategic actions of firms may affect the competitive environment through moves such as take-overs, mergers, aggressive strategies and exit. It is believed that understanding the influence of perceptions on the competitive structure may lead to new insight into competitive strategy. However, industry structure based on perceptions of the incumbent firms has received little attention in prior studies. Strategic groupings formed by the input from managerial perceptions are potentially meaningful for studying competition because group analysis provides a means of preserving information and focus on relevant targets. It should be noted that groupings formed by competitors are not really "strategic" in nature and may be more aptly termed "competitor groups" or "primary competitive groups"[9].

All firms within an industry are in a competitive position. In any industry, it is of central importance for strategic analysts to understand the nature of the competitive positions: who are the most direct competitors and on what basis is competition likely to take place. When studying the competition between rival firms, the concepts of industry and market are not very helpful as they are not precisely defined and their boundaries are difficult to draw. In a given industry there may be many companies, each having different interests and competing on different bases. Firms in the same industry may not compete with each other. Only in the same business do firms regard each other as competitors. However, there are still problems in defining a business.

Academics may use Abell's[10] three factors: customer needs, customer functions and technology. But in reality, management may have their own way of defining it, and the two definitions may not be the same.

A firm's definition of its business determines: where to compete, whom to compete with, and how to compete. Clearly such a definition requires a sound appreciation of the competition structure of the industry or market, particularly the identification of competitors. By identifying competitive position, firms in essence seek to answer the following questions:

One's own position:	Where are we?
Rivals' position:	Who are they?
	Where are they?

Although these questions are rather simple their correct resolutions are often difficult to achieve. In a recent survey of the UK computer industry conducted in 1990 by the author, one managing director's answer to the question of "*Who are your major competitors in the UK market?*" was "*All the firms in the industry are our competitors.*" This is, of course, not the case. It is only meaningful to talk about competition and competitors with reference to particular products or market segments concerned. The term "industry" loses its meaning because firms in the same industry may be in different businesses, and therefore they do not necessarily compete with each other.

ANALYTICAL FRAMEWORK

A firm's perceived structure of competition in an industry depends on its top management's ability to recognise competitors, which may produce the following three outcomes:

-Mutual recognition
-Single recognition
-No recognition

Mutual Recognition

Firms that recognise each other as rivals can be classified into the same group. They supply the same products or close substitutes to the same market segments. They may follow the same or different strategies. Thus the definition of strategic groups is quite different from the conventional one. Firms in the same competitor group have fierce competition for market share and regard each other as the main threat. Firms in the different competitor groups have no direct competition and view other groups as being in the different businesses.

Single Recognition

Single recognition refers to the case when one firm regards another firm as its competitor while the latter does not think so. This presents a more complex situation. Firstly, there may exist sheer differences in the sizes or market positions of the two companies. For example, a small firm with annual sales being only one thousandth of that of IBM (UK), identified the latter as its main rival in the UK PC industry. It can be safely concluded that IBM (UK) would not view this small firm as its competitor for the tiny firm constituted no threat to its market position. However, this single recognition does have implications in understanding competition in the industry. IBM (UK) cannot afford to ignore the aggregation of all the small firms in the PC sector as a main competitor. Secondly, single recognition may indicate the false perception held by the top management. A firm may fail to recognise its rival in a particular business. On the contrary, a firm may wrongly identify a rival which in fact is not competing in the same business. Thirdly, single recognition may result from the other party involved refusing to provide information or simply denying facts. In such a case, firms can still be put into the same competitor group as long as they are in the same business.

No Recognition

No recognition of competitors shows that both sides think their opposite number is either in a different business or too trivial to be considered as a rival. Or less likely, both sides fail to recognise that they are, in fact, competing with each other. Researchers can only presume the first conclusion. However, it should be borne in mind that the market is changing constantly. The pattern of competition is not stable.

