

THE EFFECTS OF INFORMATION TECHNOLOGIES IN MARKETING

Yusuf BAYRAKTUTAN

University of Kocaeli, Turkey

İbrahim ARSLAN

Esra G. KAYGISIZ

University of Gaziantep, Turkey

Elena DRUICĂ

University of Bucharest, Romania

Abstract

At 1990's the computers and internet had been used particularly by governments and universities. And this had started deep-rooted changes in the life of humans. This period has been called as the age of information. In this time the basis properties of the life has not been changed but new properties have been added to their ways. Continuously regeneration of information technologies has produced information systems. Information systems are the rule series that decide the data which one will select and how it will process. The development in the information technologies caused big exchanges in the structure of organization and affected all operations of business. Communication, selling and buying, obtaining information, marketing and advertising, management, health, logistics, banking have been getting new formats by information technologies. In this study the effects of IT have been inspected over marketing. IT affected the marketing both Marketing Information Systems that support all marketing operations of business and diversifying the marketing process. We aimed to inspect these two main effects in our study.

Introduction

The developments in the information and communication technologies have brought a lot of novelty and accelerated the present processes. Information technologies affected the organizations' work styles. The economic and social affects of this changes caused big exchanges in the structure of organization. The organizations that want to subsist, invested in information technologies and so they rendered their work styles compatible with information technologies. The exchanges have not confined with these and they have directed organizations to investments in updating, refreshing and reclamation hardware and software. Investments of organizations have rendered organization structure more flat, increased the number of employees and bureaucratic works and felt down the costs of communication, formation and saving documents. It has also been used from the undermost management level to uppermost level and supports all management levels in decision making. It has offered flexibility to the organizations which prefer central or local management and affected the organization control, communication, authority mechanism and decision making process. The IT which is used in all management levels, has been a strategic tool for business world nowadays. Information technologies contribute to organizations' basis and champion functions as marketing, logistic, selling, offering service, buying, human resource, management. It has also strengthened the value chain between organizations, customers and providers. All management levels effected from information technologies. With this new information stage, organizations have to change their marketing actions.

The marketing action of organizations begins with a well appointed market, focuses with customer needs, and coordinates all actions for reaching the customer and by satisfying him it gains. Also it includes advertising, actions before and after selling, improving long-term relations with customers...e.g.¹. In the digital era, a new market place has appeared which it would be accessed 7/24 and the competition has been very intensive. Now the market place and the customer are not just the same; new treatments, continuously growing competition, challenges have been the special properties of the new market. Modern marketing has been formed customer focused by the effects of globalization and information technologies. In the information technologies there is a continuously change on the customer's habits, expectations and needs. The customers have been able to access to all market and they move all the time. Their sensitivities of the prices have been increased so they want more qualified, faster and cheaper products and service. Also they think the differences between the products have been decreased so their brand constancy has decreased. Now the customer doesn't search the only suitable product, he wants the most suitable product and he can find it on the internet and in other information sources. IT affected the marketing both Marketing Information Systems that support all marketing operations of business and diversifying the marketing process. We aimed to inspect these two main effects in our study.

Marketing Information Systems

Marketing Information Systems are computer-based systems that work in conjunction with other functional information systems to support the firm's management in solving problems that relate to marketing the firm's products. They have been used to collect information for marketing actions, analyses and present them to the marketing manager for making effective decisions. Marketing Information Systems are help systems that can be used to product strategic, operational and tactical decisions for the marketing management. They collect information for the level of demand, properties of demand and the effect of its components. Also they are set up by the upper level of management to learn changes of the demand, new enterprises of rivals and new distribution channels. The first definition of Marketing Information Systems was given by Cox and Good². A MIS can be thought as a set of procedures and methods for the analysis and presentation of information that is to be used in decision-making. MIS are used to support the planning and control operations. Most of the resources of MIS are consumed to support decisions related with the prices and the products. O'Brien says that the MIS are an effective tool for the conversion of row data into useful information. Statistical analysis software, logic programming languages, and expert systems shells are only used occasionally³. Nysten defines marketing information systems as interactive systems consisting of procedures and methods that systematically handle the collection and process of information and the generation of reports in order to support the marketing decision-making. According to Marshall and LaMotte marketing information systems like a comprehensive and flexible, formal and ongoing system designed to provide an organized flow of relevant information to guide marketing decision making. Marketing information system is implementation of information. It contains management of information, application of information, process of new product, easier communication with customers, and using information for solving problems during management and marketing operations⁴. Marketing

