EFFECTIVE MARKETING INFORMATION SYSTEM AND ORGANIZATIONAL DECISION-MAKING IN THE NIGERIAN TELECOMMUNICATIONS INDUSTRY

BY

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BEING A DISSERTATIONSUBMITTED TO THE DEPARTMENT OF BUSINESS ADMINISTRATION& MARKETING, FACULTY OF MANAGEMENT SCIENCES,
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DECLARATION

I hereby declare that this is an original research work carried out by me in the Department of Business Administration and Marketing, Faculty of management sciences.

……..
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CERTIFICATION

This is to certify that this research work was carried out by **Ojieh, Magnus** with mat. No. **PG/13/14/222254** in the Department of Business Administration and Marketing and that, it is adequate in scope and content and has been approved by the undersigned on behalf of Delta State University, Asaba Campus.

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DEDICATION

I dedicate this project to Almighty God for His providence, guidance, and grace upon me during the period of this research work. To Him I return all the glory, honour, majesty and adoration in Jesus, Amen.

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ABSTRACT

This study examined effective marketing information system and organizational decision making in the Nigerian telecommunications industry. The study employed a cross-section survey research design method and the sampling procedure adopted was the stratified sampling method. Correlation and multiple regressions were used as the analytical tools. The findings of the study revealed that internal record system has positive relationship with organizational decision-making; marketing intelligence system has significant impact on organizational decision-making; marketing research system affects organizational decision-making and that there is positive relationship between marketing decision support system and organizational decision-making. It concludes that internal record system enhances organizational decision-making as it enables organizations target their marketing efforts at customers who have the highest probabilities of purchase and that marketing intelligence system has positive effect on organizational decision making. This is because marketing intelligence teams are very sensitive to detect useful data from organizations' database marketing. It finally recommends that Managers of the telecommunications firms should ensure that marketing research system is installed in the organization to enable them get relevant information that will aid them make appropriate decision. And that telecommunications firms should ensure that decision support system is installed in their organizations to help managers in making decision that needs modeling, formulation, calculating, comparing, and selecting the best option available for them. The study provided information that when marketing intelligence system is installed in telecommunications firms, it will influence their decision making. The study has also provided a modified model on marketing decision support system and states that marketing decision support system helps marketing managers in making decisions that need modeling, calculating and comparison.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Marketing is a dynamic field of study that has evolved and responded to the dynamics in external business environment. Many companies today including telecommunications firms are aggregation of many business units spanning many product lines, so they need to leverage their customers' base to maximize opportunities and manage customers across divisions. "In recent times, contemporary marketing thoughts seem to have emerged and appears to have changed the modusoperadi of marketing" (Nwokah and Ezirim, 2010). One of these contemporary thoughts is marketing information system. In every organization, marketing information system seems to be an efficient tool for giving past, present and future information relating to internal and external intelligence operations. It could support the planning, control, and operational function in organizations by providing related information in the appropriate time frame to assist the decision makers.

Marketing information may be the lifeblood of marketing process of an organization. Also, marketing decision may not be taken without marketing information. It may be affected by many internal and external environmental factors. The marketing decision maker therefore may need a great deal of information related to these factors, to predict their directions and their expected effects on the internal operations of the organization and the market, in order to make the rational marketing decisions in an uncertain environment facing the marketing administration. The marketing achievement in an organization may depend on the availability and the accuracy of marketing information from its multiple sources.

Information and reliable data may form the bedrock of any management decision. They could also form the basis for all the diagnostic and prognostic efforts of managers. From a marketing stand point, problems can only be anticipated, identified, analyzed and resolved or prevented if accurate and reliable, relevant information can be obtained promptly from both internal and external sources. This overriding importance of marketing information is so obvious that every trained marketing manager or executive makes deliberate and sustained efforts to generate, analyze and use reliable marketing related information (Igbaekemen, 2014). A great number of companies today are confronted with a continuously changing and highly competitive environment. As a result, the value of information increases since it could become one of the most valuable assets in ranking the competitive rivalry of the modern markets. This, in turn, calls for a systematic organization and development of marketing information system which can effectively collect, process and diffuse the necessary information available both to the internal and external levels (George and Kalliopi, 2006).

Marketing managers could readily access and work with information in the internal records to identify marketing opportunities and problems, plan programs, and evaluate performance of the organization. A system of internal control could be put in place to keep the organization on course towards good customers' service delivery, profitability, goals and achievement of their missions and to minimize losses and inefficiencies. An effective internal control system may help management to deal with rapidly changing economic and competitive environments, shifting customer demands and priorities and restructuring for future growth. It may promote efficiency, reduce risks

of asset loss, and help ensure the reliability of financial statements and compliance with laws and regulations.

Marketing decision made without information is like groping in the dark. Also, too much information could be just as dangerous as too little information. According to Awulu (2014), Modern marketing decision recognizes the necessity for myths and pitfalls of the marketing information system. For marketing decision to be effective and efficient, the relevant organization must appreciate the need for information system with a well-established set of objectives guiding its installation and use. Modern marketing decision seems to recognize the importance of doing things in a logical and systematic and sequential fashion. Furthermore, the process of collecting and analyzing of data for the purposes of identifying and resolving problems related to organizations' marketing services and marketing opportunities is a planned and managed activity on a scientific basis to ensure efficiency in dealing with those problems and opportunities. It is my intention to find out whether marketing information system can support managers in their marketing decision making by providing them with internal linking and operational integration between departments or sections. It could also increase the ability to respond to the organizational dynamic environmental system, allows the most efficient handling, organize, store and analyze data.

Nigeria has one of the largest and fastest growing telecom markets in Africa. The sector attracts considerable foreign investment given the potential for further growth. Far reaching liberalization has led to hundreds of companies providing all kinds of telecom and value-added services in an independently regulated market. The mobile sector saw triple-digit growth rates five years in a row after competition was introduced. Other than

the key mobile network operators, there are a number of additional players operating under a unified licensing regime. This regime has also boosted the country's underdeveloped broadband sector. Mobile services using third and fourth generation technologies, as well as WIMAX wireless broadband services, are being rolled out rapidly, backed by new national and international fiber links.

Although there seem to be some work done on the area of this study, most of the studies were done outside Nigerian context. Findings of some of the studies were not consistent. This however created gap in knowledge which this study tends to fill. Therefore, this study seeks to examine the impact of marketing information system on organizational decision making in the Nigerian telecommunications industry.

1.2 Statement of the Problem

Despite the pace of change with Nigeria's telecom infrastructure and the use of marketing information systems, most of the firms seem to be under satisfying their customers. This could be due to the fact that managers who use the marketing information system data seem to impose their private choice on the information, as well as on the ways of manipulating them. It should be noted that there are many obstacles that prevent the free flow of information, such as fear of the implementation, and personal reasons, mainly from the standpoint of self-protection within the organization. One of the problems facing the use of marketing information system could be the way in which institutional relations hinder the use of marketing information systems. Interactions problems faces marketing information system especially in the stages of creation and developments of the system, in addition to other problems related to

planning and control, there is the problem of the degree of change resistance that can be directed to this change in different kinds of circumstances, which is the result of the new entity existence.

Increasingly marketing executives seem to be viewing information not only as an input for efficient marketing decisions but also as an important strategic tool that could bring competitive edge which could be hard to prevent. Unfortunately greater numbers of organizations struggling to survive in the rapidly changing turbulent global business environment at present seem not to have realized the relevance of Marketing Information Systems which provides the holistic view of marketing strategies. They seem to find it difficult to incorporate internal record system, marketing intelligence system, marketing research system and marketing decision support system for making effective decision. These are problems most telecommunications firms are facing.

1.3 Objectives of the Study

The general objective of this study is to examine the impact of effective marketing information system on organizational decision-making in the Nigerian telecommunications industry. The specific objectives are to:

i. Determine the effect of internal record system on organizational decision-making.
ii. Ascertain the impact of marketing intelligence system on organizational decision-making.
iii. Examine the impact of marketing research system on organizational decision-making.
iv. Determine the effect of marketing decision support system on organizational decision-making.

1.4 Research Questions

This study is guided by the following research questions:

i. What is the effect of internal record system on organizational decision-making?

ii. What is the impact of marketing intelligence system on organizational decision-making?

iii. To what extent does marketing research system affect organizational decision-making?

iv. Does marketing decision support system affect organizational decision-making?

1.5 Research Hypotheses

HO_1: There is no significant relationship between internal record system and organizational decision-making**.**

HO_2: Marketing intelligence system has no significant relationship with organizational decision making.

HO_3: There is no significant relationship between marketing research system and organizational decision-making.

HO_4: There is no significant relationship between marketing decision support system and organizational decision making.

1.6 Significance of the Study

This study is significant because it enriches the extant body of knowledge by integrating the factors in a manner that has not been done previously. Specifically, this study accesses MTN, Globacom, Etisalat and Airtel.

Telecommunication regulators will benefit from this study because it will help them to understand the marketing information system that have been put in place by the telecommunication firms and support them through appropriate regulations to make appropriate decisions that will guarantee customer value and satisfaction with the services / products provided by the firms. In this area, researchers will also benefit from this study. As the study will be reference material, an addition to the existing literature on the subject matter.

The study will be of significance to the government because it will help it to recognize and regulate the activities of Telecom operators as it affect their customers. They will also use the information in this study to guide their thinking and actions.

Other business organizations in the country will also benefit from this study because it will help them to realize that effective marketing information system is a kind of tool and asset in the organization. As a result, they will do everything to increase this asset. When they do this, it will help them in taking marketing decision.

Finally, this study will provide information as regards how internal record system, marketing intelligence system, marketing research system, and marketing decision support analysis relate with organizational decision-making of Nigerian telecommunications industry.

1.7 Scope of the Study

This study covers the effect of effective marketing information system on organizational decision making in the Nigerian telecommunications Industry. It also covers the four telecommunications firms in Asaba, Oshimili South Local Government Area and capital of Delta State. These telecommunications firms were selected because the researcher perceives that they lack information needed for effective management of customers. They were also chosen because the information received from them can be used to access the entire telecommunications firms in the federation since they perform related services.

The population element employed for this study was limited to few staff and customers of the telecommunications firms. The adopted indicators for this study include internal record system, marketing intelligence system, marketing research system, and marketing decision support analysis. It was presumed that the indicators would make for easy measurement of effective marketing information system on organizational decision-making in the Nigerian telecommunications Industry.

1.8 Limitations of the Study

It is assumed that the researcher will encounter some problems while carrying out this study. Therefore, the problems encountered are:

Many employees of the firms in the Nigerian telecommunications industry disliked activities that appear to be probing them. They seem to have special liking for secrecy, thereby avoid researchers.

Some subscribers of the networks were illiterate and therefore cannot be useful for the research since they were afraid that if they give out right information, it will be used against them.

Finally, there was no much work done by researchers in the areas of this study. The researcher therefore found it difficult to get materials for the literature review.

1.9 Operational Definition of Terms

Marketing information system: Marketing information system 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 end with information users- marketing managers, internal external partners, and others who need marketing information (Kotler and Armstrong, 2008).

Internal Record System: Tapp (2008) defined internal record system as 'a comprehensive collection of interrelated data serving multiple applications, allowing timely and accurate on-demand retrieval of relevant data and having a data management system independent of applications'.

Marketing Intelligence: 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).

Marketing Research System: Marketing research is the systematic and objective identification, collection, analysis, dissemination, and use of information and solution of problems and opportunities in marketing (Malhotra, 2007).

Marketing Decision Support System: A decision support system (DSS) is an integrated set of computer tools allowing a decision maker to interact directly with computer to retrieve information useful in making semi structured and unstructured decisions (Power, 2002, Ezine, 2010, James, 1998). It provides the user with the ability to explore multiple options (Harmon, 2003).

Organizational Marketing Decision-Making: According to Awulu (2011),Organizational decision-making is a conscious human process, a particular course of action from among a set of possible alternatives to decide means to come to a conclusion or resolution. According to Fremount, et al, (1970), decision-making is defined as the conscious and human process, involving both individual and social phenomenon based upon factual and value premises, which concludes with a choice of one behavioral activity from among one or more alternatives with the intention of moving toward some desired state of affairs.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this chapter, the theoretical perspective was reviewed. Areas such as: concept of marketing information system, components of marketing information system such as internal records (data bases), marketing intelligence, marketing research and decision support system. This chapter also discusses decision-making, etc. under the discussion of decision making, the chapter discussed the types of decisions- unstructured decisions, semi-structured decisions and structured decisions. In this chapter, decision is classified into programmed decisions, non-programmed decisions, strategic decision, organizational decision-making and tactical decision. The study considered systems theory ideal and relevant to present fundamental concepts in this study. The chapter also reviewed empirical studies on the area of study. Nigerian telecommunications industry was also discussed in this chapter. This chapter also provides the conceptual framework for the study.

