
The Role of Information Systems in the Management of the Marketing Crises Decisions: The Case Enterprises in the Province of Batna, Algeria

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To cite this article:

Naima Yahiaoui, Fatiha Benoumessad. The Role of Information Systems in the Management of the Marketing Crises Decisions: The Case Enterprises in the Province of Batna, Algeria. *Science Journal of Business and Management*. Vol. 3, No. 5, 2015, pp. 134-144.

doi: 10.11648/j.sjbm.20150305.11

Abstract: The study aimed to determine the role of information systems in the management of marketing crises stages and requirements; and identify the relationship between the marketing information systems and the marketing crises management. in a group of enterprises in Batna (Sonelgaz company, cement company and dairy Aures). To achieve these objectives we follow a set of scientific research methods achieve synergy among them systematically, these approaches are: deductive approach which is based on logical thinking has been adopted by the researcher in determining the dimensions of the problem of the research and drafting of logical assumptions associated with the study and inductive approach to prove the validity of hypotheses. The researcher prepared a questionnaire for the organizations in the study and distributed 60 to the enterprises in Batna, and analyzed using simple correlation coefficient and multi addition to simple regression. The study found after analyzing their data and test hypotheses set of results such: a variation in the availability of marketing information systems and its components in the enterprises in Batna, no significant correlation between marketing information systems and marketing variables of crisis management, there are significant effect after marketing information systems in post-marketing crisis management.

Keywords: Information Systems, Requirements and Stages of Marketing Crises, Marketing Crises Management

1. Introduction

The marketing information systems are necessary for the organization to be successful in its marketing activities and to achieve efficiently and effectively its goals. Specialists in the field of marketing and information systems confirm the necessity to provide the marketing information systems for their suitable information to face crises.

2. Research Problem

It is noted that there is limited attention to the concept of the marketing crises management and lack of benefit from the marketing information systems in facing these crises. Through the field visit conducted by researchers for some establishments, it is demonstrated that there is weak and limited interest in the marketing crises management and the role of the marketing information systems. Therefore, the formulation of the questions below can contribute to the

clarification of the research's problem.

1. Is there a variation in the availability of the marketing information systems at the enterprises in Batna?
2. Is there a variation in the marketing crises management as compared to: crisis management requirements and the stages of the crisis management at enterprises in Batna?
3. What is the nature of the relationship between the marketing information systems and the marketing crises management?

3. Significance of the Study

The research is of interest to the reality of establishments at the present time, particularly in regard to the theoretical framing of the marketing crises management and the role of the marketing information systems in them, which are important foundations that this research is trying to contribute in enriching them to form a conceptual framework helps decision makers in the researched establishments.

The field importance of the research is reflected to providing a theoretical and field framework linking the marketing crises management and the use of marketing information emanating from the marketing information systems in their management.

As well as to providing scientific bases for the researched organizations which can benefit from them in determining the role of the marketing information systems in the marketing crises management.

4. Research Objectives

The research’s objective focuses mainly on determining the role of the marketing information systems in the management of the marketing crises and indicating the contents and limits of this role at the researched organizations, as well as the identification of:

1. The nature of the relationship between the marketing information systems and the marketing crises management.
2. The availability range of the marketing information systems at enterprises in Batna to achieve the objectives and answer the previous questions, we divide the research into three axes:
 1. Theoretical approach to the information systems.
 2. The marketing crises management.
 3. Description and analysis of the research’s variables.

5. Research Hypotheses

1. There is a variation in the availability of the marketing information systems with their components at enterprises in Batna.
2. There is a variation in the marketing crises management at enterprises in Batna.
3. There is a significant correlation between the marketing information systems and the variables of the marketing crises management.
4. There is a significant impact of the dimension of the marketing information systems on the dimension of the marketing crises management. The sub-hypotheses are the following:
 - A. There is a significant impact of the marketing information systems on determining the requirements of the marketing crises management.

- B. There is a significant impact of the marketing information systems on identifying the stages of the marketing crises management.

