

The Impact of Marketing Intelligence on Innovation and Technological Entrepreneurship in Jordan Telecommunication Company (Empirical Study)

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Abstract

The aim of this study is to know the impact of marketing intelligence variables (intelligence product, competitors intelligence, database, customer understanding, understanding the market) on technological innovation. The JTC is chosen for this study. The importance of the study comes from the fact that marketing intelligence is one of the important topics in the continuous technological developments, entrepreneurship and fast connection where the global business environment has become more competitive and faces many challenges which require conscious and systematic approach by departments and organizations. Despite the adoption of recent technologies in different business areas for technological and managerial organizations, there is still a failure by organizations in the use of marketing intelligence systems, which gives organizations strengths and ability to last and becomes unique. We must not forget role of these systems in technological innovation which help organizations in providing new products and services. The questionnaire was developed to collect data from the study's community which includes 150 employees in order to achieve the objectives of the study and testing of hypotheses. The main conclusions and recommendations of this study are the existence of statistically significant impact for marketing intelligence dimensions in technological innovation, the need of organizations to adopt modern technology in developing their work due to its high precision in business achievement, also, establish the concept of technological innovation in organizations, which gives it competitive advantage in the market. Continuous attention for technology analysis and data manipulation tool in the telecom company offers advanced analysis of data structure and support the decision-making process. Continuous development and updating of the database by JTC since it is a large databases that store huge amounts of data. In addition to that, we the need to understand the customer because the core all organizations.

 $\label{ligence} \textbf{Keywords}: intelligence \ , marketing \ , marketing \ intelligence \ , database \ , understanding the customer \ , understand the market \ , competitors intelligent \ , intelligent product, technological innovation \ , communications company \ , Jordan$

Introduction

Accelerated changes in marketing leads to an increase on the demand of information, where the product life cycle is short, modern technologies develop faster, and competition war is more in the global market. We can say that the marketing intelligence is considered among the most open and globalized economy means which is witnessing dramatic changes through information and communication technology. In the recent developments, marketing intelligence considered as a form of good market sense, in order for business organizations to innovate , produce and market, they need real, necessary, comprehensive information . Analyzing and organizing information has become more important: knowledge of markets, divisions, its openness to the world, its conditions and competition knowledge, technology and innovations etc.

The marketing director in the 21st century must be technical, dealer, a man of law, orderly and strategic like a soldier on the battlefield, that depends on the query in defense rather than specialization. Information has an important role in all phases of the organization's evolution, therefore, no organization can develop or even last without special knowledge of own structure. The new world system into the 3rd industrial revolution (or technological revolution), it is expected that this system in its current development and the near future will has intensive scientific and technological revolution in many aspects. This role played by multinational corporations because of their financial capabilities and enormous financial and human resources devoted to research and development of discoveries and innovations (AbdelWahabShamam, 2010). The recent age (information age) got numerous changes, a lot of information, and the new updated knowledge. These days, information technology plays a prominent role and in order for organizations to survive, they must keep up to date by having information systems that enable them to control their work. With this huge competition between organizations and the challenges they face, organizations should use and develop computer-based information systems, especially intelligent systems, that enable the Organization to develop its business, products, services and engage in world competition and excellence(Alhayali 2009). The use of marketing intelligence systems contribute and play an important role in provoking and stimulating innovation in organizations (AL Zoubi 0.2010), add value to their business by getting the output of different innovation implemented in putting up new products and services,



designing new methods and techniques (Malkawi 2007), and based on this, we need a system to take care of query and update environmental intelligence, including technological and other known marketing intelligence system.

Framework and Methodology

Problem study: Knowledge and Practical Issue

The main focus of this study is on the concept of technological innovation and marketing intelligence as they are considered an important concepts in marketing and got a lot of research attention. Recently, more focus on the scientific fields that are related to technological innovation and marketing intelligence in Jordanian companies, although there is inadequate clear by companies in the application of these concepts. Despite the adoption of technological development in various business area, technological and managerial organizations, organizations have failed to use marketing intelligence systems which help organization to last and excellence. Add to that the role of these systems in creating technological innovation systems for organizations which will help in providing new products and services

Study Questions: The study problem can be illustrated through the following questions:

- Dose the telecommunication companies care and employ marketing intelligence to achieve technological innovation.
- What is the relationship between technological innovation and marketing intelligence and the impact of each on the organization?
- Dose the Jordanian telecommunications company understand the importance of using marketing intelligence systems?
- Is there a tangible impact for the use of marketing intelligence systems on technological innovation in the Jordanian telecommunications company?
- Dose the have a clear picture on the concept of technological innovation?

Study Importance: Technological innovation and marketing intelligence help improving organizations products, services, Then their performance and effectiveness of marketing. therefore, these two concepts are important for the following reasons:

- Marketing intelligence is one of special and important topics in the continuous technological development, entrepreneurship, and fast connections, where the global business environment becomes competitive.
 This phenomenon raised many challenges that require a conscious and systematic approach by the managements and organizations.
- The importance of this study comes from being studying new concept in the marketing field which is the marketing intelligence, since it is still under development and study. also, it has a big unique role in the success of many businesses; specially when the markets characterized by a high degree of economic freedom which gives customers wide range of choices to select from among available products in the market.
- The importance of technological innovation in achieving entrepreneurial institution when priority is given to pilot projects must take into account the creativity and innovation

Study Objectives: the main objectives of this study are:

- Identify the impact of marketing
- intelligence systems on technological innovation
- Organization should know the need for using marketing intelligence systems and its role in achieving technological innovation
- Achieve practical results that contribute in developing organization process and provide recommendation and suggestion on that issue.

Study Model and variables

We need to build a virtual model to explain the study's problem and achieve its objectives. through that model, independent variables represented by the intelligence marketing and its effect and dependent variables represented by technological innovation. figure 1 shows the model.