2.2 Conceptual Review

2.2.1 Concept of Marketing Information System

Marketing Information System 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 end with information users- marketing managers, internal external partners, and others who need marketing information (Kotler and Armstrong, 2008). Boone and

Kurtz (2007) defined marketing information system as "a planned computer- based system designed to provide managers with continuous flow of information relevant to their specific decisions and areas of responsibility. Marketing information system is efficient tool providing past, present and projected information relating to internal operations and external intelligence (Armstrong and Kotler, 2007). It supports the planning, control, and operational function in an organization by furnishing uniform information in the proper time frame to assist the decision maker. Awulu (2014) sees marketing information system is the system that includes individuals, equipment, and procedures for the collection, classification, conservation, analysis, evaluation, and distribution, the accurate and timely required information to marketing decision-makers. It also defined as a set of procedures and methods for the analysis of the planned and systematic information for the use in decision-making.

Marketing information system is a “system in which marketing data is formally gathered, stored, analyzed and distributed to managers in accordance with their informational needs on a regular basis” (Kotler and Keller, 2006). 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. Marketing information system has been needed by marketing management for the purpose of identifying, measuring, and forecasting marketing opportunities, besides, analyzing of market segments. Marketing information system consists of people, facilities, and integrated procedures that used to provide management with accurate and

regulated information about the environment-related marketing, which helps decision makers to hunt opportunities and build strategies and marketing plans. Olannye (2013) sees marketing information system as an organized way of continually gathering, accessing and analyzing information for marketing decision.

Kotler (2002) realizes that marketing information system is a compound network, composed of interrelated-relations between people, machines, and procedures to provide a flow of structured information, relying on the internal and external sources of the institution that directed mainly to the formation of marketing decisions base. Despite the fact, that there are large and variety numbers of marketing information system definitions, but all of them are focused in one sense which is: the marketing information system is a structure composed of personnel, equipment, that ensuring the flow of internal and external information, which allows the spread and control of the organization's external environment, and the rationalization of marketing decisions. According to Sultan (2012), the marketing information system is the system that includes individuals, equipment, and procedures for the collection, classification, conservation, analysis, evaluation, and distribution, the accurate and timely required information to marketing decision-makers. It also defined as a set of procedures and methods for the analysis of the planned and systematic information for the use in decision-making. This definition has been developed in 1969 through the division of marketing information to planning, control, and research information.

Marketing Information System collects the relevant data; organize it into something meaningful, make recommendations based on these figures and then stock it up for future use (King, 2010). Marketing Information System 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). Marketing Information System consist of four integrated sub systems, which serves the company's marketing and other managers, begins and ends with information users. So companies must design effective marketing information systems that give managers the right information, in the right form, ate the right time to help them make better marketing decisions (Armstrong and Kotler, 2007). The marketing information systems increases the number of options available to decision maker and support every element of marketing strategy; Marketing Information System affects marketing interfaces with customers, suppliers, and other partners (Harmon, 2003). The primary benefits of the Marketing Information System impact in the areas of functional integration, market monitoring, strategy development and strategy implementation. The art of decision-making provide us a variety of approaches, methods and techniques helpful and useful for making high quality of decision.

2.2.2 Components of Marketing Information System

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

2.2.2.1 Internal Records (Data Bases)

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). Chaffey *et al.* (2009) observe, "Database marketing provides technological enabler, which allows vast quantities of customer-related data to be stored and accessed in ways that create strategic and tactical marketing opportunities". This definition appears to have ignored the processes and sources of data generation, but lays more emphasis on data usage within the organization's database.

According to Nwokah and Nwokah (2012), the data collected in the form of database about the daily operations of the companies and includes the necessary data records to obtain information regarding the scale of activity and the current performance in sales, cost, inventory and cash flow. Evans (2008) sees marketing database as "the means for storing and retrieving individual-specific data coupled with technological facilitators leading to the targeting of such individuals based on what we know of their interests and characteristics". The basic idea behind database marketing is that it is sufficient to base tomorrow's marketing strategies on yesterday's patterns of activities. According to Parker (2008), database is simply a large amount of information that is managed in a system. According to Olannye (2013), internal reports of orders, sales, prices, costs, inventory levels, receivables and payables are valuable means by which

marketing managers can track important opportunities and potential problems in the marketplace. But at the heart of the internal record system is the order-to-payment cycle. Olannye posits that the internal record system supplies result data through the marketing intelligence system.

Tapp (2008) had earlier defined database marketing as "a comprehensive collection of interrelated data serving multiple applications, allowing timely and accurate on-demand retrieval of relevant data and having a data management system independent of applications". This definition however appears to be better definition of database marketing on the grounds of the inclusion of the process of data acquisitions, the process of systematically collecting, in electronic or optimal form, data about past, current and/or potential customers, maintaining the integrity of the data by continuing monitoring customer purchases and/or by inquiring about changing status and using the data to formulate marketing strategy and foster personalized relationships with customers.

This definition is built on the basic strength of incorporating all elements of database marketing, ranging from data collection, profiling, hygiene, data mining, legal and ethical issues in database marketing and the integrity in building mutual and beneficial relationships with the customers. This gave rise to Evans (2008) re-echo and emphasized the tactical and strategic roles of organizations in maintaining and using database marketing as key components of the marketing information system. These authors also propose, "Database marketing provides the opportunity for organizations to mechanize the process of learning about customers" and for this to be iterative because "the database transcends the status of a record-keeping device and becomes an implement of ever-increasing organization knowledge.

2.2.2.2 Marketing Intelligence

Marketing intelligence (MI) systems increasingly provide the data that drives both strategic and tactical decision for enterprise. According to Awulu (2014), marketing intelligence is the means by which management can keep in contact with new knowledge of competitors emerging conditions. 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,. pride and Ferrell, 2006). 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). Olannye (2013) stated that marketing managers collect marketing intelligence in a variety of different ways, such as by reading newspapers, books, talking to customers, suppliers, distributors, etc.

2.2.2.3 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, 2007). The American Marketing Association formally defined marketing research as a function that links the consumer, 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. Market

researchis the process of collecting and analyzing of data for the purposes of identifying and resolving problems related to companies marketing services and marketing opportunities, it's a planned and managed activity on a scientific basis to ensure efficiency in dealing with those problems and opportunities (Awulu, 2014).

Organizations engage in marketing research for two reasons: (1) to identify and (2) to solve marketing problems. This distinction serves as a basis for classifying marketing research into two main parts. The first one is problem identification research; market potential research, market share research, image research, market characteristics research, sales analysis research, forecasting research, and business trends research. The second one is problem- solving research; segmentation research, product research, pricing research, promotion research, and distribution research (Malhotra, 2007).

2.2.2.4 Decision Support System

A decision support system (DSS) is an integrated set of computer tools allowing a decision maker to interact directly with computer to retrieve information useful in making semi structured and unstructured decisions (Ezine, 2010). A decision support system (DSS) is an interactive computer system that is easily accessible to, and operated by non-computer specialists to assist them in planning and decision-making functions. While DSSs may differ in their emphases on data-access and modeling functions, there is an overriding emphasis in all such systems on user accessibility to data for decision-making (Power, 2002). According to Olannye (2013), marketing decision support system constitutes a set of core applications of the marketing information system.

This decision-making applicability permits managers to simulate problems using formal mathematical models and to test the outcomes of various alternatives for reaching the best possible decision (Bernard, 1985). The term decision support system refers to a class of systems, which support the process of making decision. Decision support system allows the decision maker to retrieve data and test alternative solutions during the process of problem solving (Ezine, 2010). The meaning of decision support system is based on following assumptions about the role of the computer in effective decision-making (Ezine, 2010). The decision support system can provide analytical models for forecasting, simulation, and optimization. Decision support system tools include simple spreadsheets such as Excel, statistical analysis packages such as SPSS and SAS, on-line analytical processing (OLAP) tools, data mining applications, and neural networks.

According to Arash et al (2013), decision support system is kind of organizational information computerized systems that help manager in decision making that needs modeling, formulation, calculating, comparing, selecting the best option or predict the scenarios. Olannye (2013) stated that marketing decision support system provides computer-based tools, models and techniques to support the marketing managers' decision process. Decision support system is one of the most important information systems that help senior managers at any level of the organization in decision making and system guidance decision support system, with gathering human's thoughts and computer information support the decision maker. These systems provide for supporting different levels of managing, from senior management to operational. It's Flexible and increases the power of risk and cause Improve the accuracy, quality, updating decisions in decision making. The decision support system provides the user with the ability to explore

multiple options. Sharkar (2011) stated that typical decision support system functions include models and tools for:

1. Sensitivity analysis. Decision-makers can explore changes in a strategic variable such as price and model its impact on demand or competitive behavior.

2. What-if analysis. This can be easily accomplished with a spreadsheet. Revenues and costs can be manipulated to show the impact of each variable on profits and cash flows.

3. Goalsetting. Analysis focuses on the desired result and builds the resource base necessary to accomplish the goal.

4. Exception reporting. Analysis looks for results that exceed or fall short of stated goals or benchmarks. Which products or segments exceeded sales forecasts? It is sometimes called gap analysis.

5. Pareto analysis. Analysis looks for activities that generate disproportionate results. For instance, the top 20 percent of customers may account for 80 percent of sales revenues.

6. Forecasting models. Econometric models are used to analyze time series data for the purpose of predicting future sales and market share levels.

7. Simulation models. Monte Carlo simulations address marketing decision making under conditions of uncertainty. Variables such as the market price, unit variable cost, and quantity sold are not known ahead of the product investment decision. Simulation models allow the marketer to analyze risk and assess the probabilities of likely outcomes of their decisions.

8. Scorecards and dashboards. Scorecard systems can present a consistent framework for tracking the effectiveness of marketing activities.

The decision support system must provide case of access to the database containing relevant data and interactive testing of solution. The computer must support the manager but not replace his judgment. It should therefore neither try to provide the answers nor impose a predefined sequence of analysis. The main advantage of computer support is for semi structured problems, where parts of the analysis can be systematized for the computer, but where the decision makers' insight and judgment are needed to control and process. Effective problem solving is interactive and is enhanced by a dialog between the user and the system.

2.2.3 Decision-Making

Decision-making is a conscious human process. It is a particular course of action from among a set of possible alternatives. To decide means to come to a conclusion or resolution (Fremount, et, al,. 1970), decision-making defined as the "conscious and human process, involving both individual and social phenomenon based upon factual and value premises, which concludes with a choice of one behavioural activity from among one or more alternatives with the intention of moving toward some desired state of affairs".It represents a course of behaviour or action about what must or must not be done (Herbert, 1960). Decision making is the selecting of action from among alternatives to achieve a specific objective or solve specific problem (Donald,1963). The art of decision-making provide us a variety of approaches, methods and techniques helpful and useful for making high quality of decision. A decision maker, as an individual, or as a member of formal organization with his own philosophy and perception of the organization, selects

for optimizing values within the constraints imposed by the organization (Varshney, 1997).

2.2.3.1 Types of decision

There are different types of decision. According to Drucker, there are four basic criteria, which determine the nature of decision and the level of authority that should decide: There are (i) future times involved; (ii) the qualitative factors; (iii) whether a decision is rare or routine and repetitive; (iv) whether the impact of a decision is on other function, areas or on the businessman as a whole (James, 1998). Decisions are typically characterized as unstructured, semi-structured and structured.

2.2.3.2 Unstructured Decisions

The unstructured decision involves decision situations where it is not possible or desirable to specify in advance most of the decision procedures to fellow. Many decision situations in the real world are unstructured because they are subjected to too many random or changeable events or involve too many unknown factors or relationships (James, 1998). It is occurs when the relevant parameters as well as the influencing relationships are unknown. The manager does not know the information required. The information system can be of no help to the manager under this type of situation. For unstructured decisions cost system, sales and production R&D planning etc., techniques can be used.

