Small Businesses' Decision to have a Website Saudi Arabia Case Study

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Abstract—Recognizing the increasing importance of using the Internet to conduct business, this paper looks at some related matters associated with small businesses making a decision of whether or not to have a Website and go online. Small businesses in Saudi Arabia struggle to have this decision. For organizations, to fully go online, conduct business and provide online information services, they need to connect their database to the Web. Some issues related to doing that might be beyond the capabilities of most small businesses in Saudi Arabia, such as Website management, technical issues and security concerns. Here we focus on a small business firm in Saudi Arabia (Case Study), discussing the issues related to going online decision and the firm's options of what to do and how to do it. The paper suggested some valuable solutions of connecting databases to the Web. It also discusses some of the important issues related to online information services and e-commerce, mainly Web hosting options and security issues.

Keywords—E-Commerce, Saudi Arabia, Small business, Web database connection, Web hosting, World Wide Web (Web).

I. INTRODUCTION

ORGANIZATIONS are becoming more and more aware of the importance of going online with their businesses. Not only organizations are concerned with the decision of whether to go online or not, but also educational, research, health, social, non profitable and all Kind of organizations are concerned.

Using the Internet and Internet technologies, such as e-commerce, to conduct business and to provide online information services, is becoming a must to survive. The information can be presented in different ways. Text, pictures, graphs, diagrams, drawings, animations, video, and audio are all forms of information that can be provided online. However, small businesses have been lagging behind and slow to adopt and implement e-commerce due to different reasons and variety of barriers. For small businesses, it is quite important and useful to adopt e-business because it enables small firms to overcome geographical obstacles and compete

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with big organizations, and by leveling the playground, providing considerable opportunities to have a foot in the marketplace. The European Commission's definition for small business is the business with less than 50 headcount and an annual turnover of $\leq €$ 10 million [1]. Definition of Small and Medium Sized Enterprises (SMEs) in Australia is any business employing less than 20 people; and 20 or more but less than 200 people for medium business [2]. In this paper, we mean by small business, firms that employ less than 20 employees. This paper discusses a case in Saudi Arabia where a small firm seeks to make a decision of whether or not to adopt e-commerce and go online considering factors affecting such decision. The questions are: should we have a Website? What would be the contents of the Website? How would we manage the site?

II. LITERATURE REVIEW

Unfortunately, not enough concern by researchers has been given to this subject in the Arab World. But fortunately, a lot of studies, in Europe and America have addressed this issue and many studies are available that focus on important aspects of the matter. Much of what these studies discussed and concluded also applies to situations in the Arab World, because of the many circumstances similarities and the uniqueness of small business features anywhere. [3] State "Small businesses are not simply scaled down versions of large businesses". Although size is a major distinguishing factor, small businesses have a number of other unique features that set them apart from large businesses. There have been various studies carried out in order to isolate these features [4]-[7].

[8]-[9] show that, small firms use the Internet for a variety of online business activities. [10] Argues that, doing business on the Internet has become a competitive necessity for many small businesses. In almost all industries, large corporations and government agencies are telling suppliers to trade with them online or risk losing their business. [11] Reports that, small businesses were the slowest sector to adopt e-commerce. [12] Reports that, a new website is launched every 7.5 seconds. The Internet has produced the double-edged sword of more customer access and more competition. The study also suggested that by creating a critical sales and procurement channel that's simple to use, an e-marketplace invites small business owners into the game. Furthermore, an e-marketplace saves time researching, locating and negotiating with multiple vendors that can meet its needs. [11] Surveys of 500 small business owners, most believe selling on the Web will be important to their future and 50% said cost was the biggest barrier. Studies were also carried out to explore the