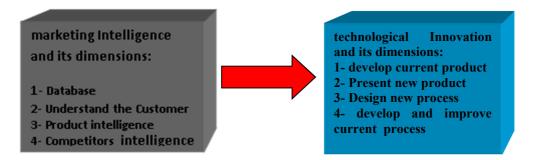


figure 1: study model

Study Hypotheses: The following hypotheses has been put based on the study problem and objectives:

- **First Main Hypothesis**: There was no statistically significant impact for marketing intelligence in its various dimensions on technological innovation in JTC. Three hypotheses come out of this:
- 1. **First Sub-Hypothesis 1**: no statistically significant impact of database on technological innovation in JTC
- 2. **Second Sub-Hypothesis**: there is no statistically significant impact of customer understanding on technological innovation in JTC.
- 3. **Third Sub-Hypothesis**: no statistically significant impact of understanding market on technological innovation in JTC.
- 4. **Forth Sub-Hypothesis**: no statistically significant impact for intelligent product on technological innovation in JTC.
- 5. **fifth Sub-Hypothesis**: there is no statistically significant impact for intelligent competitors on technological innovation in JTC.
- **Second Main Hypothesis**: No differences in the level of marketing intelligence and technological innovation among workers due to demographic factors for respondents

Study Methodology

Study Methodology: In this study we used the descriptive approach and Inferential analysis. In the descriptive approach, we have explored the sample study to identify the main characteristics of it which will be listed later on. For the analytical approach, all data; collected from the questionnaire distributed on the study sample has been analyzed using the appropriate statistical methods.

Population and Study Sample: The study population consisted of 150 employees from the Department of information systems and technology, research and development. Depending on a comprehensive study, a 150 surveys have been distributed on the sample study, and only 138 have been received, which are valid for analysis. Therefore, the total of 138 questionnaires are submitted for analysis, which form about 91% of the study population. **Study tool**: For the purpose of achieving the objectives of the study, a survey of two parts have been used. The first part includes demographic variables on the characteristics of the sample according to the following personal factors (gender, age, educational qualifications, work experience). The second part include 42 paragraphs that measure the independent variable (inelegant marketing) with its dimensions and the dependent variable (technological innovation) and its Indications.

Study tool consistency and honesty: the study tool has been verified by number of Arbitrators to check paragraphs veracity and know the suitability, validity and veracity of the paragraphs that has been used to measure the inelegant marketing and technological innovation. Also, to check if paragraphs are fit within the dimension that will be measured. Regarding the consistency of the study tool, Internal consistency coefficient was extracted for the study tool. Based on the kronbakh factor alpha where the values of consistency coefficient, The paragraphs in the study tool has consistency and coherence. Since the measure of the internal consistency of all paragraphs of the questionnaire is 0.935 and all values greater than 0.63, it is an indication of consistency between paragraphs and the reliability of the data obtained for analysis and hypothesis testing.

Previous Study

- The study of (**Hadeel A. Mohammad 2012**) entitled "The Impact of Business Intelligence and Decision Support on the Quality of Decision Making An Empirical Study on Five Stars Hotels in Amman Capital" contains



an attempt to figure out the impact of intelligent marketing and decision support systems on the quality of decision making. The study was done on hotels of five stars in Amman. The study found that there is a clear impact of intelligent marketing on Decision Making by its reports which contain high quality information that made Decision Making process fast.

- The study of (Azizah Ahmad 2011) entitled :"Business Intelligence for Sustainable Competitive Advantage: The Case of Telecommunications Companies in Malaysia" explore the role of intelligent marketing in a achieving competitive advantage. The study was conducted on telecommunications companies in Malaysia. it concludes that there a role for marketing intelligence to achieve a competitive advantage for telecom companies through it ability in the availability of data and information in a time.
- Najjar (2010) study entitled "Information systems and their impact on creativity levels. This study aimed to find out the impact of information different types of systems in creativity levels (creativity at the individual, group, and corporate level)". The study found that information systems has a direct affect on all levels of creativity in the Jordanian insurance companies.
- Hussein (2010) study entitled: "The relationship of technological innovation on customer satisfaction (guest)". The study aimed at the application of technological innovation in the hotel business section to achieve a competitive advantage by increasing customer services, or decrease the services cost through direct work action and improve the quality. With abilities to design the service in a way of its marketing, production and delivery, in addition to other secondary services. The study found there a significant correlation relationship between technological innovation and customer satisfaction
- A study about the importance of intelligence marketing in business organizations(Francine Joseph agniter,2011) found that the marketing director search the market news in 45%, 11 % for the sales negotiations, 9% for customer news, and % for the competitors news and others possible sides. Also, it found that the marketing director define the source of information for manager in about 35%, 22% for customers, and 16% for the newspapers, magazine and other ways.
- The study of (Khalid Qashi and Hakem Khelfaoui 2012) entitled "the role of intelligence marketing in achieving competitiveness in the modern business organizations". The study concluded several results and recommendations including: the use of intelligent marketing in business organizations would develop the ability to compete and last. When modern business organizations take care of an intelligent marketing system, it works as a sensor that improve information and guarantee competing ability.

Theoretical Framework

The concept of marketing intelligence: The first intelligent marketing system designed, applied by Robert Williams in 1961, he applied it in Edward Dutton's company. The system is considered as a baseline which enable marketing management to keep regular touch to the current events in the market and environment. Oxford Dictionary defines intelligence as confidential information that is collected about enemy of foreign countries. intelligence defined as a concept just as information concerning current and potential enemies (Web Stors 2009). This means that intelligence is limited to secret space concerned about enemies.