¹ Karafakioğlu M., UluslarArasi Pazarlama, p.11

² Cox D.F., God R.E., "How To Build A Marketing Information System", Vol.45, N.3, p. 145-154

³ Li, E.Y. (1997), "Marketing Information Systems In Small Companies", Information Resources Management Journal, Winter, 10,p.27

⁴ Barutçugil, O., "*Bilgi Yönetimi*", Kariyer Yayınları, İstanbul,s.142

information system may contain MIS, DSS or ES subsystems. As figure 1 the MIS, collects information from the inside and the outside of the organization and appreciates, corrects, saves this information with subsystems. At the last step it presents information to concerned management level with output systems.

Marketing information system has subsystems and it has been enlarged with these systems. The figure 2 shows the management information system and its subsystems.

Input subsystems collect data from internal and environmental sources for databases. Accounting information system provides data for periodic reports, special reports, mathematical models and knowledge-based models. Marketing Research subsystem gathers from customers and prospects and collect data. The examples of data sources are surveys, in-depth interviews, observations, controlled experiments, mailing lists, retail sales statistics, video retrieval systems.

Using Information Technologies in Marketing

The new economy is a creation which was formed by today's global competition conditions, has affected the whole world and showed its effects in markets structure and marketing. The functions of marketing are buying, selling, storing, transporting, standardization and classification, risk taking, financing, getting information about market and training of employees⁵. In the traditional marketing who would have realized these processes for which products have been defined. In addition to realizing these processes has been taking more times. Also the costs for enlarging organization's field of activity are very high. In the web marketing everyone who has an internet connection is a customer or a supplier for each other. In this way, organizations have pulled away the local area. In the traditional marketing, communication costs take big source for organizations but in the web marketing it has decreased. Holmlund and Koch say that traditional marketing has not have viewpoint for making long-term contact with customer and developing these contacts. New economy has got the organization's behaviors more customer-focused. In this term to build long-term relations with customers and transform them to correlations has turned to key of the profitability⁶. The transformation, has directed the organization to customer-focused marketing. To the customer-focused marketing, the missions of the organization are to determine the needs, wants, profits and interests of target market and to offer the aimed satisfaction by increasing the customers' opulence with more affected and abundant than rival firms. Now it is not enough that the organizations can satisfy the customer needs. They must supply the changeable individual customer needs and that has been an essentiality. In the web marketing, permission has been taken from customers⁷. Direct marketing which has been improved with the aims of customer-focused marketing has become more effective in information era by using customer databases. At that, the information of customers as age, birthdays, salaries, hobbies, old shopping information and the other data have been used for organization faster. The organization which has more information about customer, are able to send advertisements, promotion, new products, messages and congratulate the special-days of customer with e-mail. This way the organizations are closer to their customers. In addition, the developments in IT have offered direct communication with customers. The electronic markets and customer services phones can be reached 7 days a week 24 hours a day. By using these, customers can give an order and mention all thoughts about the product and services.

⁵ Young Murray A. And Sauer Paul L., "Organizational Learning And Online Consumer Information Services", Journal Of Consumer Marketing, Vol.13, No.5, p.35

⁶ Helm Cristopher, "Crm Overview", [Http://Www.Marketingpower.Com](http://Www.Marketingpower.Com), p. 1-6

⁷ Ersoy N. F., Karalar R., Yeni Ekonomide Pazarlamanın Değişen Yönü, "www.Bilgiyonetimi.Org"

Information technologies have exposed e-commerce by the way of getting new properties to the actual working forms. E-commerce (electronic commerce or EC) is the buying and selling of goods and services on the Internet, especially the World Wide Web. E-commerce is a form of commerce which has been used by a lot of sectors and can be reached 7/24 by customers. It contains the gathering and use of demographic data through Web contacts; e-tailing or "virtual storefronts" on Web sites with online catalogs sometimes gathered into a "virtual mall"; business-to-business buying and selling; the security of business transactions; Electronic Data Interchange (EDI), the business-to-business exchange of data and e-mail and fax and their use as media for reaching prospects and established customers

