THE CURRENT STATE OF E-COMMERCE IN JORDAN: APPLICABILITY AND FUTURE PROSPECTS. "AN EMPIRICAL STUDY"

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Abstract

This study aimed at determining the current state of e-commerce in Jordan, as well as its future prospects. The research population consisted of all Jordanian industrial, service and/or trade companies that have a registered website. The population size was 712 companies. A total of 118 questionnaires were distributed to randomly selected companies and 95 were returned. Cronbach alpha measure was used to test the reliability of the organizational questionnaire and was calculated to be 0.80 reflecting stability and consistency of the scale and indicating the goodness of the measure. Other statistical tests were used to test the research hypotheses such as One-Sample t-test, Independent-Samples t-test, One-Way ANOVA, Chi-Square and Bivariate Correlations (Pearson). The research indicated that Jordan has adequate and efficient e-commerce requirements in general, but there is no suitable and appropriate Community Culture in order to reach E-commerce Readiness Stage. Some recommendations are then made based on research findings.

Keywords: E-commerce, E-commerce Readiness Stage, Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organization Readiness and Support, and Community Culture.

Introduction

The phenomenal growth of the internet since the mid- 1990s is an unprecedented event in the history of information and communications technology (Chircu et al, 2000). The internet has already fundamentally changed the way many organizations think about and perform their work. The last few years have shown us the revolution of e-commerce in all over the world; so many organizations take this opportunity in our dynamic environment and adapt themselves in order to take the benefits of this new business model. To improve profits and achieve strategic sustainability in a rapidly changing competitive environment, many Websites have been repackaging themselves by targeting new markets, expanding into the offline world, forming alliances, licensing software, and adjusting their core offering to focus on the most profitable products and customers (Chircu et al, 2000). It's also important to recognize that e-commerce applications are business in it self rather than only supporting it.

E-commerce is defined as "the exchange of money, information, services, and products between economic entities over the internet, networks, and other digital technologies" (laudon & laudon, 2004). E-commerce involves any business transaction executed electronically between parties such as companies "B2B" business-to-business, companies and consumer "B2C" (business-to-consumer), participant individuals with one serving as a buyer and the other as a seller "C2C" (consumer-to-consumer), consumer-to-business "C2B", business and the public sector "B2A",consumer and the public sector "C2A", Peer-to-Peer "P2P", and Machine-to-Machine "M2M".

E-commerce supports both internal and external business functions. That is, "external e-commerce addresses the use of information technology to support how a business interacts with the marketplace, and internal

electronic commerce addresses the use of information technology to support internal processes, functions, and operations" (Haag et al, 2000, p. 248).

One can say that e-commerce encompasses internal and external communications, correspondence, contracts, electronic funds and data transfers, accounting functions, buying and selling goods and services and credit card payments (E-payment).

This study will contribute by helping Jordanian companies recognize and build a conceptual framework about the importance of the e-commerce to their business and to consider the requirements needed in order to be ready to start the e-commerce operation effectively; a successful implementation of e-commerce requires significant changes to existing business processes and substantial investment in information system technology, and before companies use e-commerce they must understand their business, their consumers, and the constraints of e-commerce.

Market analysts have identified four particularly important aspects of the new e-commerce enthusiasm, these are: (Kauffman et al, 2001).
1- Small start-ups can now shorten the painstaking learning curve and enter global markets at affordable cost.
2- Dot.com firms need not wait for years to build a customer base of thousands but can gain millions of customers within months.
3- Small ventures can achieve market valuations as high as that of established corporations.
4- Market analysts also suggest that a paradigm shift is taking place so that the traditional rules of competition are no longer applicable.

However, the growth of e-commerce all over the world is being stimulated by overcoming it's downsides through increase in internet access, user confidence, better payment system,

and rapidly improving internet and web security.

Literature Review

In order to conclude and build the criteria or the standards – on which the researchers e-commerce readiness assessment process will depend upon – that are relevant and suitable to the Jordanian business environment, the researchers went through the literature to identify and categorize the major factors affecting e-commerce; the following are some of the important studies:

Connolly (1998) study states that the development of electronic commerce poses a number of legal and consumer challenges. In Australia, they are seeing a convergence of new technologies and the deregulation of the financial sector. At a time of great change consumers need to be protected, and the law is struggling to keep up. This study examines the legal issues (Jurisdiction, and Rules of Evidence) and consumer issues (Security, Privacy, Terms and Conditions, Access, Dispute Resolution, Fees and Charges, and Fraud) rose by electronic commerce, and summarize the responses that have been proposed.

Smith and his collaborators (1999) study argues that electronic markets may dramatically change the way products are bought and sold. They also stated that early research suggests that electronic markets are more efficient than conventional markets with respect to price levels, menu costs, and price elasticity. At the same time, several studies find significant price dispersion in internet markets. This price dispersion may be explained by heterogeneity in retailer-specific factors such as branding and trust, retailer efforts to build consumer lock-in, and various retailer price discrimination strategies.

Akkeren and his collaborators(1999) study argues that the adoption of

internet technologies by the small business sector is important to their on-going survival. They find that Australian small businesses are relatively slow in adoption them. They developed a model from recent literature on the facilitators and inhibitors to the adoption of internet technologies by small business which consists of those three factors: owner/manager characteristics, return on investment, and firm characteristics. Cross-case analysis of findings from three case studies are presented which indicate that perceived lack of business benefit, mistrust of the IT industry and lack of time are the main inhibitors to internet adoption.

Figueiredo (2000) study is about how can the venture capitalist, the investor, and the manager decide whether e-commerce is sensible? More importantly, can they discriminate between types of e-commerce that will likely be attractive and profitable, and those which will end up in a commodity market structure?