Intelligence has many definition in business, management and economy: intelligence is an organized and coordinated set of comprehensive integrated processes that are designed in the whole company aimed to generate, evaluate, and distribute marketing information (Taa'y and Ajarmah 2008). Or it is the style or he way that enable the marketing manager from regularly test and know changes in the internal and external environment(Abo Khif 2006). Or it is all the useful information that can be used by the marketing management to improve the organization competition (al-Abadi and Swaidan 2009). also, It is a wide range of activities used to collect information about competitors (Yasin 2012). While Negash and Gray says that it is the combination process between data collection, storage and knowledge management with the analysis tools to provide valuable and competitive information for planners and decision-makers for marketing (azizah 2011). (David loshin 2013) define intelligence marketing as an operations, technology and tools that help in the conversion of data into information, transform information into knowledge and convert knowledge into marketing strategy plans to help the organization in competitors, while the researcher define the intelligent marketing as a set of individuals, equipments, and operations that are used in a legal and moral ways, allow the flow of the information on developments and changes that happen in the marketing environment down to making suitable marketing decision to support the over all objectives of the organization. No matter how many definitions for intelligent marketing, we can look at it through the following: first: intelligent marketing support decision (Sawaf 2012). Second intelligent marketing is the main part of knowledge management(convert data o information, then to knowledge) (Sawaf 2012). Finally, intelligent marketing from a technological perspective where it is a system to achieve the goal of using intelligent marketing (Turban 2009).



Intelligent Marketing Characteristics

Marketing intelligence system features a range of properties including: (Ali Zu'bi 2015; Scheps Swain ,2008:

- A system that has a legal, moral legitimate methodology.
- It helps marketing managements in decision-making.
- It is one of the strategic information systems in the organization because it provide them with vital intelligence information .
- It requires a range of equipment, requirements and resources.
- It requires continuous interaction with the marketing environment and monitoring of developments and changes

The importance of marketing intelligence

The importance of marketing intelligence came from the following points:

- It represents the main part in the early warning system by receiving warning signals and delivering them to the decision makers .
- It represents a protection system that helps to provide knowledge and understanding about the surrounding variables .
- It represents a bridge between the accumulated information and business strategies .
- Identify the environmental variables and their developments.
- Represents a new strategy to enter new markets and creating marketing opportunities .
- It represents one of the main sources for creativity and innovation in the organization . (Loshin David, 2013)
- It helps to absorb the prevailing situation of the work environment (which characterized by strongly competition and became more complex as a result fast changes) by trying to expect the direction business in the future or identify opportunities or risks that should be avoided (Rezzig 0.2012)
- The aim of intelligent marketing is to help in making the best decision by collect, store, analyze, and get useful information and knowledge for the organization. and provide instantaneous and accurate information of high value and data of great reliability available from several sources (Lloyd, 2011).

The main areas of intelligent marketing

The marketing intelligence system plays a major strategic role in the organization. through its contribution to the Organization in adopting the concept of environmental management. Intelligent marketing used in many fields (Mazhar al-Ani et al. 2012) as showing in the following table.

Table (2): areas of intelligent marketing

	3. 1 () 1. 1. 1. 1. 8						
#.	Indigence area	Business organization type					
1	Product Pattern and shape	Consumer goods organizations and advertising					
		agencies					
2	Pricing, promotion and advertising strategy	All organizations					
3	Expansion plans and new product development	Commercial, educational and transportation					
4	Competition plans and getting a competitive	Banks, advertising agencies, and insurance					
	advantage plans						
5	Development research and performance	Consumer goods organizations					
	improvement.						
6	Increase sales and their statistics	All organizations					
7	Making decisions	All organizations					
8	Production operations	Consumer and industrial goods organizations					
9	Data costs and invention revenues	Industrial goods and petroleum organizations					

Intelligent Marketing Types

Intelligent marketing can be classified according to more than one classification. According to the centralization standards, we can have centralized and non-centralized intelligent marketing. according to the official standards, there are the official and non-official intelligent marketing. the following diagram shows that (Ali Alzoubi and zakaria azzam 2012) & (Ali Alzoubi 2015).





Figure (2): Intelligent marketing Types

Intelligent Marketing Components

The big developments in business environment and the flexibility of intelligent marketing does not limit its technological components to a number of specific types. In general, looking at the flexibility intelligent marketing, we see five major components (Lloyd 2011):

- Database: In 1992, William H. Inmon presented a comprehensive and detailed definition of database that includes several characteristics: specific and Subject oriented, integrated, Non-volatile, and related to a time factor (Time Variant)) (Inmon 2003). Subject oriented where data stored in a data warehouse according to its subject, which means that data split into small parts that consist every particular section in the organization (i.e. sales information, marketing, products information, and customer information), where it can be organized and employed to support marketing decision inside organization. Also, give a comprehensive overview of the organizations activities (Sharma Gajendra, 2008). The analysis and data processing (OLAP), the concept of analysis and data processing indicates that there is ability to analyze large amounts of data and produce data in various forms such as graphic (Salwa al-Samarrai 2012). and then drilling data (Data mining). Where the concept of data mining refers to the hiring process and the use of technology and the one or more data analysis to extract hidden knowledge of the rules and the database within the organization. Then, goes to data mining. data mining is the process of using one or more technologies that analyze data to extract hidden knowledge from organizations databases(Hani Artemh et al. 2012, p. 4).
- **Understanding Customer**: Customer is considered as the starting point of the marketing activity, also, customer represents the core of the game and substance of the marketing job. therefore, competition between organizations depends on "know your customer, satisfy his needs in the best ways"
- **Understanding market**: the marketing understanding variables are: the market growth, market share, market size and the nature of potential customers. who understands that become clearly aware of the markets surrounding the adoption of a successful strategy that achieve competitive advantage.
- **Product intelligence**: The intelligent product has an essential role in making decisions of the mix product by providing smart information on the possibilities of facing current coming products and nature of competitors. (Ali Alzoubi 2015).
- Customers Intelligence: it is the ability to collect data and information about competitors, their activities, plans, analysis their previous behavior, picture their future behavior, see their current strategies which represents an important way to the dorm of marketing strategy in the organization (Mohammad Hadeel 2012)

Intelligent Marketing stages

- 1. Determine the need for information
- 2. Collect Information
- 3. Process Information
- 4. Broadcast information for decision-making

Intelligent Marketing Challenges (Ali Alzou'bi 2015)

- 1. Political Challenges (Bilal Alsakarneh 2008) and (Hani Artemh et al. 2012, p. 14).
- 2. Marketing Challenges(Tan pang –ning ,2011)
- 3. Technological Challenges(Turban, efram and others 2009)

Technological Innovation

The concept of technological innovation.