6. Methods of Data Collection

In order to get the necessary data and information to assign the research objectives, the researchers relied, in the theoretical side, on a variety of sources which were books, magazines, Arabic and foreign studies, Internet, and the researchers’ opinion. With respect to the field side, the researchers have used:

* Questionnaire: which is the main source to obtain the necessary data that will help in testing the research hypotheses and analyzing the results. The questionnaire includes three parts; the first one is allocated to collect data about the availability of the marketing information systems with their four components: reports system, marketing intelligence system, marketing researches and marketing decision support system. The second part of the questionnaire focuses on the scales of the marketing crisis management and its variables (crisis management requirements, the stages of management). While the third and final part focuses on the role of the marketing information systems in the management of the marketing crises. Two variables are studied: the requirements and stages of their management. Likert’s triangular scale has been used in the third part of the questionnaire, and it attributes one point for each choice. The researcher gave to researched people’s answers the degrees (Agree – Neuter – Disagree).

Statistical tools: a set of statistical tools was used in order to get accurate indicators serve the objectives of the research and the test of hypotheses. They are the followings:

1. The simple correlation coefficient: it is used to measure the strength of the relationship between two variables.
2. Multiple correlation coefficient: it is used to measure the strength of the relationship between the independent dimension and the dependent variables.
3. The simple declination: it is used to measure the impact of the independent dimension on the dependent dimension.

Axe 1: Theoretical approach to the information systems
 1. The concept of the information systems

Table (1). The concept of the information systems according to some researchers’ view points.

Researcher	Concept
Kolter[1]	A set of human and mechanism elements necessary for data collection for the purpose of converting them into information that help in making accurately and successfully the marketing decisions.
Edio Ji [2]	A designed set of methods and procedures to ensure the proper flow of accurate information for use in decisions-making and to provide the current and future facts about the market to the administration in addition to the indicators on the market’s response to the project activities and attitudes of consumers.
El-Ajarma and Ettai[3]	The plan characterized by development, awareness and continuity and aims at facilitating the flow of information along with the flow of goods and services.
Abu Nabaa and El-Allaq[4]	The selection, analysis and flow of information collected from internal and external sources to make decision.
The researchers	A set of subsystems through which information is gotten and would support and make the marketing decision and its management toward the problems and crises that it faces.

Source: prepared by the researchers

The world is witnessing in the recent period a great technical and scientific revolution in the field of communication and information as the application of science, knowledge and technology, in each establishment, has become an important aim to get immense knowledge by different means. However, to access to this aim, it is necessary to provide a large amount of data and information that enable the administration to make good decisions for the success of the organization. The most important are the marketing information, so it has become necessary to provide the information systems in any organization to provide the necessary data and information to the administrations to rationalize their decisions. The most important of these systems are the marketing information systems. There are numerous definitions of the marketing information systems, but it is noted that many of them are placed in common concepts and meanings table (1).

Based on the above, the researchers believe that the contents of these definitions focus on the basic components of the information systems concepts which are: procedures, methods, tools, individuals, equipment and machines. However, the difference lies in the method of combination or alignment between these components and the possibility of their use in the organization.

There are many organizations still rely on traditional and simple methods and techniques in data collection and

analysis, as well as there are other establishments which use the modern technologies such as the electronic calculator and others in collecting, storing, recovering, analyzing and treating data in order to obtain useful information. [5]

From the above, we see that we cannot say that the process of information collection is random or occurs once, but it occurs regularly and continuously, as the good marketing information systems provide to managers with exact information in the appropriate time. In addition, the establishment has an urgent need to know the reality of its products in the market among many competing products through accessing to information, then taking the policies about pricing, distribution, promotion and selection of the appropriate market and product form to be submitted by the organization to customers to ensure for the organization, partially at least, the success in competing organizations that offer the same product.

II. The importance of the information systems

The development of techniques and the continuity in dealing with in most of the establishments led to the necessity of the presence or configuration of a flexible and fast information system helps the marketing administration to make decisions related to providing the best products to clients. The importance of the information systems from the view point of some researchers can be shown in the table (2).

Table (2). The importance of the marketing information systems according to some researchers' view points.

Researcher	Importance
Talaat Abdelhamid [6]	They have particular importance in determining the quality of the decision about the various marketing policies as they determine the way for the administration in addition to their role in preparing information in a summarized way about each alternative and their impact on the aims to be achieved.
Laudon and Laudon [7]	The marketing information systems help marketing managers in the planning of the product, pricing, distribution, promotion and strategic decision making for sale, advertising and predicting in the market studies.
Mokabla and Assarabi [8]	The easy access to information. We know that in the era of information explosion, the establishment cannot survive and withstand without the information management, and the marketing information systems contribute to the planning and evaluation of the exact performance.
El-Bakri [9]	The movement of the marketing organizations from their work at the local level to the regional or international one makes them in the need for more marketing information systems, especially about the new environment in which they operate.
William and Ferrelt [10]	The information systems are considered as a daily framework for the administration to structure the information collected on a regular basis from different sources, so the importance of these systems stands out through the constant push of information about the means of promotion, expenses, sales and competition, as well as the distribution expenses.
The researchers	The importance of the information system is highlighted in enabling the administration to predict crises that can occur in the organization in the future, work to resolve them or avoid them before they occur in the context of information provided by the marketing information systems.

