Introducing Proposed Framework for Effective Use of Information Technology on Customer Relationship Management

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Abstract

In today's world, companies and commercial enterprises can collect huge and deep data related to their customers by utilize modern information technology and interpret them to processed data in order to use them in making strategic decisions. In this paper, it has been tried to evaluate influence of information technology – as a key factor – from different aspects in order to create and manage direct relationship between organizations and their customers. Also create and develop needed infrastructure for maximizing effective and sustainable relationship between customer and organization on basis of information technology. For this purpose, a proposed framework is presented which use modern information technology tools as input to collect useful data from customer, Then in customer relationship department of organizations, data are collected and needed processes are done and ultimately outputs like improved customer relationship, sustainable competitive advantages and reduced costs of organization will be the results.

Keywords-Customer Relationship Management (CRM) ;Information Technology (IT); Customer; Business

1. Introduction

Usage of information technology in some small industries active in industrial production come back to years ago and in recent years has created variant innovations in business management and marketing.

The use of information technology (IT) in marketing has been well established and has gained much attention from researchers and marketing practitioners. The concept of database marketing has existed since the 1960s and experienced its rapid [1].This usage has been increased after global competitions and introducing of open border policies in early 1990s.

Rapid progress in information technology is allowed new methods of collaboration between corporations and customers. Today, in the business world, management recognizes that customers are the core of a business and success of a company depends on effectively managing relationships with them [2].

Borke et al. (1999) discussed effect of IT on marketing fields and management and they have emphasized on reconfiguration of new marketing that utilize advantages of web technology [3].The advent of the Internet in commercial use in 1994 and onwards created an additional task for IT management: to transmit information to customers and secure orders worldwide [4].

Corporations to survive and success in competitive environment have to improve quality of their products and managerial processes and in the same time reduce their costs. Therefore usage of information technology is essential for them. This technology can be used both in production processes (design and manufacturing) and managerial processes (marketing and administration) of organizations. Information technology is recognized as a powerful factor for economic and social changes due to such capabilities and forecasts show that it will continue its rapid

progress and its multi-aspect application in different aspects of human life in future years.

On other hand, organizations have recognized widely that customers are their most important and valuable asset and they look to their relations with customers as opportunity (need to be managed) and as valuable and mutual interacts. These systems support important parts of main processes of organization especially in marketing, sales and customer services through providing information on history and profile of customers by usage of information technology (IT). So most organizations use information technology to survive in today's competitive markets.

With regard to global changes and based on principles of quality leadership, organization efforts must be in direction of overtaking customer needs and must provide desirable and continuous values to customers.

Customer needs and expectations have to be considered by all staffs in organization and they have to identify those needs and expectations and try to enhance customer expectation level that is possible only through effective and proper relationship with customers. Still, many of business managers believe selection of products have to be based on important factor such as information technology. Today, technology provides businesses with systems that can help companies track customers' interactions with the firms and allow the firms' employees to quickly retrieve all information about the customers. This concept is called a customer relationship management (CRM) system [2].

Customer relationship management (CRM) is an old and commercial philosophy that has been born again by development and progress in information technology. The restructuring of the business system is extremely complex in the digital environment, requiring careful planning, modeling and implementation of a customer-oriented approach. The adoption of a customer-oriented strategy is referred to as Customer Relationship Management (CRM) [5].

In next section, definitions about IT and CRM and functions of IT in CRM will be provided and after recognition of those functions, a proposed framework is presented that in this framework, IT parameters are inputs. Then processes are done in order to interpret customer's data to valuable information which output of this framework has many advantages for organizations and this output effects on sustainable relationship of companies with their customers.

2. Information Technology

Investment in information technology field is one of discussed topics in all organizations. In many cases, investment in this field has been caused many saves in costs. Information technology (IT) has become an essential element of firm capability and a source of sustainable competitive advantage [6]. To achieve this goal, organizations need a right mix of innovative information technology, effective business processes, better data management and new workforce initiatives [2].

IT plays an increasingly important role in almost all aspects of the organization's operations and corporate strategies. Researchers and professionals often assume that investment in IT will lead to gains in both profits and productivity [6].

Accordingly in large industries, accomplishments caused by usage of information technology are assessed in saving, more variant performance and proficiency frameworks and in smaller organizations its advantages are more obvious. Also more investment on IT has positive correlation with cost reductions. As other results of IT, it can be mentioned reduction in new product development and manufacturing time, utilizing corporative skills of employees, expanding organization activity areas by creating closer relationship with customers, distributors and partners. Different functions of IT are mentioned by different researchers and generally IT plays a key role in business of organizations, Fig. 1.