2.2.3.3 Semi Structured Decisions

Semi-structured decisions occur in an environment where the relevant parameters are mostly known and where influencing relationships are suspected or are approximately known. In such cases the MIS can provide assistance to the decision maker through provision of information. For semi-structured decisions, e.g., production, scheduling, cash management, overall budget, new product planning, etc., techniques can be used.

2.2.3.4 Structured Decisions

Structured decisions involve situations where the procedures to follow when a decision is needed can be specified in advance. Structured decisions are those where both the relevant parameters and relationships are known. Any decision process that can be defined in a procedure and issued to any organization is an example of structured process. For example account receivable inventory control, the reorder point; determination of the economic order quantity, short-term budgeting and the safety stork and stock are structure decision system provides analyses of determination to assist in decision-making. The structured decisions can be automated and can be computerized. The objectives of an MIS is to ensure that all the structured decisions are computer generated and the managers need not spend much time in making structured decisions (James, 1998) .

2.2.3.5 Classification of Decisions

2.2.3.6. Programmed Decisions

Programmed decisions are decisions that can be pre-specified by a set of rules or decision procedures. Programmed decisions can presumably be handled by a computer

program since the rules for arriving at a decision are completely defined and only the values of variables must wait for the specific problem. In addition to a computer program, other examples of methods for implementing programmed decision are decision rulebooks, decision tables, and regulation. These programmed decision methods imply a closed decision model because all outcomes and consequences must be known (Gordon, 1974).

2.2.3.7 Non-programmed Decisions

Non-programmed decisions are used for unstructured, unique, ill-defined situations of a non-recurring nature. They are non-repetitive decision often with high levels of risk where many factors from inside and outside the organization have to be considered. They are handling by general problem solving processes. They involve judgment, intuition and creativity. They are made by trained and higher level manager. Non-programmed decisions are one-time or recurring decisions that which change each time they are required. Decisions in open decision system are non-programmed (Gordon, 1974).

Table 2.1 Programmed and Non-Programmed Decisions

Classification of Decision	**Decision-Making**	
	Old	**New**
Programmed Repetitive and Routine	Habit Standard operating Procedure Organization Structure Policy Etc	Management Information System (Including Management Science Techniques and the computer)
Non-Programmed One-shot, ill-structured	Judgment, intuition, Insight Experience Training and Learning	Systematic approach to Problem solving & Decision-making

Source: Shaker, T.I. (2011). The Role of Marketing Information System on Decision Making "An Applied study on Royal Jordanian Air Lines (RJA)". *International Journal of Business and Social Science Vol. 2 No. 3 [Special Issue - January 2011]. P.6.*

2.2.3.8 Strategic Decision

A strategic decision is one which is made during a current time but whose primary effect will be felt during some future time. Strategic decisions affect organizational structure and objectives. Strategic decision cannot be delegated lower than a particular level (March, 1988).

2.2.4 Organizational Decision-Making

Decision making is making choices from among two or more alternatives. For example, determining the goals of organizations, what types of products or services to offer, deciding financing options, and locating a plant are decisions that must be made by top management of an organization. Thus, in order to arrive at the best decision on such programs, various options must be examined and analyzed (Robbins & Judge, 2010). Carpenter, Bauer &Erdogan (2010) as well propounded that decision-making also requires making choices among alternative courses of actions and inaction. Therefore, they argued that in order to maximize effectiveness at work it would entail increasing effectiveness in decision-making. Decision making is a daily activity for any human being. There is no exception about that. When it comes to business organizations, decision making is a habit and a process as well.

Effective and successful decisions make profit to the company and unsuccessful ones make losses. Therefore, corporate decision making process is the most critical process in any organization. In the decision making process, we choose one course of action from a few possible alternatives. In the process of decision making, we may use many tools, techniques and perceptions. In addition, we may make our own private decisions or may prefer a collective decision. Usually, decision making is hard. Majority of corporate decisions involve some level of dissatisfaction or conflict with another party. Let's have a look at the decision making process in detail. Decision making is seen as a resolution to adopt a particular course of action in preference to alternative polices. Bedein (1986) defines decision making “as the act of choosing between two or more alternatives”. Decision making therefore entails identifying alternatives and selecting the

one adjudged the best. The process of identification and selection of alternative courses of action can occur under different conditions. It is worthy to note that decision making is often a conscious and deliberate action.

According to Etzioni (1968) decision making is the most deliberate and voluntary aspect of societal conduct. Relating decision making to marketing, there are key areas in which marketing managers have to make decisions that correspond to the four components of the marketing mix namely: product, price, distribution and promotion (Anyade 2003). When a manager acts formally in his expected role in an organization, he makes un organizational decision, which becomes the organization's official decision. Organizational decision reflects company's policies and programs.

2.2.4.1 Tactical Decision

Tactical decisions are tactical in nature and called routine decision. They are important repetitive need little thoughts with few alternatives. The decision are taken up by middle and first line managers and do not involve any higher risk or uncertainty. Tactical decisions support and compliment organizational strategy. The tactical decision may be delegated to lower levels in the organization. Moreover, what might be strategies decision for one organization may be tactical decision for another? (Prasad, 1997).

2.2.5 The Nigerian Telecommunications Industry

The report of National Beareu of Statistics (2015) is used on this section 2.2.5 The report revealed that development in the Nigeria telecommunications sector shows overall positive growth garnered by entry of several operators in the market space, additional

services such as SMS messaging, lower tariff rates for longer call durations and most especially exponential increase of subscribers lines over the years. The industry has attained measurable progress along these parameters followed by the successful activation of over 127 million lines in the country, which makes Nigeria's teledensity the highest ranked in Africa according to the Nigerian Communication Commission report on subscribers and network data (2013). The telecommunication industry showed a tremendous increase in the number of active lines across the years under review (2010-2013). Growth slowed in the number of active lines recorded in 2013 and 2014.

2.2.5.1 Total Registered Active Lines 2010 -2014

National Beareu of Statistics (2015) indicated that a total of 95.89million active lines were registered by the industry across various networks in 2011. The number of active lines grew significantly by 18% or 17.31 million in 2011 to reach total of 113.20 million active lines in 2012. The year 2013 recorded a relatively slower increase by 11.3% or 14.41 million more lines to give a total of 127.61 million active lines. And in the year 2014 a much slower growth of 6.90 million lines or 5.1% (as at Sept) has been recorded.

2.2.5.2 Mobile Operators-Local and National Telephone Traffic

Domestic calls recorded by the industry between 2010 and 2013 showed no consistent trends pattern. In 2010, According to National Beareu of Statistics (2015), local outgoing calls stood at 26,484.67 million minutes while the local incoming calls stood at 29,101.60 million minutes, yielding a total of 55,586.27 million minutes made

across the four major networks in Nigeria in 2010. Year 2011 witnessed a drop in time spent on domestic calls which fell by 27% or 15,083.44 million minutes to amount to a total of 40,502.83 million minutes. Domestic calls further disaggregated showed local outgoing calls at 19,327.78 million minutes while the local incoming calls recorded 21,175.05 million minutes. Year 2012 recorded the highest time spent on domestic calls compared to other years under review with local outgoing calls of 59,115.57 minutes and incoming calls of 60,557.753 million minutes yielding a total of 119,673.32 million in minutes; this represented a significant increase of 95% or 79,170.49 million minutes. And in 2013, local outgoing calls slowed to 15,555.56 million while incoming calls reduced to 13,204.28 million in calls yielding a total of 28,759.84 million minutes, a decrease from by 90,913.47 or 75% from levels recorded in the year 2012.

2.2.5.3 Mobile Operators-International Telephone Traffic

Relative to Domestic calls, International calls recorded classified by outgoing and incoming calls were lower largely because tariffs are higher and therefore costly in call charges. The ratio of outgoing to incoming calls is approximately 1:1.6 in this category and remained steady in the 2010 –2013 period. The year 2010 recorded 1,757.65 million minutes of international outgoing calls and 2,888.64 million minutes of incoming calls. This makes a total of 4,646.28 million minutes. In the following year 2011, a similar pattern was observed in international calls where outgoing calls of 1,250.45 million minutes versus incoming calls of 2,253.78 million minutes were recorded resulting to a total of 3,504.23 million minutes of calls. This indicated a decrease of 1,142.05 or by 24% compared to the previous year.

In 2012, outgoing calls rose to 1,485.67 million minutes, while incoming calls rose to 2,456.20 million minutes, recording a total of 3,941.88 million minutes across the networks. This aggregate represented an increase of 437.64 million minutes or 12.4% compared to year 2011. A repetition in growth by 12.4% was noticed in the year 2013 showing outgoing calls of 1,799.31 and 2,461.77 of incoming calls resulting in a total of 4,261.08 million.

2.2.5.4 SMS Messages - Mobile Line Operators (Domestic and International)

The number of SMS messages sent and received in the year 2010 on mobile lines totaled 1,747.09 million with outgoing text messages at 871.97 million and Incoming text messages at 875.12 million. In the course of daily activity, 1,722.70 million messages (98.6%) were sent and received in domestically while 24.39 million messages (1.4%) were sent and received in internationally. In 2011, 80% growth in SMS messages sent and received to a total of 3,158.62 million were recorded. During this period, Outgoing messages increased to 1,897.00 million an approximately 1,000.00 million increase or by 117%, and messages increased to 1,261.61 million, a 386.00 million increase or by 44%. In this same year 2,973.97 million messages (94%) were sent and received in domestically while 189.55 million messages (6%) were sent and received in internationally.

In 2012, the sector recorded substantial growth of SMS messages sent and received, with a total of 4,315.03 million indicating a 36.6% percentage increase. Outgoing messages increased by 9% to amount to a total of 2,081.20 million while Incoming messages increased by 77% to total 2,233.82. During the year, a total of

4,094.54 million (94%) messages were sent and received in domestically while 220.49 million (5%) messages were sent and received in the internationally. The Nigerian Communication sector in 2013 recorded a decline in the number of SMS sent and received. The total number of SMS sent and received in 2013 stood at 3,394.94 million indicating a 21% decrease from 2012. The Outgoing messages in year 2013 reduced to 1,555.02 million by 25% and Incoming messages also reduced by 17% to equal 1,839.92 million SMS in that year. The domestic activity recorded a total of 2,635.77 million messages representing 77% of SMS sent and received in 2013, while 162.84 million messages (4.7%) were sent and received internationally in the same year.

2.2.5.5 SMS Messages - Fixed Line Operators

In 2010 the SMS Fixed Line service recorded only two operators in that market space. The total SMS sent and received grossed 246.32 million in that year with Incoming SMS representing 80.5% and Outgoing SMS with 19.5% of the total. The year 2011 took a downward slide with a 97.68 million reduction in the total number of SMS messages sent and received, indicating a 39.6% drop to 148.64 million SMS in the same year. Incoming messages however, contributed 51.8% of the total SMS in 2011 showing a reduction of 61% from the previous year. The total number of SMS Messages in 2012 decreased compared to other years under review. A total of 76.31 million SMS were recorded in 2012 of which Incoming and Outgoing SMS contributed an equal share of 50% each to the total number of SMS messages in that year. Finally, the year 2013 witnessed a further decrease in the number of SMS to a total of 42.43 million SMS messages, representing a reduction of 44.3% compared to 2012. Similarly, Incoming and

Outgoing SMS also contributed an equal share of 50% to the aggregate figure in that year.

2.2.5.6 Tariff Plan

Tariffs across the different networks averaged 20 to 50 kobo/sec with slightly higher tariffs during the off-net/off peak period. From the year 2011 that almost all the networks operators adopted the same tariff with the exception of MTN which, had the lowest tariffs of 20 kobo. The following year 2012, other networks followed MTN in tariff reduction to an average of 20 kobo/sec with the exception of Etisalat which maintained 40 kobo. The final analysis in 2014 shows all networks conforming to a uniform tariff price of 20 kobo/sec, with Airtel having the lowest tariff of 18 kobo/sec.

In conclusion, within the 2010 to 2014 period, the telecommunications industry has made definite progress considering all indications above. Tele density stands at 91.7, the highest in the African continent, alongside an impressive subscriber base that beats South Africa's of over 127 active lines and growing but at a slower rate. Over the 2010 to 2012 period, the national/local call traffic shows a sharp ascent indicating increased patronage across the networks, evidenced in 2012 by an increasing subscriber base. Similarity in the international call traffic shows a much slower climb in call activity from year to year but very encouraging results over the years growing at 12.4% as at 2013. The SMS (mobile) messaging peaked in 2012 by a 36% increase and never attained that level so far, while the SMS (fixed) messaging slowed by a 36% reduction. Prepaid tariffs is hovering at the 20 kobo/sec rate (except for GLO which is at 18kobo/sec) and seems to be holding steady from the year on across all networks.