This study proposes a market segmentation scheme for on-line retail trade, based on fundamental economic concepts. It then examines how industry and product characteristics (commodity products, quasi-commodity products," look and feel" goods, "look and feel" with heterogeneous quality, and the role of the consumer) will drive average segment profitability. Finally it proposes a set of segment-specific strategies that firms can employ to attempt to reach above industry-average profits.

Ghoneim and others (2000) study states that e-commerce has a number of challenges it needs to be overcome such as the growing digital divide emerging between developed and developing nations which could deepen income and wealth inequalities between the north and the south. In that respect, the government role in developing countries in preventing the widening of the digital divide is becoming increasingly vital.

This paper demonstrates the role of the government in the digital economy in developing nations using the case of Egypt. A role that blends a hybrid of traditional and unconventional methods that can help creating an environment that is healthy and promising for the enabling of electronic commerce. In the case of Egypt, e-commerce represents a tremendous challenge and at the same time a great opportunity for growth and development and hence it needs an institutional role to regulate e-commerce.

Markus and collaboratos (2001) study argues that global information management researchers should not lose sight of structural conditions related to B2B and B2C e-commerce activity, they define structural conditions are physical, social, and economic arrangements that shape e-commerce business models and influence individual and organizational use of the internet that are significantly different in various parts of Asia than are in the US. Examples of the key structural conditions that they conclude:
Financial infrastructure (e.g., electronic payment systems)
Legal and regulatory infrastructure (e.g., consumer protection legislation, taxation)
National policies about promoting or regulating internet usage and e-commerce
Telecommunications infrastructure and prices
Language and education
Firm size, structure and control systems

Also, they conclude that structural conditions vary from country to country and even within country and that they are not fully captured in measures of national culture.

Al-Kateeb and collaborators (2001) study aims to examine the influence

of electronic commerce on the strategic position of Jordanian industrial firms. This study considered as an empirical one. The study sample consists of (169) persons working in four industrial firms that use electronic network, specially internet and EDI system. The research selects (16) independent variables that reflect the requirements of electronic commerce process such as; management commitment, product characteristics, consumer behavior, and others. Then they measure its influence on the strategic position and some criteria of strategic performance such as; competitive advantage, ROI, and competences. The main result of the study shows a significant relationship between e-commerce dimensions and strategic position of industrial companies.

Furthermore, the study suggests several recommendations in order to increase the effectiveness of e-commerce process at firms and improve their strategic competitive positions.

On the other hand, Sahawneh (2002) study concentrates on theory side to help the decision makers; especially those involved in e-government project, their sample covered 31 institution from different sectors (industrial, service, and agriculture). They focus about 2 issues related to e-commerce , the first is the technical infrastructure and the other is laws and regulations by comparing them with neighboring countries. Their main results are:

- Jordan has convenient telecommunication facilities among neighboring countries.
- There are no new laws in order to govern e-commerce.

From this literature review we can recognize that e-commerce has created a new way of doing business, like all new model e-commerce it needs changes in strategic management paradigm regarding the important business issues such as the basis of competition, control, marketing, sales, pricing, operations and others. Subsequently, the companies need to reconfigure themselves in order to be ready to adopt e-commerce effectively and to reach the state of e-commerce readiness.

Research Hypotheses

the research contains two models that illustrate different purposes, the first model (Figure 2) is made as a representation of the e-commerce requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) in which the researchers depend to assess whether Jordanian companies' has reached the e-commerce Readiness Stage or not and to which extent, similarly to determine the degree of importance (Materiality) for each one of these requirements in reaching the e-commerce Readiness Stage. This will be measured from the Jordanian companies' perspective.

Technology &Telecommunication Infrastructure		
Institutional and Governmental Support	Leads to →	**E-commerce Readiness**
Organizations Readiness and Support		
Community Culture		

E-commerce Readiness
Requirements "Independent Variables"

E-commerce Readiness
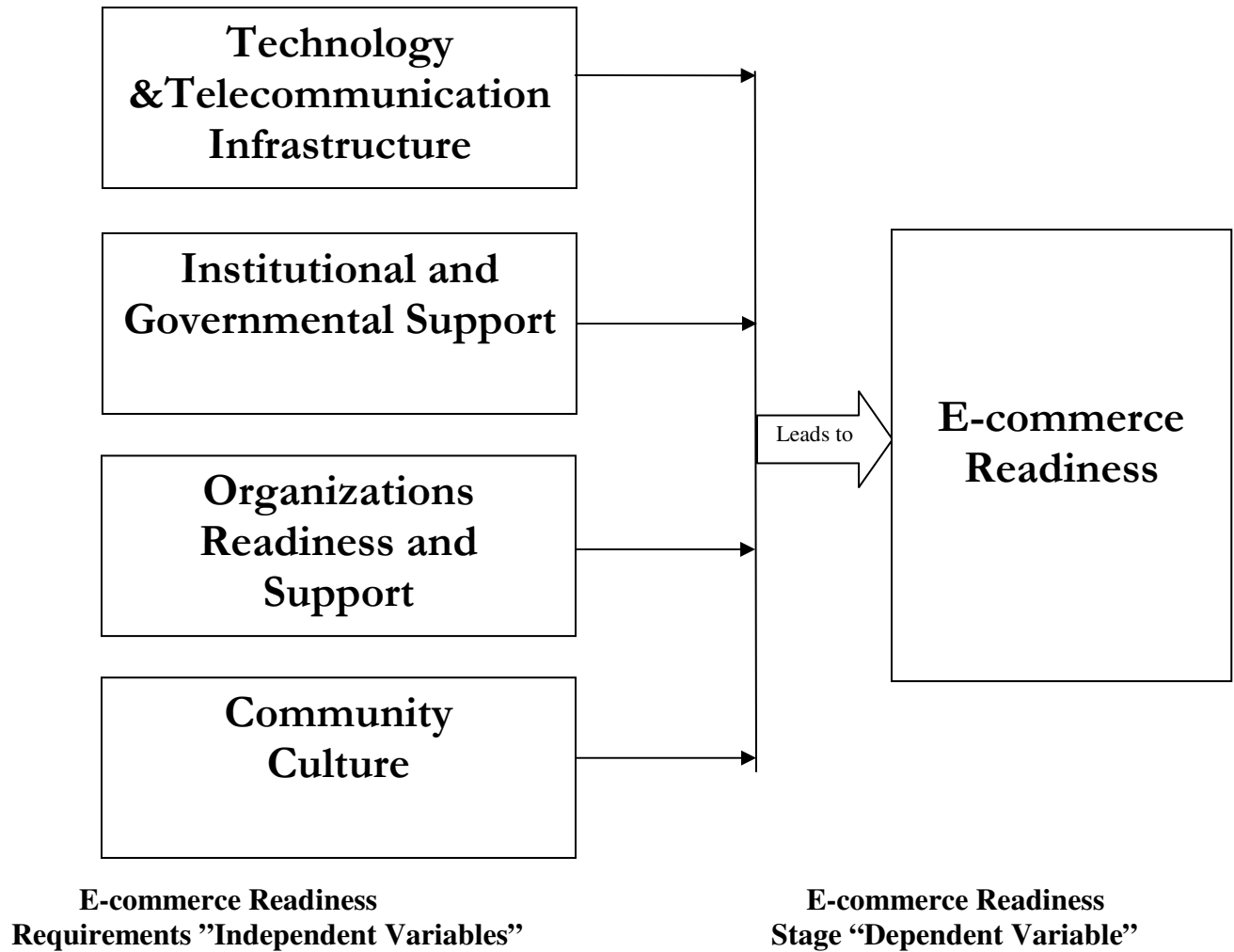**Stage "Dependent Variable"**