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TABLE I
BARRIERS OF IMPLEMENTING E-COMMERCE IN SMALL ENTERPRISE

Barriers to E-Commerce Adoption	Related Literature
High cost of implementation; Internet technologies too expensive to implement	[13]-[17]
E-commerce is too complex to implement	[18]-[19]
Small businesses require short-term ROl and E-Commerce is long-term	[16], [20]
Resistance to change because of the fear of new technology among employees	[14], [16]
Preference for and satisfaction with traditional manual methods (phone, fax, etc.)	[16], [21]
Lack of technical skills and IT knowledge among employees; lack of computer-literate / specialized staff	[13], [14], [16], [17], [19], [22]
Lack of time to implement E-Commerce	[14], [16], [23]
E-Commerce not deemed to be suited to the way the organization does business or the way our clients do business	[24], [25], [17]
E-Commerce not deemed to be suited to the products / services	[24], [25]
E-Commerce perceived as a technology lacking direction	[16]
Lack of awareness about business advantages / opportunities that E-Commerce can provide	[17], [19]
Lack of available information about E-Commerce	[16]
Concern about security of E-Commerce	[13], [14], [15], [25], [19]
Lack of critical mass among customers, suppliers, and business partners	[25]
Heavy reliance on external consultants (often considered by small businesses to be inadequate) to provide necessary expertise	[14], [16]
Lack of E-Commerce standards	[26], [27]

main barriers to e-commerce adoption by small business. These barriers can generally be classified into two main categories. Either organizations face difficulties to implement, or they find it unsuitable for their business. Table I summarizes these barriers.

III. RESEARCH METHODOLOGY

The methodology used in this study is the qualitative methodology. This type of methodology is appropriate because of the field of the study is a specific case that reflects in its issues a lot of what also constitutes similar common issues for small businesses in Saudi Arabia or the Arab world intending to own a Website and practice e-commerce.

IV. DISCUSSION AND FOCUS ON A SMALL BUSINESS SPECIFIC CASE

Al-Taher International Establishment is a small firm that employs between 12 - 15 employees. Its annual revenue is about SR 10 million. Its main business activity is trading in veterinary medicine and equipments. Its main suppliers are a well known European veterinary products company called KElA in Belgium, and veterinary equipments company called KRUSE in Denmark. They are the sole agent of these two companies in Saudi Arabia. They operate in Saudi Arabia, and cover geographically the wide market of all regions of the country. They keep a small number of employees by adopting a suitable strategy. Instead of opening branches to maintain a physical presence in all regions of the country, they establish an agreement with one wholeseller in each geographical area to promote their sales in his region. The firm's main customers are: the Saudi ministry of agriculture, some large dairy farms like Almarai Co Ltd, and Al Safi dairy farm, the retail customers who are end users, although these buy in small quantities as their needs requirements, but they constitute a considerable portion of the market as there is a large number of them.

Through interviews, and with the full support of all management levels, especially top management, focus was made possible to study this specific case. Interviews included the top consultant, the general manager, the sales manager, two veterinarians and the accountant. The decision of adopting e-commerce has recently been the concern of the top management. They realize the size of the barriers and difficulties mentioned above, but they reckon that most of these difficulties can be handled and easily dealt with. But they are mainly concerned about four specific problems, these are:-

1- Which prices to expose to their Website visitors?
2- Connecting their databases to the Web.
3- Security concerns.
4- Managing their Website, (Web hosting).

1) Prices on the Website

Making their selling prices available on the Website constitutes a problem, as they might have up to four different

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prices for the same product. First, they enter governmental tenders bidding with a special price, usually a very low price. Second, they give special competitive prices to their representatives. These are the wholesellers in all the regions. A third price, with a considerable discount, is usually given to the important customers. These are the giant dairy farms, who order in very large quantities. And the fourth price is the usual market price meant to be for the direct consumers. one of the valuable solution for the different prices is given each of the organization customers an access privilege to these prices categories.

2) Connecting Databases to the Web

At first, company used a flat–file approach, which was to store all the information required to process requests in a file with the Web–server as a part of the company's Web site. To move from the file system technology, and make use of the advancements of Web technology, companies want to Web-enable their databases to do business. Databases were made accessible to users via the Internet by browsing.