EMPIRICAL SURVEY AND RESULTS

The data for this study was obtained from a survey of the UK computer industry carried out in 1990. One of the main objectives of the survey was to identify the competitive structure of the industry and to form strategic groups by using managerial perception as input. It was difficult to draw a clear-cut boundary to the UK computer industry. The number of companies which either operated in the industry or had their business linked with "computers" was potentially so great that it was impossible to include all of them in the survey. It was decided that the survey would focus mainly on the computer manufacturing sectors. Small number of firms in other sectors such as software and services were also included to broaden the scope of the industry. The names and addresses of firms in the UK computer industry and the names of managing directors of these firms were obtained mainly from the following sources:

- -ICC Business Ratio Report
    - -Computer Equipment Manufacturers (1987, 1990)
- -Jordans Survey -Britain's Computer Industry (1987)
- -Britain's Top Computer Companies (1990)
- -Kompass Company Directory (1990/91)
- -Kelly's Business Directory (1990)

The questionnaire was designed to be completed by a senior member of management who would have adequate familiarity with the firm's overall operations and its business environment. Questionnaires were sent to a total of 104 firms identified from the sources mentioned above, among which 32 were excluded later for various reasons. Overall 72 firms were surveyed and 36 firms completed the questionnaire, a response rate of 50 per cent. Two respondents replied anonymously, but one was later identified.

12 firms explicitly refused to answer the questionnaire. It was noted that some of them did not reply due to the company policy of not responding to any questionnaires.

In the survey each respondent was asked to name the company's largest rival in the UK market and other major rivals in terms of their major product lines. Responses to the two questions from the mainframe and mini computer manufacturers are reported in Table 1. The names of eleven respondent firms disguised by using signs are on the left of the table. IBM and DEC did not reply to the survey. One firm in the mini sector was excluded as its answer of "all the large companies are our rivals" was viewed as invalid. Responses from the PC sector are shown in Table 2. Here the names of respondent firms were also disguised by using signs.
(Insert Tables 1 and 2 here).

<u>Responses from Mainframe and Mini Manufacturers</u>

From Table 1, it is seen that industry leaders had been widely identified as the major rivals (IBM: 91%, DEC: 73%). It would be interesting to compare the responses from IBM and DEC if they had participated in the survey. However, it would have little meaning to cluster all the firms into one competitor group simply because they all named IBM and DEC as their competitors. There are two pairs of mutual recognition:

Fe named Ff (in Unix systems),
Ff named Fe (in Unix systems); and

Fe named Fi (in Unix systems), but
Fi named Fe (in bank and finance market).

Based on the above information, one competitor group in Unix systems can be identified which consists of at least five members:

Fe, Ff, fi, IBM and DEC.

Of the total eleven respondents in the mainframe and mini sectors, there are 38 single recognitions of perceived competitors, among which, only 11 recognitions (11/38 =

28.9 percent) fell within the six firms participating in the survey. The rest of the recognitions of perceived competitors (71.1 percent) were firms which did not participate in the survey. Four firms (4/11 = 36.4 percent) had not been named once by their counterparts as the perceived rivals. Unfortunately, the nature of these single recognitions cannot be determined due to lack of information. This will be discussed in next section.

Responses from PC Manufacturers

Of the fourteen firms in the PC sector which entered the survey, only ten respondents named their perceived competitors. Responses shown in Table 2 present different results. First, industry leaders had not been widely perceived as major competitors (IBM: 30%; COMPAQ 40%). Second, five firms (F4, F6, F8, F9, and F11, 35.7 percent of the total) were in fact in distinctively different businesses and they named as their major rivals firms which were not in the normally defined "computer industry". Clearly, these five firms can be viewed as a group of "niche players" who had no perceived competitors in the industry. Thirdly, there are only two single recognitions of perceived rivals:

F12 named F3 and

F11 named F1.

Although f3 and F1 did not reply to the questions, supplemented by other information obtained from the survey, two "rival pairs" can be identified:

F12 v. F3 in the education market

F11 v. F1 in the low end PC sector.

HYPOTHESES

In the industrial organisation literature all firms within a conventionally defined market area tend to be regarded as potential competitors. The extent of the market area is determined by available statistical data, and the structure of the market is based on "objective" measures of market structure, such as number and concentration of firms.

However, the so called "objective" market may correspond with neither the conventional statistical classifications nor the relevant market structure perceived by individual firms[11]. It is now widely accepted that the structure of the industry or market will influence the strategies chosen by the firms. But here the boundary of the industry or market is difficult to draw. Gripsrud and Gronhaug[12] argued that it is the perceived competitive structure, not the conventionally defined market structure, that is instrumental in determining the strategy chosen by individual firms.

