

# The Internet and Small Medium-Sized Enterprises (SMES) in Jordan

Sattam Allahawiah, Haroon Altarawneh, and Sameer Alamro

**Abstract**—Because of its global reach, reduction of time restraints, and ability to reduce costs and increase sales, use of the Internet, the World Wide Web (WWW), and related technologies can be a competitive tool in the arsenal of small and medium-sized enterprises (SMEs). Countries the world over are interested in the successful adoption of the Internet by SMEs. Because a vast majority of jobs come from that sector, greater financial success of SMEs translates into greater job growth and, subsequently, higher tax revenue to the government. This research investigated the level of Internet usage for business solutions by small and medium enterprises in Jordan. Through the survey of a random sample of 100 firms with less than 500 employees and from data obtained from this survey that formed the basis for our study, we found that a majority of respondents use the Internet in business activities, the adoption of the Internet as a business tool is limited to a brochure where Web site which primarily provides one way. As such, there wasn't interactive information about the company and its products and services.

**Keywords**—Internet, SMEs, e-commerce, website, e-business, IT.

## I. INTRODUCTION

THE Internet and the WWW have created new cost-effective means for both large and small businesses in order to increase domestic and international sales, decrease costs, enhance customer relations, and build customer loyalty. For example, according to Elder, Litan, Shutter, Varian and Janu[1], organizations of all sizes in the United Kingdom, France, Germany, and the United States report a cumulative cost savings of \$163.5 billion and an increase in revenues of \$444 billion because of the adoption of Internet solutions. Using the Internet for business solutions can also set the stage for disintermediation which can result in new value chains management, sales activities,

lowered transactions costs, and new business opportunities, as well as reintermediation with the creation of new intermediaries to facilitate Internet-based transactions. Business-to-business (B2B) activities refer to the full spectrum of e-commerce that can occur between two organizations, including purchasing and procurement, supplier management, inventory management, channel payment management, and service and support. Business-to-consumer (B2C) transactions which refer to exchanges between businesses and consumers can include physical or digital products or services and are usually smaller than B2B purchases [2] small businesses alike. Other factors that act as drivers include the perception that benefits will accrue to the organization, whether they are realized or not, organizational readiness, management's commitment, and acknowledgment that e-business is used as a complement, not a replacement, for overall corporate strategy and its respective focus on quality, profit, and services.

Small and medium enterprises (SMEs) can employ a variety of means to harness the power of the Internet, the WWW, and related technologies. Activities can range from something as simple as using the Internet for communications with customers and suppliers to a full-blown integration that can provide for sustainable competitive advantages while providing at the same time for a low-cost entry into the global marketplace. Employing the Internet as a tool can help address some of the critical issues affecting SMEs, such as increased global competition, increased consumer demand for quality, increased partnerships between large/intermediate and small businesses, rapidly changing market environment, growing need for immediate access to current business information from a variety of sources, increased competition for capital, greater need to track legislation affecting small businesses, and the growing need to stay flexible[3].

## II. PURPOSE OF THE STUDY

Use of the Internet can have a positive impact on the organizations and can help to increase revenues, decrease costs, improve customer service, and contribute to stronger customer relations. Most research studies have focused on information technology (IT) implementation in a large corporate setting that may not be applicable to small firms because small firms differ from larger firms in a variety of ways, including having minimal bureaucracy, centralized decision-making in one or two persons, and/or limited long term planning[4]. The purpose of this study was to assess the current state of adoption of the Internet for business solutions by SMEs that formed the basis of our study.

Sattam Allahawiah, born in Jordan 1972, PhD in management information system, Arab Academy for Banking and financial Sciences, Amman, Jordan. He is assistant professor in management information system; He is an instructor in management information system in Albalqa Applied University, karak University College, Jordan. His principal research interests include e-commerce, knowledge management, E-learning development and software process improvement

Haroon Al-tarawneh, born in Jordan 1970, PhD in computer information system, Arab Academy for Banking and financial Sciences, Amman, Jordan. He is assistant professor in computer information system.

Areas of investigation included a determination of the current status of Internet adoption and a look at whether or not the small manufacturers have expanded beyond use of Web sites as brochure ware to one that incorporates back-office operations, including such activities as managing inventory, and e-procurement. The study also focused on the identification of the person within the firm who initiated the adoption if it occurred and on the factors that led the firm to implement use of the Internet, the benefits that have accrued, the barriers that inhibited the adoption.

