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The Effectiveness of Information System on the Marketing Methodologies, And the Best Practices to Overcome Challenges

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ABSTRACT

Management information system started to play a massive role positively on many economics sectors. On the other hand, marketing as a career presents the opportunity for growth and development through time. Unlike other careers, it is highly diverse and one has the opportunity to explore different avenues associated with marketing. Of interest is the fact that it deals with people directly and influences their choices on whether to purchase a product or not or to make a decision to associate themselves with a company. This career is preferable for discussion since over the years, it has been greatly affected by Information Technology. Information Technology impacts marketing in different ways. Summarily, the most influential impact is the enhancement of service provision and saving on labor costs. Additionally, it has led to the enhancement of marketing operations, thereby changing the face of the product or the company positively. For instance, the industry dealing in consumer packaged goods has had its character transformed in terms of marketing by Information Technology. This has resulted from the production of mew data that produces a discontinuity about the information that can be accessed by the marketers (Dibrell, Davis and Craig). In this instance, by combining data and technology, there is an increase in the shifts in power among distribution channels, changes in the organization as well as enhanced effectiveness of marketing. More generally, there has been a shift, brought about by technology, from the traditional functional and strategic boundaries by empowering the organization to supply a huge variety of products that are differentiated to a wide variety of markets that are differentiated. Based on this influence on the marketing field, the author believes that it is a career worth exploring for discussion. The future promise of further influence also places the marketing career in a position to be effectively discussed under the topic of, 'Influence of IT in Marketing.' For quite some time, researchers in I.T and marketing have studied the effect of applying computers and other forms of technology facilities on business and organizations. In the early 1970's, information technology was extensively employed by organizations mainly for accomplishing routine clerical and administrative activities such as processing data related to bookkeeping and accounting activities. The 1980's and 1990's have witnessed advancements in the technological field (along with other advancements) which have enhanced the economies of information technology and greatly expanded its applications (Gatautis). Today, information technology has become not only a tool to process data and record transactions, but also a competitive weapon that can change an industry's structure. This observation was one of the motives for the present study. This study explores the impact of using information technology in developing countries by considering its application in the Saudi private sector.

Keywords: information system, marketing, methodologies, private, data, transactions, weapon, structure, administrative activities, business model, workplace, labor market, intellectual right, economics, privacy, e-commerce

INTRODUCTION

In the recent there has been an insurgency in technology, and all signs are that high-tech progress and use of I.T will continue at a hurried pace. Complementing and supporting the intense upsurges in the power and use of emerging technologies has been the decreasing cost of infrastructures as a result of both industrial improvements and amplified competition (O'Mahony, Robinson and Vecchi; Overby).

These advances bring forth a number of significant prospects while at the same time pose major tasks. Today, novelties in technology and information systems are having a number of effects in several domains of organizations, and policy fabricators are acting on aspects that involve economics, intellectual rights of properties, the protection of individual

privacy, access to relevant information and its affordability(Sanders). In other words, adoptions made have long term magnitudes, and care has to be taken to the possible social and economic effects.

Among the greatest significant results of the development of information system is possibly e-commerce that is transacted over the Internet. Already, e-commerce affects such large sectors as communications, finance and stands the chance to expand to other sectors such as health and education. In effect, it implies the continuous application of ICT along the whole value chain of business transacted electronically(O'Mahony, Robinson and Vecchi). The study concludes with recommendations for the government and submissions of several topics to be carried out for future research to enable a better understanding of information systems which is regarded as an important resource for business and as a marketing tool.

RESEARCH METHODOLOGY

The study was examined from two key perspectives of the impact; and implementation. The impact perspective focuses on the impact of using information technology on the organizations' strategy, structure, and people. The implementation perspective covers several issues including the information technology strategic planning, technical considerations, behavioral considerations, and the role of top management in the implementation process. The sample under study was comprised from the top managers of the top 500 companies in Saudi Arabia in 1996. A total of 205 companies from 7 different business sectors in Saudi Arabia participated in the study. This represented more than a 41 percent response rate.

The necessary data was collected through two methods:

1) Mailed questionnaire.
2) Personal interviews.

