

# The Effect of the Marketing Information System (MKIS) on Decision Making: "An Applied Study on a Saudi Telecommunication Company (STC)"

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**Abstract**— The study aims at measuring the effect of the Marketing Information System (MKIS) on decision making and highlighting the significance and importance of using the MKIS in decision-making. Further, the study describes the process of decision-making that are taken by managers using the MKIS. The study also aims to form the necessary requirements for achieving a successful implementation to the MKIS in decision-making. The MKIS shows that the roles of computer-based support for developing the marketing strategy present a real challenge to individual computer-based techniques and technologies in an ever fast-changing environment. These roles are provided by additional criteria to demonstrate the importance of the internal database, marketing research and marketing intelligence criteria along with their influences on the success of the organisational decision-making. The empirical research method represents an expert assessment that is based on given questionnaires to voluntarily and randomly selected respondents. The correlation analysis is employed to test the validity of the procedure. Further, the findings that are obtained from the empirical study confirm positive relationships among the top management that is adopted by a number of MKIS elements and the success of an organizational decision making. The study offers more effective understandings of the performance-increasing market share as an organizational decision making based on the MKIS research. Such understandings are acquired by investigating a structural MKIS among internal database, marketing research and marketing intelligence systems.

**Keyword (s):** Marketing Information System, Internal data base, Marketing research, Marketing intelligence, Decision-making.

## 1. Introduction

Marketing activities are directed toward planning, promoting, and selling goods and services to satisfy the needs of customers and the objectives of the

organizations; marketing information systems (MKIS) support decision making regarding to these activities (Harmon, 2003). (MKIS) is a continuing and interacting structure consist of

people, equipment and procedures designed to gather, sort, analyze, evaluate and distribute needed, timely and accurate information to marketing decision makers; it begins and ends with information users- marketing managers, internal external partners, and others who need marketing information (Kotler and Armstrong, 2008). Successful business strategies and operations depend on successful decision-making. Marketing strategies are the means by which the company's marketing objectives will be achieved (McDonald, 1996). Marketing strategy development is concerned with devising the means by which the company can effectively differentiate itself from its competition, by capitalizing on its strengths to provide better value to its customers over time. The purpose of marketing strategy development is to establish, build, defend, and maintain competitive advantage (McDonald, 1992). The development of marketing strategy requires both comprehensive analysis of internal and external environments and a synthesis of useful information (Mintzberg, 1994a). It requires managers to deal with issues that involved a high degree of uncertainty and ambiguity (Brownlie and Spender, 1995). It also involves managers' intuition and judgment (Mintzberg, 1994a). Marketing information system is efficient tool providing past, present and projected information relating to internal operations and external intelligence (Armstrong and Kotler, 2007). The ultimate purpose of MKIS is to facilitate managers mission to make decision at all levels of operations based upon the information flow. Information is the essential ingredient of management and decision-making for both external and internal factors. Higher level of

management is concerned with external factors such as new and proposed government legislation, changes in the market, economic Status, competitor's actions, etc. At lower levels, external influences are considered less important. A value of information can be computed for decisions, which fits these frameworks of analysis.

Marketing strategy development needs much experience and extensive domain knowledge (McDonald and Wilson, 1990). Systematic analysis and strategic thinking are essential to the formulation of sound strategy. In recent years, the use of computer-based information systems in developing marketing strategy has gained attention from academic researchers. Decision support systems (DSSs) have been developed to assist with the formulation of marketing strategy using quantitative models and analytical techniques (Wilson and McDonald, 1994; Belardo et al., 1994). Efforts have also been made to apply expert systems (ESs) in supporting strategic marketing by offering domain knowledge and intelligent advice (McDonald, 1989a).