Some of the advantages of Web – database connection are: easier and faster data and information access, larger and richer data and information availability, quicker information updates, better presentation of information, easier spread of information, more useful ways of data and information classifications and the creation of new information sources. The connection can be done through two ways; appointing an application programmer who connect the database with the Web, as well as administrate, develop, and update the database in term of organization needs.

The other way to do that is outsourcing this operation to some available vendors around. The vendor will do all the process in terms of the administration and development. Hence, the main disadvantage of this way is that, some of the sensitive data leaks to other parts and that might influence the company market.

3) Security Concerns

Security issues arise mainly from the fact that the Internet, at its beginnings, was designed for research and not for business. Thus, for scientific and research purposes, not much security was needed. Now as companies need the Internet and distributed systems, and want to go online, to survive in a world rapidly moving to "e-doing it all" , if I may call it that , companies need increased security . There are many Web security issues. Here below we look at some of them:-

1- System security and integrity: Firewalls are used to deal with this problem. Firewalls solve some problems, but have their drawbacks.

2- Authentication: It can be between machines and can be between human and machine. There are different classes of authentications

3- Access control and authorization system: There are two access control policies, discretionary and mandatory. The discretionary has a drawback of being an easy target to the Trojan horses attacks. One way to deal with that problem is the use of one – time password generators.

4- Encryption: It is encoding human readable text which we call plaintext, to unreadable, which we call ciphertext, so as to protect data being transmitted over the Internet.

Further more, database Internet integration generates four more security issues 1- Server security 2- User authentication security 3- Session security 4- Web server security. The use of secure sockets layer, (SSL), and Secure- Hyper Text Transfer Protocol, (S-HTTP), are two methods to deal with Web server security.

Database vendors incorporate their DBMS servers into their Internet strategies. Different products like Oracle, Informix, Sybase, Microsoft SQL server and IBM DB2 are either script – based or server – based. All have their way to deal with connecting database to the Web. They use different Internet strategies. Some are better in certain areas where others are better in other areas.

Like most other than IT small firms, for this small business case, if the firm wants to implement e-commerce, the people in charge, who are to take the decision, lack the technical knowledge and do not know what actually could be a security threat to them, and how to deal with it. Everybody heard stories about fraud, security risks, hacking and viruses. These are real threats to e-commerce. When a small business decides to adopt e-commerce, would it be enough to qualify one of the employees through courses and some training to become a security officer and take care of this problem? Do they need to hire an e-commerce security expert? Is there some kind of software that might solve the problem? Is there another way to more effectively handle this problem? For a small firm, in other than IT field, the top management, usually lacks the experience and needs guidance to be able to make the right decision.

4) Web Hosting Options

Is the organization ready and prepared to adopt e-commerce and provide online information services and take the risk of hosting its own site, or would they be much better off if specialized people take care of hosting their Web site for them? It is not just the hassle, but factors like dedicated IT staff, data center capabilities, and required uptime are all factors that determine the success or failure of the organization hosting its own site and managing it. This management involves risks related to managing the hardware (specially the server), software and network architecture. The types of transactions conducted through the site and its intensity determine the IT and staff required. For organizations that have enough funding, the dedicated staff, the right IT, and adequate time, hosting their own site would be a good option, but these resources are usually internally available only for large businesses. For small businesses, they have to seek help and obtain some of these resources externally.

The decision of whether to host the site internally by the organization itself or outsource that activity to a hosting vendor is not the most difficult decision to make. Whom to contract with, and what kind of services do we need the vendor to provide, is a more challenging issue. The Web

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hosting industry is growing, and competition between vendors is increasing so that the services provided by different vendors are not much different. These services are becoming so much similar that they are getting to look like a commodity. Based on the site's offerings to the users, there are requirements which have to be met. To help their customers understand and choose what they need, vendors offer hosting plans. These are packages designed to meet the requirements of most of their customers and they very from simple static Web pages to a complete e–commerce packages which support everything including online payment. Once the decision has been made as to contract with a Web hosting company, there is left the more important and more difficult decision to make. That is, which hosting plan the organization should buy. In general, hosting plans are of two kinds:-

1- Shared server hosting.   2- Dedicated server hosting.