### III. LITERATURE REVIEW

Information technology and the Internet have transformed business, but the transformation is not limited to conducting business online; it's also about integrating ebusiness capabilities into every aspect of value creation, such as procurement and customer relations management[5]. For the individual enterprise, e-business offers competitive advantages, including helping the enterprise perform value-chain activities efficiently by engaging in end-to-end electronic integration of entire sales, production, and delivery processes and by reducing time to market. Because information and knowledge can move freely within the enterprise and externally with its customers and suppliers, managers can implement decisions instantaneously [6]. In spite of these advantages, it appears that SMEs the world over are struggling to embrace and utilize the power of the Internet in order to improve their performance, with most SMEs limiting their use to e-mail and a Web site. Primarily, the research, except for a few cases, documents a lack of progress in the adoption of fully integrated e-business strategies and a lack of success even with Web sites. Most research points to non-quantifiable, short-term benefits with SMEs optimistically looking toward long-term benefits.

Moreover the World Wide Web has given the opportunity to firms, irrespective of their size, to enter the fields of international marketing and trade their products and services on a global scale regardless of geographical, national, financial or other limitations. e-Commerce has the ability to change the way companies compete with one another, since the new technologies influence the strategic plans of organizations and they offer competitive advantages on both local and global level[7].

Luisa Piris, et al[8] in their study strategic motivators and expected benefits from e-commerce in traditional organizations, their study aimed to identify the strategic motivators and expected benefits related to the implementation of e-commerce infrastructures in traditional "brick and mortar" organisations. they chosen six representative organisations from different sectors to explore their rationales for their e-commerce strategies. One of the main benefits reported is to increase the focus on the customer and improving internal communications. Additionally, obtaining competitive advantage was found to be a powerful motivator.

Syed Shah Alam, et al [9] explained the major benefits that motivating to adopt e-commerce in the electronic manufacturing companies in Malaysia. The major benefits of e-commerce adoption include improved customer service, better inventory control and lower marketing and distribution costs, reduced cycle time, increased market reach and reduced operation costs. Despite the hype of the ecommerce business, the benefits realized from e-commerce

versus realized benefits. The study examined the perceived benefits of e-commerce usage by the electronic manufacturing companies in Malaysia. also differentiates the perceived benefits between the different demographic groupings. The study showed that Internet communication costs, ease link with suppliers and customers, as a tool for future business, omitted of time barriers and global presence are the major factors affecting the adoption of EC in the business in Malaysia.

Cloete, et al [10] .in their study of SME adoption of e-commerce in South Africa found that adoption is heavily influenced by factors within the organization. Lack of access to computers, software, other hardware, and telecommunications at a reasonable cost; low e-commerce use by competitors and supply chain partners; concerns with security and legal issues; low knowledge level of management and employees; and unclear benefits from e-commerce were found to be the major factors that inhibit adoption. Another study of ecommerce in China by Cooray [11] found that there are many significant barriers to e-commerce adoption. Limited diffusion of computers, high cost of Internet access, and a lack of online payment processes were found to directly inhibit e-commerce. Inadequate transportation and delivery networks, limited availability of banking services, and uncertain taxation rules indirectly inhibit e-commerce.

Mahesha, and Robyn [12] presented a model for barriers to adoption of ICT and e-commerce, collected from the available literature and the results of an exploratory pilot studies and subsequent survey. In addition to the barriers facing SMEs, the research identifies the relevant support required by SMEs in a developing country, Sri Lanka. The preliminary study helps draw some conclusions. Adoption of ICT and e-commerce in SMEs developing countries is different from the developed countries. Another factor that emerged in this study was the level of ICT adoption.

### IV. METHODOLOGY

The study followed several stages beginning with initial interviews of SMEs experts. After these discussions an initial survey was developed, the survey was revised and then distributed to a group of (122) SMEs from various sectors in Jordan as a pilot sample to further refine the survey.

Our target population was the SMEs from various sectors in Jordan. The population includes both internet adopters and non-adopters. The population was stratified into those firms having 10 to 19 employees, firms having 20 to 99 employees, and firms having 100 to 400 employees. The survey sample consisted of representatives from three major groups, namely: the Manufacturing Sector, the Service Sector and the banking Sector. These sectors was selected because they considered as key feature in the economies of every country. These crucial sectors play an important role in the development of economy's infrastructure by providing employment generation, innovation and wealth creation Our population strata contained 30 firms with 10 to 19 employees, 45 firms with 20 to 99 employees and 47 firms with 100 to 499 employees. A random sample of 122 firms, proportionately based upon the underlying state demographics, was drawn from each stratum. A survey packet was prepared that contained a personally addressed cover letter, the questionnaire, and a prepaid business reply

envelope. The questionnaire contained a control number that enabled matching the questionnaire responses to the demographic data in the SMEs. The completed packet was mailed to the presidents and owners of SMEs . After three weeks, a second mailing of the survey packet was completed.

### V. PRESENTATION AND DISCUSSION

It is interesting to examine some of the responses to this point. This section will present some preliminary observations about the initial respondents. Three hundred usable responses were obtained initially . This analysis addresses these three hundred usable responses. In this section, demographic data will first be presented. Descriptive statistics for some of the key questions will then be presented to provide a foundation for the future studies and analyses.

