

Application of Electronic Commerce and Competitive Advantage: A Case Study of Electrical Appliances Trading Companies in Baghdad

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Abstract: The aim of this study is to discover the possibility of implementing e-Commerce to achieve competitive advantage of an organization. This study selected a sample from the 175 household electrical appliances companies in Baghdad using questionnaire as a form of data collection and statistical methods such as simple linear regression coefficient, Spearman correlation regression, percentages and repetitions and Spearman Brown. The most prominent result showed that the existence or correlation in the relationship implies there is effect from exclusion of electronic commerce to achieving competitive advantage.

Key words: Electronic commerce, competitive advantage, Baghdad, linear regression, electrical appliances, Spearman Brown

INTRODUCTION

One of the most competitive tools in this information and communication era is information technology. Due to this, most of organizations have invested a lot on information and communication revolution in order to promote trade operations, reduce time, cost and distance barriers. Electronic commerce has appeared and spread to help customers to purchase goods and service from the comfort of their home without additional cost and less effort; also to enable easiest way of showcasing the product on display by advertising goods and services through the pages without incurring excessive costs. The importance of this study is to reveal the impact of electronic commerce by attracting a large number of customers and business partners. The attraction mainly from the websites serves as a conviction to promote the products of the company at a very low cost compared to the traditional method. The study concludes that the use of electronic commerce contributes to the possibility of exploring the resources of the an organization in areas that are more useful and reduces the losses and waste resulting from the use of traditional methods. The most important recommendation is focused on the urgent need to promote electronic commerce operations of payments as the purchase process in Iraq is executed electronically while the service for delivery of goods from express delivery port are paid in cash.

There are four sections in this study, the first section comprises the research methodology and the review of previous studies; the second section includes electronic commerce and competitive advantage; the third section proves the hypotheses of the study. The last section focuses on the conclusions and recommendations regarding the results of the study.

Business organizations are aware of the importance of employing modern technologies to maintain and sustain modern developments in business processes. One of the highlighted technologies that contributes significantly to customer satisfaction in achieving product and services desires in a short period of time, lost cost and highly quality is electronic commerce. Implementation of these mechanisms and techniques to operate e-Commerce are meant to achieve customer satisfaction. This has led to the ultimate question: can employees pursuing this objective in the field of electronic commerce achieve and succeed? The following questions summarized the research problem.

What are the requirements needed for the implementation of e-Commerce to achieve the competitive advantage for a company? To what extent are the requirements for the success of e-Government project can be considered by the senior management of the company? What are the challenges that can prevent the success of the company's e-Commerce project?

The aim of this research is to identify the requirements needed for the success of the e-Commerce implementation in the company through; Identification of views of the senior management in the company about the transformation from traditional trade to electronic commerce and what are the causes of the resistance to the technological change. Identification of the availability of administrative leadership specialized in the use and implementation of modern technologies in accordance to the risks of electronic contract for the success of the application of electronic commerce in the company. Possibility of reducing costs and achieving competitive advantages through a statement of the effectiveness of electronic commerce that can solve the company's problems. Identification of the importance of yet-to-be-explored electronic commerce and the reason why they are yet to be implemented. At this present era, electronic commerce is of great importance. The importance of this study can be divided into two theoretical aspects as the study is an addition to literature review on Middle East and contemporary subjects. The importance of this study encapsulates the application of electronic commerce and how customer satisfaction can be achieved. Thus, the significance of this study is summarized as follow:

To recognize the reality of the organization and its awareness on the use and implementation of electronic commerce as an attempt to bridge the technological gap and to what extent competitive advantages can be achieved on the other hand. Attentions are drawn to the importance of electronic commerce in attracting a large number of customers and convincing potential customers to buy through the websites and promote the company's products at a very low cost compared to traditional methods. Profits can be achieved and costs can be reduced with simplified procedures that encourage customers to patronize despite the insistence of the change resisters that the technology is expensive and there is need to put in place convenient infrastructure and procedures.

Literature review: Mohammed (2009) studied the extent of the possibility of applying e-Commerce in the national insurance industry. The study aimed to clarify the role of electronic commerce in the insurance industry and to validate its applicability in the national insurance in accordance with the modern concepts related to this field and the case study methodology. Thus, this improves the status of the national insurance company and its performance in all its activities by keeping integrating with

modern development. One of the most important discoveries of this study is that the Iraqi insurance companies should act fast in implementing e-Commerce and prepare specialized and skilled human resources in this field to take full advantage of the purpose of this technology. The target is to increase the sales in volume, to achieve cost and time reduction, effective communication with e-Business organizations and customers, and access to modern information in alliance with Arab and foreign companies. Also, by enabling them to identify new ideas in their field of work, improve products and enhance their competitive advantage.