2.2.6 Conceptual Framework

From the preceding review of the extant literature, the researchers realized that the four variables of marketing information system seem to be very important in affecting organizational marketing decision making. The researcher shall come out with a framework as stated below in figure 2.1, with variables; internal record system, marketing intelligence, marketing research and marketing decision support system being the dimension of marketing information system. The framework shall show how the variables relate to organizational marketing decision making which is the dependent variable.

Marketing Information System **Organizational Marketing Decision Making**

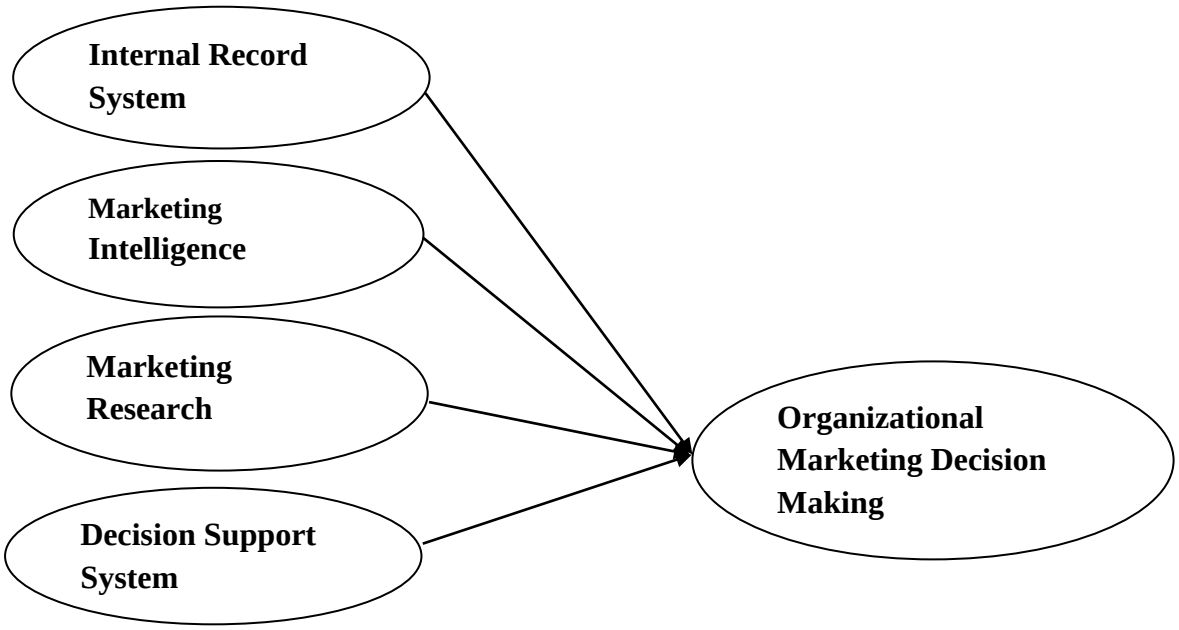

Figure 2.1 Conceptual Model

Source: Researcher's Model

The conceptual model above shows that Internal Record System, Marketing Intelligence, Marketing Research and Decision Support System are all indicators of marketing information system which is the independent variable. These variables enhance organizational decision making which is the dependent variable.

2.3 Theoretical Review

2.3.1 System Theory

Many concepts and theories exist to address the role of marketing information system in marketing decision. Most of these theories are on marketing approach, information approach and decision-making approach of organizations. This study considered systems theory ideal and relevant to present fundamental concepts on the study.

System theory which was developed by Ludwig von Bertalanffy states that the sum of the whole is greater than the parts that make the whole. According to Mele, Pels, and Polese (2010), systems theory is a theoretical perspective that analyzes a phenomenon seen as a whole and not as simply the sum of elementary parts. The focus is on the interactions and on the relationships between parts in order to understand an entity's functioning and outcomes. This perspective implies a dialogue between holism and reductionism. Systems can be found in nature, in science, in society, in an economic context, and within information systems. A distinctive characteristic of systems theories is that it developed simultaneously across various disciplines and that scholars working from a systems theory perspective build on the knowledge and concepts developed within other disciplines.

The organization as a whole must systematically respond, not just to their changing needs and tastes by proper marketing decision using available information. The firm must be considered, not just as a producer of products, but as a provider of customer crating value satisfaction. The creation of satisfied customers of the true purpose of business in the wider application of marketing philosophy characterizes a democratic society. The higher the degree of subscribers' orientation, the more the subscribers enjoy freedom of choice in the marketing place. Research for consumer preferences results in competitive advantage consumers become the electorate whose preferences determine what is to be offered on the market. As a philosophy of business, marketing implies a coordinated effort. This in turn recognizes the existence of a related or integrated system.

According to the systems theorists, a system is essentially an assemblage of things interconnected or interdependent, so as to form a complex unity (Koontz et al 1982). An important element in the systems approach is the emphasis on input-output-analysis. Worthy of note is that a system needs support from its environment in order to survive the system approach recognizes variety and offers away of interrelating differences by reconciling them within the whole this is an approach which emphasized theory and conformity. Relating this systems theory to marketing decision, it emphasizes inter-relationships among actions of marketing managers, firm's total marketing effort and the internal organization of the marketing department.

In this way, we shall conceive the firm as a total system of management action with each functional department as a subsystem. Marketers must integrate successfully the subsystems by proper information utilization during decision making to achieve optimum results. This theory is relevant to this study because it helps to understand the

different parts of the telecommunications industry and their activities as they relate to the general public.

2.4 Empirical Review

Database marketing provides the opportunity for organizations to mechanize the process of learning about customers" and for this to be iterative because "the database transcends the status of a record-keeping device and becomes an implement of ever-increasing organization knowledge. Harridge-March (2008) observes that the information which an organization stores about a customer should be fit for the purpose intended. The essence of database marketing is to develop marketing intelligence that enables marketing managers make marketing decisions in a turbulent, dynamic and contemporary business environment (Mc-Donald, 2007). Peter Drucker observed that decisions are not only supposed to be a way to providing solutions to problems, but should also, be focused on finding the right question (Belbin, 2007). He identified five distinct phases of decision-making to include defining the problem; analyzing the problem; developing alternative solutions; deciding upon the best solution; converting the decision into effective actions (Belbin, 2007). Some times when faced with uncertainty, marketing managers may opt to remain silent without a decision because of lack of information in the database marketing.

However, they refused to realize that by keeping silent, they have made decision by deciding not to decide and allowing the status quo to remain rather than change. In the context of database marketing, marketing managers need to worry about what decisions should be made and how they should be made to achieve the organization's long-term

objectives. A recent study by Unica in partnership with Saloway& co (2010) reveals that one of the challenges facing marketers is how to turn data into actions. The study reveals that many marketers are using both online and offline when making decisions about marketing offers. Customers' initiated interaction built around database marketing provides excellent opportunity to personalize marketing communications. The Unica study shows that customers who engage with the company's brand, share their wants and needs are more receptive to organization's marketing offers. Marketing managers can use the database through the intelligence built from the customer interactivities' according to lifetime value of; and identify the top strata of customers who account for over half the profits. These sets of customers are targeted for commercial action and tracked through reporting (Micheaux and Gayet, 2001). Database marketing enables companies to design offers more exactly to tailor to the customers' wants, needs and build long-term relationship with valued customers while prospecting and attracting new customers. The information in the database marketing is used in predicting more accurately the offers success, better manage the transaction's economics from design to execution and tracking; and measure return on investment (Wee, 2001; Trim, 2002). It promotes testing new combination of existing products features for segments of customers that a company already serves.

The descriptive analysis for the variables of the first hypothesis of the study of Shaker (2011) shows that the mean value of adopting data base by Royal Jordanian Airlines was (4.10) with std. deviation value (0.4169), and the mean value for the right decision making was (4.06) with std. deviation value (0.4572).which means that there are positive relationship between data base (internal records) and the right decision making,

because their means are above the mean of the scale. Also, the regression analysis shows that there is a relationship between data base (internal records), and increasing the possibility of the right decision making as r. Value reached (0.198), F. Value Reached (6.828) by significant (0.010).

Marketing intelligence (MI) is "the process of acquiring and analyzing information in order to understand the market (both existing and potential customers); to determine the current and future needs and preferences, attitudes and behavior of the market; and to assess changes in the business environment that may affect the size and nature of the market in future." According to Cornish (1997), marketing intelligence has the capacity to be at the forefront in contributing to the development of a business environment through strategic research, risk and policy analysis, credit-rating documentation, storage, publication, reporting, and communication of reliable, timely, and objective business information. It incorporates information from customer analysis and industry analysis as well as general market conditions. In other words, marketing intelligence calls for understanding, analyzing and assessing the internal and external environment related to a company's customers, competitors, markets, and industry to enhance the decision-making process. This would require the integration of competitive intelligence, marketing research, market analysis, and business and financial analysis information (Michael, 2005). According to Kotler, Keller, Koshy and Jha (2009), marketing intelligence is the everyday information relevant to a company's markets, gathered and analyzed specifically for the purpose of accurate and confident decision-making in determining market opportunity, market penetration strategy, and market

development metrics. Marketing intelligence is necessary when entering a foreign market.

Marketing intelligence determines the intelligence needed, collects it by searching environment and delivers it to marketing managers who need it. A marketing intelligence system is a set of procedures and sources used by managers to obtain their everyday information about pertinent developments in the environment in which they operate. The marketing intelligence system supplies data about the market and that marketing intelligence system is that it is a system for capturing the necessary information for business marketing decision making (Mochtar and Arditi, 2001).

In the same vain, the result of Shaker (2011) for studying the impact of marketing intelligence on right decision making for Royal Jordanian Airlines revealed that the mean value of adopting and utilizing marketing intelligence in taking the right decision making was (3.99) with std. deviation value (0.4073), which means that there a significant relationship and positive attitudes toward these variables because their means are above the mean of the scale (3). To investigate this hypothesis, simple regression analyses was applied and the result shows that there is a relationship between marketing intelligence and the possibility of the right decision making whereas: r. Value reached (0.438), F. Value Reached (39.791) by significant (0.00).

Marketing research focuses primarily on the collection and use of information on customers and their needs for designing marketing programs. Marketing data can be collected from primary, secondary, and standardized sources. Data analysis in marketing research uses the data on prospects, customers, competition, products, and markets while incorporating marketing concepts, methods, and quantitative tools, to make meaningful

decisions with regard to marketing campaigns, resource allocation, and the managerial planning process. Hence, marketing research is defined as information input to decisions, not simply the evaluation of decisions that have been made. 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, 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.

Marketing research is the systematic and objective identification, collection, analysis and dissemination of information for the purpose of assisting management in decision making (Tan and Ahmed, 1999). American Marketing Association Official Definition of Marketing Research stated that marketing research is the 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. Marketing research specifies the information required to address these issues, designs the method for collecting information, manages and implements the data collection process, analyzes, and communicates the findings and their implications. This definition highlights the role of marketing research as an aid to

decision making. An important feature is the inclusion of the specification and interpretation of needed information. Too often, marketing research is considered narrowly as the gathering and analyzing of data for someone else to use. Firms can achieve and sustain a competitive advantage through the creative use of market information.