Through this statement, we see that the information systems have importance and many benefits for the organization in general, and for marketing managers, in particular, by providing daily, monthly and annual detailed reports, in addition to information on sales, which are obtained through the sale representatives and agencies, gathering information about clients from the moment of the product purchase, to its use and ending by their impressions towards this product. They help in making the right marketing decisions toward the deviations occurring in the work plans.

III. The components of the marketing information systems

The components of the marketing information systems are the "subsystems which constitute them based on the concept of

the systems theory which states the possibility of the division of one system into a number of integrated subsystems according to different criteria." [11]

From the above, it is necessary for any organization to organize a copious flow of information to marketing managers through the integration of the basic components of the marketing information systems. The competing organizations study the needs of information for managers and put plans about the marketing information to meet these needs. [12]

1. Reports system (internal records):

Opinions differ on the labels of this system, but it refers to a common meaning indicate the data that have been extracted from the internal environment of the organization. It has been

referred to [13] as a system of internal reports or the internal accountancy system, while the use of the data processing system concept combines the internal reports (records) system and information taken from the reports.

These reports and records contain a range of important information for the marketing manager such as the monthly and weekly sales volume, the volume of sales distributed by geographic market areas, or in accordance with the brands and the various products, as well as the information on the inventory size, and the performance reports that help to improve the planning process of the marketing activity and other reports. [14]

2. Marketing intelligence

Kotler (1997) indicates that at the time when internal reports focus on the results of information, the marketing intelligence system focuses on the events (facts) in the environment.

Kotler defines it as a "set of sources and procedures that help marketing manager to obtain information concerning the evolution and change that is happening in the external environment of the marketing activity." He may agree to describe it as a: "system that provides to the organization the daily information on marketing and environmental developments that help managers in the preparation and modification of the marketing plans". [15]

Based on these concepts, the marketing intelligence system provides marketing effective information in real time to allow for the administration to control and dominate the marketing campaigns, as well as to enable the marketing administration to interact with the low level of risk. Marketing intelligence should cover all areas related to the organization to have complete, whole and durable knowledge about the developments and changes to be able to monitor their positive and negative impacts on the works of the organization. The organization should know the changes of each element of the external environment (public and private environment) and every element of the internal environment. [16]

3. Marketing Research System:

The concept of the marketing research has passed through several stages; initially it concerned the market and sales research, then the identification of the needs and desires of clients and the promotion of researches. After, it moved to the stage of the products research, advertising, determining the content of the advertising messages, the diversity dimension in the system, the marketing management, the expansion of the use of the procedures and means, and the expansion of marketing activities. The marketing research system has become a subsystem for the marketing information systems. [17]

The marketing research is an essential element of the marketing information systems and it is related to providing information about markets and their impact on the marketing strategy. The marketing research is centered in a problem or a special crisis and not only in the process of information gathering.

In the light of the above and the intellectual developments in the field of marketing towards the function of the marketing research, it has been identified by multiple directions, but the

most notable was the definition of the American Marketing Association in 1961 as a "collection, record and analysis of data related to the problems of products marketing on a regular basis. [18]

Kotler confirms that it is an: "organized design to collect, analyze and provide information reports and results regarding the situation of marketing faced by the organization". [19]

The marketing research is a " system that uses scientific research methods in treating the problems and marketing crises by identifying problems and marketing crises and analyzing them based on the appropriate statistical and mathematical methods, on setting possible alternatives, evaluating these alternatives, choosing the best alternative and justifying the selection process. The marketing research system provides a large database used by the administration in taking the different marketing decisions."

William indicates that the marketing research helps the decision users among the marketing managers in: [20]

- A. Formulating the marketing decision strategy in order to achieve better acceptance and satisfaction with the client.
- B. Enabling the director of understanding and awareness of the purchase models and methods that the clients can adopt in their dealings with the market.
- C. Knowing the changes in clients' behavior at time, so the manager can know them and formulate a practical system seeks to reduce defects in the products offered to the market.