Furthermore, Youssef studied the electronic commerce and its applicability in Iraqi business organizations. The study attempted to achieve a certain set of objectives such as: to study and analyse the basic concepts of electronic commerce and to test for their applicability in Iraqi business organizations. The study used survey questionnaire to test the applicability of electronic commerce to the desire of implementing e-Commerce of Iraqi business organization. This is achieved through the general orientation and the responses of the members of the population represented by the higher departments of the Iraqi business organizations and the foundations that helped to establish such a modern type of activity of commercial. Mansor and AmriAbidin examined the application of e-Commerce among Malaysian small medium enterprises. The study aimed at revealing the relationship between electronic commerce and the factors such as marketing, procurement and government policies in small and medium enterprises in Malaysia. The results showed that all the factors have an effective role in improving the applications of electronic commerce and enhancing their competitive advantage. The study recommended that all SMEs should pay attention to the applications of electronic commerce.

In addition, Srivihok studies an assessment tool for electronic commerce using end user evaluation of web commercial sites. The study aimed to develop a tool to measure e-Commerce using commercial websites over the internet due to the fact that these sites represent the front line in the process of communication between users and management of information systems. The study found that a cost-saving economy will provide fast communication between organizations and individuals and provide consumers, producers and processors with direct access and online delivery through the implementation and increasing employment of the new technology, especially, e-Commerce. The study concludes

that there is need to evaluate end users of the system to predict user satisfaction and acceptance of electronic commerce.

According to Maurer from a study conducted on how to turn knowledge into competitive advantage, it is found that the value of skilled workers has become important and at the same time difficult to obtain. The survey conducted showed that 70% of 1000 wealthy organizations reported a shortage in trained personnel. The study found that companies that maximize the advantage of knowledge are the most successful business. The addition of e-Learning has expedited and provided an expanded learning environment that recognizes the requirements for training of an individual. It creates more effective and direct impacts than any other form of training previously applied or available. The study concluded that organization that did not take into consideration the need for e-Learning or how it could be used to provide new opportunities in enhancing performance will continue to lag behind.

Electronic commerce and competitive advantage

The concept of electronic commerce: e-Commerce is an important area of discussion as it combines technical progress, technological development, market and competition. It is operated in accordance with the principle of sharing information about activities, conducting business transactions and maintaining relations through the means of communication (Zwass, 1996). e-Commerce comprises two technologies namely information technology and communication technology. The promotion of e-Commerce has been enhanced through the integration of internet infrastructure (Whiteley, 2000). Schneider and Cao (2002) defined e-Commerce as the exchange of business transactions using digital technology for the purpose of sale and purchase of goods and services and exchange of information.

Also, Al-Kharousi (2007) defines the concept as the process of adding all the means of business transaction on networks in the global information system and linking them to all relevant information available locally; in other word, it means implementing and managing business activities related to goods and services through data transfer over the internet or similar technical systems. Similarly, e-Commerce is noted to be any commercial transaction between the seller and the buyer with the assistance of the internet fully or partially such as provision of information concerning a product for subsequent acquisition (Ramadan, 2001).

Importance of electronic commerce: Al-Omran (2004) agree with the possibility of determining the importance of electronic commerce by the following:

There is possibility of shopping on a global level as e-Commerce is one of the easiest and the most widespread methods. Simplification of dealing with business transaction of selling the product or service without complicated paper procedures; a feature that contributed to its entry into new markets.

Allowance of organizations the opportunities to develop strategic plans and invest in electronic commerce through opening of new areas to users of the information network that was not previously mentioned. The possibility of direct dealing between the buyer and seller of the commodity or service without the need for intervention from third party to facilitate the contract and payment.

Reduction in the cost of contract as a result of the flow of information and data between the parties involved in the business process through the information network the Requirements of Electronic Commerce Al-Abdali; Al-Alaq; Al-Hamdani; Kazem and Hadi opined that e-Commerce has several components or requirements as stated below:

The formation of information infrastructure: This is the representation of the electronic commerce cornerstone by the devices and techniques where the transfer of electronic information is ensured. This stage includes confidences and procedures such as obtaining an electronic name, purchase, development of physical components, purchase and operation of software and the preparation of technical and human requirements of programmers, analysts and engineers. This structure is available for electronic systems and networks and other prevalent services which are supposed to be efficient and highly reliable; it is also, available to all and provide minimum available services for all.

Capacity building and human resources: Availability of skilled human resources and the ability to deal with new technologies and the need to upgrade and rehabilitate existing human resources are all required by e-Commerce applications. This is achieved through the establishment of courses and holding of various training programs in the field of electronic developments with support from an effective management.

Legal requirement: In developed countries, the laws relating to electronic transactions across networks are still under discussion. Therefore, an accurate review of the

relevant laws on electronic commerce and identification of the work requirements shall be carried out in a manner that preserves the privacy, confidentiality of electronic activities and recognition of the use of electronic signature, electronic proof of character and other ways to facilitate the conduct of any transaction. Therefore, the types and standards of an electronic signature and authentication to allow electronic record keeping and subject to legal controls should be specified by the legislative system.

Financial requirements: The organization's direction is affected by some important considerations called financial resources. These can be identified through financial investment such as the cost of preparing raw materials for electronic equipment and administrative costs as the entry to electronic commerce requires changes in the organizational structure.

Building technological requirements: this is the possibility of providing methods of protection through information from theft and embracing the process idea and development. This is the stage of planning which includes the requirements of physical building needed, necessary electronic programs, formulation of legal standards including property rights and intellectual protection rights.