The term "perceived competitive structure" coincides with the notion of "evoked sets"[13] i.e., the subset of all firms operating in the industry considered. Therefore, the first hypothesis is:

> H1: A firm will only perceive a small fraction of all the other members in the conventionally defined computer industry as its competitors.

While the perception of competitors may be based on many aspects of characteristics of firms within the industry, it is natural to conjecture that the firms' market position will have a significant influence on that perception. Thus, a second hypothesis is:

> H2: The probability of being perceived by other firms in the industry as their competitor is positively linked with the firm's market position.

According to Hypothesis 1, the perceived competitive structure is only a subset of all the firms in the industry. The empirical results are reported in Table 3. It can be seen from the table that the average number of perceived competitors is 3.82. This is only about one third of all the firms which participated in the survey and is far less if compared with the total number of potential competitors in the industry. It is furthermore observed that five firms (45.4 %) named three competitors. Although eight is the highest number of reported competitors; it can still be regarded as a small fraction when compared to the total number of firms in the sector. Thus, the finding strongly supports H1.

(Inset Table 3 here).

Hypothesis 2 stated that the probability of being perceived as a competitor by other firms in the industry is positively linked with the firm's market position expressed in terms of annual sales turnover. Table 1 provides a first support for this hypothesis. The industry leaders like IBM and DEC both had very high frequency of being perceived as rivals, 91% and 73% respectively. The result of correlation analysis gives further support for the hypothesis with a very high correlation coefficient, $r = .8898$ ($p < 0.001$). It can be concluded that the firm's market position, in terms of either size or market share, is one dimension that is instrumental in determining the "evoked set" of competitors. Small firms are less likely to be regarded as a serious threat in competition by their big counterparts. This may provide an partial explanation for the single recognitions discussed before.

DISCUSSION

A Problem with Strategic Group Analysis

The concept of strategic groups was designed to study industry structure and competition. The benefits of strategic group analysis can be summarised as follows[14]: (1) Identifying the strategic dimensions that define strategic groups is central to the understanding of how competitors formulate their strategies. Since these key strategic variables usually form the basis of competitive advantage and affect the height of mobility barriers in the industry, study of these key strategic variables will enhance the understanding of competition in general. (2) Strategic groups help firms to identify their rivals in each business sector. It can be assumed that conceptually, a firm may not perceive another firm in a way of being a competitor or not at all, but being a competitor to a greater or lesser degree. Grouping is an effective way to distinguish other firms within the industry into either primary competitor group, secondary or tertiary competitor groups. (3) Strategic groups can indicate to firms their positions relative to their rivals in different product and market segments. A strategic group may act as a reference group or comparison point which individual firms can use in making judgement.

However, the conventional approach of strategic group study suffers from fundamental flaws as a means for analysing competition. Most serious is the fact that the members of a strategic group, while following the same or similar strategies, are not necessarily in competition with each other. Hence, it is not possible to analyse strategic groups as competing groups of firms whose profitability depends upon the group structure and protection from other strategic groups by mobility barriers, as hypothesised by Porter[15]. Thus the utility of this approach is diminished. This, plus the scepticism of links between strategic groups and performance[16], in fact, constitutes the major problem up with the application of the concept.

A promising solution to the above problem is the competitive group, which combines the concept of strategic groups and the technique of market segmentation[17]. The competitive group is a collection of firms which define each other as rivals. Members of the same competitive group must be in the same business in the sense that they sell the same or closely substitute products to the same customer groups. As observed by Porter[18], the degree of market interdependence is one of the major factors affecting the rivalry within an industry. The key determinant for such grouping should be market interdependence rather than strategic dimensions. To what level market interdependence is significant is always a matter of degree. This can be determined by using the concept of the competitive matrix. Firms in an industry can be classified along two core dimensions: product supplied and market served. "Product" refers to the products or services the incumbent firms can supply while "market" refers to the customer groups or geographical markets served. Alternatively, product dimensions can be seen as industrial sectors. Market dimensions correspond to market segmentation. Using these two dimensions, a 2*2 matrix can be developed and firms (or business units) placed in the appropriate cells as shown in Figure 1.

(Insert Figure 1 here).