Figure 2. E-commerce Readiness

The second model (Figure 3) is made as a representation of the other investigations and tests that were conducted by the researchers in order to determine whether the e-commerce readiness will be differ among different types of companies (Industrial, Service and/or trade), and different internet presence of companies (basic Website, advanced Website, e-commerce, or e-commerce plus community).

Type of Company		E-commerce Readiness

E-commerce Readiness

1. **Technology and Telecommunication Infrastructure.**

2. **Institutional and Governmental Support.**

3. **Organizations Readiness and Support.**

4. **Community culture.**
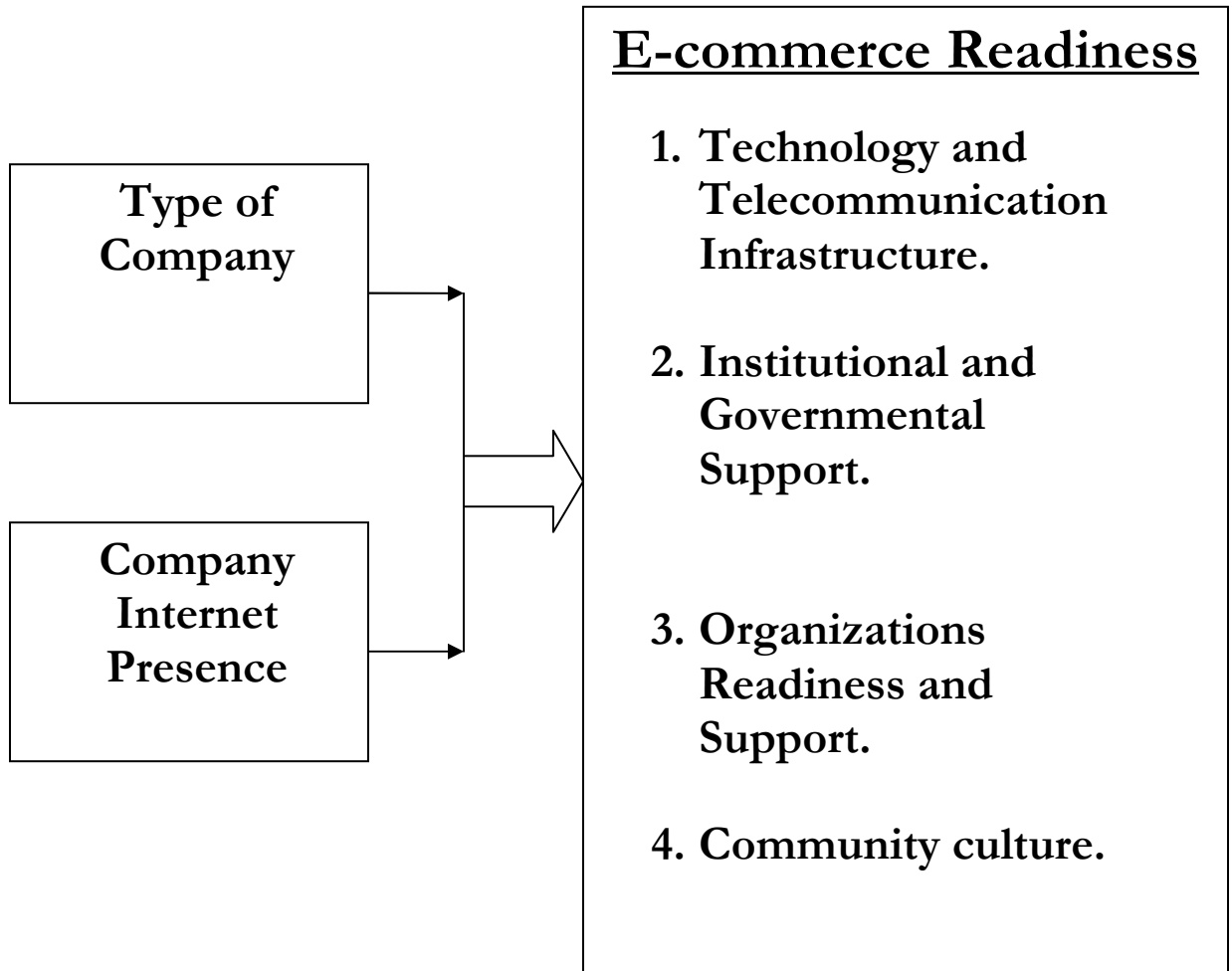
Type of Company

Company Internet Presence

Figure 3. E-commerce Readiness Relationships

First Hypothesis:
Ho: There are no adequate and efficient E-commerce requirements ((Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) in Jordan in order to reach E-commerce Readiness Stage.

