

The Challenges of Implementing E-Commerce in Kurdistan of Iraq*

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Abstract—The Retailers all over the world are prospering from the burgeoning trend of online shopping. Kurdistan Regional Government is still struggling to grow its e-commerce markets. On the other hands e-commerce in Various countries in the Middle East have some of the world's highest internet and mobile penetration rates. Alternative payments methods are quickly expanding, and having access to some of the world's most coveted natural resources that allows countries in their region to have some of the highest GDP in the world. There are several challenges prevalent in the KRG Region market that will require international merchants to develop strategies based on innovation and vigilance. This unique region is plagued with complications many other countries have little to no experience with e-commerce, which highlights the need for retailers to have a deep understanding as to how this region operates before they can begin finding solutions. One of the biggest concerns today's consumers have is the risk of fraud when they are shopping online. With highly sophisticated malware and perceptive cybercriminals, customers' card and bank information can easily be stolen if a merchant does not take the proper security measures. In this paper we summarize all challenges need to be addressed in KRG in order to make correct steps to apply e-commerce in KRG. Finally, the recommendations and framework are proposed for e-commerce to encourage government, organizations, and people to take advantages from e-commerce.

Keywords—Barriers of Ecommerce in KRG; E-Commerce ;Mobile money ;information security ;rules and regulations of Ecommerce.

I. INTRODUCTION

The expression "e-commerce", additionally alluded to as "e-business", has been characterized by numerous creators in various ways. It is characterized as "an electronic situation that makes it conceivable to purchase and offer items and administrations and data on the web" [1]. A more extensive definition would be leading business exchanges, keeping up business connections and sharing data over the web [2][3].

The appropriation the web makes it less expensive and simpler for firms to expand their business sectors, deal with their operations and direction esteem chains crosswise over fringes. Decrease in the expenses of exchanges and data, innovation has lessened business sector grindings and gave noteworthy catalyst to the

procedure of expanding world markets. ICT selection cultivates globalization by diminishing the expense of exchange and coordination and making new and extended markets with economies of scale globalization by decreasing the expense of exchange and coordination and making new and extended markets with economies of scale [9].

E-commerce has opened the entryways of chances for all intents and purposes, and all organizations whether they are working at national or global level. A standout amongst the most befitting employments of World Wide Web (WWW) is purchaser retailing Business-to-Consumer (B2C) offering. Utilizing WWW retailers can offer their products and administrations everywhere throughout the globe by method for virtual stores. With the assistance of virtual stores, any business can offer products and administrations to clients by means of electronic channel with really less cost when contrasted with what is required in customary block and-mortar stores [4][5].

Specifically, EC Commerce between a vendor and a client are ordinarily meant as Business-to-Customer (B2C) forms that can be contrasted with the retail exchange of customary business. All the more particularly, B2C market includes a substantial number of traders keen on using so as to offer items a helpful media and clients that longing to buy those items. In this connection, clients and dealers can abuse diverse open doors [6] as: (i) non appearance of time and space limits; (ii) effortlessness, proficiency and ease of offers and buys; (i) accessibility of low expenses and a few deal terms. Be that as it may, a noteworthy client trader doubt [7] still holds on in EC, generally because of the nonattendance of individual contacts and to a low acknowledgment of the e-installment techniques for security reasons.

This research concentrates on e-commerce challenges in Kurdistan Region Government (KRG) in Iraq. Kurdistan is federal state located at the north of Iraq that have own law and legislation. With a populace of 5.2 million and expanding, the three governorates of Erbil, Slemani, and Duhok, cover roughly 40,000 square kilometers - bigger than the Netherlands and four times the range of Lebanon. Moreover, international organizations have settled and worked in Kurdistan in recent years due to its

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soundness and security circumstance where nonnatives are welcome. An area encountering a financial blast, our kin and organizations are avid to shape connections and associations with global investors. KRG works close by remote speculators to make a commonly helpful monetary relationship. While most outside interest in Kurdistan is new this empowers financial specialists who arrive sooner than required to truly stamp their imprint in the district, with solid Foreign Direct Investment the Kurdistan area's economy truly can possibly prosper [8].

