

# Marketing Information Systems and Strategy Levels: An Empirical Study

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## Abstract

This research study develops a model that integrates marketing information systems and strategy levels and examines the application of these systems at each strategy level. To attain the first objective, the roles that the CEO or managers perform at each strategy level and the specific information systems required for each case constituted the starting point of the study. To reach the second objective, the qualitative method was applied, and the technique utilized was in-depth interviews. A sample of 30 medium- and big-size companies was utilized. This study showed, among other results, that companies do use the four marketing information systems, although with a different emphasis, depending on the strategy level.

*Keywords:* Strategy Levels, Marketing Information Systems, Qualitative Research.

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## Introduction

At the beginning of the 21st century, managers make decisions in more complex and dynamic settings than before; factors such as the existence of more global markets, competitive pressure, growing or expanding markets, and more demanding clients or consumers make it necessary to rely on highly specialized information. In this context, marketing information systems (MKIS) must play a different role from the roles they traditionally performed; that is, they need roles that may guide and support the decisions made at the corporate, functional, and operational levels. Previous research on the application of the MKIS shows that they have been applied mainly to the routine function of marketing rather than the strategic function (Xianzhong, 1999). Frequently, organizations have utilized these information systems to support the competitive analysis that they themselves conduct and to find out the market conditions; however, they have not developed research that may support the formulation of

strategies, or such development has been non-existent (Malo & Marone, 2002).

In this regard, Zabriskie and Huellmantel (1994) have pointed out that providing competitive information to formulate strategies is the responsibility of the marketing director, with the support of the marketing research department. However, conceptual and empirical research on marketing information systems has given little attention to the type of information that those in charge of making decisions may consider useful for the performance of their marketing tasks (Ashill & Jobber, 2002). According to Proctor (1991), there is a lot of information, but not of the correct type, and much error; that is, such information is more focused on the operational rather than on the strategic function.

Nevertheless, it is necessary to take into account that the utilization of the MKIS is crucial for the success of an organization and should be an integral part of the strategic planning process (Amaravadi, 1995) since the marketing data base is a vital element for the strategic planning of many companies and often presents challenges in terms

of management, marketing and sales (Stone & Shaw, 1987).

Within this framework, the research objectives were drawn as follows:

1. To develop a conceptual model that may integrate the strategy levels and the MKIS.
2. To examine the application of the MKIS at each strategy level.

## Literature Review

### Definition of Marketing Information Systems

The first definition of marketing information systems was presented by Cox and Good (1967) who referred to them as a group of procedures and methods for the planned analysis and the presentation of information to be used in marketing decision making. Later, this definition was extended by several authors such as Brien and Stafford (1968), Proctor (1991), Talvinen (1995), Burns and Bush (1995), and Kotler (1991, 2003), among others. Thus, Proctor (1991) defined the MKIS as a system that examines and collects data from the environment; that uses data for the operations and transactions within the company; and that filters, organizes, and selects data to present them for business purposes.

Kotler (2003) and Burns and Bush (1995) defined the MKIS as a consistent system of people, equipment, and procedures to gather, classify, analyze, evaluate, and distribute the necessary, timely, and precise information needed for decision making. For Talvinen (1995), the marketing information systems are a fundamental part of the company information systems portfolio that aids the direction of the managerial process, especially the marketing process.

### Classification of the Marketing Information Systems

In the latter half of the 20th century, several authors such as Cox and Good (1967), Kotler (1991, 2003), Proctor (1991), and Talvinen (1995), among others, have presented models for marketing information systems. Burns and Bush (1995) presented a classification of the marketing information systems similar to that of Kotler's (2003) through a model in which there is an interrelationship between the environment and the MKIS and among these and the managing directors (see Figure 1). These components are as follows:

1. The marketing decision making support system (MDMSS): It deals with the data collection, tools and coordinated techniques, with supporting hardware and software, through which an organization gathers and

interprets relevant information for the business and environment and thus becomes the basis for action taken on marketing decisions (Little, 1979).

