

## The Relationship between Information Technology and Marketing

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**Abstract**— Marketing is a managerial function and a set of procedures for generating, cooperating and providing value to clients and improving customer relationships to earn more profit for the organization. Operative marketing is about receiving messages from potential customers in some creative ways to affect their purchase decisions. This paper concentrates on the relationship between information technology and marketing. Then, the previous researches in the roles of information technology on a marketing will be studied. In the 21st Century needs the use of several information technology tools. In terms of using IT, usually marketing professionals prefer to adopt online marketing and mobile marketing to increase their transactions. The main objective of this research is to investigate that which type of information technology is the most effective way in modern marketing. The method of this research is quantitative and data which is used in this research is primary data. Data were collected from distributing questionnaire among two hundred and eighty three respondents whom between 18-30 years old. The findings proposed some significant of implications which will help marketers to select an efficient type of IT regarding to their specific goals to enhance their sales.

**Keywords**- Information Technology, online marketing, mobile marketing, modern marketing.

### I. INTRODUCTION

#### A. Background

Nowadays, many marketers prefer to employ modern marketing to attract more customers rather than using traditional marketing. Because of rapid growth in technology, modern digital marketing has more opportunity to attract customers and improve company's sales and profits. Two modern studies [21, 36] have suggested that digital marketing is the practice of sponsoring products and services employing digital spreading channels to influence consumers in an appropriate, related, individual and economical method. Digital marketing is succeeding marketing goals and objectives by applying electronic connection equipment. Several recent studies [36, 32, and 2] have suggested that IT marketing is the knowledge and preparation of marketing products and services that are

advanced and technology-concentrated. Effective communication can support business enhancement, form associations, maintains the effectiveness of organizations, and permits societies to learn about each other. Technologies, such as the Internet, mobile phones, social media, and (CRM) which is customer relationship management systems significantly affect the technique companies communicate with prospective clients. Most of business professionals and consumers are using their own computers and phones to search information and communicate with other businesses. When many sources of information are available, it would be much easier for customers to satisfy their needs based on a competitive price and quality.

Reference [13] stated that marketers must be very cautious to adopt and apply information because sometimes cost will be more than what they expected and companies must be monitoring changes carefully and only use IT when appropriate. Several studies [17, 2] have mentioned that all companies must reflect startup expenses when applying any kind of information technology system. Because of the high price of hardware and software, these costs and expenses present a main weakness of information technology in industry, principally in companies that are incoming the technology area for the first time. E-Commerce has carried rapid growth of some firms, but is initiating great turbulences to others. The other problem is about raising of criminal performances. Because of these reasons, publics' situations on this diversity can be expected to reveal their IT Approval Rate. In other word, E-Marketing has some serious disadvantages such as trustworthiness on technology, safety and confidentiality issues, conservation costs due to a continually developing situation, developed transparency of estimating and better price struggle and International competition through globalization.

Employing information technology into business procedures can protect marketers to avoid wasting time. The administration is managed instantly, and economic transactions are routinely considered. It could be extremely low risk and firms can decline their costs by using electronic media and better response and increase communication and ability to measure and collect data. Firms also have more opportunity to promote products and services with unlimited worldwide approachability. So it's really important for each industry to recognize the most appropriate type of IT based

on a type of their products to improve their productivity and income. The main objective of this research is to investigate that if there is any relationship between information technology and marketing. This research would be helpful for marketing managers to find out which type of information technology is most effective and economical in marketing products.

## II. LITERATURE REVIEW

### A. Marketing

Some current studies [30, 17, and 33] have described marketing management as “scheduling and performing the formation, assessing, and promotion and spreading of products, services, and concepts to generate interactions that gratify customers and company objectives. In traditional marketing, each transaction and consumption could be deliberated as an 'attract – exchange – separate' method so that industry progress and achievement is shaped by a range of independent gainful sales events. Marketers can make a long-term relationship with a network to better satisfy their needs and requires, for example, see [2]. Usually to create a strong relationship with clients, marketers need two way communication. They should have a great focus on operative listening and must offer quick replies that are personalized to consumer-special inquiries. Marketers can attain this objective by integrated marketing discussion to argument concepts and information with each consumer using computers and digital technology to assist that discussion [13]. Digital marketing can be defined as an E-Marketing which is employing the internet and other communicating technologies to create a discussion between the firm and its customers [9].