II. THEORITICAL BACKGROUND AND RELATED WORK

E-commerce is using internet and communication technology to conduct businesses electronically [13]. E-commerce success is an issue that has drawn the concern of many researchers and industries. The adaptation, challenges, and obstacles in front of internet based service especially e-commerce has become an interesting domain for researchers and industries. Many researches on adaptation e-commerce and use of developing countries have been published. Variety of approaches has been employed to apply e-commerce while many researchers focused on global issue of e-commerce. The technical challenges such as security for transactions, e-payment issue, and IT infrastructure are the most common challenges confront e-commerce. Furthermore, cyber law and legislation are other factors to adopt e-commerce. Therefore, for up to date technologies new law and legislation is required. Furthermore, secure electronic signature, authentication and encryption, Identity theft prevention, and trust are among the critical factors to increase customer trust to use e-commerce [20].

Many researchers concentrate on e-commerce challenges in developed country, they addressed the barriers of e-commerce in developed country, and they pointed out that the lack of IT infrastructure, socio economy, and ICT strategies are the major e-commerce obstacles [17]. The society and culture has been discussed by many researches as the challenges that face developing countries however the industrials and governments have not considered these issues in adopting and building e-commerce. [21]. [18] proposed a framework to apply e-commerce in Bangladesh as developed country in order to tackle the IT infrastructure problem in that country.

The cultural and ethical challenges, the number of internet users, and technical issues are other challenges that face e-commerce in developed country especially the Arabic countries. Additionally, [20] proposed encouragement steps to increase e-commerce in Saudi Arabia like human resource development, increasing e-commerce skills as well as establishing sophisticated IT infrastructure and communication.

Furthermore [22] discussed about e-commerce barriers in Jordan they have pointed out that law and trust are the key points to ascertain user confident toward e-commerce as well as government has a great role to adopt e-commerce in Jordan. Beside e-commerce inconsistency because of lack of law and legislation, some researcher finds out that the level of trust is different for users with

the different religion backgrounds. From that perspective [23] discussed the trust issues among Muslims user in e-commerce, the author focused on perceived privacy and security and how e-commerce may lead to leek personal information as well as uncertainty information about products and prices may affect user trust to buy or sell products through internet.

In a case of Iraq and KRG, a few studies have been done on adapting internet based services. [27] Proposed some steps to implement e-commerce in Iraq as well as the obstacles that face Iraq to adopt e-commerce. In one hand the study conducted that the Iraq are going through the same challenges of developing countries especially Arabic countries. On the other hand, the political situation in Iraq is another challenge to adopt e-commerce, and the study focused on Iraq in general. Due to the different culture and politics in KRG compared to Iraq the implementation and adaptation of e-commerce will confront different challenges and outcomes. For that reason some studies have been done on internet based services in KRG. According to [29, 26] the political and economic situation in the country, e-communication infrastructure is not well established and this has led to slow growing in many e-services including e-commerce and e-payment. Both studies show the challenges to apply internet based services on e-service in general and an e-government and e-payment in specific. The number of internet user, lack of IT infrastructure, and low level of user awareness as well as political situation with law and legislation are the highlighted issue in KRG. In one hand low level of internet service led to slow down internet based services. In another hand lack of e-payment service in KRG has a negative effect on growing e-commerce.

From the related work we deduced that the most studies show the problems without the practical solution for these problems. This research tries to highlight the current challenges in KRG according to current financial and political situation as well as answering the question "how could be possible to tackle the highlighted challenges and find alternatives to adopt e-commerce in KRG?"