Second Hypothesis:
Ho: The E-commerce readiness requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) are equal in their degree of importance (Materiality) to reach E-commerce Readiness Stage.

Third Hypothesis:
Ho: The E-commerce Readiness Stage will be the same irrespective of the Companies' Type of Business.

Fourth Hypothesis:
Ho: The E-commerce Readiness Stage will be the same irrespective of the Companies' Internet Presence.

Fifth Hypothesis:
Ho: There is no adequate and efficient Technology and Telecommunication Infrastructure in Jordan in order to reach E-commerce Readiness Stage.

Sixth Hypothesis:
Ho: There is no adequate and efficient Institutional and Governmental Support in Jordan in order to reach E-commerce Readiness Stage.

Seventh Hypothesis:
Ho: There is no adequate and efficient Organizations Readiness and Support in Jordan in order to reach E-commerce Readiness Stage.

Eighth Hypothesis:
Ho: There is no suitable and appropriate Community Culture in Jordan in order to reach E-commerce Readiness Stage.

Ninth Hypothesis:
Ho: There is no adequate and efficient Organizations Readiness and Support in terms of Internal Human Resources in Jordan in order to reach E-commerce Readiness Stage.

Tenth Hypothesis:
Ho: There is no adequate and efficient Organizations Readiness and Support in terms of Site Merchandising in Jordan in order to reach E-commerce Readiness Stage.

Eleventh Hypothesis:
Ho: There is no adequate and efficient Organizations Readiness and Support in terms of Technology in Jordan in order to reach E-commerce Readiness Stage.

Twelfth Hypothesis:
Ho: There is no significant relationship between the E-commerce requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) with each others.

Data Collection Method

Required data were collected through two main sources: primary sources and secondary sources. Data gathered from books, magazines, and previous published or no published studies of similar and related subjects, in addition to data gathered from the World Wide Web (Internet). Also the researchers made interviews with the key persons in the companies applying e-commerce in order to determine the keys for their success or the reasons for their failure and to diagnose their business ongoing and to know the applicability and future prospects of e-commerce in Jordan from their market point view.

Also, the researchers conducted an interview with a key persons in Jordan National Bank (the first internet payment gateway in Jordan with Jordan Telecommunication company) asking them about their experience and companies attitudes toward this issue and about their future plans to enhance this payment gateway.

This research used a questionnaire as a primary measurement tool; the questionnaire first aim was to collect the features of the technology and telecommunication infrastructure in the Jordanian environment from the companies point view and also whether the companies perceive it suitable or not to start e-commerce business. The second aim was to collect the features of the different institutional and governmental support that are related to e-commerce and whether the companies perceive it efficient and adequate to start e-commerce business,

the third aim was to identify and clarify the extent to which the organization is ready to adopt e-commerce effectively through the factors related to the organization such as human resources, technology, security and privacy policy, site content, and others in each organization within its study sample. The fourth aim was to determine whether Jordanian community culture encourage and aware e-commerce or not from the companies perspective.

The questionnaire also have a descriptive questions to help the researchers shape an indicator about the applicability and future prospects of e-commerce in Jordan and help the decision makers in Jordan to shape an appropriate country policy to encourage expanding into this new digital environment.

The questionnaires were distributed personally by the researchers to each company to be filled by the Website administrator of each one, most of times the researchers met the Website administrator and gave him/ her brief introduction about the research. After this step the researchers followed up this issue with the Website administrators through telephone calls or in site visits to ensure filling the questionnaire. As the last action, the researchers visited the companies those did not fill the questionnaire and asked the Website administrator for ten minutes of his/ her time to make an structured interview in order to fill the questionnaire and most of them agreed.

The questionnaire was distributed to 118

companies from all sectors as follows:

Table 1. Distributed Questionnaires

Type of Company	Number of questionnaires Distributed	Percentage (%)
Industrial	60	51%
Service and Trade	58	49%
Totals	**118**	**100%**

Some 95 questionnaires were returned as shown in table 2 below:

Table 2. Returned Questionnaires

Type of Company	Number of questionnaires Returned	Percentage (%)
Industrial	50	83%
Service and Trade	45	78%
Totals	**95**	

The number of structured interviews conducted by the researchers was (14) which consist a (15%) of the returned questionnaires and the researchers interference was at the minimal degree.

Research Methodology, Population, and sampling

This is a field study (Empirical Study) which is analytical in nature that emphasizes on understanding the relationship between all independent (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organization Readiness and Support, and Community Culture) and dependent variable (the E-commerce Readiness Stage) in order to assess the E-commerce readiness stage through out the presence of different E-commerce readiness requirements. This will be studied through the use of organization questionnaire which are the primary sources of data.

The research population consists of all Jordanian industrial, service and/or trade companies that have a registered website. According to that, the population size is (712) company (since the unit of analysis for this research are companies) according to the National Information Center (NIC) statistics published through out the following Website (www.privatesector.com.jo) as there are no other source to provide statistical data for this issue.