## 2. Study Problem

The problem of the study is to measure the importance and the effect of marketing information systems on decision making, where decision making always involves risk since it is concerned with assessment of future outcomes and events, none of which can be known. Information reduces uncertainty and helps marketing manager to see the likely effects of various decisions but the information system does not make the actual decisions – that is a MKIS function. The function of MKIS is to provide decision makers with timely and accurate data to

allow making and implementing the necessary decisions to optimise the interrelationships most effectively reach the organizations predetermined goals.

### 3. Study Importance

The research focus on highlighting the elements of MKIS, and why MKIS is important to decision makers? Moreover, The study aims at exploring the followings:-

- Present an overview for MKIS components and its importance to the decision makers.
- Outline the necessary requirement for successful decision making by implementing MKIS.

### 4. Study Objectives and its Questions

This study attempt to examine the role of MKIS elements in taking the right decision in the right time, so the study seeks to answer the following questions:

1. Does the company data base contribute positively to take the right decision by decision maker?
2. Does the marketing research of the company contribute positively to take the right decision by decision maker?
3. Does the marketing intelligence of the company contribute positively to take the right decision by decision maker?

### 5. Study Hypotheses

In order to investigate the effect of marketing information system criteria on decision-making. The researcher proposed the following research hypothesis:

**H1:** There is a positive relationship between the data base utilizing and the right decision making.

**H2:** There is a positive relationship between marketing research and the right decision making.

**H3:** There is a positive relationship between marketing intelligence and the right decision making.

### 6. Study Model

**Independent Variable (MKIS)**  
**Dependent Variable (Decision Making)**

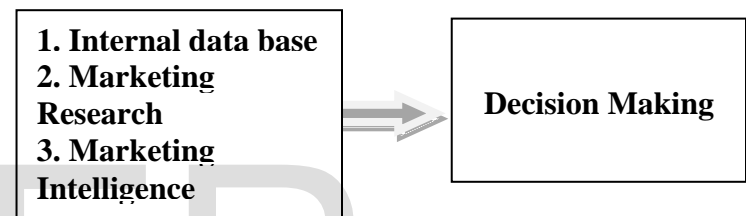


Figure 1. Study Model

### 7. Theoretical framework

To help managers to foresee the changes in markets or customer's preferences, you need sound information system, which known as (MKIS) marketing information system. MKIS collect the relevant data; organize it into something meaningful, make recommendations based on these figures and then stock it up for future use (King, 2010). MKIS is a computerized system that designed to provide an organized flow of information to enable and support the marketing activities of an organization; Which serves collaborative, analytical and operational needs, designed to be comprehensive and flexible in nature and to integrate with each other (Harmon, 2003). Kotler (2002) define MKIS as: "A marketing information

system is a continuing and interacting structure of people, equipment and procedures designed to gather, sort, analyze, evaluate and distribute pertinent, timely and accurate information for use by marketing decision makers to improve their marketing planning, execution and control.”

Marketing information system plays an important role in raising the efficiency of economic performance to the companies in highly competitive markets, through providing the necessary information for the various administrative levels. The success of the marketing process depends to a large extent on the marketing information system and the success in each elements of this system (Freihat, 2012).

Market information includes all facts, estimates, opinions and other information used in marketing decisions, which affects the marketing of goods. Goods are produced or purchased for resale in anticipant of demand. Therefore, the success of a producer or a merchant depends upon the knowledge of the demands of his product or products in the market. In the modern method of marketing it is necessary for a manufacturer to possess accurate information on the following points: What goods do consumers want? At what time do they want them? In what quantity is a product wanted? How the product of the consumers wants a particular product? How the product can be made available to the consumers? How many new customers can be attracted to purchase a product and how? Whether there is any competition already in the market. (O'Brien, *et al.* 1995).

### **3. Components and Elements of Marketing Information Systems (MKIS)**

MKIS design is important since the quality of marketing information system has been shown to affect the effectiveness of decision- making (Jobber and Fahy, 2006). The MKIS comprises the following four elements:

#### **3.1. Internal data base**

Many companies build extensive internal data base, electronic collections of consumers and market information obtained from data source within the company network. Marketing managers can readily access and work with information in the data base to identify marketing opportunities and problems, plan programs and evaluate performance (Kotler and Armstrong, 2008). Internal data bases usually can be accessed more quickly and cheaply than other information sources (Pride and Ferrell, 2006).