E-Marketing capability characterizes a firm's capability in consuming the Internet and other information technologies and to simplify amusing communications with consumers [35]. By relating technology-based implements to customers and engaging E-Marketing, IT-enabled interactivity has basically transformed how all firms relate to their markets and deals dissimilar prospects to dissimilar administrations in dissimilar situations [9]. E-Marketing has the potential to generate value in two techniques. First, by applying a close association to a firm's business procedure, E-Marketing offers consumers with uninterrupted access to firm capitals. E-Marketing capability also generates importance by assisting staff to enhance their concentration on the client by harmonizing actions and information during the business [35].

### B. Information technology (IT) and Marketing

Marketing managers must concentrate on different kinds of resources to communicate with customers in their business processes. In addition to confirming that the appropriate technology funds are committed to such purposes, managers must also promote creative cultures that maintenance the overview of the new process [35]. Several studies [13, 21, and 30] have mentioned that IT has a confident influence on some global companies' relationships because of technology competition and great technology

create relationships much more operative. To succeed the economic advantage, the worldwide trades should use different information technologies. The period of old fashion samples or print advertising has passed. Presently, online advertising, mobile marketing and other statistical analysis involved together to support global and local companies to achieve success in business. Reference [13] stated that IT can recognize and appreciate clients. Marketers also can use IT to recognize supplier's coworkers, sponsors, staffs and suppliers. Using information technology in all types of companies can have a significant impact on improving productivity [33].

Some recent studies [11, 18, and 21] have suggested that universal businesses can hire various types of information technology to promote products to the audiences. However, this way is very costly and if companies don't have a good experience and knowledge, the applied pricing methods lead to major marketing problems since most of the services are expensive beyond the affordability of many clients in the target market. Most significant technological variation like the information technology uprising extinguishes longstanding capitals and old firms. The nature of IT creativity enforced on marketing and exchanging or informing a current purpose or procedure [9]. There are some major principles about technology markets. Technology variation is a dissimilar procedure. Technology innovations need dissimilar marketing approaches. Confirming client satisfaction is a more important experiment for a product or service [13].

Only a small minority of companies currently see themselves as great operators of IT, conversely this proportion grows significantly when managers are examined to check the viewpoint usage of IT in 5 years' time [9]. In business-to-business marketing, the goal of going online is to interchange products, services, and information through what is called a virtual private network [2]. Different studies [35, 21, 13] have mentioned that E-Marketing, includes a comprehensive set of interaction-enabling technologies that are commonly applied in developed business-to-business (B2B) markets involving customer relationship management (CRM) software, sales force automation (SFA), E-Commerce websites, and extranets. Normally information technology in marketing can be categorized as online marketing, mobile marketing and customer relationship management (CRM) software.

### C. Mobile Marketing

The minor price of allocating mobile advertisings and the high possibility that they will be established by their planned receivers has venders persuaded that mobile marketing could soon exceed the usefulness of more traditional strategies [25]. Mobile marketing is a marketing profitable movement that happens when clients use their mobile devices to create consumptions, just as they use credit or debit cards at present [22]. By incorporating SMS and PC internet website, marketers can create better effects on brand observations between clients incorporating mobile push and pull marketing and an impending for growing customer recruitment and loyalty [34]. Companies can make an

advantage of their mobile marketing if firstly, consumer would be asked for permission to receive commercial messages in the form of SMS, and, secondly, if those commercial messages would be targeted by criteria such as age and needs of the consumer [37].

Mobile marketing growths observed value for customers and outcome value for vendors [34]. Mobile marketing can support customers and vendors to trade more capably, improve resource efficacy, and decrease expense economically [31]. Mobile marketing has more advantages over email, Internet, and print promotions because it rapidly influences customers everywhere at any time of day or night. This provides mobile marketing better familiarity and proximity, and it allows marketers to time messages so that the opportunity for adaptation is improved [25]. Mobile marketing also permits the promoter to exchange probable clients anytime and anywhere [6]. Reference [22] recommended that marketers must avoid explanations that limit consumers' mobile trade varieties; even if some approaches might look like methods to reserve and reinforce relationships with their own clients, restricting mobile trade resolutions fail mobile devices as tools for creating purchases and lessen their value for marketers. Marketing communications in mobile media has been theorized as mobile marketing, mobile advertising, wireless marketing, and wireless advertising [19].