TABLE I  
 NUMBER OF SMEs IN MULTIPLE SECTORS

manufacturing	50	41%
service	42	34%
banking	32	25%
total	122	100%

The survey sample consisted of representatives from three major groups, namely: the Manufacturing Sector, the Service Sector and the banking Sector. The results show that most firms in the sample belong to the manufacturing sector. Of the 122 respondent firms,

- 41% (50 firms) belong to the manufacturing sector
- 34% (42 firms) belong to the service sector
- 5.6% (25 firms) belong to the banking sector

### VI. DEMOGRAPHICS

Table II shows the results of the respondents are from a diverse group of small and medium enterprises.

TABLE II  
 BASIC DEMOGRAPHICS OF INITIAL RESPONDENTS

Demographic	N	Mean	SD
Number of years in business	73	30.05	21.06
Revenues	46	11,364,603	25,586,674
Fulltime employees	82	68.14	107.51
Advertising expenditures	61	52,332	18,9051
Internet related expenditures	67	32,231	93,511

The respondents include new businesses and well established businesses. They also cover all extremes of the definition of a SMEs with the smallest having 9 employees and the medium having the maximum of 400 employees

TABLE III  
 E-COMMERCE APPLICATIONS

EC applications	Total companies	Percentage %
Buying	43	0.352459016
Selling	43	0.352459016
E-mail	110	0.901639344
Seeking Information	86	0.704918033
Distribution	61	0.5
Direct Marketing	62	0.508196721
Advertising and Promotion	76	0.62295082
Transactions	39	0.319672131
Public Relation (PR)	59	0.483606557
Customer Services and Support	61	0.5

Respondents were asked to indicate the EC application used by the companies in multiple sectors in Jordan. For this study 10 activities were considered and they are as follows: Off all the respondents more than 90% (110 firms) indicated e-mail as the main activities used by them. 70% (86 firms) respondents indicated that, they were using Internet based EC for seeking information purposes. A total 61 company (50%) indicated were using EC for customer service and support purposes. The 35% (43 firms) used EC for buying raw materials from other businesses or suppliers. Out of 122 companies 43 companies (35%) used both for selling and buying purposes. Total 76 companies of 62% used EC as a medium of advertising their goods and services . Out of 122 companies, 61companies used EC as a tool for Customer Services and Support, distribution and direct marketing 50%. Followed by 48% (59 firms), 31% (39 firms), used EC for public relations (PR)and transactions respectively.

TABLE IV  
 SME BUSINESS BENEFITS FROM INTERNET ACTIVITIES

N	No#	Percentage %
122		
Response	No#	Percentage %
None	20	0.163934426
1-20%	70	0.573770492
21-40%	13	0.106557377
41-60%	10	0.081967213
61-80%	6	0.073770492
81-100%	3	0.049180328

Building off the activities that the respondents undertake are the business benefits. The above table summarizes the respondents' perceptions of the percent of activities within their individual organization that benefit from the use of Internet. One means of receiving a benefit from a system is its ability to interact with existing system an SMEs.

The focus of this study is the benefits that SMEs achieve through e-commerce. A key to this question is the level of e-commerce activities in the organizations. Table V presents a summary of the respondents' activities

TABLE V  
SMEs INTERNET ACTIVITIES

Activity	N	Yes	Percentage%
Provide information about company	122	85	0.696721311
Allow suppliers to interact electronically with company	122	34	0.278688525
Provide information about products or service	122	38	0.31147541
Allow customers to place or request orders online	122	48	0.393442623
Allow customers to interact electronically with company	122	32	0.262295082
Integrate with back office systems	122	15	0.12295082
Other	122	9	0.073770492

Table V displays the results of number and percentage of firms that perceive the benefit of internet. In this regard, it appears that the first question has the highest rate then followed by the third question. However, it shows that the percentage in other variables are low. This may be due to the fact that a large portion of respondents of this study said the primary benefit of Internet use was information about company and efficient communication.

#### VIII. BARRIERS TO ADOPTION OF INTERNET

Furthermore, we ask the question "what is the major roadblock when you think of adopting e-commerce?" The various factors or roadblocks to the adoption of electronic commerce have been identified as under: Financial shortage and e-commerce not suited to our customers and suppliers rank as the top two barriers to adoption of e-commerce by SMEs in Jordan followed by concern over security of payments. Also it shows that the percentage in other variables are low.