The researchers used Simple Random Sampling, so each element in the population has a known and equal chance of being selected as a subject. The researchers used this way of sampling because it has the least bias and offers the most generalizability. Table 3 below shows the types (Industrial, Service and/or Trade companies) of the sampled Jordanian companies that respond to the researchers' questionnaire.

Table 3. Types of sampled Jordanian companies.

Type	Frequency	Percentage %
Industrial	50	52.6 %
Service and / or Trade	45	47.4 %
Totals	95	100 %

Description of Collected Data

Table 4 below lists a number of descriptive statistics for the collected information about the e-commerce Readiness Stage in the 95 sampled Jordanian companies.

Table 4. Statistics of E-commerce Requirements.

Statistic	E-commerce Requirements				
	Tech. & Tele. Infra.	Inst. & Gov. Support	Organizations Readiness and Support	Community Culture	Requirements Average (EC Readiness Score)
Mean*	3.3663	3.4117	3.2545	2.9379	**3.2468**
Median	3.4000	3.3333	3.2308	2.9000	3.2537
Mode	3.40	3.22	3.15	2.90	3.07^a
Standard Deviation	.4762	.4512	.3838	.4327	.2650
Sample Variance	.2267	.2035	.1473	.1873	7.024E-02
Range	2.10	2.00	2.10	1.70	1.30
Minimum	2.40	2.44	2.36	2.10	2.72
Maximum	4.50	4.44	4.46	3.80	4.01
Summation	319.80	324.11	309.18	279.10	308.45

* Mean of the scale = $\sum$ *Degrees of the scale* / 5 = 1+2+3+4+5 / 5 = 3
[a.] Multiple modes exist. The smallest value is shown.

From the Table 4 shown in the previous page, it is found that the Community Culture variable average is less than the mean of the scale which indicates a deficiency in this area from sampled Jordanian companies' perspective in order to reach the e-commerce Readiness Stage in Jordan, while indicates efficiency in the other variables or areas. The

Community Culture variable mean (2.9379) indicates that the deficiency in this area is not a huge or a large one because the community culture variable mean is close to the mean of the scale (3).

Hypotheses Testing

First Hypothesis:

Table 5. Results of the First Hypothesis Test.

T calculated	T tabulated	T Sig.	Result of Ho	Mean
9.077	1.9855	0.000	**Reject**	3.2468

To test this hypothesis the **One-Sample T Test** was used, and according to the SPSS analysis it was found that the Mean (3.2468) is greater than Mean of the scale which is 3, this gives an indicator of a positive attitude from the respondents toward the e-commerce requirements in general, but to ensure of this positive attitude we have to compare T calculated with T tabulated, it is found here that T calculated = 9.077 is greater than T tabulated = 1.9855. The decision rule here is to accept the null hypothesis Ho if the calculated value is less than the tabulated value and to reject the null hypothesis Ho if

the calculated value is greater than the tabulated value.

The decision here can not determine on the Mean alone because we have to ensure that the data is not concentrated in the neutral area. Therefore the null hypothesis Ho is rejected and the alternative hypothesis Ha is accepted, because the Mean is more than 3 and the T calculated is more than T tabulated (This means that the data is not concentrated on the neutral area and there are an actual existence of the e-commerce Requirements) and T Sig. (0.000) Is less than (0.05).

This means that Jordan has adequate and efficient e-commerce requirements

(Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) in general from the sampled Jordanian companies' perspective.

The same approach of result analysis was used for fifth, sixth, seventh, eighth, ninth, tenth, and eleventh hypotheses.

Second Hypothesis:

Table 6. Results of the Second Hypothesis Test.

Table 20	Chi-Square	Asymp. Sig.	Mean	Result of Ho
Tech. & Tele. Infrastructure	49.947	0.000	0.309	Reject
Inst. & Gov. Support	13.789	0.466	0.217	
Org. Read. & Support	24.105	0.767	0.180	
Community Culture	41.579	0.000	0.292	

To test this hypothesis the **Chi-Square Test** was used, and according to the SPSS analysis it was found that the Asymp. Sig. For the Technology & Telecommunication Infrastructure Variable = 0.000 is less than 0.05, this indicates the observed distribution for this variable does not conform to the hypothesized distribution (All categories are equal). Also, it was found that the Asymp. Sig. For the Community Culture variable = 0.000 is less than 0.05, this also indicates that the observed distribution for this variable does not conform to the hypothesized distribution (All categories are equal). The decision rule here is to accept the null hypothesis Ho if the Asymp. Sig. For all variables is greater than 0.05 which it means that there are no significant differences between variables and that all of these variables conform to the hypothesized distribution (All categories are equal) and to the reject the null hypothesis otherwise. And from the means we can recognize that the most important variable from the sampled Jordanian companies' perspective to reach e-commerce Readiness Stage is the Technology and Telecommunication Infrastructure with a 31 %, then the community culture with 29%, third one is Institutional and Governmental Support with 22%, and finally the Organizations Readiness and Support with only 18%. Therefore the null hypothesis Ho is rejected and the alternative hypothesis Ha is accepted, this means that the e-commerce readiness requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) are not equal in their degree of importance (Materiality) to reach e-commerce Readiness Stage, or in other words, there are a significant differences between the e-commerce readiness requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) in their degree of importance (Materiality) to reach e-commerce Readiness Stage.

Third Hypothesis:

Table 7. Results of the Third Hypothesis Test.