Marketing research plays a critical part in a marketing information system. It aids in improving management decision making by providing relevant, accurate, and timely information. It is clear from the data in Sultan (2012) that the correlation coefficient (Adjusted R Square) of model (3) was (0.56) which indicates a positive statistically significant correlation at the level of less than (0.001), also, the validity and the acceptance of this model has been confirmed by examining the value of (F) which was (125.152)and the level of significance (.000), which requires rejection of the null hypothesis (H02) which states that there is no statistically significant relationship between the marketing research as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies, and accept the alternative hypothesis (Ha2), which indicates a statistically significant relationship between the marketing research as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

A marketing decision support system is a decision support system for marketing activity (AMA, 2013).The system is used to help businesses explore different scenarios by manipulating already collected data from the past events. It consists of information technology, marketing data, systems tools, and modeling capabilities that enable it to

provide predicted outcomes from different scenarios and marketing strategies (Wierenga et al, 2000). According to Nikolaos and Yannis (2003), marketing decision support system assists decision makers in different scenarios and can be a very helpful tool for a business to take over their competitors (Cassie, 1997). Also, shaker (2011) find out that the mean value of adopting and utilizing decision support system (DSS) in taking the right decision making was (4.09) with std. deviation value (0.4368), which means that there is a significant relationship and positive attitudes toward decision support system (DSS) variables because their means are above the mean of the scale (3). To investigate this hypothesis, simple regression analyses was applied. The result shows that there is a relationship between decision support system (DSS) and the possibility of the right decision making as r. Value reached (0.442), F. Value Reached (40.827) by significant (0.00). One of DSS biggest benefit according to Wikipedia is that it can help to predict the outcome of different scenarios. It can help businesses to save money by preventing failures and put them towards a better cause. Claire (1997) stated that decision support systems can help businesses to save time as well. They would not have to waste even a minute in planning and trying to create something which is not going to succeed.

Shim et al (2002) observed that marketing decision support systems are used to help solve complex problems by using computer technology and can help businesses with decision making. Marketing decision support system totally satisfy marketing businesses as it improves the effectiveness of decision making, reduce costs by eliminating completely unsuitable and useless decisions. It helps and improves the performance of decision makers by using a computer system (Honch and Schade, 1996). Sanders and Manrodt (2003) also noted that one of the most important and useful things about a

system like marketing decision support system is that it lets the business look forward instead of being stuck and trying to examine the past to get answers to complex questions.

2.5 Summary

This chapter revealed the literature of authors in line with the study. Under the conceptual review, areas such as concept of marketing information system, components of marketing information system, internal records (data bases), marketing intelligence, marketing research, decision support system, decision-making, organizational decision-making, the Nigerian telecommunications industry, conceptual framework, theoretical review, system theory and empirical review were treated. The chapter also reviewed system theory which is significant to the study. Theoretical framework was designed as well. Finally, empirical studies were discussed.

CHAPTER THREE

RESEARCH METHODS

3.1 Introduction

This study seeks to establish the relationship between effective marketing information system and organizational decision making in the Nigerian Telecommunications industry. This chapter provides the methods that were adopted in carrying out the study. Therefore, the procedures that were applied in the study include research design, the study population, sampling technique, research instrument, validation of research instrument, data collection methods and analytical procedure.

3.2 Research Design

Research design is the overall research strategy used for the study. According to Olannye (2006), research design is the approach, framework or plans that are meant to guide the researcher in the process of collecting, analysing, and interpreting observation. Research designs are used to generate primary data. Its use involves the researcher in a direct observation of events, phenomena, or relevant research issues. It also assists the researcher in turning the research question into a research project (Mark et al, 2009).

A research design also refers to the approaches, framework or the overall strategy of conducting research studies. In order to achieve the objective of this study, a number of design options were considered. Berbie (1986) stated that survey research is probably the best method available to social scientists interested in collecting original data for describing a population too large to observe. Hence the survey strategy similar to those used in some of the earlier studies on marketing information system is adopted. This

study uses survey research design to describe effective marketing information system and its effect on organizational decision making of the Nigerian telecommunications industry. Survey research design method was suitably used in the formulation of knowledge and solution to existing problems (phenomenon). It is used when collecting information about people's attitudes, opinions, habits and other possible behavior. The survey research design method that is employed for this study is the cross-sectional survey research method. It is the choice of the researcher because it aids the researcher in the assessment of public opinion using questionnaire and sampling methods.

The justification for the choice of survey research design method was guided by the following factors:

i. The design has been used in similar previous studies (Eugene et al, 2011).

ii. The next reason was that the researcher is comfortable with it (Bouckernooghe et al., 2007). Remenyi et al. (2007) considers the fourth factor "comfortability" very important for successful conduct of a research.

iii. The survey research designs are used in management due to complex relationship that exist between variables (e.g. relationship between effective marketing information system and organizational marketing decision making).

iv. Its reliance on a sample of elements from the population of interests which are measured at a single point in time (Baridam, 2001).

v. It constitutes a class of studies which mostly involves human beings, organizations, groups and communities.

vi. The descriptive nature of survey research implies natural observations of characteristics of the subjects without intentional manipulation of the research variables (Asika, 1991).

vii. It is popular and widely used in management and social sciences research where individuals are mostly used as units of analysis. Thus the foregoing reasons are normally used to guide the selection of a research (Bouckernooghe et al., 2007).

3.3 Population of the Study

In research, the population of study is the total lists of all elements or objects of a well-defined group being studied (Olannye, 2006). Population of a study is defined with respect to the sampling frame used for the study (Wiklund, 1998). The sampling frame for this study is two thousand (2000) which was created from the 4 telecommunications firms under study and their respective subscribers. The use of convenient is in line with Remenyi et al. (2007) assertion that comfortability criterion is relevant for successful conduct of research.

3.4 Sample Size Determination

A sample is said to be representative of the population from which it is drawn if the aggregate characteristics of the sample closely approximate those same aggregate characteristics of the population (Yomere and Agbonifoh, 1999). A total of 333 staff and subscribers of the 4 telecommunications firms were selected as the sample size as derived Using Taro Yamen's formula:

$$\mathbf{n = \frac{N}{1+N(e)^2}}$$

$$n = \frac{2000}{1+2000(0.05)^2}$$

$$n = \frac{2000}{6}$$

$$n = 333$$

Where: n = The Sample size

N = the population of study

e = level of significance (0.05)

Therefore, 333 were deemed appropriate to form the sample size, having a population of 2000.

3.5 Sampling Techniques

A stratified random sampling technique was adopted for this study. The justification for the choice of this technique is due to the fact that the population is divided into two categories of staff and subscribers of four (4) telecommunications firms- MTN, GLO, Airtel and Etisalat. The stratified random sampling was employed in the selection of the 333 staff and subscribers from the 4 firms. The selection of stratified random sampling was appropriate for each category because the study involved testing hypothesis using inferential statistics, and stratified random sampling provides a means by which the degree of error can be estimated (Yomere and Agbonifoh, 1999).

3.6 Research Instrument for Data Collection

Structured sets of questionnaire constituted the primary instrument for data collection in this study. Olannye (2006) stated that questionnaire is an instrument for gathering data from respondents to aid in finding solution to research problems. The researcher did not use interview because of some problems associated with its usage. Hence the researcher used set of validated questionnaire to illicit information from the respondents. A covering letter addressed to the respondents accompanied the instrument to explain the aim (objective) of the study, assuring them of the confidentiality of their responses. The introductory letter or covering letter was designed to motivate respondents to provide honest and needed responses to the survey instrument (Yomere and Agbonifoh, 1999).

The questionnaire consists of a five (5) point linkert-type question ranging from a 1-Strongly Disagree to 5- Strongly Agree. It was suitable for this study because it is particularly suitable for measuring attitudes towards an object or for obtaining the response evaluation of an object (Yomere and Agbonifoh, 1999, Mark et al, 2009). A total of 333 set of questionnaire was administered.

3.7 Validation of Instrument

The instrument for the study was subjected to thorough screening by the supervisor of this study and other specialist in the field of research in management and marketing, by restructuring the instrument to establish the content validity, after which the researcher made all necessary corrections to give the original draft of the instrument a meaning.

3.7.1 Validity and Reliability Test

In research, validity has to do with the strength of the measurement or how much it does what it says it will. Reliability refers to the dependability of something. In psychometric, reliability refers to the consistency and stability with which a measuring instrument performs its functions (Colman, 2003). Reliability is a necessary condition for validity (Farh, 2007). Reliability refers to the extent to which data collection techniques or analysis procedures will yield consistent findings whereas validity is concerned with the ability of the instrument to measure what it is designed to measure (Easterby –Smith et al., 2008, Mark et al, 2009 and Olannye, 2006). Content validity was undertaken to ascertain whether the content of the questionnaire is appropriate and relevant to the study objective. Content validity indicates that the content reflects a complete range of the attributes under study and is usually undertaken by seven or more experts (Pilot & Hunger 1999; DeVon et al. 2007 in Nasrin et al., 2009). To estimate the content validity of the marketing information system Questionnaire, the researcherasked for the opinion of his supervisor and others that are expert on the field of management, marketing and research.

Measurement of the model reliability was assessed using Cronbach's alpha (CA) based tests. Cronbach's alpha provides an estimate of the indicator inter correlations (Henseler, et al., 2009 and Sekaran , 2003). An acceptable measure for Cronbach's alpha is 0.7 or higher (Nunnally and Bernstein, 1994). Test-retest method was conducted on questionnaire. Thirty participants were used to establish this reliability and three weeks administration interval was observed. This adopted test-retest duration followsBostwick and Kyte's (1985) recommendation of two to four weeks interval. For this study, a test-

retest reliability coefficient of .70was observed as recommended by Henseler, et al., (2009). The result of the reliability test for this study is shown in the table below.

Table 3.1 Reliability Statistics Result

Variables	Cronbach's Alpha	Number of Items
Internal record system	.843	5
Marketing intelligence system	.749	5
Marketing research system	.721	5
Decision support system	.747	5
Organizational decision making	.769	5

Source: SPSS output on Questionnaire Reliability Test.

The scores from the reliability test were obtained from all items in general. The result shows that all the reliability coefficients are above the benchmark of 0.7. Therefore, the estimation reported acceptable internal consistency, implying that the set of questionnaire is appropriate.

3.8 Method of Data Collection

The strategy for generating the data for this study involved the administration of copies of validated questionnaire on the respondents. The sources for collection of data were from primary and secondary sources. Set of constructed questionnaire which was distributed to respondents serve as a source of primary data. Business journals,

newspaper, dailies and magazines that were consulted from the library and internet searches constitute the secondary sources of data collection.

3.9 Data Analysis Techniques

The data that were collected were analyzed using multiple regression and correlation as the data analytical tools. The data were first deduced from the sets of questionnaire which were distributed to the respondents and then coded for the running of regression and correlation with the use of statistical package for social science (SPSS) version 23 software package. The justification for the use of these analytical tools is that the regression analysis is used to determine the relationship between two or more variables and to make predictions of one variable on the basis of the other(s), while correlation is used to measure the degree of the relationship between the variables.

The second method explains change on the assumption that change depends on the value of variable which itself is undergoing change. Drawing from the above concept, this study adopted two basic strategies involving the use of correlation and regression. The first strategy involved the calculation of correlation coefficient in explaining the relationship among dimensions of marketing information system. Organizational decision making in this study is considered as the dependent variable while marketing information system is considered as independent variable. The relationship between the dependent variables and independent variable was ascertained through the use of correlation and regression analysis.

Correlation in this study is therefore used to identify the initial relationship between elements of marketing information system variables. Its specific relevance to

changes in the variables explains the extent to which the variables are either correlated or not correlated. A stronger and positive correlation mean a change had occurred among the measured variables. Changes therefore take place if any of marketing information system dimensions displays either negative value or positive value.

The second strategy involved the use of regression effect and the sign of the coefficient β. One of the most prominent phenomenons in the study of change is the tendency to ascertain the degree of effect resulting from the effect of the independent variable on the dependent variable. In this circumstance, the value of β may assume a negative or positive value. Also the positive value may be large or small. Thus, applying the regression analysis, the amount of change in organizational decision making was explained by the value of β (regression coefficient) which was used to predict the extent of the effect of marketing information system on organizational decision making.

Again**,** regression and correlation analysis were used because of the nature of the topic "effective marketing information system and organizational decision making". These two techniques are the most common model used by many researchers. Correlation was used to show the relationship between variables. Regression on the other hand was used for the prediction of outcome. It does not only show positive, negative or no relationship but also tells the strength of that relationship (Jonson and Kuby, 2007).

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter focuses on the presentation and analysis of data and information collected through questionnaires administered to the staff and customers of selected Branches of telecommunications firms in Asaba. The data presented and analyzed in this study is categorized into three parts; the first is the descriptive analysis of respondents profile with percentage weighting attached. The second is the correlation analysis of the research questions and their respective variables. The third is the testing of hypotheses formulated for the study with the use of regression analysis. According to Nwadinigwe (2002) data analysis is the engine room of every research, this is because if it is done properly the researcher is likely to reach conclusion that are valid and could lead to a good decision.

Out of the three hundred and thirty three (333) sets of questionnaire administered, two hundred and ninety for (294) were returned, eighteen (18) were not properly filled. Two hundred and seventy-six (276) were useable. Therefore, the analysis in this chapter is based on the sample size of two hundred and seventy-six (276) copies.

