

TOWARDS AN EXPLANATORY MODEL OF eMARKETPLACES UTILIZATION

A Case Study of Saudi Arabia

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Abstract: Many aspects of ICT such as use of smart cards, use of mobile phones and the internet have become integrated into business operations today, becoming indispensable aspects of organizations. Recent developments have seen the introduction of eMarketplaces which are virtual spaces where businesses and consumers can interact and exchange goods and services. Whilst utilisation of eMarketplaces in many regions of the world such as, North America, Europe and Asia are increasing, its adoption and utilization in Saudi Arabia has been very slow. The aim of this paper was to investigate the current lack of utilisation of eMarketplaces in Saudi Arabia. A comparison was made between utilisation of eMarketplaces in Saudi Arabia and other parts of the world. Statistical data collected shows that utilisation of eMarketplaces in Saudi Arabia is the lowest. Possible explanations were identified as weak ICT infrastructure in the country, weak technological culture, undeveloped complementary services and lack of investment by the government. Several strategies that can be used to address this problem are identified. An explanatory model of eMarketplaces utilization is proposed in this paper with suggestions for further work in this area.

1 INTRODUCTION

The growth of information and communication technology (herein referred to as ICT) in recent years has affected many aspects of human life. This technology has changed the way people communicate, the way business is conducted as well as the way people live in contemporary society. It is an undeniable fact that ICT has an indispensable role in society. In fact, ICT is the main enabling technology for eMarketplaces activities.

Businesses have adopted ICT through various strategies. These range from the simple use of email to communicate with suppliers, consumers, other businesses and other stakeholders to the use of buying and selling on the internet. In addition, consumers can share resources to gain complete advantage. Most businesses are connected to each other via the internet today, and those that are not find it hard to operate without this elite business model.

ICT is lower priced than conventional communication models such as telephony and postage. Businesses can also access and relay

information on a real time basis. This means that the business can access current information to make strategic decisions using this information.

For instance, eMarketplace is one aspect of ICT that the Saudi Arabian government (herein referred to as SA) is currently focusing on or should be focusing on. Aleid, Rogerson, Fairweather and Ben (2009) are of the view that one major aspect of improving ICT in this country is the development of a feasible infrastructure that can be used to control and support it. This is given the fact that infrastructure has been identified as one of the major factors that affect the adoption and development of ICT in any country (Steinbrook, 2009).

Another indicator of ICT consumption in most countries around the world is the internet coverage rate (Amit and Zott 2001). A high rate of internet coverage in a country points to a correspondingly high rate of ICT consumption. According to Amit and Zott (2001), internet coverage is an indication of the segment of the population that can easily access the internet and the services therein. In SA, this internet coverage rate is very low, and this translates into low utilisation of eMarketplaces. According to the Saudi Telecom Co. (herein referred to as STC,

which is one of the major players in the ICT sector in SA), the portion of Saudi residents who can access the internet is approximately 3-4 percent (Sait 2002), and this has increased to 25 percent by 2006 (Iraqi, 2006). Given that not all internet users were accessing eMarketplaces; the low rate of access to eMarketplaces is significantly lower compared to other nations around the world such as the United States of America (Vandana 2010). Furthermore, about 75 percent of these internet users in the country were male (Sait 2002). This is due to the fact that majority of businesses in this country are owned and operated by men many of whom are aged 35 years and below, an indication that the younger population are embracing technology more than the older generation (Holz 2008).

Overall, the low level of eMarketplace utilisation in the kingdom of SA can be appreciated when several aspects such as accessibility to the internet are compared with those of other developed nations. For example, the United Nations Conference on Trade and Development (herein referred to as UNCTAD), is of the view that most internet hosts are found in the United States of America and Europe, some of the most developed nations in the world. In fact, 89 percent of all internet hosts in the world are found in these two regions (UNCTAD, 2003). Subsequently, the rate of eMarketplaces access in these countries is also high.

1.1 The Need to Increase Utilization of eMarketplaces

An eMarketplace is an emerging phenomenon in the sphere of eCommerce. The definition of eMarketplace given by Cyberindigo (2010) is the one that will be used for the purpose of this paper.

An eMarket, according to Cyberindigo (2010), can be conceptualized as a “virtual space” (1) used by consumers and sellers to exchange goods and services and carry out other business transactions. Activities that take place in an eMarket are not different from those in the conventional physical market. There is exchange of information, buying or selling goods, services are also exchanged. The major difference between the eMarket and the conventional market, and perhaps the only difference, is the fact that the eMarket exists in virtual space, over the internet. This is as opposed to the conventional market where the buyer and the seller have to establish physical contact.

Having looked at e-market as a concept, it is now appropriate to expand it further and look at an eMarketplace. Cyberindigo (2010) defines it as a

“virtual online exchange” (1), a place where businesses register as either buyers or sellers. After registering as such, the businesses can now communicate with their suppliers, clients and other stakeholders over the internet (Cyberindigo 2010). Business operations such as negotiations, buying and selling are also conducted through this eMarketplace.

There are several services that are offered by eMarketplaces. These include creation of an electronic catalogue detailing the services and goods offered by the business and their prices, structuring of diverse business proposals, business negotiations and such other services (Bakos, 1998). The provision of these services depends on the demands of the consumers and the sellers.

Adoption of eMarketplaces and utilisation of services therein is not a uniform phenomenon. It is dependent upon social factors such as culture, location and economy. For example, the number of people who use eMarketplaces today is higher than that in earlier years. The rate of adoption in developed nations such as United States of America, Netherlands, South Korea and Australia is also higher than that in developing nations such as Africa and southern America (Nielson 2010).

Customers who use eMarketplaces in SA stand to benefit by having the ability to shop at any time of the day and at any day of the week (Sait 2002). Unlike conventional physical market places that are governed by business operating houses, eMarketplaces are always connected to users. Customers also have the benefit of accessing a large assortment of goods and services from which they can select what they want. This is especially so given the fact that businesses find it more convenient and low priced to advertise on eMarketplaces, and as such, customers are exposed to a huge variety of goods and services. Customers can also operate from home or from the office, without the need to travel. What they need is just a computer and access to the internet. At the same time, there will be less pollution due to reduction of vehicles on the roads as well as other environment related issues.