95% Confidence Interval of the Difference		Levene's Sig.	T Sig.	Result of Ho
Lower	Upper			
-0.3049	-0.1045	0.098	0.000	**Reject**

To test this hypothesis the **Independent-Samples T Test** was used, and according to the SPSS analysis it was found that the significance value for the Levene test = 0.098 is greater that 0.05, so the researchers used the results that assume equal variances for both groups. The significance value for the T Test = 0.000 is less than 0.05 so it indicates that there is a significant difference between the two group means. Also, the confidence interval for the mean difference does not contain zero, this also indicates that the difference is significant. The decision rule here is to accept the null hypothesis Ho if the significance value for the T Test is greater than 0.05 and the confidence interval for the mean difference contains zero and to reject the null hypothesis otherwise. Therefore the null hypothesis Ho is rejected and the alternative hypothesis Ha is accepted. This means that the E-commerce Readiness Stage will not be the same irrespective of the Companies' Type of Business, or in other words, there are a significant differences toward reaching E-commerce Readiness Stage between Industrial and service and / or Trade companies. Also, we can determine that these differences is for the benefit of the service and / or Trade companies because their Mean (3.3546) is greater than the Mean of the Industrial companies (3.1499) and the magnitude of differences between both types of companies can be results from subtract the means of both types.

Fourth Hypothesis:

Table 8. Results of the Fourth Hypothesis Test.

F calculated	F tabulated	F Sig.	Result of Ho
12.752	2.70	0.000	**Reject**

To test this hypothesis the **One-Way ANOVA** was used, and according to the SPSS analysis it was found that the F calculated = 12.752 is greater than F tabulated = 2.70 and F Sig. = 0.000 is less than 0.05. The decision rule here is to accept the null hypothesis Ho if the calculated value is less than the tabulated value and to reject the null hypothesis Ho if the calculated value is greater than the tabulated value. Therefore the null hypothesis Ho is rejected and the alternative hypothesis Ha is accepted, this means that the E-commerce Readiness Stage will not be the same irrespective of the Companies' Internet Presence, or in other words, there are significant differences toward reaching E-commerce Readiness Stage among the different types on Internet Presence. Also, we can determine that these differences are for the benefit of the companies having E-commerce + Community Internet presence because their Mean (3.9403) is greater than the Means of the rest. The following table shows the different types of companies Internet presence and their Means that indicates their readiness to e-commerce (A higher Mean indicate a higher readiness).

Table 9. Statistics of Companies Readiness for E-commerce.

Companies Internet presence	Means[*] (Readiness)
E-commerce + Community	3.9403
E-commerce	3.4435
Advanced Website	3.3487
Basic Website to promote company	3.1598

* Mean of the scale = $\sum$ *Degrees of the scale* / 5 = 1+2+3+4+5 / 5 = 3

Fifth Hypothesis:

Table 10. Results of the Fifth Hypothesis Test.

T calculated	T tabulated	T Sig.	Result of Ho	Mean
7.498	1.9855	0.000	**Reject**	3.3663

To test this hypothesis the **One-Sample T Test** was used, and according to the SPSS analysis it was found that T calculated = 7.498 is greater than T tabulated = 1.9855 and T Sig. (0.000) is less than (0.05). This means that Jordan has adequate and efficient Technology and Telecommunication Infrastructure from the sampled Jordanian companies' perspective in order to reach E-commerce Readiness Stage.

Sixth Hypothesis:

Table 11. Results of the Sixth Hypothesis Test.

T calculated	T tabulated	T Sig.	Result of Ho	Mean
8.894	1.9855	0.000	**Reject**	3.4117

To test this hypothesis the **One-Sample T Test** was used, and according to the SPSS analysis it was found that T calculated = 8.894 is greater than T tabulated = 1.9855 and T Sig. (0.000) is less than (0.05). This means that Jordan has adequate and efficient Institutional and Governmental Support from the sampled Jordanian companies' perspective in order to reach E-commerce Readiness Stage.

Seventh Hypothesis:

Table 12. Results of the Seventh Hypothesis Test.

T calculated	T tabulated	T Sig.	Result of Ho	Mean
6.464	1.9855	0.000	**Reject**	3.2545

To test this hypothesis the **One-Sample T Test** was used, and according to the SPSS analysis it was found that T calculated = 6.464 is greater than T tabulated = 1.9855 and T Sig. (0.000) Is less than (0.05). This means that Jordan has adequate and efficient Organization Readiness and Support in general from the sampled Jordanian companies' perspective in order to reach E-commerce Readiness Stage.

Eighth Hypothesis:

Table 13. Results of the Eighth Hypothesis Test.

T calculated	T tabulated	T Sig.	Result of Ho	Mean
-1.399	1.9855	0.165	**Accept**	2.9379

To test this hypothesis the **One-Sample T Test** was used, and according to the SPSS analysis it was found that T calculated = -1.399 is lower than T tabulated = 1.9855 and T Sig. (0.165) is higher than (0.05). This means that there is no suitable and appropriate Community Culture in Jordan from the sampled Jordanian companies' perspective in order to reach E-commerce Readiness Stage.

Ninth Hypothesis:

Table 14. Results of the Ninth Hypothesis Test.

T calculated	T tabulated	T Sig.	Result of Ho	Mean
5.517	1.9855	0.000	**Reject**	3.3461

To test this hypothesis the **One-Sample T Test** was used, and according to the SPSS analysis it was found that T calculated = 5.517 is greater than T tabulated = 1.9855 and T Sig. (0.000) Is less than (0.05). This means that Jordan has adequate and efficient Organization Readiness and Support in terms of Internal Human Resources from the sampled Jordanian companies' perspective in order to reach E-commerce Readiness Stage.

Tenth Hypothesis:

Table 15. Results of the Tenth Hypothesis Test.