4.2 Analysis of Respondents Profile

Table 4.1: Demographic Information of Respondents

Gender	**Frequency**	**Percentage**
Male	126	45.7
Female	150	54.3
Total	**276**	**100**
Age Range		
18-30 years	110	39.9
31-40 years	92	33.3
41-50 years	39	14.1
50 years and above	35	12.7
Total	**276**	**100**
Marital Status		
Married	184	66.7
Single	92	33.3
Total	**276**	**100**
Educational Qualification		

SSCE/GCE/NECO	18	6.5
NCE/ND	51	18.5
HND/B.Sc	150	54.3
MBA/M.Sc	38	13.8
Others	19	6.9
Total	**276**	**100**
Categories of Respondents		
Staff and subscribers: **MTN**	97	35.1
Airtel	80	29
Glo	53	19.2
Etisalat	46	16.7
Total	**276**	**100**

Source: Analysis of field survey, 2016.

From Table 4.1 above, 126 (45.7%) were males and 150 (54.3%) were females. This indicates that the female were more in number than the male respondents. The age distribution of respondents which was spread across various age brackets shows that the highest concentration of respondents fell within the age bracket of 18-30 years

110(39.9%) of respondents. The categories of respondents between 31-40years accounts for 92(33.3%). 39(14.1%) of the respondents fall under 41- 50years, while 35 (12.7%) were above 50years. The table also indicates the marital status of the respondents. It was observed that 184(66.7%) of the respondents were married, while 92(33.3%) were single.

In terms of educational qualification of the respondents, the table shows that greater part of the respondents 150(54.3%) had HND/B.Sc, ND/NCE holders account for 51(18.5%), those respondents that possess MBA/M.Sc were 38(13.8%). 18(6.5%) of the respondents indicated that they were SSCE/GCE/NECO holders and those with other qualifications accounted for 19(6.9%) of the respondents. As regard the categories of the respondents. It reviewed that 97(35.1%) of the respondents were either staff or subscriber of MTN, 80(29%) were staff or subscriber of Airtel, and those that were staff or subscriber of Glo were 53(19.2%), while 46(16.7%) were either staff or subscribers of Etisalat.

4.3 Analysis of other Research Data

This section focuses on the analysis of responses to the major research questions which were broken down into twenty (20) sub questions using the Likert scale of point 5. Specifically, they were analyzed using correlation and regression.

Research Question One: What is the effect of internal record system on organizational decision-making?

Correlation among variables of internal record system (X_1), such as target market effort, customer relationship management, customer choice and customer behaviour

response are explained by X_{11}, X_{12}, X_{13}, and X_{14}. Therefore, X_{11} represents target market effort, X_{12} represents customer relationship management, X_{13} represents customer choice, and X_{14} represents customer behavior response.

Table 4.2 Correlations among the Variables of Internal Record System

Variables	**X_{11}**	**X_{12}**	**X_{13}**	**X_{14}**
X_{11}	1			
X_{12}	.041	1		
X_{13}	.251**	.057	1	
X_{14}	.020	.339**	.217**	1

Source: Analysis of Field Work, 2016.

In Table 4.2 above, ten correlation coefficient values were reported. The results of the correlation analysis involving all the indicators of X_1 (internal record system) showed overwhelming positive correlation among the variables. It showed that X_{11} (target marketing effort) which is the first variable correlates positively with X_{12}(customer relationship management (r=.041, 0.05). It also indicates that X_{11} (target marketing effort) maintained a positive correlation with X_{13} (customer choice) (r=.251**, 0.01). The table again shows that X_{11} (target marketing effort) has positive correlation with X_{14}(customer behavioural response) (r=.020, 0.05). X_{12} (customer relationship management) reported a positive correlation with X_{13} (customer choice) (r=.057, 0.05) and X_{14} (customer behavioural response) (r=.339**, 0.01). There was a positive

correlation between X_{13} (customer choice) and X_{14} (customer behavioural response) (r=.217**, 0.01).

Research Question Two: What is the impact of marketing intelligence system on organizational decision-making?

Correlation among variables of marketing intelligence system (X_2) such as sensitive, competitive intelligence, seriously, and good team are explained by X_{21}, X_{22}, X_{23} and X_{24} respectively.

Table 4.3 Correlations among Variables of Marketing Intelligence System

Variables	**X_{21}**	**X_{22}**	**X_{23}**	**X_{24}**
X_{21}	**1**			
X_{22}	**.288****	**1**		
X_{23}	**.136***	**.497****	**1**	
X_{24}	**.184****	**.526****	**.429****	**1**

Source: Analysis of Field Survey, 2016.

The result of the correlation analysis involving all indicators of X_2 (marketing intelligence system) showed positive correlation among the variables. In table 4.5 above, 10 correlation coefficients were reported. It is reported that X_{21}(sensitive) correlate positively with X_{22}(competitive intelligence) (r=.288**, 0.01). It also maintained that X_{21} (sensitive)correlate positively with X_{23} (seriously) (r=.136*, 0.05) and also with X_{24}

(good team) (.184**, 0.01). The table also showed that X_{22}(competitive intelligence) correlate positively with X_{23}(seriously) (r=.497**, 0.01) and X_{24}(good team) (r=.526**, 0.01). Again, X_{23}(seriously) correlate positively with X_{24}(good team) (r=.429**, 0.01).

Research Question Three: To what extent does marketing research system affect organizational decision-making?

Correlation among the variables of marketing research system (X_3) such as, plan, identify new product, reduce risk and communicate are explained by X_{31}, X_{32}, X_{33}, and X_{34}. Where X_{31} is plan, X_{32} is identify new product, X_{33} is reduce risk and X_{34} is communicate.

Table 4.4 Correlations among the Variables of marketing research system

Variables	**X_{31}**	**X_{32}**	**X_{33}**	**X_{34}**
X_{31}	**1**			
X_{32}	**.** 300**	**1**		
X_{33}	**.** 087	**.** 367**	**1**	
X_{34}	**.** 236**	**.** 527**	**.** 208**	**1**

Source: Analysis of Field Work, 2016.

In Table 4.8 above, ten correlation coefficient values were reported. The correlation analysis involving all indicators of marketing research system maintained a favourable relationship amongst them. Thus, X_{31} plan correlates positively with X_{32} (identify new product) (r=.300**, 0.01) and also maintained a positive correlation with

X_{33}(reduce risk) (r=.087, 0.05) and X_{34} (communicate) (r=.236**, 0.01). From the result as well, X_{32} (identify new product) correlates positively with X_{33}(reduce risk) (r=.367**, 0.01) and also with X_{34} (communicate) (r=.527**, 0.01). X_{33}(reduce risk) correlates positively with X_{34} (communicate) (r=.208**, 0.05).

Research Question four: Does marketing decision support system affect organizational decision-making?

Correlation among the variables of marketing decision support system (X_4) such as familiar, useful, benefit, and satisfied are represented by X_{41}, X_{42}, X_{43} and X_{44} respectively.

Table 4.5 Correlations among the Variables of Marketing Decision Support System

Variables	X_{41}	X_{42}	X_{43}	X_{44}
X_{41}	1			
X_{42}	284**	1		
X_{43}	-.063	.410**	1	
X_{44}	.157**	.284**	.434**	1

Source: Analysis of Field Work, 2016.

In Table 4.5 above, 10 (ten) correlation coefficient values were recorded. The results of the correlation analysis involving all the indicators of X_4(marketing decision support system) showed positive and negative correlation among the variables. It showed that X_{41} (familiar) had a positive correlation with X_{42} (useful) (r=.284**, 0.01) and X_{44}

(satisfied) (.157**, 0.01). It also maintained that X_{42} (useful) correlates positively with X_{43}(benefit) (.410**, 0.01) and with X_{44} (satisfied) (.284**, 0.01). Also, X_{43} which is the third variable correlates positively with X_{44}(satisfied) (.434**). Hence, the negative correlation coefficient values were ignored as they do not reflect any relationship with the variables.

4.4 Multiple Regression Analysis

Multiple regression analysis is a family of techniques used to explore the relationship between one continuous dependent variables and a number of independent variables or predictors. It can be employed in addressing series of research questions. It can also establish that a set of independent variables explains a proportion of the variation in a dependent variable at a significant level (Pallant, 2005). To determine the effect marketing information system on organizational performance among Nigeria telecommunications firms, multiple regression was conducted between organizational performance (dependent variable) and internal record system, marketing intelligence system, marketing research system , decision support system using sample data from field survey. The results are shown in Table 4.6, Table 4.7 and Table 4.8.

Table 4.6 Multiple Regression Analysis among the Construct of Marketing Information System and Organizational Decision Making

Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients		
		B	Std. Error	Beta	T	Sig.
1	(constant)	1.738	1.010		1.721	.086
	Internal record system	.105	.045	.061	2.341	.002
	Marketing intelligence system	.639	.035	.654	18.158	.000
	Marketing research system	.172	.033	.186	5.193	.000
	Mktg decision support system	.170	.035	.169	4.924	.000

Dependent variable: organization decision making. Source: SPSS output of field survey, 2017.

Table 4.6 above showed that the results from multiple regressions reported all the construct of marketing information system (internal record system, marketing intelligence system, marketing research system and marketing decision support system) have positive effect on organizational decision making. The table recorded that internal record system has positive effect on organizational decision making ($\beta = .061$, $p < 0.01$). The β value shows the effect of internal record system on organizational decision making i.e the extent to which internal record system accounted for the change in organizational decision making. The table also recorded that marketing intelligence system exhibited a significant positive effect on organizational decision making ($\beta = .654$, 0.01). The β value

indicates the impact of marketing intelligence system on organizational decision making which implies the extent to which marketing intelligence system accounted for the change in organizational decision making.

On the part of marketing research system, the multiple regression analysis indicated that marketing research system has positive effect on organizational decision-making as well (β = .186, 0.01). The β value also indicates the extent to which marketing research system accounted for the change in organizational decision making. Lastly, it revealed that marketing decision support system has a positive effect on organizational decision making (β = .169, p < 0.01). This β value is the extent to which marketing decision support system accounted for the change in organizational decision making.

Table 4.7 Model Summary of Multiple Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.903[a]	.816	.813	.8799

a. Predictors: (constant), internal record system, marketing intelligence system, marketing research system and marketing decision support system.

Source: SPSS output of field survey, 2017

The table above shows the change in organizational decision making brought about by marketing decision support system, internal record system, marketing research system and marketing intelligence system. .813 (81.3%) of the change in organizational decision making is explained by marketing decision support system, internal record system, marketing research system and marketing intelligence system.

Table 4.8 Fitness of the Model Analysis (ANOVA[a])

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	929.032	4	232.258	299.955	.000[b]
	Residual	209.838	271	.774		
	Total	1138.870	275			

a. Dependent variable: organisation decision making

b. Predictors: (constant), marketing decision support system, internal record system, marketing research system, marketing intelligence system

Source: SPSS output of field survey, 2017

The *F*-ratio in table 4.8 above tests whether the overall regression model is a good fit for the data. The table showed that marketing information system significantly predict organizational decision making, F (4, 271) = 229.955, $p < .0005$ (This means that the regression model is a good fit of the data).

4.5 Hypotheses Testing

The Regression analysis was employed as an analytical tool for testing the hypotheses. Hypotheses' testing is a systematic way for testing claims or ideas about any given parameter in a population using data measured in a sample. The p-values reported in the regression coefficient tables are used for testing the study hypotheses.

The Decision Rule

If the probability value calculated is greater than the critical level of significance, then the null hypotheses will be accepted while the alternate hypotheses is rejected and vice versa. If the probability value of 0.00 is smaller than the critical value of 5% (i.e.

0.00 < 0.05), it will be concluded that the given parameter is significant. In this situation, it is accepted that there is need to reject the null hypotheses and to accept the alternate.

In Gujarati and Porter (2009), when the null hypotheses are rejected, it will be concluded that the findings are statistically significant and vice versa. They also posited that it is preferable to leave it to the researcher to decide whether to reject the null hypotheses at the given value.

Note the p- value (probability value) is also known as the observed or exact level of significance or the exact probability of committing a type 1 error. More technically, the p-value is the lowest significance level at which a null hypothesis can be rejected (Gujarati and Porter, 2009). Thus, the p-value is at 0.05 (5%).