The aim of this study is to analyse the utilisation of eMarketplaces in SA. We will look at various aspects of this phenomenon, including the factors influencing the adoption, challenges faced by eMarketplaces in this country amongst other things. The review of literature is used to contextualise the current study within the wider field of eMarketplaces and eCommerce in SA and in extension, in the world.

The structure of this paper is as follows: Section 2 reviews related literature that exists in the field of eMarketplaces. In Section 3, we discuss issues and challenges of Saudi Arabian eMarketplaces adoption supported by a collection of statistical data. An explanatory model of factors influencing the utilization of eMarketplaces in SA is presented in Section 4. Finally, in Section 5 we conclude our findings and suggestions for future work.

2 LITERATURE REVIEW

The main aim of this analysis is to identify knowledge lacuna that exists in the field and how the gaps can be filled. The literature review will also contextualise the current study within the larger field of ICT and e-business.

2.1 Categories of eMarketplaces

Barratt and Rosdahl (2002) are of the view that businesses, especially the emerging and established small and medium scale enterprises, stands to benefit from the adoption of eMarketplaces in their operations. The benefits range from reduced operation costs, efficiency and increase in volume of sales among others.

However, Barratt and Rosdahl (2002) caution that the benefits accrued by the business enterprise will depend on the suitability of the type of eMarketplace that the business selects and the compatibility of this eMarketplace with the business model and structure used by the organisation. This is given the fact that there are several types of eMarketplaces to be found in contemporary ecommerce field.

Before embarking on an analysis of the various eMarketplaces available in today's web market, it is important to note that a particular eMarketplace or site can be operated in various ways. There are those that are operated by third parties who have invested in the eMarketplace and wish to make a return on their investment (Alemayehu 2007). These investors make returns by providing value adding services to the sellers or the buyers accessing the market. These services may include creation of electronic catalogues and such others. Fees charged by owners of these markets are used to make returns on the investment made. Other markets are maintained on a cost recovery basis by associations and other bodies found within a particular field. For example, the pharmaceuticals' body in the kingdom of SA may create an eMarketplace aimed at elevating the

visibility of their members. However returns made from the operations of the site are not used to make profits; rather, the eMarketplace is operated on a non-profit basis, and the returns are only used to recover the costs of maintaining the eMarketplaces.

Regardless of the type of operator maintaining the eMarketplace, it is notable that the main aim is to bring together interested parties for the sake of conducting business. For example, the eMarketplace created and managed by the pharmaceuticals' body in SA as indicated above may aim at bringing together the sellers and buyers of the products in the market.

As stated earlier, many types of eMarketplaces exist in today's virtual space. The distinction between these eMarketplaces is made on the basis of the business model that is adopted. Various categories emanate from the kind of operations that maintain the market as well as the motivation or aim of maintaining that particular eMarketplace.

The following are some of the categories of eMarketplaces identified by many scholars in this field:

2.1.1 Independent eMarketplace

According to Pucihar and Podlogar (2005), this type of eMarketplace is usually operated by a third party who is running it just like any other business venture aimed at making economic returns to the investor. This kind of eMarketplace can be conceptualised as a business to business online pedestal aimed at making transactions between sellers and buyers easy. The eMarketplace is accessible both to the buyers and the sellers in a given industry, given that these eMarketplaces are usually industry specific (Pucihar and Podlogar 2005).

This kind of an eMarketplace requires buyers and sellers interested in the services to register with it. After the registration, they can access advertisements and business quotations in that particular industry (Pucihar and Podlogar 2005).

As stated previously, the aim of the operator of such a platform is to make profits. As such, some payments are to be made by those accessing the market. This is no different from the revenues paid to the authorities by a business operating within a given physical market. The only difference is that the charges made to the eMarketplace operators may be lower priced than those made to the authorities in the case of a physical market place.

2.1.2 Buyer Oriented eMarketplace

As the name implies, this type of eMarketplace is

usually formed and maintained by a conglomeration of buyers or consumers in a particular industry (Kamel 2009). The major aim for such a platform is to develop an efficient and conducive buying environment for the consumers (Kamel 2009). For example, the consumers and potential buyers are able to achieve the best deals from the sellers, and as a result, participation in such a platform reduces the operation costs for the buyers. For example, a consortium of construction industry operators may create an eMarketplace to access the best equipment to buy or hire for their work.

However, it is important to note that it is not only the buyers that can access and use a buyer oriented eMarketplace. Zhuo and Xinhe (2004) are of the opinion that a buyer oriented eMarketplace can also be used by sellers in a particular industry for their own benefit. For example, the buyers can access these eMarketplaces and place advertisements on them. This is advantageous given that the sellers will be able to reach out to a set of specific and target audience in one go. On the other hand, buyers on such an eMarketplace can make saving by perusing the catalogues advertised and selecting the best deals. As such, both sellers and buyers also benefit from these eMarketplaces.

2.1.3 Supplier Oriented eMarketplace

This is a forum that is created and operated by a consortium of sellers or suppliers in a given industry. Mutlaq and Rasheed (2009) also refer to this type of eMarketplace as a “supplier directory” (p. 34). The aim of the eMarketplace, and that of the sellers participating in it, is to create an efficient sales conduit that has the ability to reach a large number of consumers on the internet (Mutlaq and Rasheed 2009).

Buyers can also access these eMarketplaces, just like sellers can access buyer oriented market places. The buyer can search these eMarketplaces on the internet by the service of product that is being sold (Zhuo and Xinhe 2004). The buyers can benefit from these platforms by accessing information on sellers in the industry and regions that they are interested in where they may lack knowledge or experience. As far as the sellers are concerned, they are able to increase their volume of sales by enhancing their visibility to the buyers who access such eMarketplaces (Aleid et al 2009).

2.1.4 Vertical and Horizontal eMarketplace

This kind of eMarketplace can be conceptualised in terms of the vertical up and down businesses in a

given market (Aleid et al 2009). Such businesses benefit by cutting back their supply chain costs and other distribution expenses incurred for the suppliers.