III. RESEARCH METHODODOLY

There are not enough studies on adaptation e-commerce KRG, the study depends questionnaires. Experimental information might have been gathered and used to accomplish the targets of the research. Test measure incorporated purchaser from whom information need to be gathered. Test incorporated employees, higher education students, and lecturers from claiming e-commerce organizations starting with KRG. Those reviews might have been led ahead 120 respondents. Essential information have been gathered from our questionnaire

IV. KURDISTAN REGION E-COMMERCE CHALLENGES

E-commerce difficulties are grouped mostly as: technological, administrative, and business related. Vocatives difficulties incorporate security, site issues, and innovation (issues that envelop costs, System

development and infrastructure). Administrative difficulties incorporate individuals and organizational issues, what's more, acquiring senior administration backing. Business challenges incorporate client administration and legitimate issues [10].

For E-business to be a decent distinct option for customary business exchanges in Kurdistan region, and for a business to amplify the advantages of ecommerce, there are various issues must be considered.

A. Cultural issues & society

There are social issues that ought to be considered while receiving e-commerce in developing nations. The social variables in this paper are divided into three classes.

The main class incorporates both dialect and religious elements. The vital cultural and society challenges for e-commerce in KRG are:

- Religion: The majority of Kurdish people in KRG are Islam follower and almost all the banking sectors in KRG are following non-Islamic rules to perform their transaction they use interest rate for loans ('Riba' in Islam). Therefore, the big part of Kurdish users prevents using banking payment for their commerce.
- Language: The main language in Kurdistan is Kurdish. While the international e-commerce systems do not support Kurdish language. Therefore, Kurdish users struggle to explore and use global e-commerce systems.
- Cash based society: Although there enough banking sectors in KRG, but due to financial situations in KRG and the history of busting banks during first wolf war at 1990, second wolf war at 2003, and financial inconsistency between KRG and central administrations in Iraq [8] user does not trust banks to save their deposits anymore as shown in Figure 4 shows 46% of responders of survey says that the lack of trust is a reason of stopping e-commerce from growing in KRG as well as only 22% of responders has a higher trust on e-commerce system as shown in Figure 2. The conducted polls deduced that the most internets based shopping in KRG use cash payment on delivery of goods when they answered about payment method for their online shopping as shown in Figure 1.

B. Information Communication Technology infrastructure in KRG:

There are no dependable and grounded system frameworks for secure communications among users in KRG. This issue becomes a snag to shoppers' selection of ecommerce. During the past decade partial infrastructure based on short term plan has been developed instead of unique infrastructure for long term plan. This led to have a weak communication infrastructure in KRG.

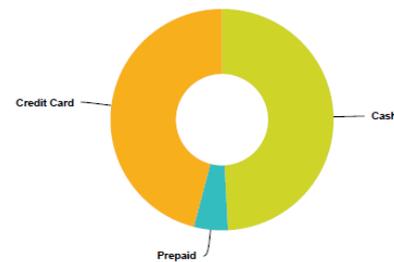


Figure 1: Payment Methods for KRG Users

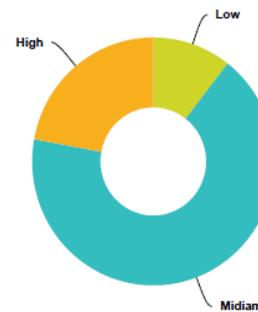


Figure 2: User Trust on E-commerce System

The broadband and communication fees including setup and monthly subscription are expensive. Although there has been a drop in broadband prices in recent years but the prices still expensive compared with developed countries. The high broadband subscription fees have led to a slowdown in its adoption in rural areas. This is because of lower incomes. Moreover, broadband availability is another communication obstacle in Kurdistan region cities. Most small towns and villages lack broadband services. Also part of this problem exists in the major cities due to the inability to meet the growing demand for broadband services, especially in new residential areas.