#### **3. 2. Marketing Intelligence**

Marketing intelligence (MI) systems increasingly provide the data that drivers both strategic and tactical decision for enterprise. Many businesses have already invested heavily to aggregate data from diverse system and applications in order to create a whole-enterprise view to fully reflect the daily state of business, as well as support more effective, informed decisions (Jazdtech, 2010). A marketing intelligence system is a set of procedures and data sources used by marketing managers to sift information from the economic and business environment that they can use in their decision making (Fao.Org., 2010

#### **3. 3. Marketing Research**

Marketing research is a proactive search for information to solve a perceived marketing problem; Marketing research is the systematic and objective identification, collection, analysis, dissemination, and use of information and solution of problems and opportunities in marketing (Malhotra N. K, 2007). The American Marketing Association formally defined marketing research as a function that links the consumer, customer, and public to the marketer through information-information used to identify and define marketing opportunities and problems; generate, refine, and evaluate marketing actions; monitor marketing performance; and improve understanding of marketing as a process.

#### **4. Decision-Making**

Decision making is the point at which plans, policies and objectives are translated into concrete actions. Planning leads to sound decision-making and that implies the selection from alternatives course of actions. Decision making is the core of planning, for instance, choosing of objectives, policies, procedures, programmes, rules, strategies and tactics etc., require the entire process of decision-making. Therefore, the quality of marketing management decision is linked with the quality, quantity, adequacy and speedy availability of data (Delone and Mclean, 1992). The purpose of decision making as well as a planning is to direct human behaviour and effort towards future objectives. In the entire process of marketing activities, making decisions is always essential (Tripalhi and Reddy, 1997).

#### **5. Information Systems and Decision Making**

The relationship between information systems and decision making is a strong one. The availability of information in large quantities means power, provides organizational options, and an effective decision maker can determine the best options at a tremendous speed, but sometimes the decision maker cannot obtain information due to lack of availability or lack of access. Because the prices and the cost of collection is very high, the less information the greater the ambiguity and increased the degree of risk and the increased risk of non-decision (Amin AAH, 2001). But after the adoption of the modern scientific method in management, the decision is no more made by intuition or guessing or even based on the experience of the manager, but depends on the exact search which could not be achieved except by collecting data on all aspects of the problem then analyzing, interpreting and translating it into reality to help making the decision (Hussein A, 2008).

#### **6. The Saudi Telecommunication Company**

##### **Company Overview**

The Saudi Telecommunication Company (STC) has a workforce of 17,000. The Saudi government owns a share of 70% while 30% is privately owned. The company was founded in 1998 as the Saudi Joint Stock Company in pursuant of the Royal Decree No. M/35 dated 24 Dhul Hijja 1418 H. The company offers integrated services such as fixed lines; mobile phone services; internet and multimedia services to more than 160 million customers that abound in Saudi Arabia and in International locations (El Emary et al., 2012). The company is considered to be the largest telecommunication company by market

capitalization. STC operates through its five business units: Al Hatif, which includes landline services, card phones, public telephones, prepaid card services and business services; Al Jawal, which offers a range of mobile services, including Family Al Jawal, Sawa, messaging services, business services, data services and roaming services; Saudi Net, an Internet provider, STC Online for electronic bills payment services and Saudi Data, a provider of data solutions. The company has expanded operations to other countries such as Turkey, Bahrain, Kuwait, Malaysia, Indonesia, South Africa, and India. As part of its corporate social responsibility, the Saudi government declared 30% of STC shares for sale to Saudi citizens and organizations. Specifically, 20% was allotted to Saudi citizens, 5% to the General Organization of Social Insurance (GOSI), and 5% to the Pension Funds Organization (PFO) (Franklin and Aguenza, 2016).