A horizontal eMarketplace is one which takes place when both the seller and the buyer are at the same level. This is for example when two business organisations with equal financial power, operating within the same industry exchange goods on the virtual market. An example is when a vehicle manufacturer sells some spare parts to another vehicle manufacturer in the country or outside the country.

On the other hand, vertical eMarketplace takes place when two parties occupying different levels in the market exchange goods and services on the virtual space. For example when a motor vehicle supplier sells its products to a fast food company online. Another example is when a motor vehicle manufacturer sells its products directly to the consumer in the virtual market. The manufacturer and the consumer are at different levels in the supply chain, and their interaction can be viewed as a vertical one.

Unlike other eMarketplaces discussed earlier, here suppliers and consumers from different markets and localities are brought together (Aleid et al 2009). An eMarketplace of this kind can also be used by consumers to buy an assortment of products that may not be related, such as office stationery and furniture.

2.2 The eMarketplaces in the Middle East Region: A Case Study of Saudi Arabia

Globalization of financial markets and other sectors have resulted in stiff competition particularly in the banking sectors of the Middle East and its regions. SA has a stable economy compared to other countries as it is dominated by the oil sector that has 35% of the Gross Domestic Product. Even though the rate of eMarketplace utilisation in this country is low, evidence supports that the adoption of this technology and ecommerce are emerging trends in trade in SA (Aleid et al 2009). This field has the potential to assist business operators in SA in facing competition both nationally and internationally.

Zhuo and Xinhe (2004) opine that those businesses and individuals in SA who access and utilise eMarketplaces do so in response to various economic factors. In the case of a business enterprise using eMarketplace to market its products, the main aim and motivation behind this may be the need to

sustain its competitive advantage in the market by expanding its market and increasing its sales volume. On the other hand, consumers just like those from any other countries in the world, may be looking for the best deals in the market.

eMarketplaces have many benefits both to the businesses and consumers in SA. According to Alemayehu (2007), the telecommunications expenses for businesses are significantly reduced. This cuts back on the inventory overheads for these businesses. For example, by making use of eMarketplaces, businesses do not need to print marketing brochures and posting them to the clients. The businesses do not necessarily have to engage in other modes of marketing campaigns such as advertising on print media.

A number of issues to be considered when using eMarketplace include how fit is the industry, management of and ownership of the eMarketplace with its finances, costs of E-marketing and technical issues among other factors. Information systems that are used in the eMarketplace should have similar features for easy access of transactions. The leading business-to-business eMarketplaces i.e tourism industries in the Middle East have enhanced its promotion by facilitating services to attract more customers in the eMarketplaces (Buhalis, 2007). Gulf oil and gas portal is a specialised government owned eMarketplace for oil services in the Middle East and its regions. RAK was established as a trade online exhibition for business transactions that have features to promote one-product and market goods and services in the Internet. The current utilization of eMarketplaces in some of the Middle East regions including the following countries: SA, UAE, Jordan and Kuwait mainly depend on the internet penetration as it assists the growth of eMarketplaces consumption (Eraqi, 2006). Table 1 shows statistical comparison on that internet users and penetration

Table 1: Number of internet users in some of the Middle Eastern countries, Adapted from: (Eraqi, 2006).

Populations in million	Country	Percentage of internet users (%)	Internet penetration
24.29	SA	10.46%	21.3%
2.48	UAE	36.29%	44.8%
5.46	Jordan	3.88%	34%
2.18	Kuwait	9.17%	30%

Table 1 shows the number of internet users in SA compared to UAE, Jordan and Kuwait. These countries are all located in the Middle Eastern region as mentioned previously. Considering that not all of internet users are interested in utilizing the eMarketplaces (Jalal and Maskati, 2010), this

presents the fact that there is still a big gap between Middle Eastern countries including SA and other developed nations. However, despite low utilization of eMarketplaces in the Middle East region, government support in those countries is growing compared to other countries in the world. Developed countries such as, USA, Netherlands and South Korea have higher percentage of internet users and internet penetration and consequently they have higher average of eMarketplaces utilization (Jalal and Maskati, 2010).

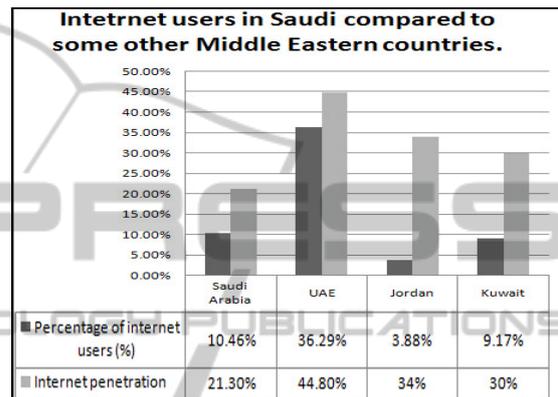


Figure 1: Comparisons between the number of internet users in some of the Middle Eastern countries, Source (Eraqi, 2006).

Figure 1 further illustrates the number of internet users, utilization averages for several nations of the Middle East including SA, and their utilization averages. Despite the fact that the United Arab Emirates and SA have a higher average number of internet users than Kuwait and Jordan, the percentage is still considered low compared to the developed countries. In addition, eMarketplaces in the Middle East region especially for both SA and UAE have more business-to-business activities of eCommerce than the business to customer eCommerce following the past decade's commerce analysis (Ferguson and Yen, 2006). Thus, the utilization rate of eMarketplaces in SA requires further improvement. This includes identifying factors affecting customer satisfaction in regards to eMarketplaces activities.

Table 2: The current and intended percentage of eMarketplaces adoption in the Middle Eastern region, Source: (Adam & Deans, 2008).

Current status	%	Intended status	%
Countries adopting eMarketplaces	16	Countries adopting eMarketplaces	48
No plans	61	No plans	42
uncertain	5	Uncertain	17

Table 2 shows the current and intended status of eMarketplaces adoption. The current status of eCommerce generally in Middle East indicates that the many countries amounting to 61% have no plans to adopt eCommerce with only 16% of the countries using eCommerce. This low percentage of adoption can significantly affect the eMarketplaces utilization as it is a prime and major component of eCommerce. However, the future intended status is that more countries will implement and adapt eCommerce while the countries with no plans were being reduced at the rate of 48% and 42% respectively. Thus the future of the eMarketplaces in the Middle Eastern region including SA can be improved by finding and tackling challenges that are facing its diffusion.