In point of substances and principles e-commerce is linked to traditional commerce and most of times it has used the same methods. Because of this e-commerce is not a new commerce which is an alternative of traditional commerce. But it is only a new commerce format which uses information and communication technologies. Simple local businesses such as specialist record stores are able to market and sell their offerings internationally by using e-commerce. This global opportunity is assisted by the fact that, unlike traditional communications methods, users are not charged according to the distance over which they are communicating

The USA Information Substructure and Applications Working Group have defined the e-commerce as:

"E-commerce, has integrated the communication, data management and security services and permits the information exchange between the different organizations. Communication services transfer the information which comes from source, to the recipient. Data management services define the formats which have been implicated for the information exchange. Security services determine the real identity of information source, search the verity of information which has reached to the recipient, and prevent the opening of information to the unauthorized users and verity the information has reached by the aimed user. "

E-commerce has changed the structure of product and service markets; entailed the new product, marketing and distributing styles; permitted to develop the new products; simplified to analyze needs of customers and replied quickly to changes of the demands in the markets. In addition, e-commerce has involved the increasing the commercial actions, enlarging the market territory and raising the economic condensing. This way e-commerce has exposed a lot of new works, jobs, missions and titles. It has been decreased the number of traditional managers and increased specializing and efficiency. Competition formats have been changed with e-commerce. Before e-commerce only big firms could reach a great number of customers, but now by using Internet little firms can reach significant numbers of customers. That is because the marginal costs of reaching and serving to customer have decreased. E-commerce will have been sustained to increase accessibility to markets and to decrease operation costs. After all, customers will get to know information of a product from a lot of seller about properties and cost by using internet. They will compare the differences between properties and costs. So the sellers must diversify products, services or distributing channels or apply price cuts. E-commerce has been directed the organizations to a transformation. Most of them have web sites for communication, marketing or introduction. These web sites are basis of online marketing which is formed by introducing the products or services on internet. Web advertising is another concept which is in the online marketing. It is the advertising of the products or services which are presented on internet. Nowadays people use internet for all sorts of operations so the value of web sites and the number of visitors have gained. Accordingly the organizations have attached importance to their web contents. That interaction has increased the importance of web advertising and online marketing. Online marketing has been made by presenting the advertisements to target group on the web sites. It

is the marketing of products or services over the Internet and used for advertising of a trademark, organization or a web site by banners, enlarging traffic of the visitors of web sites, reporting the response of users and customers and forming the strategic targets of advertisement campaign. The number of organization that prefer online marketing has been increasing daily. That is because online marketing generates interactive, personal, measurable, economical, definite solutions. It is inexpensive when compared to the costs of traditional marketing. Organizations can reach a wide audience for a small fraction of traditional advertising budgets, communicate with the target group directly, collect a lot of data and take reports about them simultaneously. Companies are relying increasingly on IT and computers to store, index, and analyze more and more information about their customers.⁸ Having these information and measuring statistics and responses are easily and inexpensively. Almost all aspects of an Internet marketing campaign can be traced, measured, and tested. In this cyber market place face-to-face communication has been taken away. Customers have been buying the products by seeing photos and reading properties. The customers of information era examine the contents of the web sites. So that nowadays the organizations are updating web sites for the formats of this new buying and selling. An organization which has opened to the whole world by internet, can transform all opportunities to advantages. Their web sites and services must supply satisfactions at all of the processes that begin with the first visiting of customer to the using the product or taking service.

Conclusion

Information technologies and internet have introduced a high-speed transformation to the current business. The traditional marketing and business forms have been changed, and the marketing activities have been advanced by internet. With this change traditional marketing functions have differentiated their processes, speeds and functions. Anymore the market is customer-focused, accessible at anytime from the anywhere. The organizations that want to stay for a long time must protect the information security and not share them with third persons. Furthermore, they must protect the credit cards numbers with advanced security software, realize the identification and authentication and update the contents of web sites periodically. After the service all kind of suggestions, desires and beefs must be considered. By this way, the trust and customer loyalty will be formed. The organizations will transform the opportunities to advantages and come forward in the competition. The governments have to apply urgent action plans for the organizations that want to take more advantages of electronic markets. They must strengthen substructure, increase the band width, generalize e-government applications and put down the costs of internet access. In addition, they have to ensure security for all internet operations by sustaining the electronic signature and to protect copyrights and to blank out censorship for information security

⁸ Rapp, S. & Collins, T.L. (1987). *Maximarketing*. New York, McGraw Hill.