4. Marketing decision support system :

Marketing decision support system is defined as a "computer system makes things easy for marketing managers to get information and use them when making decisions". It is also defined as "internal activity and computerized flexible information system enables managers to get and monopolize the necessary information to make the marketing decision". [21]

The marketing decision support system is a result of the expansion and growth in the number of organizations to help marketing managers in making more accurate decisions. At present, the reliance on these systems becomes larger as a result of the wide use of computer in various marketing activities, and the multiplicity and diversity of variables, problems and crises faced by managers and because it is difficult for the human mind to make rapid and accurate analysis of the many relationships occurring among these variables and the percentage of their mutual impact. [22]

Axe 2: the marketing crises management

1. The concept of the marketing crises

Some organizations, in various countries around the world, are exposed, at any time, for various crises which may be small and easily passable, or big and insurmountable.

Administratively [23], the concept of crisis is expressed as an "administrative failure for the decision-makers as a result of the occurrence of certain administrative defect, lack of experience, new knowledge or for all these reasons. Therefore, the frequent occurrence of crises requires changing the supervisors of the administrative entity where the crisis is repeated".

Peter Oneill identified it as an "increasing accident which raising a serious threat to the operation, existence and

reputation of the organization".[24]

According to the contents of the previous definitions, the crisis is unusual or even unexpected situation which largely affects the daily business scope and threatens the security, operations, and the reputation of the organization at risk. The organization should make the decision to confront it or reduce its severity.

So, the organizations pass by opportunities or success crises, which are a crucial stage in the evolution of events and their shift for the better or the worse. Therefore, the crisis includes two meanings; the first one is: the risk, and the second one is: the opportunity. Either risks prevent the organization to achieve its goals, or limit its ability to achieve the goals which are seeking by the organization, they can come as an opportunity to meet or achieve goals.

Regarding the marketing side, the successful for organizations that consider themselves developed organizations should take into account the concept of the marketing crisis and its potential dimensions when putting the marketing programs and to put it at the forefront of its marketing priorities, as organizations are exposed from time to time to some marketing crises, whether existing organizations in the work market, or new organizations want to market their products at the beginning of their work.

When starting a review of the marketing literatures to discover a number of principle indicators of the marketing crises, it is noted that the roots of the marketing crises dated back to the beginning of the early eighties of the twentieth century, exactly in 1981[25]. Brown confirms [26] that few people can deny that the modern marketing has crises that are very serious, but they are not considered as new marketing crises which are not, at the same time, difficult to be resolved and they are necessarily considered unhealthy.

Moharbir indicates that "marketing has two major crises; the first one is the identity crisis which is summarized in the definition of the role of marketing in the organization. The second one is the calculation crisis which consists in determining the value of marketing in the organization".[27]

Since marketing is one of the main activities of the organization, the above definitions and terms are applicable to the marketing crisis in this research, although there is no limit or clear and explicit definition in the marketing literatures to the marketing crisis.

Omar and al indicate that it is a "diminution or regression of the strategic role of marketing within organizations" [28] and this is what was agreed, at the beginning of eighties, by the marketing academics who indicated that the marketing crisis is an evident decline in the role of the strategic marketing.

It can also be described as the [29] "gap between what can be done or provided by the marketing and what it is actually doing".

As the marketing crises faced by organizations are clear and unavoidable, but with the appropriate readiness, the marketing crisis can be managed, handled and controlled, So as it will not worsen and become a great disaster.

II. The nature of the marketing crisis management

The concept of the crises management is one of the important basic concepts at the present time, as the success of the different organizations depends on its ability to face such crises which require working to prove their capacities and their convenience with the constant environmental changes which constitute a major challenge for them. The issue of crisis management is one of the vital issues that have an impact on the life and the survival of the organization. So, views on the concept of crises management, according to the perspectives of researchers, have varied Table (3).

Table (3). Shows the concept of the crises management according to researchers' view points.