Saudi Telecom Company (STC) entered the Asian markets as part of a strategy to strengthen its global presence. This goal has been accomplished through rapid widening and geographic reach in populous high growth markets via targeted acquisitions, described by some scholars as accelerated internationalization. "The information and communication technology sector are one of the most important and dynamic sectors because it contributes to sustainable development in all scientific, cultural and social areas." (Communications and Information Technology Commission, 2019).

## 7. Previous studies

The study of (Al-Bashabsheh, 2015) aimed to identify the effect of the quality

of administrative information in raising the level of job performance in Jordanian Social Security Institution. It also aims to identify the reality of the quality of management information systems in this institution, and the level of job performance. The study concluded that there is an important impact of the quality of information systems in raising the level of job performance.

The study by (Queiroz and Oliveira, 2014) in their paper on benefits of the marketing information system in the clothing retail business familiarized with the benefits of the marketing information system in companies that operate in the retail business. A field research was done in a major clothing retailer, by means of a case study that consisted of interviews with two employees of the company, one from the top management and one from the marketing area, based on a semi-structured script, in addition to a documental analysis. The results indicate that information and its systematization possess great importance for the development of competitiveness, contributing to the development of the operations and to the promotion of new business opportunities, as provided by the pertinent literature.

The study of (Berhan, Paul and Jan, 2012) viewed that it is impossible to consider marketing without an information system. In this context, they argue that many companies combine marketing policies and techniques with information technologies, enabling managers to offer distinctive services

and products, create value for the clients and generate profits for the organization. Thus, the company's structure must be learning-process oriented, capable of obtaining relevant information from the data related to the decisions to be made and such decisions pertain to the strategies and actions which enable the defined goals to be met.

The study of (Ismail, 2011) This study aimed at highlighting the significance and importance of utilizing marketing information system (MKIS) on decision-making, by clarifying the need for quick and efficient decision-making due to time saving and preventing of duplication in work. The empirical study findings confirmed positive relationships between the level of utilizing and adopting "decision support system & marketing intelligence" and the success of an organizational decision making.

The study of (Al-Din, 2009) The purpose of this study was to determine the importance of using marketing information systems in the five-star hotels operating in Jordan. The most important findings of the study were: marketing information systems had great importance and role in the hotels included in the study, which in turn led to the growth of the five-star hotels market share for the period (2004-2007), the growth of the five-star hotels market share is attributed to the effectiveness of marketing tourism activities, and the effect of each element of the marketing information systems and their role in improving services offered, based on marketing studies, database marketing, and marketing planning, which in turn

impact positively on the increasing rate of accommodation for tourists, and the increasing in sales volume, and thus increasing market share.

The study of (Al-Mousa, 2007) The purpose of this study was to determine the level of using the integrated marketing communication sample in the major Saudi companies, which is one of the recent applications that have emerged in the nineties of the previous century to overcome money and business programs marketing communications companies obstacles, in the United States as a result of the enormous developments in the communications and marketing environment. The study has been successful in developing a scientific scale measures the levels of integration in the major Saudi companies marketing communications.

The study of (Farahtyah, 2006) The study aimed at shedding light on the marketing information system and its role in providing accurate and comprehensive information for the planning and controlling of marketing activity. The most important recommendations of the study are linking the various sections of the company with an effective information system to improve the company's performance, recruiting specialized competencies and conducting training courses on the use of information technology.

The study of (Wober, 2006) This study aimed at improving the efficiency of marketing information access and use by tourism organizations. The database

used in the study is a collection of tourism statistics that has been created by the Austrian National Tourist Office in close collaboration with the Vienna University for Economics. Economics. The online hypertext database is called Tour MIS and is implemented on the World Wide Web and used by 256 European tourism managers. Analyses of the server's log file shows a significant correlation between different presentation styles and the usability of the system. Exploring content and quantity of requested information by user groups also lead to results which will contribute to a more efficient architecture of marketing information systems in tourism.

