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PARTICIPANT IDENTIFICATION OF COMPETITORS IN A
MARKETING SIMULATION COMPETITION

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ABSTRACT

Despite extensive academic research on how to classify competitors, little is known about how managers identify competitors in practice. This paper examines how student managers in two different marketing simulation games identified their strongest competitors and how these managers evaluated their competitors in terms of the level of threat they posed and their relative importance as competitors. The findings from 96 simulation teams indicated that simulation game players used many of the same criteria as practising marketing managers but the scope of the criteria used were influenced by the nature of the simulations being played and the evaluation approaches being employed.

INTRODUCTION

A clear identification and understanding of a firm's major competitors is central to formulating marketing strategies (Aaker 1995). In all industries, customers have choices as to whom they will patronize. Thus, when marketing managers identify a target market that the firm will serve, the manager is also bringing a group of competitors, serving similar markets, into the firm's external environment. To be successful in the marketplace, the current and future actions of these competitors must be monitored and even anticipated. One of the problems in understanding competitors is simply identifying them. That is, how do marketing managers answer the question, "Who are our current and future competitors?"

The marketing literature conceptualizes a number of different varieties of competitors (Ferrell, Hartline, Lucas and Luck, 1998). *Brand competitors* are those who market products exactly like ours with similar prices selling to the same customers (Coca-Cola and Pepsi-Cola are good examples). *Product competitors* are those who sell products similar to ours but with different features and benefits and at different prices (Coca-Cola and Anheuser-Busch). *Generic competitors* are those who market different products that satisfy the same consumer need (Coca-Cola and water). *Total budget competitors* are those who sell different products from ours but are competing for the same limited financial resources of the customer (Coca-Cola and potato chips).

It is clear that a marketing manager for Coca-Cola would view Pepsi-Cola as a direct competitor. In the same fashion, Procter & Gamble marketing managers would view Kimberly-Clark as a direct competitor, General Motors' management would view Ford as a direct competitor, etc. Many examples, like these, would seem to be clear. However, competition can come from companies that are not exactly like us (product, generic and total budget competitors). When identifying competitors, what criteria do marketing managers use?

PAST RESEARCH

When analyzing and describing competitor performance in the marketing literature, researchers have generally followed two approaches to competitor identification. The *supply-based approach* classifies competitors on the basis of the characteristics of the competing firm. Firms would be deemed to be competitors if there was a similarity in products offered, marketing strategy employed, production technology, size, and similar characteristics. A review of some of the research following this approach to competitor grouping can be found in McGee and Thomas (1992) and Thomas and Venkatraman (1988).

The *demand-based approach* classifies competitors on the basis of the target markets, or customers, that are being served. In this approach, competitors are identified based on customer attitudes and behavior towards the supplying firms. Firms whose offerings customers perceive as similar, the offerings are substitutable for one another, are deemed to be competitors. Marketing has a long history of examining industries and companies from a market perspective. A review of articles using this approach can be found in Day, Shocker and Srivastava (1979) and Cooper and Inoue (1996).

Several characteristics, generally supply-based in nature, have also been used to group competitors. These include firm size, firm success and threatening behavior of the firm. Several authors have suggested that managers tend to view the largest firms in their industry as their competitors (Chen and Hambrick 1995; Walton 1986) while others suggest that managers view those companies of a similar size as their most direct competitors (Porter 1979).

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The success of other firms is another characteristic that is likely to attract attention to a firm and result in it being viewed as a competitor. Certainly, as many authors suggest (Greve 1998; Miller 1994; Tucker, Zivan and Camp 1987), when it comes to benchmarking performance, we look at the most successful firms in our marketplace environment. Finally, it's reasonable to assume, as many researchers have, that firms that are viewed as a direct threat to us, or have taken threatening behavior towards us, would be viewed as competitors (Heil and Walters 1993; Robertson, Eliashberg and Rymon 1995).

While research into, and analysis of, competitor performance exists using both the supply-based approach and the demand-based approach to group firms, the competitor groupings in the marketing literature are based on writers' views of what makes up the competitive environment. The groupings are not based on how managers of the firms included would necessarily identify competitors. In fact, little is known about how marketing managers identify competitors in practice.

To get some insight into competitor identification, Clark and Montgomery (1999) conducted a survey among 37 second year MBA students, all of whom had previous work experience, and 20 business managers in an executive training course. These 57 subjects were asked to identify all "major

competitors" for a firm for which they had worked or currently work. "Major competitor" was not defined for the subjects. The research subjects were then asked to explain why the listed firms were deemed to be major competitors.