Figure 1 Framework of a Marketing Information System, Mcleod and Rogers

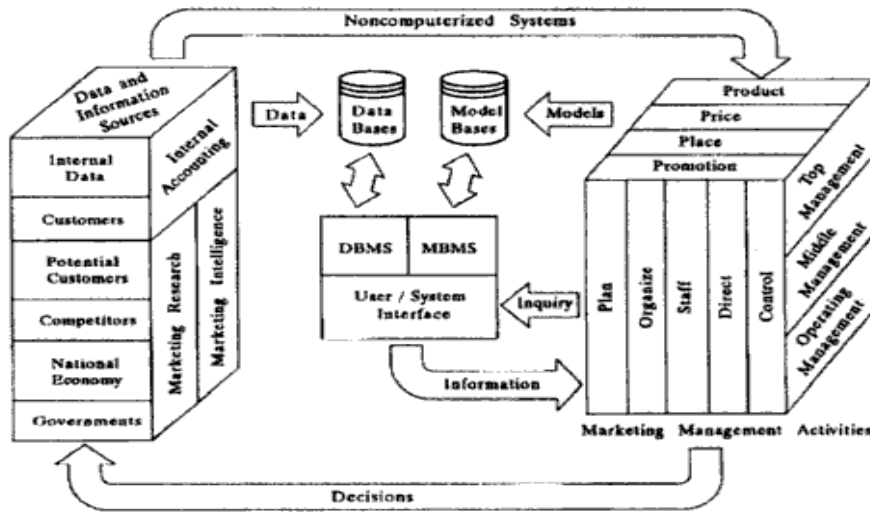
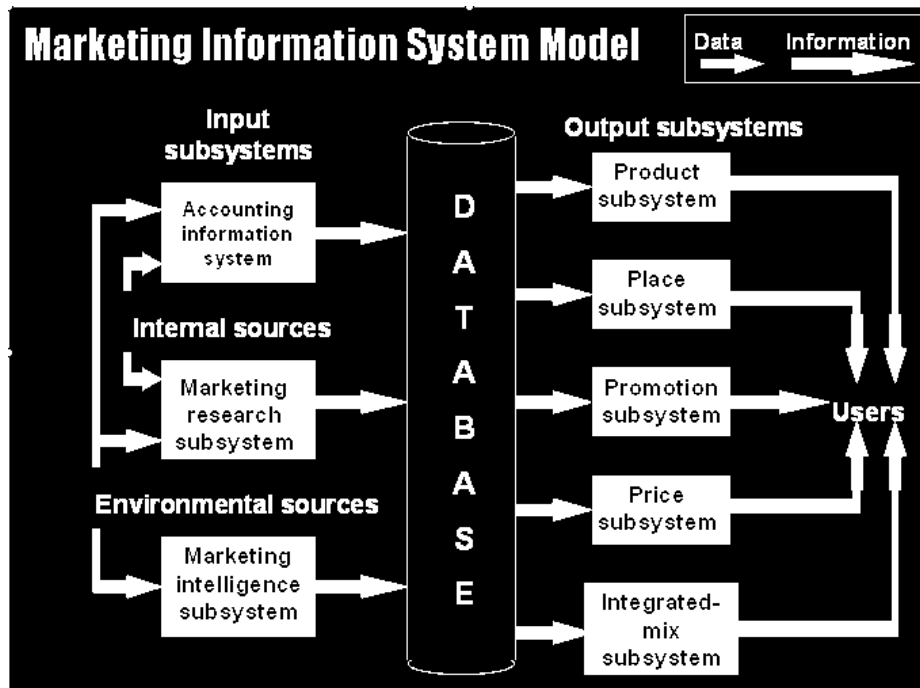


Figure 2 Marketing Information System Model



Source: Jarl M. Talvinen, "Information System in Marketing", European Journal of Marketing, Vol.29, No.1, 1995

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