Based on the statistical analysis of the data, the study suggests that the use of information technology in the Saudi private sector is expected to have positive impacts on the strategy of business organizations. The data also suggests that information technology usage could induce many organizations to adopt smaller and flatter structures. Also it was found that information technology utilization can lead toward a more decentralized decision-making organization. The results showed that a positive relationship exists between information technology usage and decentralization in the private firms of Saudi Arabia. The study also finds that respondents believe that the use of information technology in business organizations in Saudi Arabia can help to reduce the total number of the organizations' employees. This is particularly the case regarding unskilled workers. The study did not provide evidence to support the view that the use of information technology in business organizations would lead to the elimination of middle management. The study also did not provide evidence to support the hypothesis that information technology utilization is dependent upon the size of the company. The data analysis showed that several technical and behavioral problems could affect the success of information technology in business

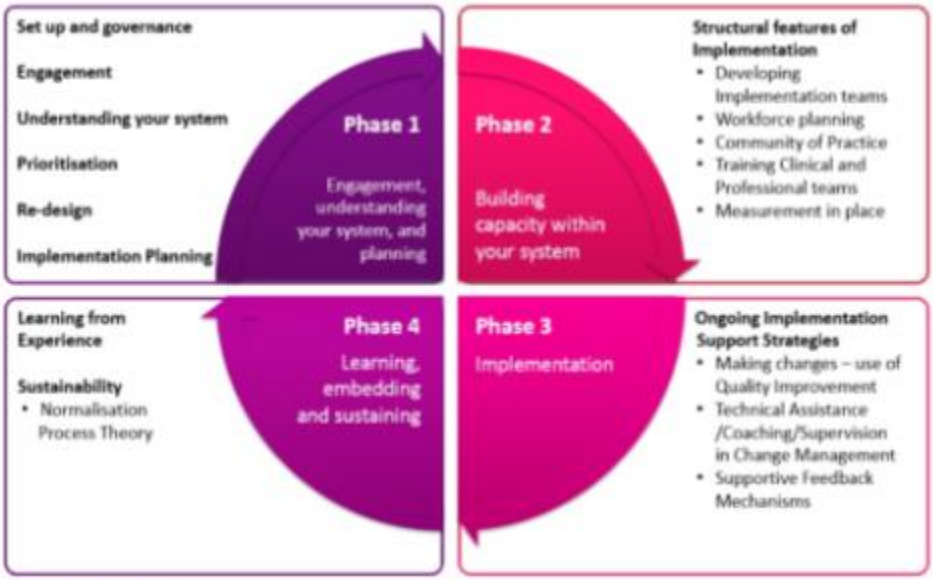
organizations and the involvement and support of the top management is essential for success in the implementation process.

The best practices to overcome challenges

The core objective in this research is to recognize the impact of information technology in the marketing sector. The use of information systems in organizations more so in marketing has been researched from multiple perspectives. In order to achieve this objective, this chapter will examine an assortment of literature relating to two perspectives:

- The impact perspective
- The implementation perspective

The first section of this chapter will highlight selected research on the factors affecting the use of information systems and technology. Consequently, a number of aspects on the impact of information systems and technology in marketing will be touched on. In addition, the section will focus on the strategy, the structures, and people because these aspects constitute to the core components of the organization. On the other hand, the second section will review some of the published research related to the implementation perspective.



The Impact Perspective

In the earlier years of its inception, information systems and technology were widely used by businesses especially for realizing the traditional office and administrative functions such as data processing in relation to accounts and the regular book keeping activities. Essentially, technology was used as a monitoring and operation facilitator tool with the bulk of the work still being handled manually. In other words, information systems and technology were deployed as a provision factor for the other organizational structure components. However, the cost, the distribution, and the fact that information technology was widely applied to only simple tasks in its early stages discouraged its approach to strategic uses in areas such as enhancing the organization's position against competitors, moving into new markets, and providing managers with better information for effective decision making.