Before talking about the concept of technological innovation, we must clarify the concept of creativity. Creativity



is defined as the process that introduction new products or new methods of production. This include all stages of the innovation to the development, then experimental production to marketing and commercial production. The future requires a broad shift to support innovation system with institutions and organizations supported by the private sector (Cooke 2001)

technological Innovation as defined by (Shodjai 1995) is the process that requires cooperation and coordination between a number of overlapping activities in the organization in order to adopt, use new ideas and technological developments depending on a systematic applicable methods for the purpose of introducing goods or new service for the organization, or design/improve new process in order to satisfy customers needs. Then achieve the objectives of the organization to last, grow and become more competitive (Diaye 2002) that technological innovation refers to a series of technical and industrial steps that contribute to introduce new products to Alsoq.oaakd (Willam 2007) that technological innovation is discovery and development of products (goods or services) or processes, discovery and development of new products is the entrance to the development of new knowledge and its translation into commercial applications. (Diaye 2002) explained that technological innovation is a series of technical and industrial steps that contribute in the introduction of new products to the market (Willam 2007). assure that technological innovation is the discovery and development of products (goods or services) or processes. Discovering and developing new products is an entrance to develop new knowledge and convert it to commercial applications. Many researchers have agreed (Hassan 2008) (2002) (narrator 2005) that technological innovation is classified to the creativity and innovation of the product process. The creativity of the product include: introducing new product, improving an existing product. Creativity of the process include: design or use a new process and improve an existing (Hani Artemh et al. 2012).

Creativity, as shown in Figure 3 is a source of drawing future milestones 'new business organization 'in terms of introduction of new products in thier quality, shape, technical characteristics, more technical and shot time products (Ali Alz0u'bi and Zakaria Azzam . 2012).

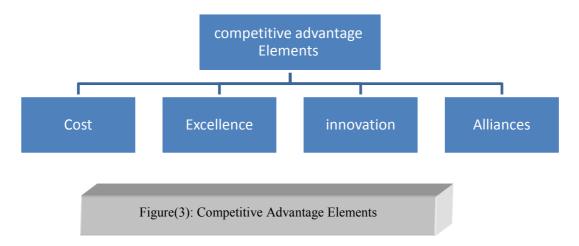
Innovation Classifications: Innovation can be classified as follows: Basic Innovation, applied innovation, etymological innovation and change innovation. (Bjerke, B., and C. Hultman, 2009)

Types of creativity: There are three main types of innovation: constructivist innovation, evolutionary innovation (developmental), and radical innovation (Buskirk, B., and M. Lavik, 2009)

Innovation obstacles: Obstacles are represented in the following: the strategy , methods, tools , ways and time . (Carson, D 2008; Ali alzoubi 2015).

Technological innovation and entrepreneneurship

The technological development is one of the main driving forces of competition due to its structured organized implications, and its ability to create new products and industrial activities. Many organizations last and continue because of this factor. In order for the Innovation to play this role, it should provide the following conditions (Colbert, F. 2009; Hussein Ihyosh, 2010):



This innovation should be for a specific period of time.

- It has positive effects on the various elements affecting the cost.
- Give the secondary benefits of creative excellence, even if the latter was based on obsolete technology (base)
- This innovation has an impact on the structure of industrial activity or other that organization dose it main activity, these conditions are the motivations to adopt innovative strategies by business organizations that



seek to improve their competitiveness and reach Excellency.

Usually, The main features of the innovation strategy determined by answering the following questions: What are the technologies to be developed or invented? Should we become the first to make progress in these technologies? What is the status and importance of these technologies licenses? The answer to the first question requires the choice of technology that are more fit and help to achieve the major goals of the overall strategy of the organization. with regard to the technological head start, - which gives its owner distinction - it comes through attention to innovation and to highlight the spirit of innovation in the organization. This head start is related other three sub-elements:

- the fame.
- excellent position in the market that gives organization an opportunity to control production power, ways and shape of distribution of the new product.
- determine the marketing and production criterias
- a head start in gaining skills, experience and new knowledge.
- put legal and organizational obstacles to fight against counterfeiting, theft: patents, for example.
- The possibility of achieving high profits due to the head start factor which allow contracts, deals, ... etc
- The risk of a head start, which include: the cost of innovation (Hani Artemh et al., 2012)

looking at the technological concept in the marketing field, Its clearthat there are two definitions of Technology, one is narrow and the other is wide, the narrow concept represented as it is the "technical process designed to harness the tools and scientific knowledge rules for the production process". The wide concept "exceeded the limits of the production process by focusing at the same time on the way the management or information systems". Technological entrepreneneurship embodied mainly in the productive side, which used to introduce new products to the market. The operational side that based on the development or use of new technology in the field of processing system (computer based system). This in order to achieve competitive advantage through creativity and technological innovation (Jumat, A., A. Ishak, M. Faeruz, and I. Rohani, 2008). Technological entrepreneneurship cannot be pictured and understood away from the creativity and technological innovation. Technological innovation is the process by which the embodiment of creativity in practical reality. Which mean that idea converted into marketing concept that embodied in either the service, the creation of a new product, or new product development. This is what leads us to say that the technological entrepreneneurship lead to achieve competitive advantage through innovation. The technological revolution in a cycle in the global marketing changes. If the industrial revolution has enabled Human to control natural forces, then the technological revolution enabled him to expand his mental abilities and potential productivity. The main advantages of this revolution are (Dorn, C., and N. Scan Nell, 2010):