Behavioral requirements and building environmental: Since, the transformation depends on an integrated philosophy of values, goals, methods and integrated systems, the support and acceptance of external parties are required by the entry of electronic commerce. Therefore, their translation into the practical reality needs efforts and requirements to come first in the public awareness as the nature shift in terms of psychology, behaviour, techniques and finance.

Associated risks with electronic commerce: Lotfi (2005) stated that risks associated with e-Commerce can be divided into three types.

Business risks: This examines various business risks from e-Commerce.

Information security risks: These are the risks that are associated with operating and registering e-Commerce transactions through control system or security-related infrastructure by using data encryption, firewall, control systems that are developed and implemented to support e-Commerce activities.

Risks related to privacy: Loss of confidence in the transaction due to theft of the electronic signature of customers during transaction with the company online.

Transaction failure during the conversion of payment: This becomes risk when there is absence of documentation which increases the likelihood of dealing with the wrong person.

Identity theft risk customers: This risk is caused by hackers that forge information of service provider.

The disadvantages of electronic commerce: The e-Commerce system is an ideal environment vulnerable to theft and manipulation. Dahmash and Al-Qashi, Ali (2010) agree on the reasons for the difficulty of tracking Internet-based frauds as follow:

The ease of access from different locations: anyone who can access the network from any location where there is a computer and internet service as the online transaction does not require a specific place to enter the network. Although, it is affected by: 1.

The speed of the process: It takes hacker not more than few minutes to penetrate a site and manipulate transaction, then leave the site before being tracked.

Space of distance: The hacker may be located at a place ten thousand of kilometres away in another country as internet is designed to work globally.

Anonymity of identity: It is difficult to know the identity of the hacker in any way.

Lack of international law: The internet is a global network with standardized law for each location. There is no need for uniform laws to deal with the hacker.

Lack of material evidence: There must be a material evidence to prove any crime.

Possibility of damaging computer data: In an attempt to track any hacker, the hacker can destroy the data of the machine by simply making the tracking process useless.

Protection of bank account: There are many bank accounts that are protected from external invasion. The hacker uses this type of account without minding the mechanism of the tracking.

Lack of breakthrough report: There are many companies that do not report the breaches of their systems out of a fear of losing customers. The companies prefer to bear the

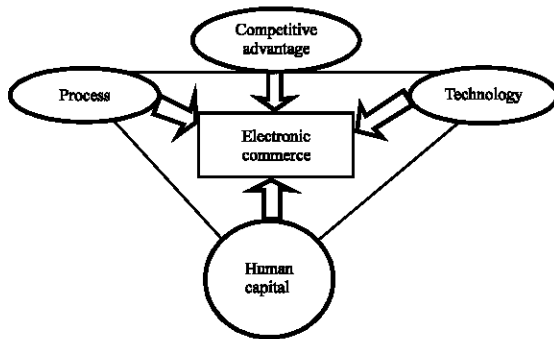


Fig. 1: Relationship between Electronic Commerce and Competitive Advantage Resources: (Goetsch, 2011) Service centric Enterprise Architecture for Chase Global Bank, Ect556, Depau University, P11)

loss instead of losing confidence in their customers. Example of this is what happened in City Bank early 2001 in Russia where the bank suffered a loss of about \$10 million to one person without acknowledging the hacker.

Relationship between electronic commerce and competitive advantage: When there is electronic commerce in place, organizations can achieve competitive advantage through the following elements:

- A minimum cost by reducing the paperwork, distribution, promotion and cost of dispatch
- Quality: this is achieved by reducing errors associated with human factors
- Time: quick completion and execution of business in various procedures for a short period of time
- Flexibility: The possibility of performing work remotely

Furthermore, the availability of specialized, efficient and trained personnel are also required to perform better operations than the business rivals to achieve the organization's objectives in a highly volatile environment. This relationship can be represented in Fig. 1.

Competitive advantage

The concept of competitive advantage: The concept of competitive advantage is an ideal revolution in the world of business organizations. Researchers have different views on the definitions of competitive advantage due to the fact that there are different dimensions and factors that can interact with competitive advantage. According to Lynch (2000), Hugh and Tampoe (2000), competitive advantage is looking for something different and unique away from competitors as the success of the organization

in the future depends on finding new models of competitive advantage as long as current models are known and available to all. Hitt *et al.* (2001) emphasized on the need for organization to carry out its activities in a unique way to achieve competitive advantage. Also, Heizer and Render (2004) opined that an organization with advantageous hedge that makes it superior to other competitors with what they have will bring a value that provides the customer a good service in an efficient manner. Therefore, this study considers competitive advantage as an effective exploitation of the strengths of an organization in order to achieve excellence on competitors, which ensures the organization to stay growing with profit.

The importance of competitive advantage: James and James (1993) states the importance of competitive advantage by providing orientation and motivation to the organization while its importance can be demonstrated by the views of Hugh and Tampoe as stated us:

Competitive advantages represent an important criterion for successful organizations as they are new models which are not found around their competitors.

Competitive advantage is an important factor for organizations working at different levels to meet the challenge of competing with other organizations through the development of knowledge and ability of the organization to meet the needs of customers in the future. It is also important in the study and management of strategy, so that, strategic management can be considered as a competitive advantage.