Competitive Matrix

Firms in Cell A inflict head-on competition because they supply the same products to the same customers. Firms in Cell B sell different products to the same market, each product competing with other substitutes. Firms in Cell C sell the same products to different customers. Their relationship can be regarded as entry from outside. Firms in Cell D are virtually in different businesses and there is no current rivalry. From "head on competition" to "substitute" to "entry" to "no current competition", the degree of market interdependence is decreased, thus the degree of competitive intensity changes from maximum to minimum. Firms in the same competitive group perceive each other as the main rivals regardless of what strategies they pursue. The virtue of such groupings is that they can provide a convenient abstraction of, and a ready guide to, the competitive structure within the industry at a particular time period. Studying competitive groupings at different time periods will reveal the dynamic structure of competition as firms in the industry may change their group membership by taking strategic moves[19].

Competitive Groups

Like strategic groups, competitive groups can be defined at different levels and by different means. What are being grouped can be firms, SBUs, or even product brands. The competitive groups are not mutually exclusive as far as firms are concerned. IBM can virtually be assigned to almost all groups except some niche player groups. IBM with CDC and FUJITSU is the group for supercomputers, and also in another group for PCs with firms like AMSTRAD and APPLE. The major difficulty in identifying competitive groups in the industry is that it requires not only insight knowledge of competition but also information about products and markets, which is usually confidential to the outsider. Fortunately, this does not pose serious problems to the practitioners with many years of experience in competing with other firms and knowing each other very well. The basis for all classifications is the existence of differences.

The basis for competitive groups is the firm's strategic decision on product differentiation and market focus. Borrowing the terms from Mintzberg[20], since the "intended" differentiation perceived by the firm may not be the same as the "realised" differentiation perceived by buyers, it is possible to construct competitive groups from two sources: perception of the firm and perception from its customers, buyers or dealers. Comparison of these two perceptive spaces plus the perception from the firm's competitors, will shed further light on the competitive structure of a given industry. The first step in forming competitive groups is to define the industry (market) by using a so-called logical division. An example of the UK computer industry is shown in Figure 2. It starts with the computer industry, and carries on with divisions into more and more refined market segments. At the bottom of the hierarchy, the final branches are "single" businesses, i.e. specific product/market, for instance, standard desktop PC for the university market. The next step is to identify the firms which compete in the business and form the competitive groups. Based on the responses from the survey, one competitive group was identified with the following members:

IBM, APPLE and OLIVETTI;

F1 and F11.

(Insert Figure 2 here).

The survey also provided some clues for competitive groups in other product sectors, though the market segments were not specified (details have to be omitted here for the reason of confidentiality). The responses from the companies in the UK computer industry suggest that competition is a concrete term, which always refers to competing in specific market segments and with specific product lines, otherwise it is meaningless. This is where the conventional concept of strategic groups has failed.

The evaluation of the perceptions from both management and the buyers of the firm's products is an essential ingredient in the process of strategy formulation, particularly, marketing strategy. It provides strategists with a clear understanding as to where they are vis a vis their immediate competitors. Competitive groupings provide a useful device for such analysis. The extensive study of competitive groups requires further research efforts employing carefully designed case studies, interviews and cooperation from the industry, which are beyond the scope of this study. However, without any doubt the concept of competitive groups represents a new direction in the study of strategic groups. As Porac et al.[21] concluded in their study of competitive groups:

> *when attempting to understand the strategic interactions occurring within and among groups of similar firms, the social psychological reality of 'the group' must be taken into account. To do so,however, requires that the researcher assesses the shared perceptions of member organisations and how such perceptions influence strategy formulation.*

CONCLUSION

The analysis of the managerial responses in the survey of the UK computer industry to the question of competition suggests that firms do not regard themselves as facing competition in the whole competitive space defined as the industry, but in their own perceived sub-space, which includes only a small number of rivals. It is on the basis of such perceived competition that firms formulate their competitive strategies. Thus, strategic groups can be further extended to "perceived competitive groups". It is expected that such groupings will be of assistance in understanding the competition process. It will be particularly useful in examining how such perceptions influence strategic decision making, and how rival firms communicate with each other, i.e. so called competitive signalling. In short, competitive groupings provide a broad arena for the application of the strategic group concept. This analysis will help management in identifying and understanding: competitor recognition, competitive positioning as well as competition process.

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