- accelerate exploration results in various sectors.
- Technology has become a direct productive element
- automation entered various activities, especially the industrial ones

Marketing literature treated technological revolution based on the following types (Buskirk, B., and M. Lavik, 2009):

- Information Technology: Microelectronics technology is the centre of the modern technological revolution which implemented in computers, informatics, and automation. It is possible to rely on it tomanage the production cycle in huge factories using a small percentage of high level manpower (industrial automation systems), such as a complete manufacturing computer system and the flexible manufacturing system. The fast developments in information technology led to a revolution in the service area and turned it to industry in itself that occupies an important place in international trade at the level of the emergence of new service-activities or the dynamic growth in this sector or at the level of its effects on other sectors. (Hani Artemh et al. 2012)
- **Biotechnology and Genetic Engineering**: This kind of technology help organisms to fit into others to a level that human can control the nature. The most important progress in this area has been in agriculture. Seeds have been developed to become give more production, resistance to natural conditions, or resistant to various diseases. Control has also been in the development and diversification of livestock by creating new types and changing fertility cycles in the animal. (Hani Artemh et al. 2012)
- Advanced Materials Technology: Chemical and petrochemical industries have played (and still) an essential and important role in developing new materials. Sequential and fast progress has been made in this area is reflected in the pushing of new goods that can be used in industry or other activities. These goods override and replace those which relied on nature or limited. Given that the new materials have high technical specifications, low-cost and the ability to control their production, it has become a serious competitor to these natural goods produced by private underdeveloped countries. (Buskirk, B., and M. Lavik, 2009).
- **New and Renewable Energy Technology**: The technology that develop alternatives for the conventional energy because of the high global demand and dropping of the global oil reserve. The nature



of the energy in the future is nuclear energy, solar energy, earth energy esoteric and ocean energy. From the previous, it's clear that technology has a role in the development of the country, technical, marketing, and the political level. and then the evolution and change in the structure of the international economy. (Hani Artemh et al. 201)

Practical framework (Statistical analysis)

First: Description of demographic variables

Table (3) the characteristics of the study population according to personal and functional variables

Sex	Repetition	Percentage%
male	88	64
Female	50	36
Total	138	100

Table (3) indicates that the sample had contained most of the properties, which is characterized by the community members. The proportion of males (64%) is more than females. this can be explained by the fact that the company relies on more males in IT departments .

Table (4) indicates that the sample contains most of the properties, which is characterized by the members of the community, 74% of the members are bachelor holders and the rest hold master or high diploma. It may happen because of personal reasons of the employee or organization attracts employee with high education,.

Table (4) Qualification for the community study

Qualifications	Repetition	Percentage%
Diploma	25	16
Bachelor	100	74
Master or high Diploma	11	8
Doctorate	2	2
Total	138	100

Table (5) indicates that the sample contains most of the properties, which is characterized by the members of the community. Also, members have some experience in general, where the percentage of those who have experience of 6-10 years is (46%), and this is inline with the previous rates

Table (5) Experience of community study

Experience(years)	Repetition	Percentage%
<=5	60	43
6 - 10	62	46
11- 15	9	6
16 <=	8	5
Total	138	100

Table (6) age of the community study

Age (years)	Repetition	Percentage%
<=30	75	53
31 - 40	40	29
41 - 50	15	14
>5	8	4
Total	138	100

Third: Description of the study variables

Table (7) indicates that the database general average reached (4.125) with high relative importance. The paragraph ("organizations Database has the ability to store large amounts of data") got the first order with an average of (4.77) and standard deviation equal to(0.75), with high relative importance. While the paragraph ("easy access to the database by the workers") got the last rank with an average of (3.84) and standard deviation equal to (0.72), with high relative importance.



Table (7): Statistics for some database paragraphs

#	Items	Average	standard deviation	relative importance
1	Organization's database store comprehensive large amount of data with high quality	4.77	0.75	high
2	Database contains information about the external environment of the organization	4.06	0.78	high
3	Easy access to the database by workers	3.84	0.72	high
4	Technology helps searching data to find forms and new relationship.	3.91	0.94	high
5	Technology helps searching data to predict customer's direction and behaviors	3.89	1.04	high
6	Technology helps searching data to provide employee with information that encourage their creativity	4.02	0.70	high
7	Data analysis system tools provide reports on the organization performance over different periods of time	4.30	0.49	high
8	Data analysis system provide users with instance detailed information	4.21	0.70	high
Ge	eneral measure	4.125	0.064	high

Description of customer understanding variables:

Table (8) indicates that the general average for understanding customer vriable has reached (4.33), with high relative importance. The paragraph "the organization works on determining the customer needs and interests" came in the first order by an average of (4.78) and standard deviation equal to (0.79) with high relative importance, while the paragraph "organization works on making the customer in the core of attention and the basis of surviving" came in the last rank with an average of (3.98) and standard deviation equal to (0.47) with high relative importance also.

Table (8)

#	Items	Average	Standard Deviation	Relative Importance
9	Organization works on determining customer needs previously.	4.56	0.87	High
10	Organization works on determining customer needs and interest.	4.78	0.79	High
11	Organization works on expecting customer behaviors and direction.	4.00	0.76	High
12	organization works on making the customer in the core of attention and the basis of surviving	3.98	0.47	High
Ger	neral Measure.	4.330	0.073	High

Description of market understanding variables:

Table (9) indicates that the general average for understanding market variable has reached (4.327), with high relative importance. The paragraph "organization working to determine the size of the market and demand" came in the first order by an average of (4.66) and standard deviation equal to (0.76) with high relative importance, while the paragraph "organization is working to find out the nature of the potential customers" came in the last rank with an average of (3.88) and standard deviation equal to (0.98) with high relative importance also.