The last barrier in this section is poor broadband quality. Many participants stated that there is a lack of confidence in broadband services. This is because of its disconnection of from time to time. The second reason is the gap between announced and actual download speeds [11]

C. Technical issues

The technical issues that will lead to successful system with e-commerce abilities in KRG can be classified as follow:

- Not enough IT-proficient representatives to deal with the e-commerce data stream and keep up the entire business framework. However, some universities add e-commerce in their syllabus in

major of IT, like University of Human Development (UHD), but still universities, academic institutes, and industries does not focus on e-commerce as a require subject. Furthermore, the study shows that 28% of responses believe that lack of professional IT teams is a reason that slows the growing of e-commerce.

- Securities highlights, dependability, clarity, ease of use, availability and route are thought to be basic contemplations are other technical issues that confronting e-commerce in KRG.

Subsequently, these variables can be measured as empowering components that urge shoppers to manage online stores. [12]

On the other hand, the current e-commerce websites had not been designed in a scientific and accurate to retrie these data for the customers, Search based (additionally called content based inquiry) uses a buyers buy history and evaluated thing to make a hunt question which find different things [13], (for example, creator or comparable kinds) like purchasers taste. for example, in kurdshopping e-commerce website if one searches for with keyword "Mobile" the result show Sim card, ipod devices, internet devices and mobile devices. This is not scientific and correct search in e-commerce websites as shown in Figure 3

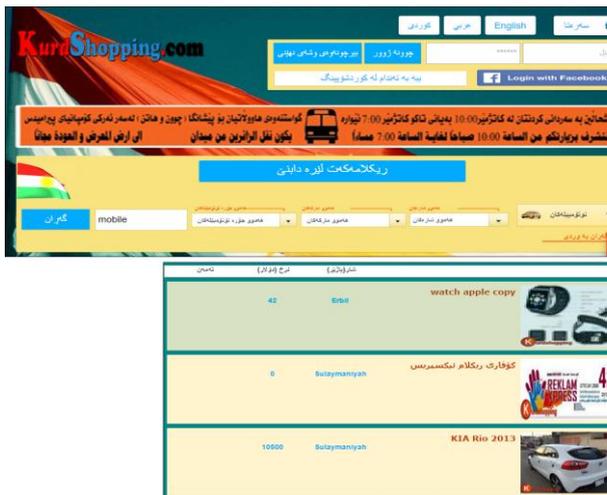


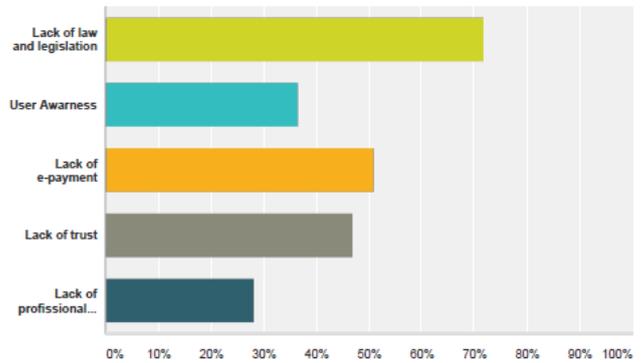
Figure 3 Example of search on kurdshopping e-commerce site

D. A. Legal issues:

The government have to establish an honest system of goodness construction to administer e-commerce exchange (such electronic records, imprints et cetera.); and legal foundations that may execute the legitimate composition (such Similarly as laws and regulations) Furthermore shield customers what's more associations from conning [14].

Clashing principles and laws between KRG and central administration of Iraq lead to inconsistency among companies and private sectors to establish e-commerce and e-payment system. Whilst KRG claims

independency in administering laws for its area, however according to article 27 in Electronic signature and electronic exchanges Law No. 78/2012 and decision No. 3/2014 of Iraqi council of ministers, all the e-payment transactions for any e-commerce, e-trade, and any other reason must be executed through the Central Bank of Iraq (CBI)[15]. Therefore, any endeavor to use e-payment transaction for any e-commerce system in KRG the endorsement from the CBI is required. This implies that there are conflicts between KRG and focal administration of Iraq to issue the required law to administrate internet based service[16]. Furthermore, the lack of any law to administrator e-commerce transaction, prevent electronical crime, e-payment, protect users and providers right, and cyber in KRG has a great side effect on Kurdish users. In addition, the study shows that Kurdish users believe that the lack of law and legislation has higher side effects on growing e-commerce system KRG as shown in Figure 4.