The study of (Al-Mahasneh, 2005) This study aimed at identifying the impact of the efficiency of information systems in the effectiveness of decision making in customs department, by identifying the trends of individuals of the sample towards the efficiency of information systems, the effectiveness of decision making and analyzing the impact of the efficiency of information systems in the effectiveness of decision. The researcher concluded that Management Information Systems in Customs Department has high quality and efficiency also the decision making process in this department is highly effective moreover there is a significant correlation between the independent variable (the efficiency of information systems) and the dependent variable (the effectiveness of decision making process).

The study of (Darman, Solomon sateck, 2003) The purpose of this study was to

determine the role of marketing intelligence system in marketing decisions making. The most important findings of the study were: The degree of marketing decision accuracy corresponds to high extent to the level of appropriate, important, and accurate information available to the decision maker, the degree of marketing decisions need for the external information is more than its level in other administrative areas, because the latter can be taken without relying on external information, while the marketing decisions are rarely taken without relying on external information.

The study of (Tao and Yeh, 2003) introduce two simple yet essential database-marketing tools: i. usage segment code (USC). ii. Net revenue equation (NRE). And their applications in the top ten US credit card business. The promising results further demonstrate that simple yet creative ideas can be converted into powerful database marketing tools to increase the return on investment in a marketing database.

The study of O'Brien *et al.* (1995) mentioned that the volume of data available to the marketing function in customer products companies has grown exponentially throughout the past decade. With this explosive growth has come a corresponding need to transform the data into information, which is usable to assist marketing managers in making business decisions.

## 8. Results and Discussion

A total of 100 fully completed questionnaires were processed, the response rate of this survey is 80%



which was desirable and higher than corresponded research in social science.

For investigating the MKIS elements of the questionnaire, the most common index of reliability, namely Cronbach's coefficient alpha for each criterion of

Table (1): Cronbach's coefficient alpha of MKIS

Relationship Marketing Criteria	Cronbach's Coefficient Alpha
Data Base	0.8433
Marketing Research	0.8697
Marketing Intelligence	0.8721

### 9. Hypothesis Testing

Table (2)

Descriptive statistics for utilizing market concept

variable	mean	Std.deviation	K.S value	Sig.
Data base	3.38	0.81	2.04	0.00
Decision-making	3.73	0.77	1.54	0.02

Descriptive analysis Shows that the mean value of Adopting internal data base was (3.38) with std.deviation value (0.81), and the mean value for right decision making was (3.73) with std.deviation value (0.77), which means that there are positive attitudes toward

To investigate first hypothesis simple regression analysis was applied table (3) shows that:

MKIS elements was computed. The result of alphas that exceeded the threshold of 0.7 has been listed in Table (1). The scores in the range of 0.8 are considered good providing support for the reliability of the questionnaire.

The aim of this project is to study the relationship between MKIS elements and decision- making. The result will display by following hypothesis:

**H1:** There is a positive relationship between the degree of data base adopting and the right decision making.

To investigate hypothesis number one of the study, descriptive statistics of variables were computed, table number (2) shows that:

these variables because their means are above mean of the scale (3). Also, the value of normality test for Using MKIS concept was (2.04), and for increasing decision making was (1.54) which is a significant value this means that the distribution of the variables was normal

Table (3)

**Regression analysis for utilizing market concept \***

Model	r	R-square	$\beta$	t	Sig.	F	Sig.	Result
Adopting data base	0.57	0.33	0.54	13.67	0.00	187.07	0.00	reject Null

the analysis shows that there is a relationship between data base, and decision making, r. value reached (0.57), f. value reached (187.07) by significant (0.00), this indicate there is a positive relationship between the two variables. So null hypothesis was rejected.

**H2:** There is a positive relationship between the degrees of marketing research an adopting and the right decision making.