Researchers	Concept
Dobler, Donald W [30]	The degree of mastery by the organization of recognizing and diagnosing the crisis, trying to treat it and harnessing its various resources, as well as directing the organization towards resolving the crisis
Herrero [31]	The process of regular preparation and appreciation of the various problems that seriously threaten the reputation of the organization and its operations and survival in the market.
El-Khudhiri [32]	It is how to overcome the crisis by the different scientific and administrative instruments, avoiding its negatives and taking advantage from its positives.
Mohammed Fathi [33]	The continuous administrative process that interests in predicting potential crises through sensing and monitoring internal or external environmental variables generating the crisis.
Essayrafi [34]	The dealing methodology with the crises in the light of the preparations, knowledge, awareness, understanding, available possibilities and skills, and prevailing patterns of administration.
www.dti.gov.uk	It is the process by which the organization manages the necessary extensive effects on the organization relationships and its means of communication and it enables the organization to control these negative effects.
The researchers	It is an administrative process which aims to control the negative effects of the crisis as soon as possible and with fewer losses, in addition to reduce the possibility of falling again in the crisis by the organization.

Source: prepared by the researchers.

Some decision-makers confuse between the concept of the crisis management and the management by crisis; there is a difference between them: the process of crisis management is different from the management by crisis. This difference can be explained through a review of some concepts of the management by crises.

El-Khudhiri defines it as the "science of crisis industry to

control and dominate the others". Showman stresses that the management by crises is "an act intends to stop or interrupt an activity and destabilize some conditions in order to make something of a change in that activity for its mastermind" [35].

From the contents of the previous concepts, we are aware that if the organization desires to fabricate or create a crisis for others, it uses the management by crises while the other team

that is the victim of this crisis fabrication, uses the crises management. This does not mean that all the crises which affect the organizations are fabricated by other organizations. They may even be naturally-occurred crises as a result of certain reasons.

The crisis planning process is a regular and continuing operation which aims to achieve efficiency and effectiveness in directing the available capacities of the organization in dealing with crises and facing them. In addition to the preparation to sudden situations faced by the organization because of crises, including the marketing crisis.

There are some sudden crises which are supposed to occur by marketing managers who own marketing information, and this is the point where the planning process for the marketing crisis should start [36].

The special plan of the marketing crisis management is the general framework which leads the marketing partners thinking to the performance of marketing activities using the administrative methodology, that is to say, moving away from the confusion and random in making marketing decisions.

The plan of the marketing crisis management should be a guide and not a process of heavy details for two reasons: for the flexibility and ease which are two advantages in helping in treating the marketing crisis. Each plan of the crisis management needs to take into account the potential widespread impact of crises. So, the organization should not deal with the crisis as an isolated event or a series of small events, but as a single major event which should be treated. The plan of the marketing crisis management includes what

follows: [37]

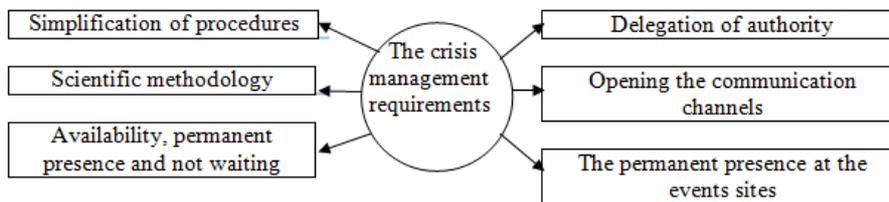
1. The individuals working in the field of marketing and their duties.
2. The methods of determining the marketing crisis and its definition.
3. The methods of involving in the management.
4. Effective marketing communications.
5. Mechanisms of reports preparation.
6. The marketing decision making process.
7. Administrations and facilities, such centers for the crisis management.
8. Levels of control and determinants of authority.

Based on the above, we believe that effective planning facilitates to focus on the main reason of the marketing crisis, as well as to provide the necessary time to know the dimensions of the crisis in terms of its causes and finding the tools and skills to alleviate the severity of the marketing crisis.

III. Marketing crises management requirements

In order to enable the organization to success in the management of its marketing crises, a set of necessary requirement should be provided. These requirements allow to the team of treating or managing the marketing crisis a good movement toward the crisis. Researchers have identified a set of requirements which are the element of strength and support to manage the marketing crisis in the organization.

Among the most important marketing crisis management requirements: [38] Do not complicate the procedures during the treatment of the crisis, good planning, effective coordination, permanent presence and delegation of authority.



Source: Khudhiri, Op. Cit., p. 133.

Figure (1). The marketing crisis management requirements.

There are also other requirements for the success of the crisis management: [39]

- Lack of tension.
- Understanding and unity.
- Changing the management styles.
- Using the scientific methodology in the analysis to alleviate the crisis.