T calculated	T tabulated	T Sig.	Result of Ho	Mean
10.648	1.9855	0.000	**Reject**	3.3967

To test this hypothesis the **One-Sample T Test** was used, and according to the SPSS analysis it was found that T calculated = 10.648 is greater than T tabulated = 1.9855 and T Sig. (0.000) Is less than (0.05). This means that Jordan has adequate and efficient Organization Readiness and Support in terms of Sites Merchandising from the sampled Jordanian companies' perspective in order to reach E-commerce Readiness Stage.

Eleventh Hypothesis:

Table 16. Results of the Eleventh Hypothesis Test.

T calculated	T tabulated	T Sig.	Result of Ho	Mean
1.589	1.9855	0.115	**Accept**	3.1088

To test this hypothesis the **One-Sample T Test** was used, and according to the SPSS analysis it was found that T calculated = 1.589 is lower than T tabulated = 1.9855 and T Sig. (0.115) is higher than (0.05). This means that there is no adequate and efficient Organizations Readiness and Support in terms of Technology from the sampled Jordanian companies' perspective in Jordan in order to reach E-commerce Readiness Stage.

Twelfth Hypothesis:

Table 17. Results of the Twelfth Hypothesis Test.

Correlations

		MEANTI	MEANIG	MEANORS	MEANCC
MEANTI	Pearson Correlation	1.000	.026	-.072	.214*
	Sig. (2-tailed)	.	.805	.486	.037
	N	95	95	95	95
MEANIG	Pearson Correlation	.026	1.000	-.166	.445**
	Sig. (2-tailed)	.805	.	.108	.000
	N	95	95	95	95
MEANORS	Pearson Correlation	-.072	-.166	1.000	.311**
	Sig. (2-tailed)	.486	.108	.	.002
	N	95	95	95	95
MEANCC	Pearson Correlation	.214*	.445**	.311**	1.000
	Sig. (2-tailed)	.037	.000	.002	.
	N	95	95	95	95

*· Correlation is significant at the 0.05 level (2-tailed).

**· Correlation is significant at the 0.01 level (2-tailed).

To test this hypothesis the **Bivariate Correlations (Pearson)** was used, and according to the SPSS analysis it was found that the highest absolute Pearson correlation coefficient = 0.445 and it is between the community culture variable and the Institutional and Governmental Support variable, this number (0.445) is not close to 1 or -1 as well as the others Pearson correlation coefficients shown in table 28 (Correlation Matrix) so it indicates that there is a weak positive correlation between community culture variable and the Institutional and Governmental Support variable. So we can recognize that all these positive or negative correlations represented by the Pearson correlation coefficients are weak. The decision rule here is depending on the result of the following formula; if the result is less than 5 so the null hypothesis Ho will be accepted and if the result is more than 5 the null hypothesis Ho will be rejected. The formula is as the following:

$$VIF = 1 / 1 - r^2$$
$$VIF = 1 / 1 - (O.445)^2$$
$$VIF = 1 / 0.801975$$

$$\boxed{VIF = 1.247}$$

Since (1.247) is less than (5.00) the null hypothesis Ho will be **accepted.** This means that there is no multicolleniarity or there is no significant relationship between the e-commerce requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) with each others and that they are separated variables from each others.

Discussion

Several limitations should be emphasized to avoid any possible mislead conclusions, as there were no statistical reports showing the number of Jordanian companies having a registered web site to be used as a reference for the researchers in order to determine the population and sample size of the research. Therefore the researchers used the data provided by the National Information Center (NIC) through the web site (www.privatesectors.com.jo) as a reference for determining the population and sample size of the research as there is no other reference available.

Furthermore, the number of studied websites was as accurate as possible because, companies can register a domain name in advance without having a web site, therefore the researchers found no way to exclude those companies from the population size. Also, some companies' web sites were under construction so they were included in determining population size as there was no way to exclude them.

On the other hand, some companies were reluctant to conduct the study and they gave excuses such as that they don't have time or that they are not interested and others said that the management strategy is against showing any data related to the company. Finally, Lack of prior similar studies especially those applied to Jordanian companies has made the comparison between this research and others practically impossible.

Conclusion

Our research revealed that Jordan has adequate and efficient e-commerce requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organizations Readiness and Support, and Community Culture) in general, but there is no suitable and appropriate Community Culture Jordan in order to reach E-commerce Readiness Stage.

Furthermore, The Jordanian companies application of an e-commerce business is small, we can consider it as an individual tries; the number of those pioneers in Jordanian environment does not exceed 20.

Finally, the researchers believe that two scenarios could lead to widely spreading and adopting of e-commerce by Jordanian companies. The first one is that private sector will take the lead and will be the initiative then the government to follow, the second scenario that the researchers believe it's more closest to occur is that the government will be the initiative and it will take the lead by e-government project that will be achieved in 2007 and then the private sector to follow.

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<u>Annexes</u>

Annex1

Questionnaire No. ☐

Date: / /

University of Jordan

Organizations Questionnaire

Title of the study: The Current State of E-Commerce In Jordan: Applicability and Future Prospects. "An Empirical Study"

If u prefer to have a copy of the study please check ☐

<u>General information about the company</u>:

Company Name _____

Address _____

Tel. _____

Date of establishment _____

A1. Please tick one of the choices describing the company type of business mode:

☐Industrial Company   ☐Service and/ or Trade Company

☐Other (please specify) _____

*Note: *All data in this questionnaire are confidential and for statistical purpose, kindly note that will not be used for any other purpose, and in accordance with the law of the Department of Statistics number 24 year 1950 and its modifications.*

The Researchers
Dr. Rifat O. Shannak
Eng. Mu'taz Al-Debei

Section One - Company Assessment and Opportunity

It is important to assess the potential of the company's products and services in respect of Internet characteristics and customer profiles.