In another vein, Hamza regarded competitive advantage as: achieving strategic excellence for competitors with the possibility of excellence in strategic resources and competencies; to achieve market share as well as profitability, survival and continuity and to strengthen the image of the company and ensuring customer loyalty.

The stages of building competitive advantage: Heizer and Render (1999), Patridge and Perren have a consensus that there are three phases of building competitive advantage and they can be illustrated as follows:

- Environmental analysis such as using SWOT, understanding environment variables, customers, industry requirements and competitors
- Identification of the organization's mission and the motive behind the establishment. Also, determination of the targeted value

- Formulation of strategy which includes building competitive advantage by adopting low price or flexibility of design or size, quality and speed of delivery and reliability

Challenges of competitive advantage: Hicks (1993) identified several factors that give rise to competitive advantage and lack of concern for the concept which led to challenges that contribute to hindering the achievement of competitive advantage; those factors are:

Comparative efficiency: This implies the ability of an organization to produce goods and services at a lower cost than the competitors as affected by the internal efficiency, i.e., the level of costs incurred by the organization in its internal operations, in contrast to the mutual organizational efficiency which includes the external costs of the organization.

Power of negotiation: This is the ability to negotiate with the customers and suppliers for its own benefits. This is affected by several costs such as research and development cost or cost of shift borne by customers or processors when dealing with the organization.

Competitive priorities: This study conceptualized priorities in competitive advantages as core content, external performance measures, manufacturing tasks or public capabilities. Similarly, Slack *et al.* (2004) divided the concept into: cost, quality, time, flexibility and creativity. This looks similar to the classification of Davis *et al.* (2003) which are: cost, quality, delivery, flexibility and service. These two researchers agree with Lowson (2002) in dividing the dimensions of the competition into five: quality, flexibility, time, cost and creativity.

Quality: Quality is one of the critical success factors for many organizations and the basis for them to achieve competitive advantage. The customers always want a soft-landing between a good price and quality during business transaction. According to James and James, 2003 (1997), quality is a sense of a product's ability to perform a goal designed for it properly and efficiently. From another perspective, Krajewski and Ritzman (2005) divided quality into two parts:

High quality of performance: The degree and quality level available in the performance of operations to achieve good delivery of the product.

Quality of conformity: The ability of the organization to convert inputs to outputs by conforming to the standardized specifications.

In summary, the degree of awareness of the quality of the products varies individually depending on the degree of satisfaction.

Flexibility: This is the ability to deliver a wide range of products to customers and adapt rapidly to rapidly changing opportunities (Dilworth, 1992a, b). Flexibility is provided for an organization to offer new products at the time of demand and to control sizes and quantities (Adegoke, 2005; Slack *et al.*, 1998). Krajewski and Ritzman (2005) divided flexibility into two types:

- Supervisory: the ability to give satisfaction to customer needs
- The flexibility of the size, the speed or the rate of delivery of the products

Time: The speed of development and quick achievement of tasks are among the most important characteristics of successful organizations in their quest to satisfy the needs of the customers (Chase *et al.*, 1998):

- Fast delivery is needed for an organization to reduce the arrival time to deliver the products
- Reliability of delivery: this implies the degree of the organization's commitment to the agreed delivery dates in accordance with the promises and contracts made
- The speed of development: This is the period between the conception of the product and the introduction of the product to the market

Cost: One of the most important priorities for organizations to compete with other organizations is the cost of products. The more an organization can reduce its cost, the less it will be able to offer products that are less expensive for the customers (Wheelen and Hunger, 2005). Cost is classified by Krajewski and Ritzman (2005) into: labor force, raw materials, equipment, facilities and technology. Electronic commerce contributes to the reduction of costs through adoption of IT-based virtual markets. Other priorities influence the precedence of cost if high-quality processes reduce downtime and avoid operational costs. The speed of work indirectly reduces the administrative costs, inventory costs under operation and delivery time. Also, with flexibility, loss of time and energy can be avoided (Slack *et al.*, 2004).

Creativity: A new product and idea or the combination of both which has not been integrated in the past is capable of providing new products and processes (James and James, 1997).

Relationship between the competitive priorities: An increase in competitive advantage leads to increase in competitive priorities in a way that developing a particular competitive advantage generates advanced performance in other priorities in order to improve the performance ns relationship between the priorities (Al-Yasiri, 2013). In other words, improvement of quality automatically improves flexibility and subsequently, quality and flexibility leads to improvement in delivery and cost. This is referred to as the cumulative capacity model. The overall cost at the end is reduced with the improvement in the flexibility and delivery dimension. Khatib (2001) stated that creativity is not an independent dimension because it exists within every dimension which is needful to raise the quality of products. Therefore, the hypotheses of this study are as follows:

- H₁: there is a significant correlation between the dimensions of electronic commerce and the exclusion of competitive advantage (quality, cost, delivery time, flexibility and creativity)
- H₂: electronic commerce positively affects competitive advantage in its individual and collective dimensions