Mobile marketing can be defined as spending a wireless medium to offer customers with time- and setting, modified information that promotes products, services and concepts [30]. The future of mobile marketing will appear some new technologies such as mobile wallet, merchant-specific mobile applications, time and location-based strategies, cameras in mobile devices working as barcode scanners, near field communications and enhanced predictive analytics [25]. With mobile marketing, customers may recruit the message linked to information about products or services, and the marketer is needed to react quickly [10]. In mobile communications, tariff-mediated network possessions are of specific significance as they can be endogenously shaped by network workers through the plan of their tariff arrangement [24]. Mobile marketing can be a main type of marketing in a near future and companies can invest in this type of marketing to improve their profits [26]. The most common samples of mobile marketing is involved mobile advertising, mobile sales promotions, mobile direct marketing and mobile customer relationship management. Also, they proposed that customer relationship management (CRM) should be seen as a specific communications tool in the mobile marketing context [19].

#### D. Online Marketing

In the face of the fact that extra marketing is moving online, amazingly large percentage of creative that falls undersized it's potential [12]. Some recent studies [20, 7, and 6] have claimed that a lot of firms prefer to extend their marketing expenses to online marketing. Recently companies desire to purchase online marketing due to some advantages such as better stock management, enhanced pricing

clearness, efficient buying/selling procedures, and better analysis and coverage qualifications.

Among different types of online marketing, website and social network marketing have a significant impact on improving sales [14]. Online marketing expenses regularly exceed the expenses in some countries [8]. Online marketing is the lowest-priced and the most dominant kind of expertise where by several marketers charming consumers [5]. Numbers of recent studies [14, 15, 28] have mentioned that online marketing types contain portals, search engines, websites and blogs, social media, video, YouTube, email and E-Commerce. In pay per click advertising, online promoters are challenged with other online promoters who want their own marketable shows when someone looks for the same keyword phrase [23].

Online marketing has several types. One of the most popular ways for online marketing is using social network which means that consumers and shareholders are more than audiences [4, 14]. Marketing on social networks compared to other traditional media is moderately inexpensive; generally it has a lower cost [3]. Online marketing is more successful for women than men due to women buy more products compared to men [16]. In the beginning online marketing were sold particularly on a cost-per-impression pricing method used by offline media [27]. In pay per click advertising, online advertisers are challenged with other online advertisers who want their own commercial shows when someone looks for the same keyword phrase [23]. Several existing studies [14, 15, 1, and 29] have stated that some companies recognized marketing as a kind of investment and for the other companies advertising is a kind of expenses. Exponential growth of marketing through the use of electronic media, especially the Internet, has gradually increased the growth of consumerism as a major cultural way of living.

### III. METHODOLOGY

This paper will investigate the relationship between information technology and marketing. The key objective of this study is to find which kind of information technology is more significantly related to marketing. According to a literature review, it's obvious there are several types of Information Technology which effect on consumer behavior. Due to that, the following hypotheses have been developed:

*RH*: there is a significant relationship between information technology and marketing.

*RH<sub>a</sub>*: there is a significant relationship between mobile marketing and marketing.

*RH<sub>b</sub>*: there is a significant relationship between online marketing and marketing.

After this, to examine hypotheses, this research adopts fully survey questionnaire. This research is a quantitative approach. The study depends on a non-probability sample. According to the research objective, the study needed to obtain information from people who can present the desired information within a short time, thus, and the best type of

sample fits this study is the purposive sampling approach. A sample of this paper combines two hundred and eighty three young respondents whom between 18-30 years old from different countries.

#### IV. FINDINGS

##### A. Reliability

At the first stage the reliability was investigated through Cronbach's Alpha technique, analysis of the M, MB and OM was carried out respectively. The results of Cronbach's Alpha for all variables respectively, are: 0.639, 0.807 and 0.782. The results are normally within acceptable limit for social studies [14].

##### B. Regression Results

According to the Table I, a simple regression analysis revealed an affects at all variables between independent variables (MB, OM) and Dependent Variable Marketing (M). The overall effects between the variables was R Square= 0.49, which means that just 49% of the dependent variable explained by independent ones.