3 ISSUES AND CHALLENGES OF SAUDI ARABIA eMARKETPLACES ADOPTION

3.1 Overview

A survey carried out in 2008 by the Arabs Advisors Group, showed that buyers in SA spent about 3.28 billion dollars doing online transactions in the year 2007(Al-Hawari 2008). The government of this country also invested significantly towards the utilisation of eMarketplaces in this country. Figure 2 depicts this spending from 2005-2009:

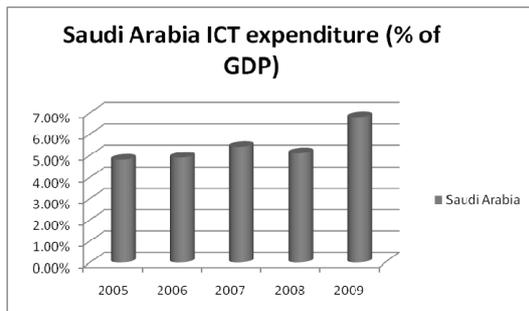


Figure 2: The Saudi government spending on ICT in SA, Source: TheWorldBankGroup, 2010a).

Additionally, the rise in internet consumption as compared to previous years has been attributed to the rise in the population size in this country. For example, by the year 2005, population size has increased to about 23.4 million (Solbi and Mayhew 2005). Moreover, despite the fact that growth of internet usage in SA has reached 27.1% in 2009(CDSI, 2010), the proportion is still considered

low. A study conducted by Mutlaq and Rasheed (2009) found that there are several threats facing the adoption of ICT in SA. For example, they found that infrastructure issues such as low and slow connectivity, lack of or inadequate investment in the sector and lack of appropriate human resource are some of the hindrances to ICT for businesses here. It should be noted that any hurdle facing adoption of ICT in businesses means that eMarketplaces are also affected, given that the latter rely on ICT infrastructure and accessibility

3.2 Lack of Utilisation of eMarketplaces in SA: Possible Explanations

The following are some of the possible explanations to low utilisation of eMarketplaces in SA:

3.2.1 Security Issues

According to the study conducted by Mutlaq and Rasheed (2009), 70 percent of consumers in the kingdom of SA are of the view that security is their major concern when it comes to buying or selling online. This is especially so given the fact that to buy from the eMarketplace, personal details such as names and account details are needed. Of major concern is the disclosing of credit card details to eMarketplaces sellers.

The level of concern that the people in this country have as far as the security of the internet is concerned is clearly indicated by a comparison between the utilisation of eMarketplaces in this country and in other developed countries such as the USA. Figure 3 depicts this comparison:

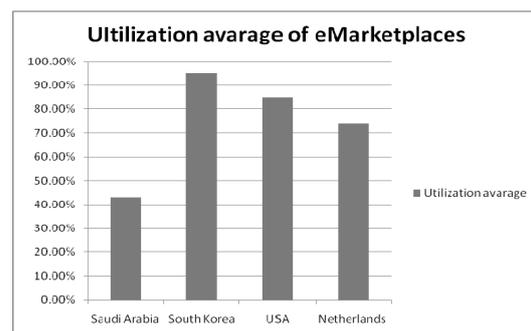


Figure 3: Comparison of the utilization average of eMarketplaces between SA and some of the developed nations, Adapted from: (Nielson, 2010).

Alemayehu (2007) puts this concern down to the conservative nature of people from this region. They

are of the view that consumers are naturally adverse to anything new that may destabilise their existence. While this may not exactly be true, it is also a major concern to many people in SA that the rate of eMarketplace utilisation in this country is very low.

However, Alemayehu (2007) believes that security concerns can be addressed by ensuring that safety measures such as secure sockets layer are implemented. This way, consumers can exchange data between their systems and that of the supplier in a secure manner. This makes the customers confident, and they can use the services without fear of their details been accessed by unauthorised parties.

Strong encryption servers which cannot be easily hacked can also be used to ensure the information and data on eMarketplaces in SA is secure (Aleid et al., 2009). Security also can build consumers' trust (Hoffman et al., 1999).

3.2.2 Undeveloped Complementary Services

For eMarketplace to flourish there is a need for supporting services and technologies to be developed. This is for example training of businesses' members of staff and the population in general and equipping them with IT skills, which is an important prerequisite for eMarketplaces. This has not taken place in SA. Kamel (2009) is of the view that only 35 percent of the population in SA have the skills needed to utilise the internet. Low utilisation of the internet means that eMarketplaces are also under utilised (Ariba, 2000).

Figure 4 compares the internet coverage between SA and other developed nations such as USA and South Korea:

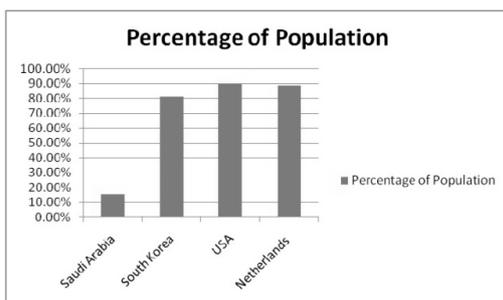


Figure 4: Comparison of ICT usage average of population in SA, USA, Netherlands and South Korea, Source: (Nielson, 2010).

It is important to note that the rate of internet coverage in the country is an indication of the rate of development of other complementary services such as the availability of computers.

The challenge of underdeveloped complementary services can be addressed by having the government and other stakeholders invest more in ICT. For example, buying more computers for schools and other initiatives, like making teaching of IT skills mandatory to all school going children.