Table (9)

#	Items	Average	Standard Deviation	Relative Importance
13	Organization working to see market share and lifting	4.22	0.36	High
14	Organization working to see volume growth in the market	4.55	0.87	High
15	Organization working to determine the size of the market and demand	4.66	0.76	High
16	Organization working to find out the nature of potential customers	3.88	0.98	High
Gen	eral Measure	4.327	0.074	High



Description of intelligent product variables:

Table (10) indicates that the general average for intelligent product variable has reached (4.354), with high relative importance. The paragraph "organization working on the use of promotion element and efficient advertisement" came in the first order by an average of (4.67) and standard deviation equal to (0.82) with high relative importance. while the paragraph " the organization is working to create ways and effective distribution channels" came in the last rank with an average of (3.99) and standard deviation equal to (0.81) with high relative importance also.

Table (10)

	1 10010 (10)							
#	Items	Average	Standard Deviation	Relative Importance				
17	Organization works to provide sophisticated marketing mix	4.35	0.45	High				
18	Organization is working to develop their goods and services	4.65	0.66	High				
19	Organization is working to develop flexible pricing policies	4.11	0.72	High				
20	organization is working to create ways and effective distribution channels	3.99	0.81	High				
21	organization working on the use of promotion element and efficient advertisement	4.67	0.82	High				
Ger	eral measures	4.354	0.069	High				

Description competitors intelligent variable

Table (11) indicates that the general average for intelligent product variabe has reached (4.246), with high relative importance. The paragraph "organization is working to find out other products and brands" came in the first order by an average of (4.87) and standard deviation equal to (0.87) with high relative importance. while the paragraph "organization is working to hide everything it has from others" came in the last rank with an average of (3.96) and standard deviation equal to (0.56) with high relative importance also.

Table (11)

#	Items	Average	Standard Deviation	Relative Importance
22	Organization is working to find out the strategies and goals of others	4.22	0.55	High
23	Organization is working to find out the plans and programs of competitors	4.31	0.67	High
24	Organization is working to find out the creations and innovations of competitors	4.26	0.78	High
25	organization is working to hide everything it has from others	3.96	056	High
26	Organization working to find out other brands and products	4.48	0.87	High
Ger	neral measure	4.246	0.068	High

Technological innovation

Table (12) indicates that the general average for Technological innovation variable has reached (3.009), with high relative importance. The paragraph "the organization adopt clear policies to make the product in conformity with the standard specification" came in the first order by an average of (4.75) and standard deviation equal to (0.90) with high relative importance, while the paragraph "organization is working on the design of new processes to produce new products" came in the last rank with an average of (3.71) and standard deviation equal to (0.88) with high relative importance also.



Table (12)

#	Items	Average	Standard Deviation	Relative Importance
27	Organization presents new products	4.07	0.85	Hig
28	Organization's products satisfy customer needs	3.96	0.77	High
29	Organization's Management interests in producing products that excite and attract customers	3.82	0.97	High
30	Information Technology Contributes to the design of new products	3.93	0.87	High
31	Organization products are subject to continuous improvement	4.02	0.82	High
32	the organization adopt clear policies to make the product in conformity with the standard specification	4.75	0.90	High
33	Improving the organization's products are based on the customers needs	3.75	0.97	High
34	Organization products on a high degree of confidence in use	4.25	0.81	High
35	The diversity of the organization way in producing products	4.14	0.63	High
36	The organization keep track of modern technological developments in product design	4.09	0.68	High
37	organization is working on the design of new processes to produce new products	3.71	0.88	High
38	Employees contribute in the design of new process for the production of products in the organization	3.96	0.83	High
39	Applying plans to improve the quality of the productions operations.	4.06	0.75	High
40	Organization is committed to developing and implementing accurate delivery schedules	3.71	0.82	High
41	Speed product offering considered good compared with competitors	4.07	0.69	High
42	The production processes is under continuous development in the organization	3.86	0.82	High
Gen	neral measure	4.009	0.815	High

Hypotheses Test

To test the hypotheses of the study, a simple linear regression analysis has been used to determine the impact of the independent variable on technological innovation. Below are the results:

- **The first main Hypothesis**: There is no statistically significant effect of intelligent marketing creative in technological innovation. To test this hypothesis, multiple linear regression has been used and the results are below:

Table (13) first main hypothesis test results

			1 40	10 (15) 1115	t mam nypomesis to		ion Coeffi	cient									
_	De			70		Regress	ion Cocini	cicit									
Dependent variable	R Correlation Coefficient	R ² etermination Coefficient	F Calculated	Sig** Significant Level	Statement	β	Standard Error	t Calculated	Sig** Significant Level								
			.832 38.453	0.000	database	0.156	0.122	1.187	0.208								
Te I	0.799 0.832 38.453 0.000				Understanding Customer	0.088	0.089	0.714	0.399								
Technological Innovation		38.453 0.000			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	53 0.000	Understanding market	0.654	0.114
ogical ıtion		Intelligent Product	0.512	0.143	4.432	0.007											
					Intelligent Competitors	0.499	0.098	1.576	0.115								



Results shown in table 13 shows that the multiple regression model for the dependent variable (technological innovation) on the independent variables is moral with statistical indication 0.05. the calculated F value equal to (38.453) and significance level (Sig = 0.000). The value of the correlation coefficient is (0.799), this is an evidence of a positive moral relationship between the dependent and independent variables. The coefficient of determination has been reached (0.832), meaning that the independent variables explain 83.2% of the changes in the dependent variable. Also, the value β showed that the market understanding variable has the greatest and clearest impact technological innovation, which has a statistically significant, the calculated value of t (5.032) is moral at the level of statistical significance 0.05. meanwhile the impact of other variables was not significant when considering the impact of the combined .independent variables

first sub-hypothesis no statistically significant effect of the database in technological innovation.