2. The marketing intelligent system (MIS): It is the group of procedures or sources utilized by the managing directors to obtain information on the pertinent developments about the environment (Burns & Bush, 1995; Kotler, 2003). It includes the procedures for the collection of information from the informal media (books, journals, printed materials, conversations with clients, suppliers and distributors, and meetings with the marketing managing directors of other companies) as well as from the formal media (conducted by members of the staff to whom the specific task of finding any pertinent trace for the company or industry is assigned); that is, it deals with the collection of information on the surroundings that may directly or indirectly affect the company. Presently, technology facilitates this task, since these procedures may be carried out electronically, which allows the coverage of thousands of documents at the same time.
3. The marketing research system (MRS): This system gathers information that is not generated by other marketing information systems; the system consists of studies purposely designed to meet the needs of the organization; they have a beginning and an end, and they are translated into a research report (Burns & Bush, 1995; Kotler, 2003).
4. The internal record system (IRS): This system gathers information generated by the internal records on the buying orders, prices, costs, inventory levels, and others (Burns & Bush, 1995; Kotler, 2003).

Talvinen (1995) classified the models presented in two groups determined by the managerial position and the operational-tactical function of those who make the decisions. In the first group, the basic classifying models of all the authors are presented, and the users are likely to be the senior executives, business strategy units, directors, marketing analysts, and experts. In the second group, the model of Moriarty and Swartz (1989) is found, and its users are likely to be the mid level executives and sales operations personnel.

### Marketing Information Systems and Strategies

When the notion of strategy is discussed, there is neither a universally accepted definition nor a single approach. Thus, according to Ansoff, Declerck, and Hayes (1990), the strategic level of a company is in continuous contact with the organizational environment; for Mintzberg and Quinn (1993), strategy is defined in terms of the four p's: plan, pattern, position, and perspective. Finally, according to Thompson, Strickland, and Gamble (2005), the strategy consists of business competitive movements and

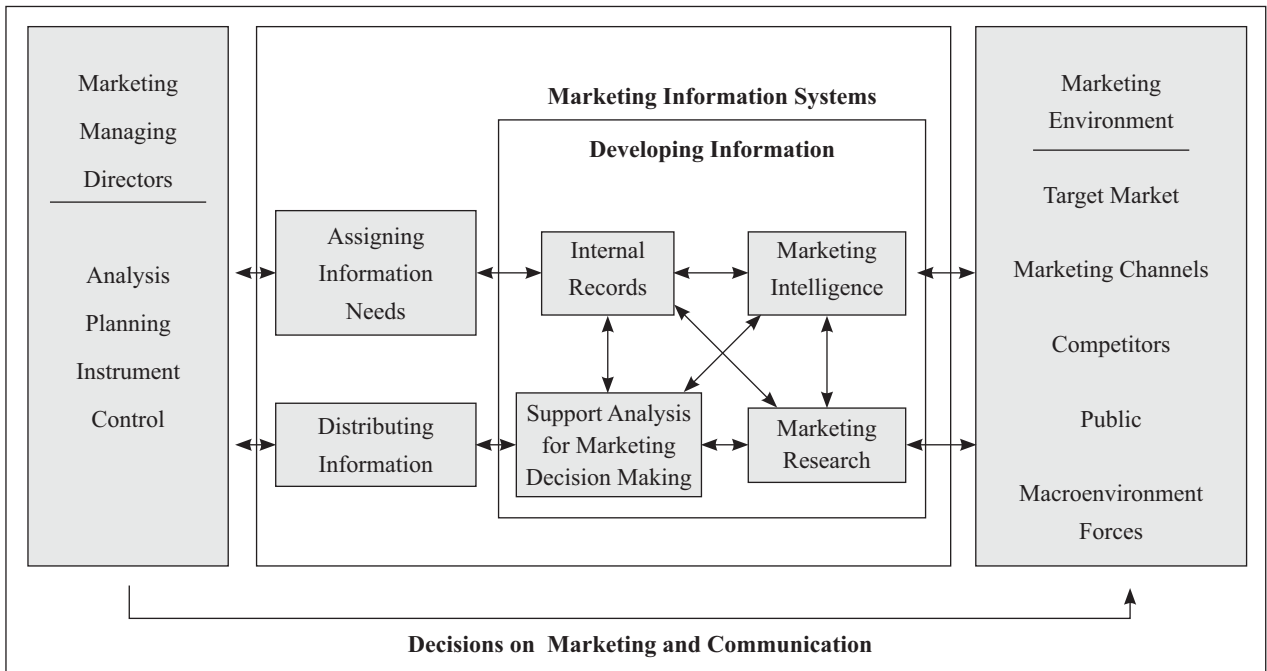


Figure 1. Marketing information systems.