Based on the above, it can be said that if the organization wants to manage successfully its marketing crises, it should facilitate things during the treatment of the crisis, in addition to the speed in completing works using the planning, organization and proper guidance with the need for team spirit, cohesion and harmony among the members of the crisis management team and facing the crisis using the attack method rather than defense, as well as the need to provide accurate information that will help decision makers to take the appropriate decision to confront the crisis and control its negative effects or alleviate it severity.

IV. Marketing crisis management stages

Organizations can deal with the crisis and manage it including the marketing crisis in a good way using the administrative functions represented by (planning, organization, implementation, following up, evaluation) as these functions facilitate to focus on the major crisis and the search for possible methods which help to alleviate the crisis severity. [40]

The nature of the marketing crisis makes relatively difficult the choice of one alternative to deal with it as the organization faces great difficulty when managing crises through specific alternatives. On the contrary, if the organization identifies many effective alternatives and chooses the best alternative, that ensures its success in dealing with the marketing crisis [41]. So, the determination of precise stages to manage the crisis is one of the most important conditions for the success of the organization, as putting intact and studied stages to manage the marketing, facilitates the marketing management through

the possibilities and available marketing information about the crisis and reduces its gravity and thus eliminates it. The following figure shows a set of stages that represent the process of dealing with the marketing crisis which can be considered as marketing crisis management stages.

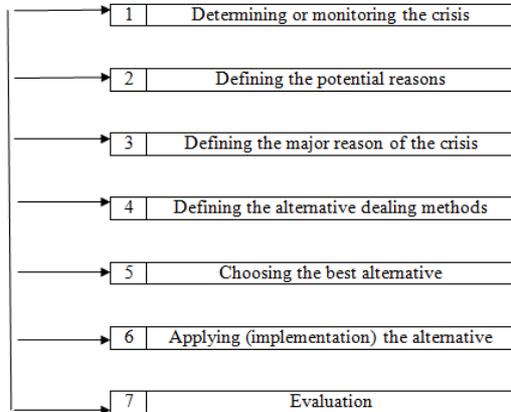


Figure (2). Crisis management stages.

Source: Abu Joumaa, Naeem Hafid, Unhealthy Marketing Phenomena in the Arab World, (Jordan: Second Arab Forum 2014), p. 47.

Figure (2) shows that dealing with the marketing crisis begins in the first stage with the process of identifying the type of the marketing crisis; is it large, medium, small, natural, sudden, repeated or non repeated and other classifications. Then identifying the most important potential causes of the marketing crisis, the main reason that led to the marketing crisis through the operations of analyzing and destructing the marketing crisis by the crisis management team, after, it comes the role of the process of determining the appropriate alternatives to deal with the marketing crisis and choosing the appropriate and effective alternative that reduces the severity of the crisis and its effects which might be represented by a decision or a set of decisions, new marketing procedures and the implementation of this alternative. The last stage which is the evaluation is the useful feedback at any stage of the previous stages.

The failure in dealing with the marketing crisis will pose a threat to the life of the organization when it loses its concentration on clients and market. [42]

So, organizations should diagnose their clients and markets during the crisis period; clients include individuals within the organization: the workers, especially in the field of marketing, as well as the owners and shareholders, in addition to those outside the organization: media, consumers, government

Table (5). Results summary of the marketing crises management dimension at the researched organizations.

Variable	Establishments	Existence range of variables		
		Arithmetic average	Response rate	Classification
Marketing crises management requirements	Sonelgaz Company	1.6506	82.6%	3
	Aures Dairy	1.800	90%	1
	Cement Company	1.690	84.5%	2
Marketing crises management stages	Sonelgaz Direction	1.653	82.65%	3
	Aures Dairy	1.80	90%	2
	Cement Company	1.88	94%	1

Source: prepared by the researchers based on data from the researched establishments

officials, business organizations and other groups that have a vital interest with the organization..... Consequently, we see that the marketing crisis management and successful handling must include all the aspects and units of the business at the organization, as well as the human resources efforts which are a key factor in the success of the organization which should work together to face the marketing crisis.

Axe 3: description and analysis of the research's variables

I. Description of the research variables

1. The variation in the availability of the marketing information systems at the establishments. This paragraph aims to test the first main hypothesis which states that there is a variation in the availability of the marketing information systems in the researched organizations. Table (4) shows the arithmetic averages for the availability of the marketing information systems as well as the response rate of each organization to this dimension.