3. Customer relationship management

Customer relationship management is based on customer's data and is facilitated by usage of IT. In fact, CRM is a modern and developed tool for data mining of customer's data which is supported by using of various communication points in system and create comprehensive point of view from customers. Customer relationship department acts as watcher in a ship. This watcher enhances quality of products by understanding needs and expectations of consumers and reflecting them to producer.

CRM is an example of relationship marketing that aims to retain customers, build lasting relationships, and maximize customer value for the company [17]. Customer management itself is not a new concept. The development in the mid-1990s of customer management techniques using IT (termed CRM), with the IT being used to track multiple activities of
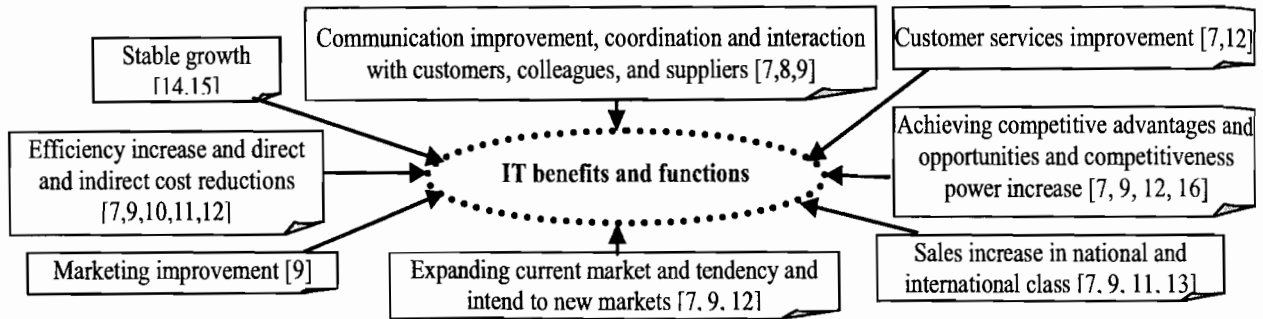
Figure 1. IT Benefits and Functions.

customers, distinguishes CRM from earlier approaches to customer management [18].

Organizations often have difficulty in understating of customer relationship management. They think that they can achieve customer relationship management (CRM) advantages only by implement of technology; but they can't achieve; because organization can utilize from significant advantages of customer relationship management in business only when organization take customer-oriented business strategy which be caused customer-oriented organizational culture in it and then implement suitable technology and integrated with its information technology infrastructure.

In fact, it can be said information technology (IT) is necessary and vital factor in CRM but is not sufficient factor and it needs using other tools too. In some enterprises, CRM is only a technology which is caused organizational activity improvements by developing databases and sales automation tools and as well as connecting sales and marketing duties. Although customer relationship management is not a new tool, with considering advancement in IT, it has been formed practically. This comprehensive strategy strives to achieve knowledge by customer's data collection and analyze them with regarding to customers through effective utilizing of information technology and thereby, establish effective relationship with customers and make common customer-oriented culture and eventually conduct organizations in achieving long-term benefits.

In customer-oriented culture customer is employer and producers are required to produce and deliver what customer wants and what possible for producers is. This type of organizations focus on customer needs with moving from product-oriented to customer-oriented culture and with relying on IT in a focused way, communicate with customers one by one and provide valuable products to customers in appropriate time.

CRM is a designed process to collect data related to customers, to grasp features of customers, and to apply those qualities in specific marketing activities [19]. Early in the conceptualization of CRM in the field of marketing, Parvatiyar and Sheth (2001) explored the conceptual foundations of CRM based mainly on the relationship marketing concept. They attribute the development of CRM to the changes of business circumstances with IT, especially innovation of firms' interfaces with customers and total quality philosophy associated with cost reduction efforts [20].

Compared with the relatively simple database marketing approach, CRM requires more complex and company-wide systems [17]. Therefore, CRM is defined as customer relationship building programs based on IT. Such programs may be directed at loyalty building, but other uses are also in evidence [18].

3.1. New technologies in supporting of CRM

IT advancements have changed different field of marketing and business environment. One of the newest CRM application software which is related to real value of electronic business is E-CRM. It helps companies improve the effectiveness of their interaction with customers while at the same time making the interaction intimate through individualization [21]. Also new kind of CRM which works with wireless device called customer relationship management based on mobile or M-CRM.

Customer analysis in analytical E-CRM includes two major procedures: (1) preprocessing data, and (2) building customer profiles from this and other data [1]. CRM application software suppliers provide software which connects electronic customer relationship management (E-CRM) to wireless devices such as cell phone, personal digital assistant (PDA) and portable computers. The purpose of M-CRM is creating of bilateral and continuous interactions between organizations and customers in any place and any time (whether in work office or while walking on street).