Organizations in the 1990's are seen to heavily investment in information systems technology. At this point, the organizations and the marketing sector are acutely aware of the need to use and exploit effectively such systems for business advantages Robinson and Vecchi (2008) suggested that because of the rapid pace of technological advances and the impact of information technology on the changing competitive environment, organizations are forced to evaluate their control of information and technology resources in order to achieve their strategic objectives. Dibrell, Davis and Craig pointed out that according to many research projects and studies, many organizations use information technology to achieve faster and more accurate flows of information and to overcome the constraints of time and place. The aim of achieving greater organizational success has attracted organizations to invest heavily, and to utilize the new technologies. Business in the 1990's is totally different to the way it has been in the past.

Business is moving towards services rather than the production of goods. For example, the United States economy in 1995 has some 22 percent of its employees engaged in manufacturing and 78 percent on services. With aggressive competition, a changing environment, and international marketplaces, firms need to be extremely flexible and responsive to the rapid change in the markets and technologies. They have to adopt the latest innovations to survive and prosper in a complex, harsh, and uncertain business environment (Baskerville & Smithson, 1995). Even though small businesses suffer from capital poverty as suggested by Dibrell, Davis and Craigwhich is caused by various conditions such as operating in a highly competitive environment, inadequate funding, lack of professional expertise and staff training facilities, there is an increase in the usage of information technology within small businesses which can be attributed to two things. Firstly, the dramatic drop in the cost of technology, and secondly, the advances in technology that have made information technology more user-friendly. Other reasons for the increasing use of information systems and technologies implemented by small businesses have been identified in a study carried out by Overby. They have shown that the acceptance by small firms that technology can help them in solving their business problems, meeting requirements, the excitement surrounding technology and the notion that it can work wonders, are factors leading small firms to spend, adapt, and implement information technology in their business activities.

The Implementation Perspective

According to many authors, information technology has become a true strategic tool, a new tool in the competitive race, and enables organizations to achieve a sustained competitive advantage. Many studies suggested that the strategic use of information technology within the broader corporate structure is seen as the key to the future. Organizations are increasingly using information systems to gain a competitive advantage in the market. Additionally, technology is used to develop solutions to business problems, improve on efficiency and effectiveness, to enhance productivity, to achieve stability, and effectively compete for new markets. Furthermore, technology may be used to lower production cost, enhance organizational strengths, identify appropriate market segmentation and focus on them, and raise entry barriers. A greater importance is the fact that large American and Japanese multinationals firms such as IBM, GM, AT&T and Mitsubishi, have invested and capitalized on information technology to reduce internal and external values. This has been achieved through networking, economies of scale, and an increase in the degree of firm activities.

In 1991 M.I.T concluded that information systems and technology is the platform on which success can be built on.

However, organizational factors are crucial to realizing the benefits of automation and technology. In essence, ICT can be considered to be a series of innovations tailored to enhance productivity and quality of service deliver. Even though the innovations deliver the work plan with new and different ways of solving problems and enhancing performance, there is still an outstanding deal of research to be done and discussion among researchers and organizational theorists on how innovations should be implemented and managed and how they affect organizations on different levels.

During the last four decades, several studies identified significant factors that are often found to be associated with the adoption of information technology. One of those significant factors is the size of the organization. In the research area of studying the relationship between the structural dimensions of an organization and its adoption and use of information systems technologies, Etro (2009) considered an organization's size as the most frequently investigated structural element.

According to these authors this is partly because it is assumed that managers are aware of the economic and strategic incentives that favor the adoption and use of technology by large organizations. Another reason is that increasing size leads to more difficulty in communications and coordination. Therefore, greater motives to apply and invest in information technology O'Mahony reported that most of the organizational studies that have used the organization size as a correlate of information technology adoption can be categorized into three types: Studies that investigated the relationship between firm size and whether computers were adopted.Studies that investigated the relationship between firm size and the number of operations computerized. Studies that investigated the relationship between firm size and the proportion of information technology expenses to total operating expenses.

Davis and Craig pointed out that most of these studies concluded by showing the existence of a direct positive relationship between the firm's size and the adoption of information systems technologies. Yi and Thomas concluded their studies with a positive correlation between hospital size and the number of computerized applications adopted. Computerized functions in eight areas were investigated: accounting, admissions, discharges, personnel records, payroll, medical records, research, and patient care.

The first study used the number of patient’s admissions as a measure of the organization’s size while the latter study used the number of hospital beds as the size measure.