Table (4). Results summary of the marketing information systems availability at the researched organizations.

Establishments	Availability range of systems		
	Arithmetic average	Response rate	Classification
Aures Dairy	1.850	92.5%	3
Sonelgaz company	2.000	100%	1
Cement Company	1.950	97.5%	2

Source: prepared by the researchers based on data from the researched establishments

According to table (4) data, there is a variation in the availability of the marketing information systems in the researched organizations. The Direction of Sonelgaz company Direction ranks first in terms of availability with an arithmetic average of (2.00) and a response rate of (100%). While the cement company comes in the second place with an arithmetic average of (1.95) and a response rate of (97.5%). Aures dairy ranks third with an arithmetic average of (1.85) and a response rate of (92.5%). Thereby, the indication of the first main hypothesis is correct and the hypothesis is accepted.

2. The variation in the marketing crises management at the establishments

The second main hypothesis which states that there is a variation in the marketing crises management at the researched organizations. Table (5) shows the political averages of the marketing crises management dimension, in addition to the response rate of the marketing crisis management dimension as well as the response rate of each organization to this dimension.

According to table (5) data, there is a variation in the marketing crises management requirements as the Aures dairy ranks first with an arithmetic average of (1.8) and a response rate of (90%). The cement company comes in the second place with an arithmetic average of (1.69) and a response rate of (84.5). Finally, the Sonelgaz direction with an arithmetic average of (1.6506) and a response rate of (82.6%).

The table shows the variation at the researched organizations in the stages of the marketing crisis management as the cement company achieves the first place with an arithmetic average of (1.88) and a response rate of (94%), followed by the Aures dairy with an arithmetic average of (1.80) and a response rate of (90%) and finally the Sonelgaz direction with an arithmetic average of (1.653) and a response rate of (82.7%).

Thus, the second main hypothesis that indicates the

Table (6). Correlations between the dimension of the marketing information systems and the variables of the marketing crises.

Adopted variables	Marketing crises variables			
	Independent dimension	Marketing crises management requirements	Marketing crises management stages	Overall index
Marketing information systems	*0.377		*0.371	*0.464

Source: prepared by the researchers based on data from the researched establishments

Based on the results of the simple correlation analysis between the marketing information systems and the variables of the marketing crises management, there is a significant positive correlation between them, as the correlation coefficient is between (0.377, 0.371). these relationships indicate that the existence of the marketing information systems contribute to determining the requirements of the crisis management and the stages of its management through the marketing information emanating from them and that help the marketing administration in making the right decisions. These results reflect the acceptance of the third main hypothesis which states that there is a significant correlation between the marketing information systems and the variables of the marketing crisis management at the overall level.

2. The impact relationships analysis

After clarifying the correlations between the research's variables, the impact relationships between the same variables is done in this chapter, to identify the degree of the impact of the marketing information systems on the variables of the marketing crises management in order to confirm the validity of the third main hypothesis which states that: "There is a significant impact of the marketing information systems dimension on the marketing crises dimension".

The data of table (8) of the declination analysis indicate that the value of the determination coefficient R^2 is (0.175), which means that 17.5% of the total variance of the marketing crises is due to the impact of the marketing information systems, while the remainder of 82.5% is due to random variables which cannot be controlled or they are not included originally in the declination model. This is

presence of a variation in the crises management represented by the basic variables of the marketing crisis (Marketing crisis management requirements, marketing crisis management stages) is accepted.

II. Research variables analysis

1. Correlations analysis

Table (6) shows the results of the analysis of the correlations between the independent dimension represented by the marketing information systems and the variables of the marketing crises management represented by (marketing crises management requirements and marketing crises management stages). The results show, at the level of the overall index, that there is a significant positive correlation between the dimension of the marketing information systems and the variables of the marketing crises management together if the correlation coefficient reaches (0.364).

supported by the F value which is calculated at 12.332 and it is more than its scheduled value of (4.00), at a freedom degree of (1.58), a level of significance of (0.05), from the analysis of the β value (0.681) and in terms of the t calculated value (3.512) which is more than its scheduled value (1.671), it is shown that there is an impact of the marketing information systems on the marketing crises.

Table (7). Analysis model of the impact relationship of the marketing information systems dimension on the marketing crises dimension.

Dependent dimension	Marketing crises			
	Independent dimension	R^2	B	F
Marketing information systems		0.175	0.681 (*3.512)	*12.332

Source: prepared by the researchers based on data from the researched establishments

Thus, the third main hypothesis that states (there is a significant impact of the marketing information systems dimension on the marketing crises dimension) is accepted.