Note. Burns, A. & Bush, R. (1995) Marketing Information Systems (p. 14). New Jersey: Prentice Hall.

approaches that the directing managers employ in order to attract and please clients, compete successfully, make the business grow, conduct operations, and reach set goals.

There are studies on strategies at different levels (corporate, business unit, and functional or operational), studies of the role of the chief executive officer (CEO) or the manager and of the contribution that they make for the fulfillment of the organizational objectives (Hill & Jones, 2005; Javidan, 1998; Johnson & Scholes, 1993; Porter, 1992; Thompson et al., 2005; Webster, 1992), but there are no studies on the type of MKIS that the CEO's require for those levels.

At the turn of the 21st century, researchers paid increased interest in the marketing information systems that are required by those in charge of making decisions (Amaravadi, 1995; Ashill & Jobber, 2002; Talvinen, 1995). However, little has been studied regarding the marketing information systems and the formulation of strategies at different levels. Research studies have centered upon general aspects of the formulation process and strategy implementation (Ashill, Frederikson, & Davies, 2003; McCarthy & Leavy, 2000; Varadarajan & Jayachandran, 1999; White, Conant, & Echambadi, 2003) rather than on specific aspects such as the information systems that the organizations require in order to formulate strategies (Proctor, 1991).

However, it is necessary to consider that organizations operate at three levels (corporate, business unit, and functional or operational) and reflect, at the same time,

three strategy levels (corporate, business unit, and functional or operational). The MKIS range from the strategic to the operational level and require a different type of information on marketing at each level. This distinction of levels has prompted some authors to study the MKIS and strategy levels (Hair, Bush, & Ortinau, 2003; Talvinen, 1995), as well as the MKIS required at each strategy level (Talvinen, 1995), but the type of marketing information required at each strategy level and for each MKIS has not been studied.

### An Integrative Conceptual Model

The review of the literature revealed several gaps to identify specific information in each MKIS and at each strategy level. Therefore, to complement the studies already performed and find that specific information, several steps were followed, and the related literature was analyzed at each one. The results are presented in Table 1.

1. The role of the CEO or managing director was analyzed at each strategy level (corporate, business unit, and marketing).
2. According to the roles of the managing directors, the marketing information required at each strategy level was identified.
3. Information was classified for each of the MKIS taking into account the classification provided by Kotler (2003), Burns and Bush (1995), and Talvinen (1995).

Table 1  
*Specific Information on Marketing in the MKIS by Strategy Level*

Strategy level	MKIS	Specific information on marketing required by the CEO or managers
Corporate	MDMSS	<ul style="list-style-type: none"> <li>Type of business to participate in (profitability)</li> <li>Tendencies of national and international markets</li> </ul>
	MIS	<ul style="list-style-type: none"> <li>Analysis of the market structure</li> <li>Industry environment: whether there is partial or total integration</li> <li>Country environment: whether the specific configuration of national traits in which a company operates facilitates reaching competitive advantage in the global market</li> </ul>
	MRS	<ul style="list-style-type: none"> <li>Who the potential clients and their needs are</li> <li>Distinctive client skills</li> <li>Company image</li> <li>Company positioning</li> <li>Which business to participate in (market diversification)</li> </ul>
	IRS	<ul style="list-style-type: none"> <li>Current clientele behavior</li> <li>Company financial statements</li> </ul>
Business unit	MDMS	<ul style="list-style-type: none"> <li>Analysis of market size and growth</li> <li>Sales forecast</li> <li>Analysis of profitability for the business strategic unit</li> <li>Monitoring of key business indicators (consumption, sales, market participation, among others)</li> </ul>
	MIS	<ul style="list-style-type: none"> <li>Competitive industry structure</li> <li>Analysis of the impact of globalization on the industry</li> <li>Monitoring competition</li> <li>Study of the strategic areas for business</li> <li>Specific competitive position of main competitors</li> </ul>
	MRS	<ul style="list-style-type: none"> <li>Positioning of product</li> <li>Market segmentation</li> <li>Potential market</li> <li>Product differentiation</li> <li>Identification of opportunity areas for new goods or services</li> <li>Buyers' needs</li> </ul>
	IRS	<ul style="list-style-type: none"> <li>Sales reports</li> <li>Client database</li> </ul>
Marketing	MDMSS	<ul style="list-style-type: none"> <li>Analysis of demand</li> <li>Sales forecast</li> <li>Analysis of price through models</li> <li>Financial analysis of the marketing mix</li> </ul>
	MRS	<ul style="list-style-type: none"> <li>Testing of concepts and products</li> <li>Research on attitudes</li> <li>Research in stores</li> <li>Studies on advertising efficacy</li> <li>Studies on client satisfaction</li> <li>Studies on service quality</li> <li>Launching a product</li> <li>Evaluation of packaging</li> <li>Buying and consumption habits</li> <li>Consumer behavior</li> <li>Loyalty to trademark</li> <li>Client preferences</li> <li>Perception of promotion campaigns</li> </ul>
	IRS	<ul style="list-style-type: none"> <li>Buying orders</li> <li>Prices</li> <li>Inventories</li> <li>Report of sales orders</li> <li>Client database</li> </ul>