The shared server plan is where multiple Web sites, for different companies, are hosted within one server. This has the advantage of being less costly as the cost of the technology and support is shared among many customers. One of the most important disadvantages of this plan is that the site performance will be affected if the neighbor site has a lot of traffic. An option within shared hosting is "virtual private server hosting" this option provides more protection through isolating the site, but still within a shared server, and assigning to it unshared server resources. This arrangement also limits the negative effect of a high traffic neighbor site. On the other hand, dedicated hosting is where a server is assigned to a single site. No sharing with other sites occurs. This arrangement is more suitable for large – sized businesses as it is more flexible, more reliable and more secure. It solves many of the problems mentioned above and gives a better response time, but it is more expensive.

V. SUMMARY

Providing online information services and adopting e-commerce, is a must step to survive in a world that is becoming more and more dependent on electronic information transfer, in all aspects of life. One of the main ways to provide online information services is to connect databases to the Web so as to enable users to access the information via the Internet through browsing. Different technologies were developed to deal with Web-database connection. Each of these technologies has its advantages and drawbacks.

For a small business, when they decide to own a Website and make a start towards adopting e-commerce, what would be included in the Website and what the site's offerings to the users, are issues to be discussed and appropriately decided upon.

Security is one major issue that arises when databases are made available online. No security measure is a 100% perfect and safe, but with enough security mechanisms in place, an organization should feel secure enough about its data.

For a firm to go online and fully conduct e-commerce, it needs to Web-enable its database. Making a decision about Web hosting is an important issue. It doesn't involve cost and expenses only, rather a more important factor is whether the firm has the technical infrastructure and staff skills or not. If the firm decides to outsource the hosting of its Website, there are two main plans to consider, shared or dedicated server hosting. The size of transactions, the complexity of the site, the required uptime and the site's offerings to users are all to be considered when a hosting plan is to be chosen.

VI. CONCLUSION AND RECOMMENDATIONS

To survive in the era of electronically mediated information exchanges, and successfully practice e-commerce, it is not a matter of whether to go online or not. The question is how quickly you want to act? And what do you need to do to succeed? Being able to go online and adopt e-business is the future of information exchanges and conducting business.

Small firms usually lack the technical knowledge; lack the know-how and the experience. In this Case Study, the firm's main concerns were Website contents and offerings, database-Web connection, security and Web management, (Web hosting).

Outsourcing is strongly recommended to enable the small firm make a good start and take care of many of the potential problems mentioned above. When the Web hosting is outsourced to a specialized vender, there will be no more worries about Web-database connection technicalities, Web management, and security risks. The website offerings, as a start, is recommended to include general information about the firm, its kind of business activities, the managerial structure, the persons in charge and their responsibilities, (may be their pictures too), the available products and some brief information about the main, most important products. Contact information is a must, like telephone and fax numbers, email addresses and postal address. This way, if somebody is searching the net looking for suppliers, they get invited to submit their quotation and would not be left out. The prices problem could be resolved by posting the usual market retail price meant to be for the direct consumers, with big emphasis on the fact that for large quantities, special prices could be offered upon contacting the sales section depending on the size of the order. Wholesellers, (representatives), in each geographical area, would be assured that their special competitive prices are to continue regardless of the different higher prices posted on the Website. Among the site offerings, the wholesellers should be able to place an order using an identification name and a password.

In our opinion, this research's main contribution to the subject is that it focuses on helping non technical business managers who recognize the important role of the technology and need no convincing to adopt e-commerce but due to their IT illiteracy, they do not have adequate knowledge about the nature of the issues involved and where to start. The paper provides a brief explanation of these issues and a guide for an interested manager as how to start and where to begin. Simply instruct his secretary to call a vendor offering hosting plans and arrange a meeting.

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