first sub- hypothesis Tes	esuns of i	ie (14) re	1 ab
Regre	70	1	

D _V	Cor	Dete	Ca	D] Freedom	Signi	Regression Coefficient				
Dependent variable	L =	R ² rmination	F Calculated	DF lom Degree	Sig** Significant Level	Statement	β	Standard Error	t Calculated	Sig** Significant
Technologi cal	0.655	0.512	34.43	1 136 137	0.000	database	0.577	0.085	6.222	0.000

*The impact has a statistical indication at level ($\alpha \le 0.05$)

Results shown in table 14 shows that the multiple regression model for the dependent variable (database) on the independent variables is moral with statistical indication 0.05, the calculated F value equal to (38.43) and significance level (Sig = 0.000). The value of the correlation coefficient is (0.655). This is an evidence of a positive moral relationship between the dependent and independent variables. The coefficient of determination has been reached (0.512), meaning that the independent variables explain 52.2% of the changes in the dependent variable. Also, the value β has reached (0.577) representing the overall impact of the variable data base on technological innovation, which has a statistically significant, the calculated value of t (6.222) significant at the level of statistical significance 0.05. Therefore, there is impact with statistical significant of database on technological innovation.

Second sub-hypothesis no statistically significant effect of understanding customer on technological innovation.

	- 0	De		Fre	Sig	Regression Coefficient										
Dependent variable	R Correlation Coefficient	R ² Determination Coefficient	F Calculated	DF Freedom Degree	Sig** Significant Level	Statement	β	Standard Error	t Calculated	Sig** Significant Level						
Te I				1		Un										
echnologic Innovation	0.411 0.166	Technological 0.411 0.166 7.456 136 0.008 Understanding 0.5	0.166 7.456	7.456 136	7.456	136	136	136	0.008	Customer Understanding	Custon	Custom	0.522	0.168	2.655	0.000
gical				137		er ding										

*The impact has a statistical indication at level ($\alpha \le 0.05$)

Results shown in table 15 shows that the multiple regression model for the dependent variable (Customer Understanding) on the independent variables is moral with statistical indication 0.05, the calculated F value equal to (7.456) and significance level (Sig = 0.008),. The value of the correlation coefficient is (0.411). This is an evidence of a positive moral relationship between the dependent and independent variables. The coefficient of determination has been reached (0.166), meaning that the independent variables explain 16.6% of the changes in the dependent variable. Also, the value β has reached (0.522) representing the overall impact of the variable data base on technological innovation, which has a statistically significant, the calculated value of t



(2.655) significant at the level of statistical significance 0.05. Therefore, there is impact with statistical significant of database on technological innovation.

Third sub-hypothesis no statistically significant effect of Customer Understandingon technological innovation

Table (16) results of third sub-hypothesis Test

- 0	De		Fre	Sig	Regression Coefficient						
R Correlation Coefficient	R ² etermination	F Calculated	DF edom Degree	Sig** nificant Level	Statement	β	Standard Error	t Calculated	Sig** Significant Level		
			1		Ma Under						
0.360	0.167	7.588		0.007	arket standing	0.490	0.490	0.490	0.490 0.166	2.754	0.007
	Correlation 0.360	ä			0.360 0.167 7.588 136 0.007	0.360 0.167 7.588 136 0.007 Market dandin	β Coefficient C	Standard Error Significant Level Coefficient Coefficient 0.360 O.167 Coefficient Coefficient O.360 O.167 Coefficient O.360 O.167 O.360 O.166	Coefficient Coeff		

*The impact has a statistical indication at level ($\alpha \le 0.05$)

Results shown in table 16 shows that the multiple regression model for the dependent variable (Market Understanding) on the independent variables is moral with statistical indication 0.05. the calculated F value equal to (7.588) and significance level (Sig = 0.007),. The value of the correlation coefficient is (0.360). This is an evidence of a positive moral relationship between the dependent and independent variables. The coefficient of determination has been reached (0.167), meaning that the independent variables explain 16.7% of the changes in the dependent variable. Also, the value β has reached (0.490) representing the overall impact of the variable data base on technological innovation, which has a statistically significant, the calculated value of t (2.754) significant at the level of statistical significance 0.05. Therefore, there is impact with statistical significant of data mining on technological innovation.

Forth sub-hypothesis no statistically significant effect of Intelligent product on technological innovation.

Table (17) results of forth sub-hypothesis Test

	- 0	De		Fre	Sig	Regression Coefficient				
Dependent variable	R Correlation Coefficient	R ² etermination Coefficient	F Calculated	DF Freedom Degree	Sig** Significant Level	Statement	β	Standard Error	t Calculated	Sig** Significant Level
Technological Innovation	0.370	0.152	7.502	1 136	0.009	Product Intelligence	0.413	0.151	2.739	0.009
ogical tion				137		ıct ence				

*The impact has a statistical indication at level ($\alpha \le 0.05$)

Results shown in table 17 shows that the multiple regression model for the dependent variable (Intelligent Product) on the independent variables is moral with statistical indication 0.05. the calculated F value equal to (7.502) with significance level (Sig = 0.009),. The value of the correlation coefficient is (0.370). This is an evidence of a positive moral relationship between the two variables. The coefficient of determination has been reached (0.152), meaning that the independent variables explain 15.2% of the changes in the dependent variable. Also, the value β has reached (0.413) representing the overall impact of the variable product intelligence on technological innovation, which has a statistically significant, the calculated value of t (2.739) significant at the level of statistical significance 0.05. Therefore, there is impact with statistical significant of data mining on technological innovation.

Fifth sub-hypothesis no statistically significant effect of Intelligent customer on technological innovation .