3.2.3 Weak Infrastructure

An effective and strong eMarketplace needs an equally efficient and strong infrastructure. However, in SA, ICT infrastructure is not as effective as it should be. Compared to spending on eMarketplaces by other countries in the world, this can be due to the low rate of investing in this sector by the Saudi government and other stakeholders in the private sector. Figure 5 represents a comparison of the portion of GDP that was spent on ICT in SA and in the previous mentioned developed countries in the year 2008:

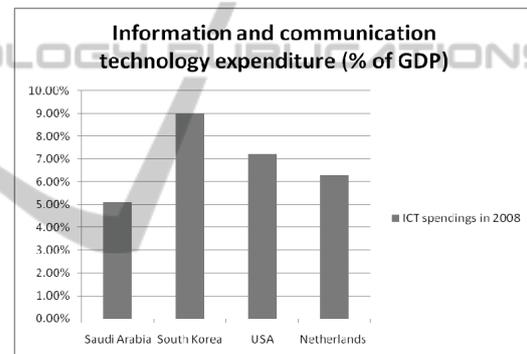


Figure 5: GDP comparison spending by governments of SA and some other developed nations on ICT, Adapted from: TheWorldBankGroup, 2010a).

As seen from the figure, spending of the Saudi Arabian government in ICT was only 5% of GDP compared to 9% of the South Korean expenditures. Consequently, spending on eMarketplaces was less than 5% as ICT spending includes non-eMarketplaces operations.

At the same time, infrastructure such as secure servers and internet coverage are also lacking. This makes it hard for the people to access the internet and eMarketplaces.

3.2.3.1 Impact of Strong eMarketplaces Infrastructures on the Economy Growth of Saudi Arabia

The kingdom of SA has a large potential for utilisation of eMarketplaces. This is given the fact that the economy of this country is one of the largest

in the Arab world. The economy has also experienced significant growth in the past few years. Figure 6 depicts the growth of this economy in the past ten years:

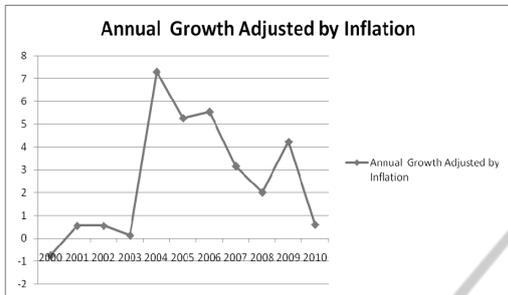


Figure 6: Economy growth in the past ten years in SA, Source: TheWorldBankGroup, 2010b).

This means that if the government and other stakeholders in this country invest more in this sector, then the eMarketplaces in this country have the potential to contribute significantly to the growth of the economy.

3.2.4 Reliability of eMarketplaces

Reliability in eMarketplaces typically means dependability. In research context, the word reliable also means the probability of a failure free system that consumers can rely on (Lyu, 1996), however that is not the precise meaning. Having a reliable measure or observation in a research perspective can be confused simply with the thought of a valid measure. Therefore, describing reliability measure in eMarketplaces has to be defined precisely in order to gain and understand clearly its context.

Assessing reliability in eMarketplaces, (as a part of e-business processes) is still a difficult and time consuming task (Anderson et al., 2005). However, reliability could also mean consistency. An eMarketplace is considered reliable if it provides us the same results in different cases assuming that the eMarketplace we are assessing is consistent. Thus, consistency is highly required for all facts that contribute positively in measuring reliability. Factors like connectivity (Zhang et al., 2009) where the eMarketplaces are connected at all times and also consumers have the ability to access it together with accuracy (Auer and Biffel, 2004) and (Yang et al., 2005) means eMarketplaces have the ability to perform precisely, are trustworthy and dependable for all consumers in at all stages of the eMarketplace processes (Kohlas et al., 2006).

A study conducted by McKnight et al (2002) shows that, internal consistency reliability is

considered as an important factor that raises the trust of online consumers. In addition, they explained that eCommerce consumers measure eMarketplaces not in broad terms, but in terms of precise attributes. Trusting attitude can also enhance reliability of eMarketplaces even in the preliminary stage.

3.2.4.1 Types of Reliability

Reliability is a major consideration when analyzing the application and success of eMarketplaces. As a result there are several ways in which reliability of eMarketplaces can be ascertained.

There are several reliability identities which are used in the study of eMarketplaces. As shown in Table 3. The information is crucial in the formulation of policies as well as to ensure the overall success of eMarketplaces (Daniels & Harrington 2006) and (Brombacher et al., 2005).

Table 3: Types of Reliability.

Reliability Identity	Essence
Inter observer reliability	Scope of eMarketplace
Examining re-examining reliability	Desired results
Parallel figures reliability	Diversity role
Inner consistency reliability	Consistency and depth

Inter-Observer Reliability plays a significant role in the whole aspect of determining the scope of eMarketplace in a given area. This term suggests the analysis of how viewers of different calibres perceive a particular eMarketplace based on the belief that several opinions can provide better understanding to a given concept. Under normal circumstances, there cannot be the same evaluations by different observers. Thus, with the use of inter observer reliability; there will be different evaluations of the same aspects. This seeks to analyze and derive meaningful interpretations from the conflicting perceptions.

The marketing strategy may also be hindered by the distribution of the product (Knolmayer, Martens & Zeier, 2002). As a company launches into extensive marketing strategy, it should also have in place a strong distribution channel to support its marketing strategy. With the expansion of eMarketplaces utilization, local products are gaining popularity on the international market. Customers may be disappointed if the company cannot efficiently supply them with the products/services. Examining-Re-examining reliability can provide feedback on actual outcomes to improve the processes. Companies can apply this type of reliability for same group of customers during

different periods of time. Results obtained from previous examinations can assist companies to further enhance their eMarketplaces services.

Parallel figures reliability evaluates necessary information for eMarketplaces measurement by setting different tests for different participants at the same period of time. For instance, a company that provides eMarketplace services may wish to develop a large set of questions for testing the reliability of its software. Using different sets of questions, the company chooses the most consistent results of one set for evaluation (Beizer, 2002).