To test the sub-hypotheses, the impact degree of the marketing information systems should be separately determined in each variable of the marketing crises management in accordance with sub-hypotheses emanating from the third main hypothesis.

A. The test of the first sub-hypothesis of the third main hypothesis which states that (there is a significant impact of the marketing information systems on the marketing crises management requirements).

Table (8). The impact relationships of the marketing information systems on the marketing crises management requirements.

Dependent dimension	Marketing crises management requirements		
	Independent dimension	R ²	F
Marketing information systems	0.135	0.789 (*3.006)	*9.038

Source: prepared by the researchers based on data from the researched establishments

We note that there is an impact of the marketing information systems on the variable of the marketing crisis management requirements as the value of the determination coefficient R² is (0.135). This indicates the amount explained by the marketing information systems in the change of the marketing crises management requirements of (13.5%), in terms of the F calculated value (9.038) which is more than its scheduled value of (4.00), at a degree of freedom of (1.58), level of significance (0.05), by following-up the β coefficient and in terms of the t calculated value (3.006) which is more than the scheduled value of (1.671), it is shown that there is an impact of the marketing information systems on the marketing crises management requirements. This supports the validity of the first sub-hypothesis of the third main hypothesis which states that there is a significant impact of the marketing information systems on the marketing crises management requirements.

B. The test of the second sub-hypothesis of the third main hypothesis which states that (there is a significant impact of the marketing information systems on identifying the stages of the marketing crises management).

Table (9). The impact relationships of the marketing information systems on the stages of the marketing crises management.

Dependent variable	Marketing crises management stages		
	Independent dimension	R ²	F
Marketing information systems	0.131	0.776(*2.252)	*8.716

The results of the declination analysis indicate that there is an impact of the dimension of the marketing information systems on the stages of the marketing crises management; the impact relationship is significant, as the value of R² is (0.131) which means that (13.1%) of the explained differences in the stages of the marketing crises is due to the impact of the dimension of the marketing information systems, while (86.9%) is due to random variables which cannot be controlled or they are not included in the declination model; in terms of the F value (8.716) which is more than its scheduled value of (4.00), at a degree of freedom of (1.58), a level of significance of (0.05) and by following-up the β (0.776%) and in terms of the t calculated value (*2.252) which is more than its scheduled value (1.671), it is shown that there is an impact relationship of the marketing information systems on the stages of the marketing crises management. This supports the validity of the second sub-hypothesis which indicates that (there is an impact of the marketing information systems on the stages of the marketing crises management).

7. Conclusion

From the above results, it is clearly shown the huge importance which the decision-makers should attach to the information systems and continuously and permanently developing them in establishments, because this will help a lot in reaching the best decision at the right time to deal with crises, disasters and emergency incidents.

Among the results obtained as follows:

There is variation in the availability of marketing information systems at enterprises in Batna, Sonelgaz company ranked first, while Cement company ranked second and ranked third Dairy Aures, Thus proving the discrepancy in the availability of marketing information systems and its components at enterprises in Batna.

A variation in the marketing crises management requirements where the Aures dairy ranks first, cement company comes in the second place, finally the Sonelgaz company. As well as the variation in the stages of the marketing crisis management as the cement company achieves the first place followed by the Aures dairy and finally the Sonelgaz company. And this indicates the presence of a variation in the crises management represented by the basic variables of the marketing crisis (Marketing crisis management requirements, marketing crisis management stages) at enterprises in Batna.

The results indicate that the contribution of marketing information systems to determine the crisis management requirements and managed stages through marketing information which helps in marketing management make the right decisions.

The results indicate that there is an impact of marketing information systems in marketing crises.

A set of recommendations can be provided:

1. Creation of automatic mechanism based on the fast and flexible response to the events and surprises and completely encircles the entire crisis situation by relying on the organization's database.
2. The necessity to focus on the method use and referring to the vocabulary of the electronic process to obtain the appropriate information at the right time to support the crisis management, reduce its causes and encircle it.
3. The necessity for the organizations to rely on providing an information system of high efficiency to meet their needs and modify their operations in accordance with the crisis situation up to an administrative decision to treat the crisis.
4. The necessity for the organization to have the decision making electronics to provide appropriate information for the purpose of crisis treatment and management.

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