Ranking	Number of responses	Percentage
Financial shortage	112	0.918033
Concern over lack of IT employees	75	0.614754
Internal resistance	70	0.57377
Concern over security of payments e-commerce not suited to our customers and suppliers	80	0.705902
lack of popularity for online marketing and sales	84	0.745902
	42	0.31250

#### IX. CONCLUSION

With the direction of major companies to online transactions and the growth of electronic commerce accelerating growth and entering the world economy, as one of the most important features of the modern digital economy, SMEs are still lagging behind larger organizations in the adoption and evaluation of e-commerce despite the benefits it offers. Small and medium-sized companies (SMEs) that have limited opportunities and strengths when trying to compete against the large organizations may find a way to overcome the obstacles incurred by their small size through the multiple benefits that E-commerce offers.

This study has highlighted the critical role of the internet to SMEs in several sectors in Jordan and clarify how SMEs in particular may benefit from it. Internet makes it easier for many SMEs to maintain contact with their customers. They can use the Internet for transnational marketing and transactions, thereby globalizing their sales and allow SMEs to improve relations with their suppliers and customers, whilst also creating the potential for collaboration with other SMEs. Also it showed that Internet communication, ease link with suppliers and customers, as a tool for future business, and Financial shortage, Concern over security of payments barriers are the major factors affecting the adoption of EC in the business in Jordan.

The results of this study indicate that even though a majority of respondents use the Internet in the business activities and their own Web site. The adoption of the Internet as a business tool is limited to a brochure ware Web site which primarily provides one way, non-interactive information about the company and its products and services.

- [1] Bui T.X., Sankaran S. and Sebastian I.M. 2003: A framework for measuring national e-readiness, *Int. J. Electronic Business*, Vol. 1 No. 1, pp. 3-22.
- [2] Gregory, M. (2003). SME job engine drives Canadian employment growth. *Small Business Research*, 3, 1-6. [www.bmo.com/economic/special/sbr3.pdf](http://www.bmo.com/economic/special/sbr3.pdf)
- [3] Pauline Ratnasingam.(2002), Perceived versus Realized Benefits in E-commerce Adoption. *Malaysian Journal of Library & Information Science*, Vol.7, no.2, December 2002: 57-68
- [4] Doukidis, G., Poulmenakou, A., Georgopoulos N., & Motsios Th. (2001) E- Commerce in Large Greek Enterprises:Issues and Prospects, EASE (Confederation of CEOs of Greek Enterprises), (In Greek).
- [5] Shin, N. 2001. Strategies for competitive advantage in electronic commerce. *Journal of Electronic Commerce Research*, Vol. 2, No.4, pp. 34-41.
- [6] Chau, S. & Pedersen, S.G. (2000). Small is Beautiful: The Emergence of New Micro Business Utilising Electronic Commerce, *Proceedings of the Australian Conference on Information Systems 2000*, pp. 1-8, Brisbane, Australia, 2000.
- [7] Scupola, A. (2003), "The Adoption of Internet Commerce by SMEs in the South of Italy: An Environmental, Technological and Organizational Perspective," *Journal of Global Information Technology Management*, Vol. 6, No.1, pp. 51-71.
- [8] Luisa Piris, Guy Fitzgerald and Alan Serrano. (2005) Strategic Motivators and Expected Benefits from E-commerce in traditional Organizations.
- [9] Syed Shah Alam, A. Ali Khatibi, Hishamuddin Bin Ismail and Ismail Ahmad (2005). Perceived Benefits of E-Commerce Adoption in the Electronic Manufacturing Companies in Malaysia, *Journal of Social Sciences* 1 (3): 188-193
- [10] Cloete, E., S. Courtney, and J. Fintz (2002). "Small Businesses' Acceptance and Adoption of E-Commerce in the Western-Cape Province of South-Africa." *Electronic Journal on Information Systems in Developing Countries* 10(4), 1-13.
- [11] Currie, W. 2000. *The global information society*, Wiley, Chichester.
- [12] Plessis, M. and Boon, J. A. 2004. Knowledge Management in eBusiness and Customer Relationship Management: South African Case Study Findings, *International Journal of Information Management*, 24, 73-86.
- [13] Mahesha Kapurubandara, and Robyn Lawson (2006) Barriers to Adopting ICT and e-commerce with SMEs in Developing Countries: An Exploratory study in Sri Lanka.
- [14] Barua, A; Konana, P., Whinston, A.B., and Yin, F. 2001. Driving e-business excellence, *MIT Sloan Management Review*, Fall 2001, pp. 36-44.
- [15] Chan, S., and Davis, T. 2000. Partnering on extranets for strategic advantage. *Information Systems Management*, Vol. 17, No 1, pp. 58-64.
- [16] Akkeren J, Cavaye A, (1999). Factors Affecting the Adoption of E-commerce Technologies by Small Business in Australia – An Empirical Study. (Available: [www.acs.org.au/act/events/io1999/akkern.html](http://www.acs.org.au/act/events/io1999/akkern.html)).
- [17] Ghobadian, A. and Gallear, D.N. (1996), "Total quality management in SME's", *Omega*, Vol. 24 No. 1, February, pp. 83-106.