In order to integrate the marketing information systems and the strategy levels, the starting point of the study were the roles that the CEO or managers perform at each strategy level. Thus, at the corporate level, the mission and goals are defined, the business in which to participate is determined, and the resources are assigned to the different businesses. At the business unit level, the specific business strategies are formulated in order to meet the objectives set at the corporate level and to improve the competitive position of the business products within the specific industry or market segment. At the marketing level, the functional strategies that seek the efficacy of the operations to reach the business unit and the corporate objectives are developed (Hill & Jones, 2005; Johnson & Scholes, 1993; Kotler, 2003; Thompson et al., 2005; Webster, 1992).

In order to fulfill these roles, the CEO or the managers require, at each strategy level, to count on specific information about the marketing area; that is, at the corporate level, they require the analysis of the market structure and ad hoc information to position the business within the industry; as a business strategic unit, they need sales forecast, the competitive structure of the industry, and pertinent information to position the product in the market; and in the function of marketing, the demand analysis and research on attitudes and consumer behavior are needed (Ashill & Jobber, 2002; Hill & Jones, 2005; Thompson et al., 2005). However, the activities related to marketing have conventionally concentrated on the sales function (Xianzhong, 1999), an orientation that has limitations when a business operates within a dynamic and complex environment in which it has to anticipate the needs of a changing market, and, hence, count on information pertinent to the strategy levels. The activities of marketing do not only describe a group of operation activities; these are more than sales, with a more strategic external orientation, and they are more oriented towards the competitive market (Lynch, 1994; Talvinen, 1995; Webster, 1992; Xianzhong, 1999).

Like the application of the marketing activities, the application of the MKIS has also concentrated on the area of productivity and sales administration more than on the strategic area (Hewson & Hewson, 1994; Wilson & McDonald, 1994). Even though some businesses have used these systems at the strategic level, their use still concentrates on the marketing functions related to the client, such as, for example, direct sales (Xianzhong, 1999). In the face of the existing gap in the literature, and, above all, because there is no classification of the MKIS by strategy level, the information that the managing directors require at each level was classified for each MKIS taking into account the definitions that these systems present (Burns & Bush, 1995; Kotler, 2003; Talvinen, 1995).

## **Method**

This study utilized the qualitative method and the technique of in-depth interviews. The qualitative

method provides a deeper understanding of the research phenomenon (Hanson & Grimmer, 2007), and the qualitative techniques may provide the tools for the business and organization researcher (Cassell & Symon, 2006). An in-depth interview is defined as a meeting for the exchange of information between a person (the interviewer) and another (the interviewee) (Hernández, Fernández, & Baptista, 2006).

The companies that were selected to carry out this study were large and medium size (classified according to the number of workers) and located in the metropolitan area of Mexico City. The sample was a group of 30 companies: 20 large and 10 medium sized. In all of them, the CEO or managing directors had participated in the formulation of strategies. These companies belonged to the following sectors: textile, dairy, automobile, refreshments, beauty products, liquor, communication, electronic products, furniture, education, insurance, laboratories, mobile telephones, and entertaining.

The instrument to obtain the data was designed on the basis of the conceptual model: it consisted of an individual interview guide, in a nonstructured format with nonstandardized questions, which was personally applied to the managing directors who participated in the formulation of strategies at the different levels. The data analysis was not statistical.