The correlation between firm size and the proportion of information technology to total operating expense in the US life insurance industry has been studied and investigated by Davis and Craig for the purpose of their study, they used the ratio of information technology costs to total operating costs as a measure and dependent variable. Some of the key variables they used are premium income, log of premium income, information technology spending, and record of information technology spending. In their study, Kalathil and Boas found that there is no real relationship between firm size and the level of information technology investment intensity. They also noted that large insurers on average were not leaders in realizing the full economic benefits of information technology. They suggested that firms should connect the investments in information technology with the firm's strategy, the structure of the organization, the measurement and control system, the reward system, and the characteristics of the technology. Many researchers have cautioned that while increasing the amount of investment in information technology is essential, the way this technology is used and managed to accomplish the productivity and economic growth is even more momentous.

In the meanwhile, other organizational characteristics such as formalization and complexity have been identified to provide an impression of the relationship between them and the adoption of information technology. Etro has also investigated the relationship between the company's size and the use of information technology. He analyzed the relationship between organizational size and the use of computers in the US National Forest System. He studied 66 of approximately 130 administrative units and used different measures of organizational size such as capital, number of employees, acreage and timber harvesting. The end of his study showed that there is no correlation between organizational size and the use of computer information systems. Many researchers believe that Gatautis's decision ought to be qualified.

The reason behind this is that he gathered qualitative data on five administrative units that were located in the same region and were similar in size, but they were quite different in their use of computer systems. The presence of key individuals in some administrative units can boost computer use within these units. The function key individual's play in this context is similar to the role of champions in promoting and supporting technological innovations within organizations. Dibrell, Davis and Craig found that the presence of a champion in an organization is strongly correlated with the success of technological innovations. It is possible to conclude here that studies showed that several factors have become the promoters and the driving force to utilize and adopt advanced information technology. These factors include the need to gain competitive advantages and to develop solutions to business problems, the desire to improve both the efficiency and effectiveness of the decision-making process, the need to enhance productivity, the need to gain an accurate flow of information, and the need to overcome time and place constraints.

Finally, the need to achieve dynamic stability and prosperity in a harsh complex environment, differentiate themselves from their competitors, compete for new markets and raise entry barriers for those markets. Information technology studies have identified specific organizational characteristics which affect the adoption of information technology (Yi and Thomas). These characteristics include firm size, business sector, centralization decentralization, formalization, complexity, and the presence of "champions" in the organization.

With the rising importance of information technology during the 1980's and 1990's, numerous studies covering several issues can be found in the literature regarding the impact of information technology on organizations.

For example, Trainor et al. (2011) discussed the impact of information technology on the retail financial services. Sanders (2008) focused on the impact of information technology on the attitudes of end-users. Other studies include the impact of information technology on managers, the impact of information technology on the public sector and the governmental agencies. To review all these issues is beyond the scope of this dissertation. Therefore, we will include in the next sections and subsections only certain studies which focus on the impact of information technology on selected aspects of strategy, structure, and people which are the components of the organization.

Marketing and Business Models

A significant way in which technology and information systems are affecting work is through reducing the significance of distance. In many sectors, marketing included, the geographic setting of work is being altered by a number of factors. For instance, software firms overcome labor competition in the local market by sending projects to India or other nations. A similar trend can be seen in hardware manufacturing and advertising companies that seek services over the internet and across their borders on technology platforms.

In addition, such provisions take advantage of time variances and enable critical projects to be worked on around the clock. Furthermore, firms get to outsource manufacturing and rely on information systems and technology to keep management,

distribution, and marketing teams in contact with the progress. In such instances, technology enables a better distribution of labor among countries, which in turn affects the relative demand for various skills in each nation. Similarly, information systems support a market-like distribution and production form.

This in turn gives an ICT infrastructure that provides a 24-hour access of product information to desired by buyers. In effect, this will decrease the informational obstacles to an effective market setup. This arrangement might also offer the means for implementing real-time transactions and make intermediaries redundant in some ways. Effectively, this would reduce production and distribution costs to the consumers benefit. The information technologies have facilitated the evolution of enhanced mail order retailing, in which goods can be ordered quickly by using telephones or computer networks and then dispatched by suppliers through integrated transport companies that rely extensively on computers and communication technologies to control their operations. Nonphysical goods, such as software, can be shipped electronically, eliminating the entire transport channel. Payments can be done in new ways. The result is disintermediation throughout the distribution channel, with cost reduction, lower end-consumer prices, and higher profit margins.