To investigate hypothesis two of the study, descriptive statistics of variables were computed table (4) shows that:

**Table (4)**

**Descriptive statistics of Adopting data base**

variable	Mean	Std.deviation	K.S value	Sig.
Marketing research	3.38	0.84	1.94	0.00

Shows that the mean value of the degree of Adopting marketing research was (3.38) with std.deviation value (0.84). Which means that there are positive Relationship between MKG research and decision-making.

To investigate second hypothesis simple regression analysis was applied; table (5) shows that:

**Table (5)**

**Regression analysis for marketing Research**

Model	r	R-square	$\beta$	t	Sig.	F	Sig.	Hypothesis Result
Marketing research	0.56	0.32	0.51	13.23	0.00	175.15	0.00	reject Null

shows there is a relationship between degree of Adopting MKG research and decision- making. r. Value reached (0.56), F. Value Reached (175.15) by significant (0.00), this indicate there is a relationship between MKG research and decision- making. So Null hypothesis was rejected.

**H3:** There is a positive relationship between degree of marketing intelligence adopting and the right decision making.

To investigate hypothesis three of the study, descriptive statistics of variables were computed, table (6) shows that:

**Table (6)**

**Descriptive statistics for Marketing intelligence**

variable	means	Std.deviation	K.S test	sig
Marketing intelligence	3.27	0.83	2.19	0.00

Shows that the mean value of Adopting MKG intelligence was (3.27) with std.deviation value (0.83), which means that there are positive relationship MKG intelligence and decision making. their means are above mean of the scale (3). and the value of normality test was

(2.19) which is a significant value..

To investigate hypothesis three simple regression analyses was applied; table (7) shows that:

**Table (7)**

**Regression analysis for Marketing intelligence**

Model	r	R-square	$\beta$	t	Sig.	F	Sig.	Hypothesis Result
Marketing intelligence	0.54	0.29	0.49	12.5	0.00	156.65	0.00	reject Null

shows there is a relationship between degree of Adopting marketing intelligence and decision- making. r. Value reached (0.54), F. Value Reached (156.65) by significant (0.00), this indicate there is a relationship between Adopting marketing intelligence and decision- making. So, hypo Null hypothesis was rejected.

projected information relating to internal operations and external intelligence. It supports the planning, control, and operational function in (STC) by furnishing uniform information in the proper time frame to assist the decision maker. The ultimate purpose of MKIS is to facilitate mangers mission to make decision at all levels of operations based upon the information flow. Information is the essential ingredient of management and decision making for both external and internal factors.

**10. Future Research**

It is useful to replicate this research in other contexts. It is also suggested that future researchers investigate each part of MKIS separately to concentrate more on specific issues related to each part.

The summary result will be as following:

**11. Conclusion and Recommendation**

**A- Conclusions**

The paper provides a conceptual framework for the implementation of all parts of MKIS for marketing strategy development and strategic marketing planning for (STC). MKIS is efficient tool providing past, present and

1- There is a relationship between the degree of adopting internal data base and the right decision- making. whenever (r. value) reached (0.57) and (f. value) reached (187.07) by significant (0.00), this indicate there is a relationship between the two variables.

2- There is a relationship between the degree of adopting MKG research and the right decision taken by marketing

manager. whenever (r. Value) reached (0.56) and (F. Value) Reached (175.15) by significant (0.00), this indicate there is a positive relationship between the two variables.

3- There is a relationship between the degree of adopting MKG intelligence and the right decision taken by marketing manager. whenever (r. Value) reached (0.54) and (F. Value) Reached (156.65) by significant (0.00), this indicate to a positive relationship between the two variables.

### **B- Recommendations**

Telecommunication Company (STC) must rely more on MKIS to take the right decisions (Programmed, Non Programmed, strategic and tactical decisions) to differentiate it self and its services from other competitors. The importance of adopting MKIS elements by decision maker, which help them to take the right decision at the right time to minimize cost and to maximize profit.

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