MATERIALS AND METHODS

Population and sample of the study: A group of agents from the household electrical appliances company was selected to know their multiplicity by classifying them to different clusters of the population. Nineteen representatives of well-known companies were selected as the sample of the research within the city of Baghdad. The companies are: LG, Shonk, Sony, Crafft, Panasonic, Hitachi, Ponyverser, Knorr, Philips, Mustobashi, Tokkma, Haas and Samsung. The total numbers of individuals selected were 175. Total sums of 180 questionnaires were distributed and 5 responses were disregarded because they were incomplete, thus not valid for statistical analysis. Table 1 presents the demographic data of the research sample. The sex variable is characterized by more percentage of males (72%) than females (28%). The age group as variable of 30 is the lowest percentage (16%) under the category of 41-50. The number of years of experience is the third variable with (<5 years) as the lowest percentage (12%) while the category 31 and more is considered as the largest proportion of 27%. The fourth variable is related to the scientific qualification; the highest is the percentage of bachelor’s degree holders (59%), followed by the secondary school (26%) and finally the master’s degree (7%). The respondents were sufficiently aware and guided on how to answer the

Table 1: Sample of the study

Items	Variables/distribute the attribute	No.	Percentage
1	Sex		
	Male	122	70
	Female	53	30
	Total	175	100
2	Marital status		
	Single	70	40
	Married	105	60
	Total	175	100
3	Age		
	30 years and below	30	17
	31-40	50	29
	41-50	58	33
	More than 50 years	37	21
	Total	175	100
4	Scientific qualification		
	Secondary school	37	21
	Diploma	12	7
	Bachelor’s degree	90	51
	Higher diploma	0	0
	Master	26	15
	PHD	10	6
	Total	175	100
5	Years of experience		
	<5 years	18	10
	5-10	37	21
	11-20	45	26
	21-30	23	13
	More than 31 years	52	30
	Total	175	100

questions presented in the questionnaire. The fifth variable is the marital situation. While the sample of the married population is 62%, the unmarried respondents recorded 38%.

Information gathering tools: To collect information, interview and make observations, this research was based on the questionnaire as a main tool. Information was also gathered from several sources and necessary procedures were taken such as reliability of the arbitrators as it was presented to a group of specialists. Also, the tests of reliability and validity were made. The Cronbach coefficient is 0.86. These significance results indicate the reliability and consistency of the questionnaire and its validity and its ability to achieve the purpose of this study.

Statistical methods: This study employed many statistical methods to get data and analyze results. These methods are: percentages, frequencies, Spearman correlation coefficient, simple linear regression coefficient, midterm fragmentation, and Cronbach α .

The research model: Figure 2 explained the model of the study.

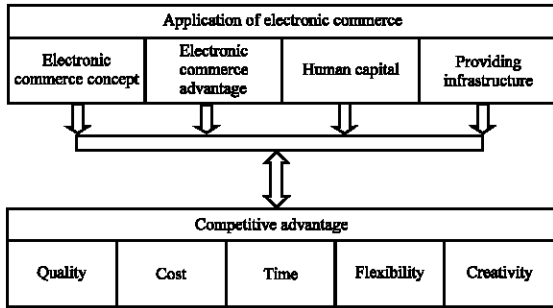


Fig. 2 : Research model (Prepared by researchers)

RESULTS AND DISCUSSION

The following presents the reality of e-Commerce in Iraq:

An overview of the reality of electronic commerce in Iraq The huge technological development in the field of technology has helped electronic commerce to appear and spread among businessmen to do transaction of what they need in the comfort of their home without bearing any kind of efforts and costs. The products are display of the goods or services through the web pages without incurring excessive costs. The electronic commerce is characterized by the use of a set of technical standards in the infrastructure of communications. Thus, the aim of this study is to study the impact of electronic commerce and the possibility of activating the process of remote procurement through the websites of a number of agents dealing with electrical home appliances and the requirements and limitations its possibility in Baghdad.

Analysis of the results: The results are presented on the basis of dimensions of e-Commerce and the analysis of the results on the competitive advantage of agencies.

Result analysis of electronic commerce: The result confirms that the sample in question is relevant to the requirements of the application of electronic commerce. The average of 3.5 represents the possibility of completion of the work assigned to the workers in the organization. The overall dimension with the value of 3.73 confirms the clarity of the concept of electronic commerce in the surveyed sample while the highest standard deviation is 1.1. This shows that the dispersion is highly significant and acceptable if the size of the sample (175) is taken into consideration. Also, the larger the sample size, the higher the degree of deviation.

Test of hypothesis:

- H₁: there is a significant correlation between e-Commerce in its dimensions and the dimensions of competitive advantage

- H₂: e-Commerce positively affects the priorities of competitive advantage individually and as dimensions collectively

The researchers resorted to the use of a set of statistical tools as presented in Table 2 in order to test the hypotheses of the research according to the questionnaire prepared in accordance to the study variables.

From the Table 3, it is revealed that the highest average is 3.9. This shows that the companies investigated achieved cost reduction and reduce in number of the employee. Also, the result implies that electronic commerce can cause decline in the number of workers in the companies. The value 3.7 means there is possibility of reducing the administrative complexity from the surveyed sample selected although this value is higher than the average but it indicates that the electronic commerce cannot escape complications. While the total average value is 3.8, the highest standard deviation of 1 shows the significance of electronic commerce at organization’s level.