This is considered as a tool which empowers CRM with utilizing advanced wireless communication tools.

This new technology can even allow call centers to contact their customers more frequently to offer new services and improve the relationship between the companies and their customer [22].

"Sage CRM" is a CRM software product of "Sage" company which is considered as one of the best-selling CRM software in market and in the world for medium-sized companies. This software is a CRM system based on Internet which makes possible access for customers, partners and data of customers in any place and any time in organization areas.

Software companies are active in different field such as call centers, sales, real-time and online services, marketing, application software, e-commerce, call routing management. In Europe and Asia, short message service (SMS) has become a primary form of communication. Consumers in the USA are now catching up with this trend. About 2/3 of Americans have subscribed to mobile phone services, and 72 percent of these use SMS text messaging [23].

4. Variant functions of IT in CRM

From a technological perspective, IT is considered an enabler that allows organizations to foster closer relationships with customers, analyze customer information and provide a coherent view of the customer [24]. Information recording technology and customer behavior analysis allow to companies to identify good customers easily. No doubt technology is essential to CRM implementation. Collecting customer data, disseminating, using and integrating them within the firm, requires technology [18].

Teo et al. (2006) proposed an overall framework for CRM which is based on three operational, analytical and participatory parts in organization. As well as three main elements of technology, business and customer are caused that CRM communication ring be formed [25] Fig. 2.

Chircu and Kauffman (2000) argue that a firm can obtain a sustainable competitive advantage if it uses IT capability to exploit specific organizational resources that are unique, difficult, or costly to imitate, and if other firms cannot acquire or build them fast enough [26]. Brynjolfsson and Hitt suggest that the value of IT should be measured by intangible dimensions such as improvements in quality, customer service, and new
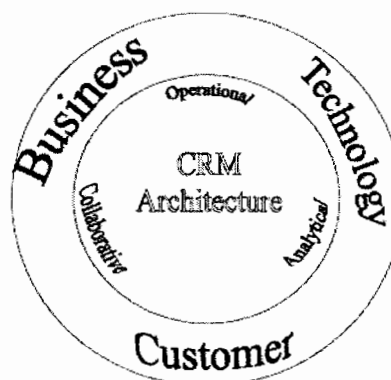

Figure 2. Overall framework for CRM [25].

product development [27].In fact, it can be said IT and CRM have a kind of bilateral relation.

Information technology rapid progress in organizations with regard to new solution-based technology (i.e. CRM technology) is emerged in order to manage customer relationships. IT systems provide for the acquisition, storage and accessibility of customer information as well as for its analysis which we hypothesize to be both positively associated with performance [28, 29]. The task of IT staff is not purely technical, but instead to embed IT in business applications, by matching IT to needs of the business, anticipating IT needs of customers, and working with the firm's non-technical managers.

In other hand, CRM is not just an exercise for IT. IT support for CRM systems varies in terms of the complexity, the difficulty in implementation, and the range of customer support. Chang & Wen Ku (2009) in their paper defines CRM as "the combination of marketing efforts, business processes and technology that allows the firm to understand its customers from multiple perspectives". According to their view, CRM uses IT and knowledge to integrate marketing, sales, service, and provides customization to improve customer satisfaction, boost customer loyalty, and consequently increase revenues from existing customers [30]. Lederer et al. (2001) noted the importance of using IT resources to improve customer relations in a web shopping mall environment, a task that clearly requires an external orientation [31].

CRM implementation can be viewed as the integration of the use of strategic customer data and a loyalty scheme through the use of IT. Change programs arising from new business processes, such as CRM, are directed almost exclusively by the IT function. In particular, the experience of the IT service provider across multiple client CRM implementations was felt to add effective breadth to the study. Most clients would want all their departments to be

integrated after the establishment of CRM. IT tools are selected to attain optimal compatibility with business objectives [30]. When information technology has been utilized properly, it can help to keep customers by better managing customers based on knowledge and initiating stronger relation. Therefore, CRM often requires sophisticated IT support.

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4.1. Introducing proposed framework

In previous section, functions of IT in CRM discussed from various researchers' point of view. As mentioned point of views are not comprehensive, So a result from key and important functions that include other detailed and effective factors is presented in framework format; see Fig. 3.

Within this framework, all types of information technology tools that organizations and enterprises use them in their business processes are defined as "input".

Customer Relationship input channels including are Web, call centers and mobile technology [32]. Also short message service, telephone marketing activities, e-mail, fax centers are other communication methods that are unitized in collecting customer data.

In "processes" step, raw data that are sent from different input channels by using these technologies to organization or company are analyzed and processed by experts. In "output" step, very valuable and useful results and data are concluded.