TABLE I. REGRESSION MODEL RESULTS

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.722 <sup>a</sup>	0.49	0.43	0.45974

Source: SPSS Software  
Predictors: (Constant), M, MB, OM

##### C. Testing Hypotheses

According to the Table II, this paper can claim that for the variable M and MB, the estimated Pearson product-moment correlation is 0.206 implying a positively correlated relationship with a magnitude of 20.6% between the two variables "M" and "MB". To determine whether the correlation coefficient is significant, the p-value (designed as Sig. (1-tailed) has to be noted. The p-value is less than 1% (p-value<0.01). As a result, there exists a relatively weak positive relationship between Marketing (M) and the Mobile Marketing (MB). Also, this paper can claim that for the variable M and OM, the estimated Pearson product-moment correlation is 0.111 implying a positively correlated relationship with a magnitude of 11.1% between the two variables "M" and "OM". To determine whether the correlation coefficient is significant, the p-value (designed as Sig. (1-tailed) has to be noted. The p-value is less than 5% (p-value<0.05). As a result, there exists a relatively weak positive relationship between Marketing (M) and Online Marketing (OM). Alternatively, this paper can claim that for the variable MB and OM, the estimated Pearson product-moment correlation is 0.133 implying a positively correlated relationship with a magnitude of 13.3% between the two variables "MB" and "OM". To determine whether the correlation coefficient is significant, the p-value (designed as Sig. (1-tailed) has to be noted. The p-value is less than 5% (p-value<0.05). As a result, there exists a relatively weak

positive relationship between Mobile Marketing (MB) and Online Marketing (OM).

TABLE II. CORRELATIONS RESULTS

		M	MB	OM
M	Pearson Correlation	1	0.206**	0.111*
	Sig. (1-tailed)		0.000	0.031
	N	283	283	283
MB	Pearson Correlation	0.206**	1	0.133*
	Sig. (1-tailed)	0.000		0.013
	N	283	283	283
OM	Pearson Correlation	0.111*	0.133*	1
	Sig. (1-tailed)	0.031	0.013	
	N	283	283	283

\*\* Correlation is significant at the 0.01 level (1-tailed).

\* Correlation is significant at the 0.05 level (1-tailed).

Source: SPSS Software.

#### V. RECOMMENDATIONS AND LIMITATIONS

This research examines the hypotheses by using coefficient correlation. Based on the findings of this research, more particular variables can be recommended for further study. The impact of each type of online marketing can be examined for further study. Nowadays, most of cell phone users consuming internet on their phones. Mobile marketing has more opportunity for growth. Customers can almost always be reached and interrupted. So Mobile marketing can be a good choice to create new options for marketers to attract more customers. Therefore, future research can focus on the impact of mobile marketing on modern marketing. Also the questionnaire was distributed among 283 young people, especially those who are living in different countries with different culture and beliefs. Further research can focus on only one country as a scope or by comparing the results with one country to another.

As a limitation of this study, by only checking the relationship by using SPSS, this research cannot claim if the IT is useful in the marketing field. Future research must develop more hypotheses about the impact of IT on modern marketing. Then the research can critically conclude that if the IT has a significant impact on modern marketing. So further research can concentrate on this way.

#### VI. CONCLUSION

According to the previous study and the findings of this research, this study can propose some significant considerations. The first one is to investigate the relationship between the information technology and marketing. Also assist the future study to estimate for other variables might impact on marketing or using different methodology like an interview.

Based on the finding of this study, there are some important points that can be employed to conclude this research. This research investigates that there is a significant relationship between Mobile Marketing and Marketing with a magnitude of 20.6% between the two variables “M” and “MB” at the 1% significance level. Marketing managers can incorporate SMS messages and PC internet website, marketers can create better effects on brand observations between clients, incorporating mobile push and pull marketing and an impending for growing customer recruitment and loyalty. Mobile marketing can be a main type of marketing in a near future and companies can invest in this type of marketing to improve their profits.

Also, according to the findings of this study, there is a significant relationship between Online Marketing and Marketing with a magnitude of 11.1% between the two variables “M” and “OM” at the 5% significance level. Marketing managers can employ online marketing. Online marketing has some advantages such as better stock management, enhanced pricing clearness, efficient buying/selling procedures, and better analysis and coverage qualifications. Online marketing has several types and according to the literature review, website and social media have the greatest opportunity to improve marketing performance.

In this research Information technology divided to two different types such as mobile marketing and online marketing. According to the findings of this research there is a significant relationship between Mobile Marketing and Marketing. Also, there is a significant relationship between Online Marketing and Marketing. So based on the findings of this study, there is a significant relationship between Information Technology and Marketing. Marketing managers can apply information technology into business processes can preserve marketers to avoid wasting time. As technology develops, responsibilities that were previously executed by social staffs are now supported by computer systems. The capability to keep information in an electronic database simplifies faster, more effective announcement.

I recommend for future research to investigate further on variables affecting Modern Marketing.

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