The highest average value as shown in the previous Table 4 is 3.9. This shows that the availability of specialized human capital and presence of scientific qualifications that facilitate application of electronic commerce are significance. Also, the existence of training plans in the organization to develop and rehabilitate individuals in senior management and among workers in the application of trade revealed to be significant. The mean value of 3.8 indicates the receipt of employees for training courses in the use of computer and communication technology in the company and reliance on an extensive training plans to use those techniques. The relationship between the average values shows that the head of the companies provide human capital and resources with the eagerness of the organization to accept change and transform to keep pace.

As reported, the highest average mean is 3.9. This indicates that there is continuous updating of the company’s website particularly in the area of data in order to ensure customer satisfaction. The average mean of 3.5 represents the possibility of delivering all offices in the companies to one network for structural considerations. The result showed that there is need for increase in interest in that area due to its importance in the application of electronic commerce while the total average mean of 3.76 reflects the availability of infrastructure of the companies surveyed and a need for the company to be strengthened.

The average mean is 3.9 as reported from Table 6. This shows that the presence of research and survey

Table 2: The clarity of the concept of electronic commerce

Items	The clarity of the concept of electronic commerce	Mean	SD
1	You have knowledge of the requirements of e-Commerce application	3.9	1.0
2	The senior management is familiar with the requirements of electronic commerce	3.7	1.0
3	Customers can buy products online without having to go to the company's exhibitions	3.7	1.0
4	The presence of an effective website for the company reveals the company's products and means of purchasing the goods produced by the company	3.8	1.0
5	There is completion of employees for work at home and the possibility of increasing working hours	3.5	1.1
6	Senior Management held meetings and workshops to define the strategic vision of e-Commerce in the company	3.8	0.9

Table 3: Advantages of electronic commerce

Items	Advantages of electronic commerce	Mean	SD
7	The application of electronic commerce reduces administrative complexity	3.70	0.96
8	The electronic commerce application reduces the mistakes that occur in the business	3.80	1.00
9	e-Commerce application reduces from time to time of completion of tasks	3.76	1.00
10	The electronic commerce application reduces the cost	3.90	0.99
11	The application of e-Commerce increases the trust between the branch managers and the parent company	3.80	1.00
12	The application of electronic commerce reduces the number of employees in the company	3.90	0.99

Table 4: Availability of human capital

Items	The availability of human capital	Mean	SD
13	There are training and rehabilitation plans for senior management personnel and employees to implement e-Commerce	3.9	0.96
14	All departmental managers, divisions and units and senior management have the ability to use computers efficiently	3.8	0.97
15	I have received internet training courses	3.8	0.99
16	I have received computer training courses	3.9	0.94
17	The majority of employees in the company have scientific qualifications that facilitate the process of applying electronic commerce	3.9	0.98
18	We adopt a broad training plan for our employees on how to use modern communication technologies	3.8	1.00

Table 5: Availability of infrastructure

Items	Availability of infrastructure	Mean	SD
19	Computers are provided with an appropriate number of employees in the company	3.80	1.00
20	The possibility of delivering computer network to all offices	3.50	1.00
21	The possibility of connecting all the computers in the company to its electronic network	3.80	0.99
22	All administrators and department heads have computers	3.80	1.00
23	The existence of the company's website	3.70	1.00
24	The company site is continuously updated	3.98	0.90

Table 6: Competitive advantage (quality)

Items	Competitive advantage (quality)	Mean	SD
25	The company activates the role of the research and survey department in the company in a way that contributes to the provision of products that meet the needs and desires of customers	3.9	0.90
26	There is need to attract intellectual capital in the company in order to raise the quality of its performance compared to the competitors	3.9	1.00
27	There is use of modern technologies and software to protect the customers which enhances the confidence in dealing and raising the levels of customer satisfaction	3.8	0.96
28	The application of e-Commerce helps to convince the customers of the quality of the company's products through electronic promotion methods and facilities offered	3.8	0.96
29	The adoption of quality standards is evident in the company's business	3.8	1.00
30	The company meets the needs of customers with high accuracy	3.8	1.00

department in the organization contributes to the quality of products that meet the desires and needs of the customers. It also indicates the need to attract intellectual capital in the company that can raise the quality of performance compared to the competitors. The least average mean of 3.8 shows that there is possibility to convince the customers about the quality of the company's products and to use the modern technologies and software to protect the customers and raise their levels of satisfaction. From the sample selected, the mean average of 3.83 shows that the availability of infrastructure of the companies indicates the need to strengthen them.

Table 7 shows the highest average mean to be 3.8. This shows that it has the most effective role in reducing the costs compared to the traditional methods while the average mean of 3.7 indicates the turning point in the electronic commerce for financial transaction. The result shows that the price of high quality product does not increase but facilitates the methods of dealing. The value 3.75 reveals the potential of cost reduction when electronic commerce is effectively applied while the highest value (1.1) standard deviation indicates that the dispersion is higher than other variables.