Hypothesis $H0_1$

There is no significant relationship between internal record system and organizational decision-making**.**

Since the p-value established is at 0.05 (5%) i.e. the level of significance which is the tolerable error in estimation is greater than the critical level of significance (0.002< 0.05) in table 4.6, the null hypothesis is rejected while the alternate is accepted implying that there is significant relationship between internal record system and organizational decision-making**.**

Hypothesis $H0_2$

Marketing intelligence system has no significant relationship with organizational decision - making.

From table 4.6 above, the critical level of significance of 0.000 is less than the p-value established (0.000 < 0.05), therefore the null hypothesis is rejected to accept the alternate thereby implying that Marketing intelligence system has significant relationship with organizational decision making.

Hypothesis $H0_3$

There is no significant relationship between marketing research system and organizational decision-making.

Table 4.6 above shows that the calculated critical level of significance for marketing research is less than the p-value of 0.05 (5%) i.e. (.000 < 0.05) and this means that the level of confidence between the two factors is 100%. Similarly, the null hypothesis is rejected to say that there is significant relationship between marketing research system and organizational decision-making.

Hypothesis Four $H0_4$

There is no significant relationship between marketing decision support system and organizational decision making.

The level of significance that was calculated for marketing decision support system in table 4.6 above is lesser than the established p-value (.000 < 0.05), therefore the null hypothesis is again rejected to accept the alternate hypothesis which states that there is significant relationship between marketing decision support system and organizational decision making.

4.6 Discussion of Findings

In accordance with the analysis of data conducted in chapter four and the review of related literature in chapter two, the discussion of findings of this research study is presented below.

Internal Record System and Organizational Decision-Making

From the results of data analyzed in table 4.2, it was reported that the overall positive correlation coefficients values among variables of internal record system is indicative that they are appropriate indicators and dimensions of internal record system. The R^2 adjusted in table 4.7 showed the extent to which internal record system accounted for change in organizational decision making .813(81.3%).

More so, the result of hypothesis tested in table 4.6 revealed that there is significant relationship between internal record system and organizational decision-making. This result agreed with the findings of Harridge-March (2008) that internal record system provides the opportunity for organizations to mechanize the process of learning about customers. He also noted that internal record system also known as data

base transcends the status of a record-keeping device that become an implement of ever-increasing organization knowledge. The result also follows Mc-Donald (2007) position that the essence of database marketing or internal record system is to develop marketing intelligence that enables marketing managers make marketing decisions in a turbulent, dynamic and contemporary business environment. The implication of this is that internal record system aids marketing managers in making appropriate marketing decisions.

Marketing Intelligence System and Organizational Decision-Making

From the results of data analyzed in table 4.3, it was reported that all the items used to measure marketing intelligence system reported positive correlation among them. This suggests that all the items were appropriate indicators and dimensions of marketing intelligence system. Table 4.7 showed that the R Square Adjusted value .813 (81.3%) indicates that marketing intelligence system accounted for variance in organizational decision making. It also shows that the change in organizational decision making is explained by marketing intelligence system.

Furthermore, the result of hypothesis tested in table 4.6 reported that marketing intelligence system has significant relationship with organizational decision making. This is in line with Kotler et al, (2009) assertion that marketing intelligence is the everyday information which is relevant to a company's markets, gathered and analyzed specifically for the sole aim of making accurate and confident decision-making in determining market opportunity, market penetration strategy, and market development metrics. Again, this result supported the findings of Mochtar and Arditi, (2001) that marketing intelligence system supplies data about the market and that it is a system for capturing the necessary

information for business marketing decision making. This implies that marketing intelligence teams are very sensitive to detect useful data from organizations' database marketing which helps marketers to make good decision.

Marketing Research System and Marketing Decision Making

From the analysis of data in table 4.4, overwhelming positive correlations were observed among the variables of marketing research system. It maintained a high positive correlation between X_{32} (identify new product) and X_{34} (communicate) (r=.527**, 0.01). It shows a low positive correlation between X_{31} (plan) and X_{33}(reduce risk) (r=.087, 0.05). The overwhelming positive correlation among the variables suggests that they are appropriate indicators and dimensions of marketing research system. Table 4.7 showed that the R square adjusted value.813 (81.3%) has an impact on marketing research system and organizational decision making. This shows the extent to which marketing research system accounted for change in organizational decision making.

More so, the result of hypothesis testing in table 4.6 showed that there is significant relationship between marketing research system and organizational decision-making. This is in line with Sultan (2012) observation that marketing research system aids in improving management decision making by providing relevant, accurate, and timely information. It is also in line with Tan and Ahmed (1999) statement that Marketing research is the systematic and objective identification, collection, analysis and dissemination of information for the purpose of assisting management in decision making. The implication of this is that marketing research system helps to reduce risk and uncertainty that affect business decision.

Decision Support System and Marketing Decision Making

From Table 4.5, it was reported that all the variables of Decision Support System exhibited positive and negative correlation coefficient values. The positive values imply that these items are all appropriate indicators of decision support system. Table 4.7 showed that the R square adjusted value .813 (81.3%) of the change in organizational decision making was as a result of decision support system. Accordingly, the result of hypothesis four tested in table 4.6 reported that there is significant relationship between marketing decision support system and organizational decision making. This is further supported by the findings of Nikolaos and Yannis (2003) that marketing decision support system assists decision makers in different scenarios and can be a very helpful tool for a business to take over their competitors. It is further supported by the findings of Shaker (2011) that decision support system helps managers in taking the right decision. Also, Shim et al (2002) observed that marketing decision support systems are used to help solve complex problems by using computer technology and can help businesses with decision making. This implies that marketing decision support system is useful for organizational decision making.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This research study examines effective marketing information system and organizational decision making in the Nigerian telecommunications industry. This chapter focuses on discussing the summary of findings from the analysis of data in chapter four, drawing conclusion on the basis of the findings and making appropriate recommendations.

5.2 Summary

In this study, the raw data generated through questionnaire were analyzed such that they provided very useful and sufficient information to the research study. Correlation and Regression statistical tools were used to analyze the sets of research questions raised in this study. All the null hypotheses were rejected implying that the sample data provided enough statistical evidence that those null hypotheses stated were false. Also effort was made to present the results from data analysis in a factual and original form without any attempt to draw inferences. The chapter also discussed the findings from the results.

The main objective of this study was effective marketing information system and organizational decision making in the Nigerian telecommunications industry. Four objectives were spelt out with the aim of addressing the four research questions raised.

Four hypotheses were subsequently tested in line with objectives, and the findings were summarized below:

The reliability test for the measuring instrument using the Cronbach Alpha coefficient estimation mode was used as a means of testing the reliability of the instrument and the findings revealed that all the sub-scale were deemed to be reliable enough to carry out the research in line with Nunnally and Bernstein (1994) cut of point 0.7. On the specifics, internal record system has the highest Cronbach Alpha value of .843, while marketing research system has the lowest Cronbach Alpha value .721.

The analysis of the background profile of the respondents shows that 45.7% were males, while 54.3% were females. The age distribution of the respondents indicated that 39.9% were between the ages of 18-30years, 33.3% falls between the age range of 31-40 years, 14.1% were between the ages of 41-50 years and 12.7% were 50years and above. The marital status of the respondents indicated that most of the sampled respondents (66.7%) were married, while 33.3% of the respondents were single. The educational profile of the respondents indicated that 6.5% of the sampled respondents were O/Level holders, 18.5% were either NCE or ND certificate holders, 54.3% were either HND or B.Sc Degree holders, 13.8% were MBA/M.Sc holders and others who were uncategorized made up6.9% of the total sample size. As regards the categories of the respondents, 35.1% were MTN respondents, 29% were Airtel respondents, 19.2% were Glo while 16.7% were Etisalat.

The result of the inter-item correlation indicated that all the variables were positively correlated with each other. Specifically, on internal record system,

X_{12}(customer relationship management) has the highest correlation coefficient score with X_{14}(customer behavior response) (r=.339**, 0.01), while X_{11}(target marketing effort) and X_{14}(customer behavior response) has the lowest correlation score of (r=.020, 0.05). The findings from the regression analysis indicated that there was a positive relationship between internal record system and organizational decision-making (β=.061, p<0.01), while it shows that there exists a significant relationship (.002<0.05).

On marketing intelligence system, X_{22}(competitive intelligence) has the highest correlation coefficient score on X_{24}(good team) (r=.526**, 0.01) and the lowest correlation coefficient score were recorded between X_{21} and X_{23} (.136*, 0.05). The regression analysis indicated that there was a positive relationship between marketing intelligence and organizational decision making (β=.654, p<0.01), It also indicated that there was a significant relationship between the variables given that the exact level of significance (.000) is less than the probability of committing a type one error (.05).

On marketing research system, the entire ten 10 correlation coefficient were positive. X_{32} (identify new product) recorded the highest coefficients with X_{34} (communicate) (r=.527**, 0.01), while the lowest coefficient was recorded among X_{31} (plan) and X_{33} (reduce risk) (r=.087, 0.05). The findings from the regression analysis indicated that there was a positive relationship between marketing research system and organizational decision making (β=.186, p<0.01), the result of the findings also indicated that there was a significant relationship between the variables given that the exact level of significance (.000) is less than the probability of committing a type one error (.05).

On the coefficient score for marketing decision support system, some of the correlations coefficients were positive and a negative correlation coefficient is recorded. However, X_{43} (benefit) recorded the highest positive correlation coefficient score with X_{44} (r=.434**, 0.01). The lowest positive coefficient was recorded between X_{41} (familiar) and X_{44} (satisfied) (r=-.157**, 0.05). The findings from the regression analysis indicated that there was a positive relationship between marketing decision support system and organizational decision making (β=.169, $p<0.01$), while it shows that there exists a significant relationship (.000<0.05).

5.3 Conclusion

The following are the conclusions arrived at based on the findings of this study: That internal record system enhances organizational decision-making. This is because internal record system enables organizations target their marketing efforts at customers who have the highest probabilities of purchase, it is considered very important aspect of customer relationship management in organizations, it helps organizations to understand the most important factors driving their customers' choices, and it enable firms understand their customers behavioural response in terms of past purchase behaviour for similar products, attitudes or psychographics.

It is also concluded that marketing intelligence system has positive effect on organizational decision making. This is because marketing intelligence teams are very sensitive to detect useful data from organizations' database marketing, data from firms' customer database also assist in building their competitive intelligence, marketing

intelligence is as important as firms' customer intelligence and the respondents have good marketing intelligence team in their firms.

The study further concludes that there is positive relationship between marketing research system and organizational decision making since marketing research helps a firm to plan how to attract and maintain customers, it helps a firm to identify new product area, it reduces risk and uncertainty that affect business decision and as it helps firms to communicate with their stakeholders.

The study finally concludes that marketing decision support system affect organizational decision making as the respondents were familiar with the decision support system developed in the company. This conclusion was also as a result of the system being useful for decision making. The system also benefits respondents' expectations; this makes them to be satisfied with the system.

5.4 Recommendations

On the bases of the findings of the study and the conclusion, the study recommends as follows:

Internal record system is a large amount of information that is managed in a system. It is the means for storing and retrieving individual-specific data with technological facilitators directing to the targeting of such individuals based on what is known of their interests and characteristics. The basic idea behind marketing internal record system is that it is sufficient to base tomorrow's marketing strategies on yesterday's patterns of activities. It is therefore recommended that telecommunications

firms should provide this system to enable them have access and work with information in the system (data base) to identify marketing opportunities.

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. It is the means by which management can keep in contact with new knowledge of competitors emerging conditions. It is recommended that Nigerian telecommunications industry should put this system in place in order to have knowledge of what other firms in the industry are doing to retain their existing subscribers and also attract new ones.

Marketing research is a proactive search for information to solve a perceived marketing problem. It is a function that links the subscribers and public to the marketer through information. The information is used to identify and define marketing opportunities and problems. When this system is put in place in an organization, information regarding opportunities for the organization will be generated easily. Therefore, managers of the telecommunications firms should ensure that this is installed in the organization to enable them get relevant information that will aid them make appropriate decision.

A decision support system is an integrated set of computer tools allowing a decision maker to interact directly with computer to retrieve information useful in making semi structured and unstructured decisions. It permits managers to simulate problems using formal mathematical models and to test the outcomes of various alternatives for reaching the best possible decision. The study then recommends that telecommunications firms should ensure that this system is installed in their organizations to help managers in

making decision that needs modeling, formulation, calculating, comparing, and selecting the best option available for them.