The impact of ICT on the organizations cost structure can be best demonstrated on the e-commerce platform. The main cost reduction areas when comes to e-commerce sales involve the physical institution, placing orders, client support services, human capital management, inventory management, and commodity distribution. Much as the initial set up tends to be costly, the actual benefit of e-commerce is realized once the store operations roll out. A number of benefits emerge from a technological front that surpasses the traditional physical store. Consequently, e-commerce is very effective at decreasing the costs of getting new customers and entering new markets. This is because marketing is essentially cheaper and can be tailored to deliver specific information to a given market segment more accurately.

Moreover, the technology platform allows e-commerce traders to verify a number of transaction security documents in time and accurately. Through e-commerce, most organizations are in a position to give customers access to databases or information manuals directly thereby improving on customer support. This additional feature cuts operational and marketing costs considerably while at the same time improving on the quality of service delivery. E-stores require a lesser workforce trained for their specific duties and saves when it comes to inventory carrying costs.

Even though electronic commerce causes the some inconveniences n business transactions, it builds greater reliance on others and also some completely new intermediary roles. Among the transitional services that could be of additional costing to e-commerce operations are marketing, safe online payment, and distribution. The comparative simplicity of becoming an e-store and setting up the necessary platform translates to a number of situations that can easily overwhelm the consumer (Trainor et al.). Therefore, this necessitates using marketing to establish a brand name and market recognition in the target market. This process can be costly and represents a significant challenge especially for e-store start-ups. Additionally, innate features of e-commerce such as global reach, directness, and lack of physical clues make it susceptible to scam. In this regard, new systems are being developed to safeguard the use of credit cards in electronic trades and this would lead to additional costs. A major piece of e-commerce trade is the suitability and convenience that comes with online shopping. With the current growth pace the Internet, e-commerce and e-stores are expanding into the global market with and gaining a lot of popularity among shoppers.

The open nature as presented by e-commerce increases global outreach and consequently the market size and structure. These changes apply both in terms of the physical outreach and the number of international competitors that are introduces in the process. Internet technology is increasingly helping the business environment to improve on outreach, marketing, service delivery and customer satisfaction (Sanders). E-commerce reduces information and business costs for operating on overseas markets and provides a cheap and efficient way to strengthen customer-both the supplier and business entity. It also inspires organizations to develop original ways of marketing, reaching out to clients and supporting their in-house activities.

Workplace and Labor Market

Computers and communication infrastructures pave way for individuals to converse with each other in ways corresponding to the traditional face-to-face, telephone, and written approaches. Information systems and technology also enable a cooperative work comprising of distributed groups who seldom meet in reality. Such technologies make use of communication structures that are reliable, global, and dependable in delivering such services. Therefore, such mechanisms enable a full-time activity and collaborations among individuals, business partners, and organizations that can be asynchronous as well as synchronous. However, in such instances social interaction within the organizations will be greatly affected and may even lead to the loss of the human “face” of “interaction” by the organization (Etro).

That aside, Peer-to-peer associations along departmental lines will be improved through information sharing and proper coordination of business activities. Similarly, on one hand communication between management and employees will become edgier because of social regulation issues as raised by computerized monitoring systems. On the other hand, e-mail communication within the organization will bring down the obstacles to communications at different reporting levels thereby ensuring a flawless and official communication system.

Through the incorporation of technology and information systems, the relevance of distance will be eliminated through telecommuting which enables meetings to proceed without necessitating physical appearance (Kalathil and Boas). Similarly, employees can be granted remote access to work systems that will enable a myriad of possibilities. Consequently, this eliminates the need to work from a centralized place; the significances of such a change in employment from the suburbs to more secluded area would be a possibility. Essentially, such a platform has the net effect of decentralizing businesses without changing their target market structure. This in turn would mean reduced operational and fixed costs of employment (Choi, Lee and Yoo). Through such reductions, extensive telecommuting should make it simpler for employees to work on flexible plans, on a part time basis, equally share demanding duties, or to even have two multiple jobs simultaneously. This is because changing work would not necessarily necessitate changing workstations or even residential location.