Across all respondents to Clark and Montgomery (1999), the average number of competitors named was 6.46. The top ten reasons given for identifying a firm as a competitor are shown in Table 1. Eight of the reasons given can be classified as supply-based attributes (as described above) while only two (identified with an asterisk in Table 1) are demand-based attributes.

While some ABSEL papers have examined certain aspects of the competitive environment of simulation teams, such as whether or not simulation teams monitor and emulate industry leaders (Wellington and Faria 1997), an examination of all ABSEL papers in The Bernie Keys Library showed no matches with "competitor identification", "competitor analysis" and similar related terms. As well, no articles examining competitor identification when using simulation games could be found in the complete history of *Simulation & Gaming* articles. As such, this is an area ripe for some exploratory research which could add to the rich history of simulation gaming research.

TABLE 1

TOP TEN COMPETITOR IDENTIFICATION ATTRIBUTES FROM CLARK AND MONTGOMERY (1999) STUDY

<u>Attribute</u>	<u>Percent Respondents Identifying</u>
Products offered	60%
Product positioning	51%
Geographic scope of market *	46%
Resources	39%
Customer perception of firm *	39%
Price	33%
Competitor size	28%
Distribution	25%
Financial strength	25%
Competitor behavior	23%

METHODOLOGY AND HYPOTHESES

A study was undertaken during one semester at a large university involving two separate marketing classes. The subjects of the study were drawn from a total of 360 students in an introductory marketing course and 112 students divided into thirty teams of three or four participants each in an associated application focused follow-up marketing class. The subjects played two different marketing simulation games. *PAINTCO V: A Marketing Simulation* (Galloway, Berman,

Evans and Wellington 1997) was used in the introductory marketing course while *COMPETE: A Dynamic Marketing Simulation* (Faria, Nulsen and Roussos 1994) was used in the follow-up marketing course.

The *PAINTCO* players competed as individuals in 60 six-team industries. These student/companies were evaluated in the *PAINTCO* simulation by being asked to maximize an efficiency ratio comprised of their earnings divided by manufacturing costs. The thirty *COMPETE* simulation companies were divided into six industries of five companies each. The *COMPETE* participants were told that they would

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be evaluated based on their companies' earnings per share with the objective of being the highest earnings team in their industry.

In *COMPETE*, at the end of each year of a three-year simulation competition, participants on each company were asked to rank all other firms in their industry from strongest to weakest competitor. Each company was also asked to indicate why it had selected the firm it did as its strongest competitor. The *PAINTCO* competitors were asked to undertake a similar ranking at the end of every third period of a nine period competition. Across the 60 six team *PAINTCO* industries, only eleven industries (66 teams) submitted all three requested surveys. As such, only these industries were included in the analysis. In contrast, all thirty teams in the *COMPETE* competition submitted all three surveys and all of them were included in the analysis.

The findings presented, therefore, are based on an analysis of the competitor reports submitted by ninety-six simulation companies. In these reports the simulation participants: (1) ranked each of their competitors from strongest to weakest; (2) awarded points to each of their competitors using a 100 point, zero-sum point allocation scale with each competitor being given a point total in relation to the perceived importance of that competitor; (3) ranked each competitor on a seven-point Likert scale as to the perceived direct threat of that competitor to the respondent company's sales and market share; and (4) described in words why the company identified as the most direct competitor was selected as such.

A number of hypotheses, based on the available marketing literature, were formulated for testing.

- H₁: Student teams will most frequently identify competitors using supply-based attributes similar to those identified in the Clark and Montgomery (1999) study.
- H₂: Student teams will identify major competitors based on the absolute size of the competitor as measured by dollar sales or market share.
- H₃: Student teams will identify their most important competitor based on the earnings of that competitor.
- H₄: Student teams will identify their most important competitor based on the similarity of the marketing strategy of that competitor.
- H₅: Student teams will identify their most important competitor based on the threatening behavior of that competitor.

There is some literature that suggests managers tend to identify a limited number of firms as their competitors (Gripsrun and Gronhaug 1985; DeChernatony, Daniels and Johnson 1993). Generally, managers tend to list no more than seven firms as their most direct competitors. This was not an issue in the current study as the *PAINTCO* industries were limited to six companies and the *COMPETE* industries were limited to five companies.