Through inner consistency reliability it is possible for the eMarketplaces providers to determine its consistency viability for decision making. As consistency plays a significant role in assisting the consideration of eMarketplaces (Lockett and Brown, 2006). This type of reliability evaluates in depth the consistency of eMarketplaces by testing different sets of questions of the same construct. For example, a company may wish to set altered questions to test the consistency of a specific function for their eMarketplace. Results then compared to each other for their ability to provide consistently proper outcomes. Through this it becomes possible to understand whether the eMarketplace is viable or not. As consistency is a key factor in the whole process of evaluating eMarketplaces (Grudzewski, 2008).

Hence, applying all types of reliability mentioned previously can significantly improve the reliability and efficiency of eMarketplaces thereby increasing their utilization. This is ideal for SA to exploit these techniques for further developments in the field of eMarketplaces.

3.2.5 Regulatory Requirements of eMarketplaces

When the internet came into the kingdom of SA, it brought a new challenge to the government. The government did not want to create a situation where the new technologies interfered with the cultural beliefs of the country. Thus eMarketplace regulatory mechanisms stem from two main forces, i.e. the eGovernment and cultural values of the country provide an environment of checks and balances within the eMarketplaces environment.

Initially eMarketplaces activities had no formal regulations. As widely believed, regulations were expected to distract the growth of the markets. However, it resulted in many notable legal disputes and security concerns worldwide. Armed with this information the Saudi government decided to put in

place measures to control trading in eMarketplaces. It started with the government's adoption of technology by introducing the eGovernment. This initiative sent a strong message to the community at large. ICT is now being continually embraced in hospitals, schools and other businesses. For instance, SA colleges are now using and sharing open source courses (Lewin, 2009).

The eGovernment, which was established following a royal directive in March 2003, has put in place measures for regulation of eMarketplaces in the region. In addition, the Ministry of Finance recently implemented what was called the Saudi Project for Electronic Data Interchange (SaudiEDI). The main aim of this initiative was the securing of speed and transparency in the business environment of eMarketplaces. The SaudiEDI applies both to import and export services on the trade market. The SaudiEDI implies that there will be electronic interchange of information of the consignment, the delivery papers, as well as the other main items of information in the context of import and export. These procedures involve different agencies which include customs department, shipping agents, clearing agents, and even general ports department (World Summit on IT, 2005). This has an overall effect of creating a safe environment for trade for the private sector, the international community as well as the citizens.

Cultural issues have also been a factor that has largely contributed to the regulation of the eMarketplaces. Predominantly, SA is a Muslim kingdom. Muslims in SA are obligated to implement Sheria law in all aspects concerning their lives. From a purely commercial perspective, Islam Sheria law has provided its faithful with guidelines. These guidelines are not to be ignored and neither are they to be infringed. Bringing to attention this affects the eMarketplaces as reference has to be made to what the Sheria law has to say concerning it first before it can be accepted (Edward, 2008).

Since the advent of the eMarketplaces, one of the biggest concerns for the government was whether it contravened the teachings of the Quran. The Sheria law has laid down procedures and regulations for businesses. It has its unique terminologies which can not be ignored in a trading environment, for example, processes for the contract of sale, the meeting place and absentee purchases. As the Quran teaches that a purchase should not be initiated by two parties in one place and then later wrapped up in a totally different place. This presented very unique problems (and largely contributed to the laxity of the

people to adopt the eMarketplaces) to the utilization of eMarketplaces in SA (Alzaagy, 2007).

The Monarch of SA established a committee by a royal decree to look into the eCommerce details and if it could be seamlessly adopted in the context of the Sheria law. It was later realized that the Sheria law was in fact friendly to E-commerce. Convincing the staunch Muslims of this fact is what has been a white elephant for the committee (World Summit on IT, 2005). However, in the case of E-markets there was a need of further scrutiny by Muslim kadhis or jurists to establish the accepted practices in the Quran.

As the Kadhis and Muslim Jurists examined the Sheria Law in the light of eMarketplaces, it was discovered that the door has been left open. It indicates that eMarketplaces activities can be ruled upon by the most suitable and convenient approach. This precipitated into the gradual entrance of eMarketplaces into the region.

Generally, it can be said that the government has recognized the importance of the ICTs and began embracing the emerging trends in a bid to be abreast with the rest of the world. The government envisions a strategic plan for 2020 in the 7th development plan to have fully embraced the necessary ICTs. Nationally, precedence has been set by the government’s ambitious e-government project. The national policy document for ICT was also adopted by the ministers. This document envisages the development of ICTs with the needed mechanisms that will be used in meeting this objective. In line with this, the Saudi Computing Association has been mandated with the task of preparing a national IT plan. The government wants to make sure it is at par with the rest of the world as far as technological advancement is concerned.

There is a direct relationship between the government regulations and the cultural/religious customs of the Saudis. The main reason for this is the fact that SA is predominantly a Muslim kingdom and like every other Muslim nation, the laws that govern the land are the Muslim laws otherwise called the Sheria law. For instance when the internet came to SA in 1998, it was with the presence of control mechanisms by the government to ensure that unwanted content was filtered out. This was to make sure that the internet was not used to violate the teaching of the Islam faith and the cultural believes of the Saudi Nationals. It was a balance that would allow the people to enjoy the benefits of the internet including eMarketplaces while at the same time be protected from the malpractices of the internet.

4 PROPOSED EXPLANATORY MODEL

A number of influencing factors for eMarketplaces utilisation are identified in this paper. Security being the first and biggest concern of online shoppers has a significant role to increase the current utilization rate in SA (Mutlaq and Rasheed 2009). In addition, reliability of eMarketplaces can raise the confidence of eMarketplaces users (McKnight et al,2002). Thus, these two factors require attention and further investigations to gradually impact positively on the utilization of eMarketplaces for Saudis.

Other factors shown such as strong infrastructure, regulatory and complementary services need to be highly considered by the government to assist further development of eMarketplaces in SA.