The idea of telecommuting would, therefore, increase movement at work and the pace of individual career progression. This increased tractability might also play a major role in reducing work related stress thereby increasing efficiency. In light of the fact that work related plays a key role in determining the quality of work output, it will be safe to say that technology improves individual work output and quality. Similarly, by virtue of the fact that technology simplifies work, processes, and decision making processes, it definitely adds on to the quality of final output. Therefore, the impact of information technology in marketing and the business environment in general takes shape from the input, into the real processes and eventually can be seen in the form of improved outputs.

Still on the work and labor force environment, a more difficult subject to approach is the real impact information systems and technology have on employment and related procedures. ICT platforms such as computers and other devices have the capacity to perform faster and better that human workforce (Overby). Additionally, when it comes to basic clerical, administrative, and accounting work, computers are efficient, and more accurate. This also goes beyond simple book keeping and administrative functions seeing as information systems such as ERPs and decision making systems are now being deployed at the highest decision making organs on the organization. In other words, information systems and technology is being used to replace human capital and this also works as a cost cutting measure in the business environment. When it comes to marketing and advertisements, information systems are used to create graphics and with the use of platforms such as CAD the human effort required is reducing by and by.

In essence, one can comfortably argue that information technology systems are being used to replace the human labor force. The repose to this is that, much as computers are being used to replace certain aspects of the job market, quite a number of other opportunities are being created in the areas that deal with the development, maintenance, and support of information systems and technology (Yi and Thomas). It is more likely that information systems will lead to a number of changes in the business environment. However, all the changes have a very positive side especially from a business perspective in that it creates a leaner more efficient system of production.

Another definite impact in the introduction of ICT into the marketing and business arena is the obvious disruption of the normal order of events. A good example is the change brought about by the introduction of e-commerce to the local market. The first point of impact in the distribution sector where e-commerce opts to directly deliver its product to the clients location unlike the traditional means where clients had to go to the product. Where the commodity goes directly to the customer, even the mode of marketing has to shift from the traditional print media or television to move online or risk being pushed out of market. On a positive note, commerce opens up boarders and creates new markets for those bold enough to take up the challenge. Such extended markets offer fresh opportunities for job creation in the organization and a better change for revenue generation.

CONCLUSION

In conclusion, when data is represented in a digital format, its distribution and duplication is not only simplified but also enhanced. In other words, from inception, information systems and technology were in some way designed as marketing tools. The ability of digital content to be easily propagated across continents puts up a proper foundation from where the

main impacts of ICT in every other sector may be established. However, based on this concept alone, the distribution of digital content brings forth a dilemma to produces and users alike. On one hand, digital the distribution of this content is fast, cost and reliable while on the other hand, content distribution without respecting the original producer may inhibit the production and sharing of such works in the internet. The use of information technology in practically all fields raises a lot of questions when it comes to intellectual property rights, security, and international laws that govern specific borders.

Many issues also surround how the content can be regulated and shared in a “decent” forma so to speak (Gatautis).

However, dealing with indecency, regulation, or even enacting border laws. Furthermore, the same system that will be used to filter out unwanted content can again be used to censor the right information thereby working against media freedom. Therefore, the best solution for such a situation might be labeling of content being set up on the internet.

The progress noted in technology inevitably creates dependency on information systems and ICT. The se up of the entire technological infrastructure is designed to ease and hasten the traditional way of performance. In essence, incorporation of technology into marketing, education and the business environment is intended to compliment the provision of services. It is the efficiency and simplicity brought about by the application of technology that brings about dependency. The risk of this set up is that today, technology is applied in every sector of trade and its failure may bring its operations to a halt.

However, it is undoubtedly impossible to evade technological dependency. Therefore, the experience brought from depending on ICT with a noticeable likelihood of failure must be deliberated.

The continuing computing and communications development has a number of economic and social impacts on society. Therefore, this requires more research in order to understand and mitigate the risks involved. This is because, currently, all organizations and sectors within are headed the technology direction and it is necessary to take precaution.

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