## **Results Discussion**

The study revealed that the managing directors perceive the importance of the strategic function, but since they are more engaged in the day-to-day operations, due to the high level of existing competition in the market, their main interest centers around the devising of strategies at the functional level (marketing); in addition, in many cases, they are more concerned about the marketing mix, that is, the product, the price, the distribution, and the integral marketing communication.

According to the data obtained, the managing directors of the companies show lack of knowledge of the MKIS as they appear in theory as well as of their classification and the definition of each one of them. However, in all of the sampled companies, the CEO's or managers utilize—however much or little— all the systems at each of the strategy levels.

Moreover, the results demonstrate that the application of the MKIS is greater in the marketing area than at other strategic levels, but it is evident that these companies are already utilizing these systems to obtain marketing information related to the environment, the future, or the strategic area (see Table 2). At the corporate level, the most utilized MKIS are the marketing decision making support system and the marketing intelligence system; at the business unit level, one finds the marketing research system and the marketing intelligence system; and in the marketing

Table 2  
*Specific Information on Marketing utilized by Managers in Mexican Companies in each of the MKIS by Strategy Level*

Strategy level	Specific information that the CEO and managers utilize
Corporate	MIS: Analysis of country/ies to reach a competitive advantage, analysis of the macro environmental factors MDMSS: Analysis of profitability MRS: Company image, business opportunities IRS: Financial statements
Business units	MRS: Market movement and participation, users and attitudes, positioning, knowing clients, potential market, competition, new products, identifying opportunities, identifying sale zones, product acceptance, preferences and levels of client satisfaction, service acceptance MIS: analysis of industry, analysis and monitoring of competition, market analysis, analysis of the environment and governmental regulations, study of the strategic zones MDMSS: analysis of profitability, financial analysis, analysis of consumption tendencies, monitoring of the main indicators (consumption, market sales), elasticity-price of demand IRS: financial, sales, and company performance indicator reports; client database
Marketing	MRS: evaluation of promotional concepts, perception of communication campaigns, packaging, anthropological studies, consumption and buying habits, users and acceptance of products, trademark competition, market participation, identification of product growth opportunities, advertising campaigns, launching, sales points, replay of advertising, trademark image MIS: marketing mix analysis, market analysis MDMSS: financial analysis of marketing mix  IRS: internal statistics of the company, sales, data base, inventories, financial statements

function, the most utilized are the marketing research system and the internal records system.

Additionally, the study found that the CEO's or managers utilize the MKIS at all levels, but not all the types of information on marketing that belong to each of the systems. Consequently, opportunity areas with a strong potential of being used for the nonutilized information have been identified. These areas are the following: at the corporate level, the analysis of businesses in which participation is feasible, the tendencies of the national and international market, the analysis of the market structure, the distinctive client skills, and the company positioning; at the business unit level, the sales forecast, the industry competitive structure, and the product differentiation and segmentation; at the functional level (marketing), the analysis of demand, the study of the clients' preference, the follow-up of sales, and anthropological studies (with a strong potential to be used in studies about behavior).

It is appropriate to point out that this study reveals the importance of all the MKIS at the strategic levels, although some managers placed emphasis on their concern about the sales area before the rest, and others mentioned the search for the precision of information and the contact with the clients to obtain as much feedback as possible.

This study shows that the scope of the MKIS is considerable. It is suggested that managers articulate the marketing strategic function with the business unit and corporate levels, regarding the marketing areas, so that the systems, such as those of the decision-making support

and the market intelligence, may offer better support with purposely sought and relevant information.

## Conclusions

The managing directors recognized the strategic role of the marketing activities at all levels and pointed out the importance of the use of MKIS. However, some managers still work with information that responds only to the operational-tactical activities, such as the marketing mix, or to make sales efficient.

Opportunity areas were found with a strong potential for use of the MKIS at the different levels of strategy, such as the tendencies of the national and international market, the analysis of the market structure, the positioning of the company, the sales forecast, the competitive structure of the industry, the analysis of demand, the study of clients' preferences, and anthropological research, among others.

It is important to utilize the MKIS since at each strategy level, the CEO's or managers require different types of information, with own characteristics. Therefore, there is interest to promote research about MKIS to support the managing directors in formulating their strategies based on information specific to the needs of each strategy level.

It is recommended that future research studies focus on different industry sectors to identify specific opportunity areas for the MKIS to support companies in the formulation of strategies; in addition, researchers should investigate these issues in other countries.

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## Footnotes

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