Based on the previous section the following model is proposed to clarify the relationship between all five factors. These factors can be applied to identify the most appropriate eMarketplaces type that suits Saudis:

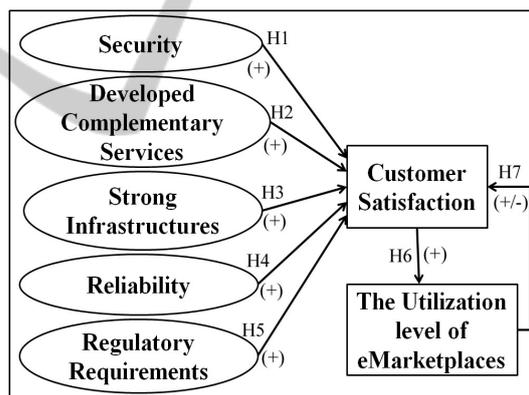


Figure 7: Factors influencing the utilization of eMarketplaces.

Figure 7 further demonstrates the significance of the relationship between the previously mentioned factors in order to obtain higher utilization level of eMarketplaces in SA. Higher utilization of eMarketplaces can benefit both companies and individuals. Consumers can comfortably shop and obtain their purchases with efficient transactions as mentioned earlier. Companies in the other hand can avoid lagging behind competition with foreign companies that have implemented their eMarketplaces effectively. It also assists companies to reduce transaction costs, improve audit of capability and advance the relationship between buyer and supplier of eMarketplaces (Howard et al.,

2006).

Thus further work involves addressing the following questions:

Q1: Do current eMarketplaces have sufficient security that assure confidence of online consumers?

Q2: How could developed complementary services contribute to increasing the current utilization of eMarketplaces in SA?

Q3: Does government funding for the eMarketplaces infrastructure meet the required levels in SA?

Q4: How can eMarketplaces' reliability be increased/maintained within SA?

Q5: How can the government of SA regulate eMarketplaces appropriately?

Q6: How does customer satisfaction impact on the utilization level of eMarketplaces in SA?

Q7: What type of relationship exists between the utilization level of eMarketplaces in SA and customer satisfaction of the eMarketplaces?

Hence, future studies could identify more factors affecting the current utilization of eMarketplaces in SA and its surrounding neighbours of the Middle Eastern region. Further research can help in testing the following hypotheses derived from figure 7:

H1. An advanced security system can develop appropriate satisfaction for customers and therefore increases the utilization of eMarketplaces in SA.

H2. Developed Complementary services of eMarketplaces can increase the level of utilization of eMarketplaces in SA.

H3. Stronger infrastructures can lead to higher levels of customer satisfaction on eMarketplaces in SA.

H4. Reliability of eMarketplaces can increase customers' satisfaction of eMarketplaces in SA.

H5. Abiding Regulatory requirements can influence the utilization of eMarketplaces in SA.

H6. Customer satisfaction can enhance the utilization of eMarketplaces in SA.

H7. The utilization of eMarketplaces in SA can be increased/decreased in accordance with the increase in customer satisfaction.

5 CONCLUSIONS & FUTURE WORK

Current lack of utilisation of eMarketplaces in SA is due to a number of factors i.e. weak infrastructures

and shortage of resources such as human resource. The internet coverage in SA was found to be lower than that in other developed countries such as the United States of America, Netherlands and South Korea.

These challenges affect the adoption of eMarketplaces in this country. This is despite the fact that the kingdom of SA is the economic nerve centre of the Islamic world and has the largest economy in the region, standing at approximately 160 billion dollars as of 2009. This means that there is a large potential for eMarketplaces in this region, a potential that can be exploited to further the economic pursuits of this country.

Future comparative research could target these areas to gain comparative national results. In addition, measuring behaviours of users of eMarketplaces can be desirable for future studies. In order to determine the most appropriate evaluation strategy for assessing our model, data collection including web-based surveys, mail questionnaires and personal interviews will be focused on the development and improvement of the Saudis' utilization of eMarketplaces.

REFERENCES

- Adam, S. and Deans, K. R., 2008. Web qual: an e-commerce audit, fib Australian world wide web conference (pp. 2-5), Southern Cross University, Hypermedia References, HREFI, Australia.
- Aleid, F., Rogerson, S., Fairweather, N., and Ben, N., 2009. *Factors Affecting Consumers Adoption of Ecommerce in Saudi Arabia from a Consumers' Perspective*. [Online]. Available: <http://hdl.handle.net/2086/4020>. [08 November 2010].
- Alemayehu, H. G., 2007. B2B eMarketplaces: How to succeed. *Business Strategy Review*, 12(3): 20-28.
- Alzaagy, A., (2007). The Islamic Concept of Meeting Place and its Application in e-Commerce. 1(1) p. 45.
- Al-Hawari, M., Al-Yamani, H., and Izwawa, B., 2008. Small Businesses' Decision to have Website: Saudi Arabia Case Study. [Online]. Available: <http://www.waset.org/journals/waset/v37/v37-55.pdf>. [25 November 2010].
- Amit, R., and Zott, C., 2001. Value creation in e-business. *Strategic Management Journal*, 22(6-7): 493-520.
- Anderson, B., Hansen, J., Lowry, P. & Summers, S., 2005. Model checking for design and assurance of e-Business processes. *Decision Support Systems*, 39, 333-344.
- Ariba. N. M., 2000. *B2B marketplaces in the new economy*. [Online]. Available: http://www.ariba.com/com_plat/white_paperform.cfm. (8 November 2010).
- Auer, M. & Biffel, S., 2004. Increasing the accuracy and reliability of analogy-based cost estimation with