5.5 Contributions to Knowledge

Based on the findings and conclusions of this study, the following were the contributions to knowledge.

i. The study demonstrated that internal record system, marketing intelligence system, marketing research system and decision support system are dominant predictors of organizational decision making in the Nigerian telecommunications industry.

ii. The study has provided new information that when marketing intelligence system is installed in telecommunications firms, it will influence their decision making.

iii. Again, it has equipped managers of Nigerian telecommunications firms with effective information that will aid their decision making.

iv. Lastly, this study has provided an enhanced model on marketing decision support system and how it helps marketing managers in making decisions that need modeling, calculating and comparison.

5.6 Suggestions for Further Studies

This study, like other research work, ends with an appeal for more research. Both relatively straightforward work and more complex tasks lie ahead.The results of this study were in accordance with some theoretical expectation. The study has researched on effective marketing information system and organizational decision making in the Nigerian telecommunications industry, and the indicators included were internal record

system, marketing intelligence system, marketing research system and marketing decision support system. Further research could recognize the value of other indicators of marketing information system.

The use of cross-sectional data in a single industry may limit some of the conclusions. This is due to the fact that sample objects are ascertained by taking a snap shot of a situation and analyzing it. Further study may avoid such limitation by using longitudinal data generated from the sample objects at different points in time for analysis.

This study examined effective marketing information system and organizational decision making in the Nigerian telecommunications industry. Industry specific studies may be tempted to highlight the constructs of marketing information system on the background of the inherent features of the selected industry. It will be useful to extend further research to other different industries in Nigeria towards developing further consolidated view on this area of study.

The analytical tools used for this study was correlation and regression analysis. It is therefore suggested that other analytical tools be used for further studies to see if the findings will remain the same. Also, method of data collection was purely questionnaire. Other means such as interview should be employed.

This research work was conducted in one state (Delta State) only. The findings from this area alone may not reflect the situations of other states in Nigeria. Based on the forgoing therefore, generalization should be done with care. Therefore further studies should be extended to cover other geographical locations, thus extending the observations and findings to the entire country at large.

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Appendix i

Department of Management,

Faculty of Management Sciences,

Delta State University,

Abraka.

23th February, 2016.

Dear Sir/Madam,

REQUEST FOR THE COMPLETION OF QUESTIONNAIRE

I am an M. Sc. student in the Department of Management and Marketing, Faculty of Management Sciences, Delta State University, Asaba Campus. I am conducting a research on effective marketing information system and organizational marketing decision making in the Nigerian telecommunications industry. It will be appreciated if you kindly respond objectively to the sets of questions contained in this questionnaire. The exercise is purely academic and whatever may be your views will be treated in confidence.

Thanks for your time and assistance on this research.

Yours faithfully,

Ojieh, Magnus
(*Researcher*)

SECTION A: Demographic Information of the Respondents.

Please answer the following questions to the best of your knowledge. Mark (✓) in the option you choose appropriate.

Measuring Group	**Categories**
Gender	Male Female **Total**
Age Range	18 – 30 years 31 – 40 years 41 – 50years 50 years and above **Total**
Marital Status	Married Single
Educational Qualification	SSCE/GCE/NECO NCE/ND HND/B. Sc MBA/M. Sc Others
Category of respondent	**Staff**: MTN
	AIRTEL
	GLO
	ETISALAT
	Subscriber: MTN
	AIRTEL
	GLO
	ETISALAT

SECTION B: Information about effective marketing information system and Organizational marketing decision making.

Use the scale below:

SD	Strongly Agreed
D	Agreed
U	Undecided
D	Disagreed
SD	Strongly Disagreed

Internal Record System

S/N	STATEMENTS	SA	A	U	D	SD
1.	Internal record system enable organizations target their marketing efforts at customers who have the highest probabilities of purchase					
2.	Internal record system is considered very important aspect of customer relationship management in organizations.					
3.	From internal record system, organizations understand the most important factors driving their customers' choices.					
4.	Internal record system enable firms understand their customers behavioural response in terms of past purchase behaviour for similar products, attitudes or psychographics.					

Marketing Intelligence System

S/N	STATEMENTS	SA	A	U	D	SD
5.	Marketing intelligence teams are very sensitive to detect useful data from organizations' database marketing.					
6.	Data from firms' customer database also assist in building their competitive intelligence					
7.	Marketing intelligence is as important as firms' customer intelligence and we take both seriously					
8.	In our company, we have a good marketing intelligence team					

Marketing Research System

S/N	STATEMENTS	SA	A	U	D	SD
9.	Marketing research helps a firm to plan how to attract and maintain customers.					
10.	Marketing research helps a firm to identify new product area.					
11.	It reduces risk and uncertainty that affect business decision.					
12.	It helps firms to communicate with their stakeholders.					

Marketing Decision Support System

S/N	STATEMENTS	SA	A	U	D	SD
13.	I am familiar with the DSS developed in the company.					
14.	The system is useful for decision-making.					
15.	The system's benefits met my expectations.					
16	I am satisfied with the system.					

Organizational Marketing Decision-Making

S/N	STATEMENTS	SA	A	U	D	SD
17.	We rely heavily on information from our database marketing for all our marketing decision-making.					
18.	Marketing decisions made previously based on our database marketing resulted to positive return on investment					
19.	We evaluate the quality of data in our database marketing through the outcome from decisions made thereof.					
20.	We use data from our database marketing to make proactive marketing decisions					

Appendix ii

```
CORRELATIONS
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  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE.
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Correlations

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
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Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.03

Descriptive Statistics

	Mean	Std. Deviation	N
target mktg effort	4.844	.3828	276
Crm	4.670	.5009	276
customer choice	4.750	.5385	276
customerbehv. Response	4.746	.5126	276

Correlations

		target mktg effort	Crm	customer choice	customerbehv. Response
target mktg effort	Pearson Correlation	1	-.041	.251**	.020
	Sig. (2-tailed)		.494	.000	.737
	N	276	276	276	276
Crm	Pearson Correlation	-.041	1	.057	.339**
	Sig. (2-tailed)	.494		.343	.000
	N	276	276	276	276
customer choice	Pearson Correlation	.251**	.057	1	.217**
	Sig. (2-tailed)	.000	.343		.000
	N	276	276	276	276
customerbehv. Response	Pearson Correlation	.020	.339**	.217**	1
	Sig. (2-tailed)	.737	.000	.000	
	N	276	276	276	276

**. Correlation is significant at the 0.01 level (2-tailed).

```
CORRELATIONS
  /VARIABLES=sensitive competitiveintelligence seriously goodteam
  /PRINT=TWOTAIL NOSIG
  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE.
```

Correlations

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
Syntax		CORRELATIONS /VARIABLES=sensitive competitiveintelligence seriously goodteam /PRINT=TWOTAIL NOSIG /STATISTICS DESCRIPTIVES /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.05

Descriptive Statistics

	Mean	Std. Deviation	N
sensitive	4.576	.6753	276
competitive intelligence	4.420	.6585	276
seriously	4.377	.7927	276
good team	4.301	.7676	276

Correlations

		Sensitive	competitive intelligence	seriously	good team
sensitive	Pearson Correlation	1	.288**	.136*	.184**
	Sig. (2-tailed)		.000	.023	.002
	N	276	276	276	276
competitive intelligence	Pearson Correlation	.288**	1	.497**	.526**
	Sig. (2-tailed)	.000		.000	.000
	N	276	276	276	276
seriously	Pearson Correlation	.136*	.497**	1	.429**
	Sig. (2-tailed)	.023	.000		.000
	N	276	276	276	276
good team	Pearson Correlation	.184**	.526**	.429**	1
	Sig. (2-tailed)	.002	.000	.000	
	N	276	276	276	276

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

```
CORRELATIONS
  /VARIABLES=plan identifynewprdtreducerisk communicate
  /PRINT=TWOTAIL NOSIG
  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE.
```

Correlations

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
Syntax		CORRELATIONS /VARIABLES=plan identifynewprdtreducerisk communicate /PRINT=TWOTAIL NOSIG /STATISTICS DESCRIPTIVES /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01

Descriptive Statistics

	Mean	Std. Deviation	N
Plan	4.558	.7534	276
identify new prdt	4.279	.7897	276
reduce risk	4.359	.8213	276
communicate	4.261	.8554	276

Correlations

		plan	identify new prdt	reduce risk	communicate
plan	Pearson Correlation	1	.300**	.087	.236**
	Sig. (2-tailed)		.000	.151	.000
	N	276	276	276	276
identify new prdt	Pearson Correlation	.300**	1	.367**	.527**
	Sig. (2-tailed)	.000		.000	.000
	N	276	276	276	276
reduce risk	Pearson Correlation	.087	.367**	1	.208**
	Sig. (2-tailed)	.151	.000		.001
	N	276	276	276	276
communicate	Pearson Correlation	.236**	.527**	.208**	1
	Sig. (2-tailed)	.000	.000	.001	
	N	276	276	276	276

**. Correlation is significant at the 0.01 level (2-tailed).

```
GET
  FILE='C:\Users\user\Desktop\now.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
CORRELATIONS
  /VARIABLES=familiar useful benefit satisfied
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

Correlations

Notes

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	N of Rows in Working Data File	276
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
Syntax		CORRELATIONS /VARIABLES=familiar useful benefit satisfied /PRINT=TWOTAIL NOSIG /MISSING=PAIRWISE.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.03

[DataSet1] C:\Users\user\Desktop\now.sav

Correlations

		Familiar	useful	benefit	satisfied
familiar	Pearson Correlation	1	.284**	-.063	.157**
	Sig. (2-tailed)		.000	.300	.009
	N	276	276	276	276
useful	Pearson Correlation	.284**	1	.410**	.284**
	Sig. (2-tailed)	.000		.000	.000
	N	276	276	276	276
benefit	Pearson Correlation	-.063	.410**	1	.434**
	Sig. (2-tailed)	.300	.000		.000
	N	276	276	276	276
satisfied	Pearson Correlation	.157**	.284**	.434**	1
	Sig. (2-tailed)	.009	.000	.000	
	N	276	276	276	276

**. Correlation is significant at the 0.01 level (2-tailed).

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT ORGANISATIONDECISIONMAKING
  /METHOD=ENTER INTERNALRECORDSYSTEM
MARKETINGINTELLIGENCESYSTEM MARKETINGRESEARCHSYSTEM
MKTGDECISIONSUPPORTSYSTEM.
```

Regression

Notes

Output Created		18-MAY-2017 21:38:20
Comments		
Input	Data	C:\Users\user\Desktop\now.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	276
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT ORGANISATIONDECISIONMAKING /METHOD=ENTER INTERNALRECORDSYSTEM MARKETINGINTELLIGENCESYSTEM MARKETINGRESEARCHSYSTEM MKTGDECISIONSUPPORTSYSTEM.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.03
	Memory Required	2692 bytes
	Additional Memory Required for Residual Plots	0 bytes

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	MKTG DECISION SUPPORT SYSTEM, INTERNAL RECORD SYSTEM, MARKETING RESEARCH SYSTEM, MARKETING INTELLIGENCE SYSTEM[b]	.	Enter

a. Dependent Variable: ORGANISATION DECISION MAKING

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.903[a]	.816	.813	.8799

a. Predictors: (Constant), MKTG DECISION SUPPORT SYSTEM, INTERNAL RECORD SYSTEM, MARKETING RESEARCH SYSTEM, MARKETING INTELLIGENCE SYSTEM

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	929.032	4	232.258	299.955	.000[b]
Residual	209.838	271	.774		
Total	1138.870	275			

a. Dependent Variable: ORGANISATION DECISION MAKING

b. Predictors: (Constant), MKTG DECISION SUPPORT SYSTEM, INTERNAL RECORD SYSTEM, MARKETING RESEARCH SYSTEM, MARKETING INTELLIGENCE SYSTEM

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.738	1.010		1.721	.086
INTERNAL RECORD SYSTEM	.105	.045	.061	2.341	.002
MARKETING INTELLIGENCE SYSTEM	.639	.035	.654	18.158	.000
MARKETING RESEARCH SYSTEM	.172	.033	.186	5.193	.000
MKTG DECISION SUPPORT SYSTEM	.170	.035	.169	4.924	.000

a. Dependent Variable: ORGANISATION DECISION MAKING