Sustainable competitive advantages [26], cost reductions [10], customer relationship improvement [31], information dynamic increase, communication rapidity, remote access [33], personnel efficiency increase [34], processes integration [18] are the most important and fundamental results of this framework.

It is needed companies use all technologies for more effective communication with their customers to maximize these benefits and have maximum output.

5. Conclusions

Importance of information technology and its effects on companies are increased significantly and its growth and development is considerable more than before. In today's world, IT empower companies to access to their long-distance customers and allow to

customers to buy a products if they want it and also express their comments, suggestion and even compliment.

Companies can acquire 360-angle view from customers while having optimum interaction with them by using information technology and have optimum communication with them in future. Therefore, it is expected from businesses to achieve their growth goals and continue their ambitious development by integration of customer views with their production technology. Information technology can lead to creation of direct relationship between companies and their customers and help to information exchange between them and generally it is considered as opportunity for companies.

Nowadays concurrent with advancement in information technology and communication, in-house stimulation, cost saving and e-commerce growth drive companies and organization toward utilizing an appropriate strategy for attracting, retain and loyal-keeping of customers. The sales organization's ability and willingness to use IT tools are critical to the ultimate success or failure of the CRM initiative [35].

Based on what is inferable from assessment of using information technology effects in companies, necessity of setting special policy in each section of this business can be concluded. For instance, it should be emphasized on infrastructure development including skills and standards and also appropriate legal and lawful conditions have to be furnished. Also, If companies want to concur themselves with rapid revolution and advancement of science and technology, it is necessary employees and experts update themselves by using IT constantly.

Development of IT helps to improvement relationship of company with its customers by different ways. Including understanding of rapidity and development of e-commerce between companies and organization is very important. For instance, companies can communicate with their customers by providing their products in technology portals.

Collecting and analyzing data about customer patterns, customer behavior interpretation, delivery of products and services to special customers and creation and development of service-level increase models are other results that can be acquired by innovation and creativity in IT area and CRM utilization. CRM business strategy maximize interaction with customers benefits by using marketing, information technology, sales operation customer services, human resources, research and
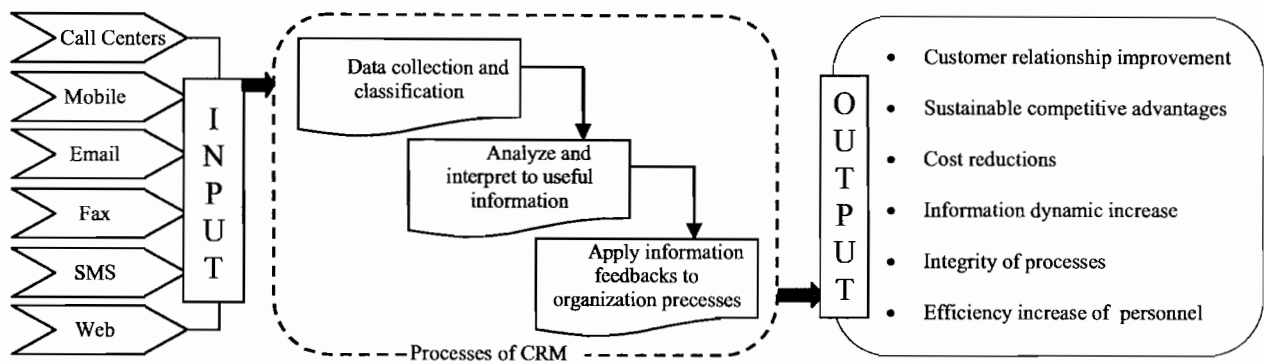
Figure 3. Proposed framework: all type of IT tools as input and output will be the results as shown.

development and finance levers. In the highly competitive digital market, the implementation of a Customer Relationship Management (CRM) strategy may represent the difference between success and failure for online retailing firms.

Implement of CRM, however, requires huge investment in IT but it is expected that lead to profitable output as result. Support to expand marketing communications toward customers depend on how marketing is capable to be done based IT. If

Figure 3. Proposed framework: all type of IT tools as input and output will be the results as shown.

firms have IT infrastructure to keep their customers more effectively, they should enhance this orientation [23]. Companies can produce products according needs and expectation of customers by using information technology and storage of customer information and also by advanced analyzing of this information.

CRM as one of information systems in organizations is able to cover and fulfill informative and communicative needs of an organization by combining information technology, marketing and services. But 70 percent failure rate for CRM projects is an alarm for organizations to avoid from hasty decision making to invest in this system and provide needed infrastructures including IT before implement of this tool.

Acknowledgment

6. References

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