- extensive project feature dimension weighting. *IEEE*, 147-155.
- Bakos, Y., 1998. The emerging role of electronic marketplaces on the internet. *Communications of the ACM*, 41(8): 35-42.
- Barratt, M. and Rosdahl, K., 2002. Exploring business-to-business marketsites. *European Journal of Purchasing & Supply Management*, 8(2):111-122.
- Bates, T., 2005. Analysis of young, small firms that have closed: Delineating successful from unsuccessful closures. *Journal of Business Venturing*, 20(3): 343-358.
- Beizer, B., 2002. Software testing techniques, *Dreamtech Press*.
- Brombacher, A., Sander, P., Sonnemans, P. & Rouvroye, J., 2005. Managing product reliability in business processes under pressure'. *Reliability Engineering & System Safety*, 88, 137-146.
- Buhalis, D., 2007. E Tourism: information technology for strategic management. *Prentice Hall*, London.
- CDSI, 2010. Saudi Arabia Social and Demographic Statistics. In: Information, D. O. S. A. Kingdom of Saudi Arabia. [Online]. Available: <http://www.cdsi.gov.sa/english/DemStats>. [18 November 2010].
- Cyberindigo, 2010. *EMarketplaces*. [Online]. Available: <http://www.cyberindigo.net/articles/emarketplaces.htm>. [8 November 2010].
- Edward, M., (2008) Rim To Let Saudi to Monitor Blackberry Data. [Online] (Updated August 7, 2010) available at: http://news.cnet.com/8301-1035_3-20012988-94.html (Accessed on 25th December 2010).
- Eraqi, M., 2006. IT as a means for enhancing competitive advantage. *Anatolia-Ankara-International Journal Of Tourism And Hospitality Research-*, 17, 25.
- Ferguson, C. W. & Yen, D. C., 2006. A regional approach to e-commerce global expansion. *International Journal of Electronic Business*, 4, 99-114.
- Grudzewski, W., Hejduc, I., Sankowska, A. & Wantuchowicz, M., 2008. Trust Management in Virtual Work Environments: A Human Factors Perspective, *CRC Press*.
- Harrington, J. & Daniels, P., 2006. Knowledge-based services, internationalization and regional development, *Ashgate Pub Co*.
- Hoffman, D. L., Novak, T. P., and Peralta, M. A., 1999. Building consumer trust online, *Communications of the ACM*, 42(4): 80-85, UK.
- Holz, M. K., 2008. *Ecommerce in the Arab countries*. New York: Free Press.
- Howard, M., Vidgen, R. & Powell, P., 2006. Automotive e-hubs: Exploring motivations and barriers to collaboration and interaction. *The Journal of Strategic Information Systems*, 15, 51-75.
- Jalal, A. & Maskati, M. A., 2010. Insight of Online Shopping Trend: An Empirical Study with relevance to Bahrain. *Global Journal of Enterprise Information System*, 2.
- Kamel, S., 2009. Electronic business in developing countries: Opportunities and challenges. *London: Idea Group Inc*.
- Knolmayer, G., Mertens, P. & Zeier, A., 2002. Supply chain management based on SAP systems: order management in manufacturing companies, *Springer Verlag*.
- Kohlas, R., Jonczy, J. & Hafni, R., 2006. Towards a precise semantics for authenticity and trust. *ACM*, 1-9.
- Lewin, T. 2009. In a digital future, textbooks are history. *The New York Times*, 9.
- Lockett, N. & Brown, D. H., 2006. Aggregation and the Role of Trusted Third Parties in SME E-Business Engagement. *International Small Business Journal*, 24, 379.
- Lyu, M., 1996. Handbook of software reliability engineering, *McGraw-Hill, Inc. Hightstown, NJ, USA*.
- McKnight, D., Choudhury, V. & Kacmar, C., 2002. The impact of initial consumer trust on intentions to transact with a web site: a trust building model. *Journal of Strategic Information Systems*, 11, 297-323.
- Mutlaq, A. O. and Rasheed, M. A., 2009. e-Commerce Adoption in Saudi Arabia: An Evaluation of Commercial Organisations' Web Sites. *King Saudi University*. [Online]. Available: http://faculty.ksu.edu.sa/DrRasheed/My%20Publications/Saudi_Websites.pdf. [8 January 2011].
- Nielsen, A., 2010. Global Trends in online shopping: a global Nielsen consumer report. Message post to: <http://hk.nielsen.com/documents/Q12010OnlineShoppingTrendsReport.pdf>. [10 November 2010].
- Pohjola, M., 2003. The adoption and diffusion of ICT across countries: Patterns and determinants. *The new economy handbook*, 77-100.
- Pucihar, A. and Podlogar, M., 2005. e-Marketplace adoption success factors: Challenges and opportunities for a small developing country. *Princeton: Princeton University Press*.
- Sait, S. M., 2002. *IT in Saudi Arabia: Status & Trends*. [Online]. Available: <http://faculty.kfupm.edu.sa/coe/sadiq/richfiles/rich/ppt/morocco.ppt>. [8 November 2010].
- Solbi, A. & Mayhew, P., 2005. Measuring E-Readiness Assessment in Saudi Organisations Preliminary Results From A Survey Study. *Citeseer*, 10-12.
- Steinbrook, Y. E., 2009. Ecommerce in developed nations: A case study of Asian economies. *International Journal of Management and Enterprise Development*, 13(4): 82-88.
- THEWORLD BANK GROUP, 2010. Information and communication technology expenditure [Online]. Available: <http://data.worldbank.org/indicator>. (Accessed November 29, 2010).
- THEWORLD BANK GROUP, 2010b. World Development Indicators [Online]. Available: <http://data.worldbank.org/data-catalog/world-development-indicators>. (Accessed November 14, 2010).
- United Nations Conference on Trade and Development (UNCTAD), 2003. e-Commerce in Developed Countries Continues on Strong Growth Path. [Online].

Available: <http://www.unctad.org/templates/webflyer.asp?docid=4253&intItemID=2261&lang=1>. [8 November 2010].

- Vandana, M. N., 2010. ICT and SME's in developed nations. *European Journal of Purchasing & Supply Management*, 3(8), 27-33.
- World Summit on Information Technology (2005) Information and telecommunication technology in Saudi Arabia. *Proceedings of the World Summit on Information Technology of 2005*. P.6-15.
- Yang, Z., Cai, S., Zhou, Z. & Zhou, N., 2005. Development and validation of an instrument to measure user perceived service quality of information presenting web portals. *Information & Management*, 42, 575-589.
- Zhang, X., Jia, L., Dong, H., Wang, Z., Wang, K. & Qin, Y., 2009. Analysis and Evaluation of Connectivity Reliability for Dynamic Transportation Network. *Seoul IEEE*, 353-356.
- Zhuo, J. and Xinhe, J., 2004. Analysis of eMarketplace for the textile industry in China. *International Journal of Management and Enterprise Development*, 4(3): 337-353.