Based on the findings from the only study of the nature to be undertaken here, as with Clark and Montgomery (1999), it has been hypothesized that simulation competitors will more often identify supply-based attributes as the reason for selecting a company as its most important competitor than demand-based attributes. Due to the limited number of companies in the simulation competitions used in this study, and in line with the marketing literature, it is hypothesized that simulation competitors will most often look to the largest team in their industry (as measured by market share or dollar sales) and the leading earnings team in their industry as their major competitor. Finally, the more astute simulation competitors, analyzing the simulation competition more intensely, will identify those teams using similar strategies and who are most threatening to their target markets as their most direct competitors.

FINDINGS

The findings from this study will add to the very limited knowledge of how competitors are identified in practice. In this instance, the how and why of competitor identification in a simulation competition will be compared to the findings from 57 business managers in the Clark and Montgomery (1999) study.

The overall findings from the *PAINTCO* and *COMPETE* simulation competitions are reported on in Tables 2, 3 and 4. H₁, H₂ and H₃ were evaluated using a simple comparison of Table 1 findings from the literature with the Table 2 findings of this study. These findings support the acceptance of H₁. The simulation players report ten supply-based variables which are the same as, or very similar to, seven of the eight supply-based attributes reported on by Clark and Montgomery (1999).

The one Clark and Montgomery (1999) exception is product positioning. However, the simulation teams did identify advertising and sales force strategies which might represent product positioning within the context of the simulation competitions and in the minds of the simulation participants. As such, H₁ is accepted.

With respect to H₂, an average of 31.6 percent of the simulation respondents reported using market share as the means of identifying major competitors. This was the second most frequently cited reason for competitor identification. On top of market share, an additional 10 percent of the respondents reported sales volume as the means of identifying major competitors. Sales volume would represent the same concept as market share. Market share is more often identified by the simulation participants than sales volume, likely, as market share data is reported to the simulation participants every period while dollar sales volume of competitors had to be purchased as a market research study. As such, H₂ is supported.

H₃ is strongly supported with an average of about 70 percent of respondents reporting earnings as the major variable used to identify their most important competitor. This is more

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than double the next most reported attribute which is market share.

The findings with respect to H4 are reported on in Table 3. This hypothesis is also fully supported. In response to the issue, on what basis do you determine your closest competitor, an average of 32 percent of the respondents reported that overall competitor strategy was the key consideration in determining their closest competitor.

H5 was tested by examining the correlation between the importance rating of competitors as measured with a 100 point

constant sum scale versus how the competitors were rated as a competitive threat on a one to seven semantic differential scale (1 being a strong threat and 7 being a weak threat). The results of this rating, reported on in Table 4, show a high correlation (ranging from -.551 to -.788) between the importance ranking of a competitor and the perceived marketplace threat of the competitor. The correlations found between competitor ranked performance and perceived threat of the competitor are all highly significant (.000). As such, H5 is accepted.

TABLE 2

COMPETITOR IDENTIFICATION ATTRIBUTES REPORTED BY PAINTCO AND COMPETE SIMULATION PLAYERS

	<u>Report 1</u>	<u>Report 2</u>	<u>Report 3</u>	<u>Matches Clark & Montgomery</u>
Earnings	69.8%	70.8%*	72.9%	Yes-Indirectly
Market Share	33.3%	31.3%	30.2%	Yes-Indirectly
Pricing Strategy	27.1%	14.6%	19.8%	Yes
Return on Sales**	25.0%	24.0%	32.3%	Yes-Indirectly
Product Quality	14.6%*	9.4%	5.2%	Yes-Indirectly
Advertising	13.5%	14.6%	11.5%	No
Manufacture Costs**	11.5%	9.4%	4.2%	Yes-Indirectly
Marketing Strategy	10.4%	6.3%	7.3%	Yes
Sales	9.4%	11.5%	9.4%	Yes
Salesforce Strategy	6.3%	6.3%	4.2%	No
Distribution**	4.2%	6.3%	6.3%	Yes
Efficiency Ratio**	4.2%	8.3%	13.5%	Yes-Indirectly