Answer Choices	Responses
Lack of law and legislation	71.88% 69
User Awarness	36.46% 35
Lack of e-payment	51.04% 49
Lack of trust	46.88% 45
Lack of professional team to manage and produce	28.13% 27

Figure 4: The reason of slow growing e-commerce in KRG

E. Political Issues

The political and governmental situations are the most serious drawback in the promotion of the internet based services. The various political systems can be divided into some distinct groups reflecting the principal differences. Some of them are classified by category inside the autocracy, conservatism, the democracy, monarchy, socialism, and Theocracy. In fact, the various political systems have their own positive and negative impressions on the growth of e-commerce. It is clear that, the majority of the governments reach with the importance of ICT to present a new manner of working make deals, to increase the public services, to improve the quality of the public life, at the costs of reduction and to increase the economic situation finally. However,

country in the process of development with some principal obstacles meets as follow:

- Governmental structures.
- Type of governing on people and the Companies.
- Lack of national policies harmonization with the rest of the world.
- Lack of the necessity

V. IMPLIMENTING E-COMMERCE IN KRG

The implementation of successful e-commerce in KRG depends on several factors:

- Infrastructure: In the absence of unique communication infrastructure in KRG while mobile communications are accessible for a wide area in Kurdistan the mobile operator network could be a possible solution and alternative infrastructure.
- Language: In order to tackle language issues more e-commerce systems are required with unique standard Kurdish language. In addition, the public and private sectors have to attempt to collaborate more with global e-commerce system to add Kurdish language into their systems.
- E-payment: With the using of mobile operator and lack of online banking in KRG mobile money payment system more reliable and easy to use as an alternative to e-payments. Furthermore, we proposed a framework to apply mobile money as e-payment alternative as shown in Figure 5.
- Religion: The solution is to encourage Islamic banking in KRG to build e-payment systems with current amount of rate that not conflict with sharia principles. Adding to that increase the Islamic banking system in KRG to make it more popular between KRG citizens.
- Political: The KRG have to take serious steps to establish secure and trustworthy internet based services like e-government including e-commerce and e-payment systems.

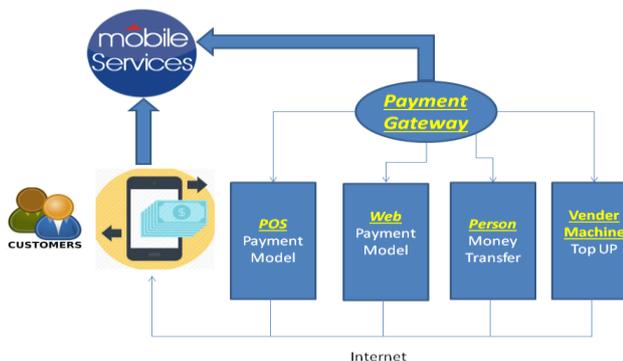


Figure 5 Proposed Framework

VI. CONCLUSION

In this paper the necessity of e-commerce in KRG has been shown, because KRG is a developing region and has many financial investments. To support this argument a survey has been conducted among many scholars and students. Most of their answers support the recommendations that this paper suggest. The general definitions about e-commerce in the entire world have been highlighted. Moreover, a literature review about e-commerce and successful e-commerce system in other developed countries has been described. This paper presented the challenges that faced KRG to implements a successful e-commerce which includes infrastructure communications, languages, religions, and political with demonstrates the finding of research survey. The paper ends by suggestion a successful framework and recommendations to deliver and applicable e-commerce system in KRG.

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