From Table 8, the highest mean value (3.9) shows the significance of electronic commerce application to

Table 7: Competitive advantage (cost)

Items	Cost	Mean	SD
31	One of the most important features of e-Commerce application is its low cost compared to conventional methods such electronic exhibitions	3.8	0.98
32	The application of e-Commerce contributes to a regulatory policy to reduce excessive costs	3.8	1.10
33	The application of e-Commerce to promote the culture of quality in line with high costs and prices of products as provided to customers	3.7	1.00
34	The company seeks to implement e-Commerce to offer new products and services to customers	3.8	0.97
35	Electronic transactions positively influence the advertised prices of the goods in the company	3.7	1.00
36	Electronic commerce is a turning point in financial transactions	3.7	1.00

Table 8: Competitive advantage (time)

Items	Time	Mean	SD
37	The application of electronic commerce reduces routine work and reduces waiting time for processing	3.9	0.96
38	The company seeks to adopt procedures and processes that reduce the level of deviations in the delivery of its products at the stipulated time	3.7	1.10
39	The company investigates the causes of the disruption of work and non-completion of the work.	3.8	1.10
40	The best use of the workers' capacities makes it able to offer its services and products faster than its competitors	3.9	0.99
41	The company enjoys high confidence by customers	3.8	1.00
42	The company adopts re-engineering standards to win customer satisfaction	3.8	1.00

Table 9: Competitive advantage (flexibility)

Items	Flexibility	Mean	SD
43	The company seeks to change its plans and services according to environmental parameters	3.9	1.00
44	The company seeks to change its operations and adapt to the change in the demand of its goods and services	3.088	1.00
45	The company has the ability to develop its services to meet changing customer demands and emergency situations to maintain its position in the market	3.9	1.00
46	The company has employees with flexible thinking capability	3.9	0.95
47	The company relies on high capabilities to deal with the important factors	3.8	1.00
48	e-Commerce provides a close margin of customer interaction	3.7	1.00

Table 10: Competitive advantage (creativity)

Items	Creativity	Mean	SD
49	In the application of electronic commerce, the company seeks to constantly change its various activities in order to compete with the competitors	3.8	1.0
50	The company seeks to expand the horizons of development and innovation in the provision of services to customers.	3.7	1.0
51	The company relies on brainstorming to generate ideas	3.7	1.0
52	The company gives incentives for new ideas that help to improve products and services over the competitors	3.8	1.0
53	The management of the company allocates rewards and prizes for creative ideas for customers	3.8	1.0
54	The company adopts unique modern applications	3.6	1.1
55	The company employs innovative ideas	3.5	1.2

reduce the routine work and processing time. The average mean value (3.7) represents reduce in the level of deviation in product delivery at the stipulated time through the company's efforts in adopting procedures and processes. From the analysis of the result which provides total average mean of 3.81, the time of completion of tasks is sufficiently reduced when applying e-Commerce efficiently while highest standard deviation (1.1) indicates that the dispersion in the answer is acceptable.

The highest mean average was 3.9 from the Table 9. This indicates that the company attempted to change its plans and services to the available environmental factors. The average mean <3.7 represents the closeness of the organization in dealing with the customers. Generally, result like 3.84 indicates that there is reduce in the efficiency of the electronic commerce performance while achieving the highest standard deviation of 1. This indicates that the dispersion in the answer is not

unacceptable if the size of the sample (175) is taken into account. The larger the size of the sample the higher the dispersion in the value of the results will be achieved.

Table 10 above shows the highest average mean of 3.8 which indicates that there is positive contribution from the application of e-Commerce, thereby giving the company the power to remunerate incentives for new ideas that help to improve its products and services more than competitors. The management of the company awards rewards and prizes for creative ideas provided for the customers. Also, in the area of application of electronic commerce, the company is constantly changing its various activities in order to face competitors. The mean value of 3.5 represents the attempt of the company to employ the owners of creative ideas and the result shows that answer is approaching the medium satisfactory (3). Therefore, the companies promote creativity and work to attract the owners of ideas and giving employment in a way that raises the value of

Table 11: The relationship between the applications of e-Commerce and competitive advantage

Variables	Competitive advantage	Quality	Cost	Time	Flexibility	Creativity
Application of electronic commerce	0.5**p(0.00)	0.24**p(0.01)	0.27**p(0.00)	0.268**p(0.00)	0.471**p(0.00)	0.35**p(0.00)
Clarity the concept of electronic commerce	0.26**p(0.01)	0.2**p(0.00)	0.12**p(0.1)	0.09**p(0.2)	0.25**p(0.01)	0.2p(0.1)
Advantages of Electronic Commerce	0.24**p(0.00)	0.08**p(0.33)	0.2*p(0.01)	0.2*p(0.01)	0.23**p(0.05)	0.17*p(0.02)
Human capital	0.4**p(0.00)	0.14p(0.06)	0.22**p(0.00)	0.27**p(0.00)	0.43**p(0.00)	0.26**p(0.00)
Availability of infrastructure	0.44**p(0.00)	0.28**p(0.00)	0.23**p(0.00)	0.262**p(0.00)	0.29**p(0.00)	0.36**p(0.00)
N	175	175	175	175	175	175
Moral relations						
No.	5	3	5	5	5	
Significance	100%	100%	100%	100%	100%	

(*) The relationship is significant at the level of significance 5%, (**) The relationship is significant at the level of significance of 1%

investment in them. The mean value of 3.7 acknowledges the creativity in the process of applying electronic commerce compared to the traditional methods that are difficult to maintain consistency with.