N=96 respondents

* Significant difference between *PAINTCO* and *COMPETE* respondents

** *COMPETE* groups did not report these

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TABLE 3

ATTRIBUTES CONSIDERED IN COMPETITIVE ANALYSIS REPORTED BY PAINTCO AND COMPETE SIMULATION PLAYERS

	<u>Report 1</u>	<u>Report 2</u>	<u>Report 3</u>
Pricing	34.3%	41.7%	28.1%
Competitor Strategy	31.3%	29.2%*	35.4%
Earnings	30.2%	31.3%*	36.5%*
Advertising	25.0%	33.3%	16.7%
Product Quality	25.0%	20.8%*	17.7%*
Market Share	24.0%*	20.8%	15.6%*
Salesforce Strategy	13.5%	13.5%*	9.4%
What-If-Software**	13.5%	9.4%	8.3%
Market Research	12.5%*	10.4%*	12.5%*
Distribution**	12.5%	12.5%	8.3%
Sales	11.5%	7.3%	5.2%
Manufacture Costs**	8.3%	11.5%	5.2%
Efficiency Ratio**	4.2%	6.3%	4.2%
Return on Sales**	2.1%	3.1%	13.5%

N=96

* Significant difference between *PAINTCO* and *COMPETE* respondents

** *COMPETE* groups did not report these

TABLE 4

CORRELATION BETWEEN THREAT EVALUATION AND THE 100 POINT CONSTANT SUM SCALE BY COMPANY

	<u>Report 1</u>	<u>Report 2</u>	<u>Report 3</u>
Company 1	-.669* (77)	-.644* (79)	-.639* (79)
Company 2	-.551* (79)	-.597* (78)	-.613* (79)
Company 3	-.788* (77)	-.625* (79)	-.686* (79)
Company 4	-.629* (77)	-.590* (79)	-.772* (79)
Company 5	-.759* (76)	-.617* (78)	-.603* (79)
Company 6	-.732* (52)	-.717* (55)	-.685* (54)

* Significance < .05

Note: Company 6 data for *PAINTCO* only, *COMPETE* industries had a maximum of 5 teams.

CONCLUSIONS AND IMPLICATIONS

While the marketing literature is filled with discussions on competitor analysis, little is truly known about how business managers identify their direct competitors. Clark and Montgomery (1999) used a group of 57 business managers

taking MBA and Executive Training courses to identify a number of attributes used by this sample of executives to isolate major competitors to the companies for which the executives currently, or formally, worked. This added some important knowledge to the marketing literature on competitor identification.

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The current study was formulated to examine whether students participating in a simulation competition would use similar attributes as described in the marketing literature and as reported by Clark and Montgomery (1999) to identify competitors. An issue long debated in the simulation literature is the relative merit of simulation games as a learning tool (see Faria 2001 for a review of this literature). If simulation participants use the same criteria in the selection of competitors as business managers do in practice, this would add additional support to the realistic nature of this form of instructional tool and its educational merit.

The findings from this study indicate that student simulation players developed essentially the same set of attributes to identify competitors as a group of experienced managers reported on by Clark and Montgomery (1999). This finding would support the relevance of simulation play for developing an understanding of competitive behavior on the part of future business managers. Arguably, one could take the position that simulation games are the most appropriate and unique exercises available to assist managers in learning how to develop an understanding of competitors and what attributes to use when identifying competitors.

Consistent with the marketing literature, in general, and the Clark and Montgomery (1999) study, in particular, simulation game participants tended to use supply-based attributes rather than demand-based attributes to identify competitors; most frequently used absolute size, as measured by earnings or market share/sales, to identify major competitors; used similarities in marketing strategy variables to identify competitors; and viewed those companies that were the most direct threat to them as the most direct competitors. All of this suggests behavior on the part of simulation participants that is similar to the behavior of practising marketing managers.

One interesting finding from this study, outside of the major thrust of the study, was that simulation participants used one set of criteria to identify major competitors but a separate set of criteria to analyze their competitors. For example, while earnings and market share topped the chart in identifying competitors, these attributes, once used for identification, were not then analyzed further. Instead, the simulation participants then concentrated on analyzing competitor strategy in the form of marketing mix variables such as prices charged, advertising strategy, sales force, etc. The distribution of firms was barely considered for competitor identification, less than 10 percent of firms used it, while it was an area for competitive analysis for 18 percent of the simulation players. In retrospect, the finding that competitor classification variables are different from competitor analysis variables may not be surprising. After all, identification of competitors mainly involves selecting attributes for classifying them while the analysis of their activities would involve much deeper deliberation and consideration.

One of the key limitations of this study was that, by their nature, simulation games lend themselves to supply-based approaches to classifying competitors. Simulation participants are usually given, and can acquire through market research

reports, many details about their competitors. However, in most simulation games, far less information is available about the markets being served by the competitor companies. The real world indeterminance of purchasers and the complexities involved in product demands are usually too difficult to model in simulation games. As such, it would be less likely that demand-based attributes would be described by simulation participants in competitor identification than might be the case in the real world.

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