Table (18) results of fifth sub-hypothesis Test

	- 0	Do			Sig	o nypoune		ssion Coe	oefficient		
Dependent variable	R Correlation Coefficient	R ² Determination Coefficient	F Calculated	DF Freedom Degree	Sig** Significant Level	Statement	β	Standard Error	t Calculated	Sig** Significant Level	
Technological Innovation	0.840	0.716	99.07	1 136 137	0.000	CompetitorIntellige nce	0.738	0.073	10.053	0.000	

*The impact has a statistical indication at level ($\alpha \le 0.05$)

Results shown in table 18 shows that the multiple regression model for the dependent variable (Competitor Intelligence) on the independent variables is moral with statistical indication 0.05. the calculated F value equal to (99.07) with significance level (Sig = 0.000),. The value of the correlation coefficient is (0.840). This is an evidence of a positive moral relationship between the two variables. The coefficient of determination has been reached (0.716), meaning that the independent variables explain 71.6% of the changes in the dependent variable. Also, the value β has reached (0.738) representing the overall impact of the variable product intelligence on technological innovation, which has a statistically significant, the calculated value of t (10.053) significant at the level of statistical significance 0.05. Therefore, there is impact with statistical significant of the direct analysis processing in technological innovation.

The second main Hypothesis: There is no relationship between personal factors and the marketing intelligence level and technological innovation among employees in the Jordan telecommunication companies we used T-test Independent Samples for the sex variable and ANOVA test for the rest of the variables. Results are summarized in the following table:

Table (19) results of fifth sub-hypothesis Test

Variable	F Calculated	Tabulated	FMoral	TCalculated	TTabulated	TMoral	Result
	ped	ě.	_	æd	ed		No
Qualification	17.794	2.60	0.000	-	-	-	Differences
Experience	2.066	2.60	0.104	-	-	-	No Differences
Age	12.353	2.60	555	-	-	-	No Differences
Sex	-	-	-	0.684	1.96	0.701	No Differences

We note from the above table that the marketing intelligence level and technological innovation difference by varies educational qualification and age, while the rests are varies depending on personal factors

Results And Recommendations

First: Results.

The results of this study are:

- The marketing intelligence system is one of the tools that can be used by the telecommunications company to find creativity and entrepreneneurship and face the competition in the developments of the organization environment.
- The marketing intelligence system enable telecommunications company to monitor its environment and work in it. Also, make company aware its surrounding competition.
- The marketing intelligence system guarantee that the company will last, continue and grow with ability to



compete.

- The marketing intelligence system help in getting high level of quality and production, also, adapt and stand out from competitors.
- The marketing intelligence system has a great importance in achieving technological creativity and entrepreneneurship for the organization.
- there is statistical significant for marketing intelligence and its five indicators in technological innovation. β value shows that marketing understanding variable has the biggest impact on technological innovation with statistical significant, the calculated value of t (5.032) is moral at the statistical significant level 0.05.
- there is statistical significant for database eon technological innovation. calculated value of F equal to 34.43 with significant level of (0.000), where the correlation factor is 0.655.
- there is statistical significant for customer understanding on technological innovation. the calculated value of F is equal to 7.456 with significant level of (0.008), where the correlation factor is 0.411 this dimension has the least effect from marketing intelligence dimensions in technological innovation.
- there is statistical significant for market understanding on technological innovation. the calculated value of F is equal to 7.588 with significant level of (0.009), where the correlation factor is 0.360. this dimension has the most effect from marketing intelligence dimensions in technological innovation
- there is statistical significant for product Intelligence on technological innovation. The calculated value of F equal to 7.502 with significant level of (0.009), where the correlation factor is 0.370.
- there is statistical significant for competitors intelligence on technological innovation. The calculated value of F is equal to 99.07 with significant level of (0.000), where the correlation factor is 0.840.
- The level of intelligent marketing and technological innovation is different by the difference in education level and age. however, No differences by the other personal factors.

Second: Recommendations

- The need for caring and designing marketing intelligence system in telecommunication companies is more like a sensor that provide necessary information to achieve technological innovation, which guarantee its last, grow and continuous.
- it is necessary to depend on marketing intelligence system as its one of the supporting hand that provide necessary information, that help in doing its activities and business in the best way, also, watch its marketing environment.
- it is necessary to take advantage of all the available information in the Jordanian telecommunications companies, then try to organize, arrange, and analysis to utilize them in an effective way.
- It is necessary to analyze the limitations and challenges of the technological innovation and entrepreneneurship. Also, try to invest in it to get the best of the organization depending on the output of the marketing intelligence system.
- Jordan Telecommunication company should pay more attention to database technology, this will help in forecasting new products and services.
- Jordan Telecommunication company should continued in giving more attention to the technology of analysis and data processing, since it is a tool that provide advanced data analysis structure and support the decision-making process.
- Work on understanding the customer and being a hub Based survival and the continuation of the organization and the basis of the marketing process.
- Work on the development and updating of the database constantly by the Jordan Telecommunication company because it is a large databases that store huge amounts of data (historical data for all the company's activities).
- Work to understand the market size, demand, type and competitive, since it is the basis for growth and market share of the Organization.
- Business organizations that operate in the same sector or other sectors should rely on modern technology in their its business developments, because technology has high-precision in achieving businesses.
- Focus on the intelligence of the product by providing an integrated marketing mix to satisfy customers needs.
- Business organizations operating in the same sector or other sectors should keep track with the rapid development of information technology and cope with the nature of their work
- Establish the concept of technological innovation in organizations, which may be the key that will bring



- it to compete in the labor market.
- Focus on the competitors intelligence as they are the challenges and threats that organization should avoid.
- Technological innovation does not come only from the ideas of individuals and experts in the organization, but modern technology contributes significantly to help organizations creativity of new products and processes.

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