This section contains the analysis of the nature of relationship between the research dimensions and the variables. The correlation is tested on the relationship between electronic commerce and competitive advantage from the first hypothesis. The result shows that there is significant correlation between electronic commerce and competitive advantage.

Table 11 shows a significant correlation between the variables of competitive advantage (quality, cost, time, flexibility and delivery) and electronic commerce with the correlation coefficient of 0.5at a significant level of 5%. The results encourage great interest of companies in the application of electronic commerce. The result is logically consistent with the existing theoretical concept and therefore has achieved the validity of the first main hypothesis. The results in the table validate the relationship between the application of electronic commerce with other variables of competitive advantage such as quality, cost, time, flexibility and creativity.

The second hypothesis presents that there is correlation between the clarity of concept of electronic commerce and the dimensions of competitive advantage. It is found that there is significant correlation between the clarity of the concept of electronic commerce and all elements of competitive advantage (0.26**) except in the case of time and creativity as the results show no relationship between them. The third hypothesis presents that there is a correlation between the advantages of e-Commerce and competitive advantage. The result presented in Table 11 shows that there is a correlation between the advantages of e-Commerce and the competitive advantage of the e-Commerce companies with the coefficient of correlation (0.24**). The exception is in the variable, quality where the result showed that there is no significant relationship.

Furthermore, there is a correlation between human capital and competitive advantage. It was observed that there was a correlation coefficient (0.4**) which indicates

that the relationship between human capital and its ability to create a competitive advantage for the company from the selected sample results for all elements except the quality component are significant. From the fifth hypothesis which assumed that there is relationship between the infrastructure and the dimensions of all competitive advantage, there exists a strong correlation between the infrastructure and competitive advantage in all its dimensional forms. Table 11 shows the factors related to competitive advantage with some factors having partial significance but the quality components such as human capital and infrastructure have the most significance and the correlation between the elements of competitive advantage (quality, cost, delivery time, flexibility and creativity).

CONCLUSION

The following summarized the conclusion derived from this study: The management of the company has successfully used the dimensions of e-Commerce such as human capital, the advantages of e-Commerce, infrastructure and the clarity of the concept of e-Commerce to enhance opportunities for achieving competitive advantage measured through flexibility, quality, time, cost and creativity.

There is a significant correlation between the variables of competitive advantage (quality, cost, time, flexibility and delivery) and electronic commerce. At the significant level of 0.05, the correlation coefficient is 0.5**. According to the views of the 175 top managers and the middle management of the companies selected, many organizations are interested in applying e-Commerce.

There is significant correlation between the clarity of the concept of electronic commerce and the dimensions of competitive advantage. Also, it is noted that there is significant relationship and direct correlation between the clarity of the concept of electronic commerce and all the factors of competitive advantage with the correlation coefficient of 0.26** more than the other variables such as time and creativity.

There is a correlation between the contribution of electronic commerce of the selected companies and the ability those companies to achieve competitive advantage. The coefficient of correlation is reported to be 0.24** except in the case of quality according to the result where there appeared to be no relationship.

The correlation coefficient between the human capital and its ability to create a competitive advantage for the company from the perspective of the respondents is significant for all the factors except in the case of the quality.

There is a strong correlation between infrastructure and competitive advantage in all variables according to the respondents with the correlation coefficient of 0.44**.

The uses of electronic commerce contribute to the exploration of the resources of the organization in areas more beneficial to them and reduce the losses and waste as it is known for traditional methods.

LIMITATIONS

According to the data adopted, the limits of this study are as follow:

Spatial boundaries: The research focused on several companies located in the city of Baghdad.

Time constraints: The study explored the period of time from 2/1/2017 to 1/7/2017 for collecting data and information.

Scientific boundaries: The variables of the research are limited to electronic commerce and competitive advantage which have been studied theoretically and practically.

Human borders: Several levels of employees of the companies.

RECOMMENDATIONS

A number of recommendations in accordance with the results are provided as follow: There is a need for the company to invest in the bond of the relationship between the dimensions of electronic commerce (human capital, the advantages of electronic commerce, infrastructure and clarity of the concept of electronic commerce) in order to promote the opportunities that bring forth competitive advantage through quality focus, cost reduction and short delivery time.

The companies concerned must adopt the latest technology in all their business operations to achieve

competitive advantage for them to satisfy their customer. This is a huge step to be taken for a company to become global with reputation in the world markets.

Also, there is need to facilitate e-Commerce operations regarding payment of goods and services, since the purchase process in Iraq are done electronically, but payment is done in cash for express delivery of goods.

In addition, there is a call for provision of intellectual capital and not just human resources to take control of modern technologies all over the world but also the designers, programmers and technicians from Iraqi population must employ these technologies.

Finally, creativity is an integral component useful in all factors and its presence contributes to the achievement of other dimensions in this study. Creativity attracts strong incentive for the success of companies as conducted in the Iraqi environment.

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