1. Our current Internet presence would best be described as (either third or fourth choice are ticked, please go to question 2, else go to question 4)
❑ Basic website to promote company (Static Website)
❑ Advanced website and no e-commerce (Dynamic, Based on Database)
❑ E-commerce
❑ E-commerce + community (e.g. chat rooms, auctions)

2. Our type of business mode is
❑ Business-to-Consumer (B2C)
❑ Business-to-Business (B2B)
❑ Other (Please specify) _____

3. Our sales through e-commerce business are taxable from government
❑ Yes
❑ No

4. From your perspective, what are the reasons behind not widely adoption of E-commerce in Jordan and to what extent?

The following scale of 5 choices indicates the degree of preference for the particular question.

Choices	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Security Issues (Not Secured Business) / Fraud					
Inefficient Jordan telecommunication infrastructure					
Our community is not aware enough about E-commerce					
Not sure of E-commerce benefits					
Lack of information about the requirements					
Inability to make and receive payments					
Organization strategy against E-commerce					
Lack of qualified personnel within the organization					
The high price offered by Jordanian Internet Service Providers (ISP's)					
Lack of regulatory and legislative bodies					
The high cost for implementing E-commerce					
Lack of internet accessibility in Jordan					

5. Categories we sell include: (check all that apply)
❑ Commodity Products (Books, CD's, Magazines, Newsletters, Products with brand name)
❑ Look & Feel Products (Food, Clothes, Sweets, Furniture, Products without brand name)
❑ Service

6. Our Online strategy will be defined in:
❑ Its already defined
❑ Next 6 months
❑ 6 months-1 year
❑ Next 2 years
❑ Unsure of the time frame, but in more than 2 years

7. We have a team already in place to execute our E-commerce strategy

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. Senior management believes pursuing an E-commerce initiative will have a large impact on our existing business

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. We believe our customers
❑ Shop offline (physical retailers) and online
❑ Offline (physical retailers) shop only
❑ Online shop only
❑ Shop multiple channels based on convenience and need
❑ Unsure

10. Current daily activity on our site is

Number	Visitors	Shoppers
1-50		
51-100		
101-500		
501-1000		
1000+		

Section Two - Strategy: Internal Human Resources

It is important to consider who is best suited to implement an Internet initiative – factoring in existing personnel from both the marketing and technical perspectives while considering where external resources may add value.

The following scale of 5 choices indicates the degree of preference for the particular question.

1. We will handle the E-commerce project without much outside experts collaboration

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. We will need an extensive outside expert collaboration in our E-commerce Project

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. We already have an adequate and qualified staff to run this new E-commerce business internally

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. We need to recruit new people to run this new E-commerce business

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. Our employees (Marketing, Technical) already qualified to what E-commerce business required

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. We have the intention to give the employees (Marketing, Technical) the training required for E-commerce if needed

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Section Three - Site Merchandising

Merchandising is one of the key ingredients for the success of any website. An exploration of features and functionality will enable companies to understand the complexity and costs that may be associated with e-business undertakings.

1. Please check any features that are currently offered on the site. And if it's not offered please check when the company planned to offer it.

Feature	Currently on site or planned for launch	From 1 to 6 months	From 6 months to one year	More than one year	We will not offer now or in the following five years.
User Feedback tools (email)					
Site search engine					
Privacy Statement					
Secure payments facility					
Chat rooms, newsletters					
Product reviews and photos / Services offered					
Company telephone, fax, email, address, etc.					
Links from trusted Website					
Multimedia (e.g. Video, Audio, Animation)					
Arabic language					
English Language					
Instructions /Tips					
Catalog request					
Auctions					
Incentive Programs (such as monthly random gift for one of the Website users)					

Section Four – Technology

It is important to guarantee that your site is flexible, scaleable and modular so that as technology evolves you are in a position to evolve accordingly. For traditional companies, an understanding of your existing technology infrastructure is important prior to determining integration or new system development.

The following scale of 5 choices indicates the degree of preference for the particular question.

1. Our systems (order fulfillment, accounting, and supply) already have the capacity to fully back up our E-commerce efforts

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. We need to add the capacity and systems to handle e-commerce
❑ Yes
❑ Yes, but all what we need is a little extent
❑ No, because there is no need
❑ No, although there is a need
❑ Unsure

3. Existing systems can accommodate e-commerce

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. Please check which systems requires changes to be able to accommodate e-commerce (check all that apply)
❑ Customer profiling (Customer Relationship Management "CRM")
❑ Database
❑ Graphic
❑ Accounting
❑ Customer service

5. Requirements for upgrade will include Total system overhaul or Build to suit E-commerce

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. Requirements for upgrade will include Comprehensive integration with existing systems without making total system overhaul

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. IT Department can do the required upgrades without much external specialist collaboration

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. Our Web site is scaleable to accommodate increases in sales and traffic

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. Communication methods we use
- Dial-up
- Leased-line
- ISDN
- ADSL
- Fiber Optics

10. We will develop tracking system (if we implemented an E-commerce solution) so the customer can track his/her order electronically through our web site

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Section Five- Payment

Flexibility and multi-ways for payments will be useful for E-commerce business.

1. We will offer the use of (check all that apply)
- Credit cards
- Internet cards
- Purchase cards
- Coupons
- Payment on delivery
- Letter of Credit (L/C)

2. Who will process your online payments?
- Internally
- Third party
- Unsure at this point

Section Six – Miscellaneous

The following scale of 5 choices indicates the degree of preference for the particular question.

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.We believe that our community is aware enough about E-commerce					
2.We believe that our community has an acceptable access to internet from different locations					
3.We believe that Jordanian banks and financial institutions can help us in our E-commerce (E-Payment, E-Loans).					
4.We believe that the Jordanian Government are taking steps to encourage E-commerce					
5.We believe that Jordan has an adequate and an efficient telecommunication infrastructure to run E-commerce					
6.We believe that Jordanian telecommunication companies and Internet service providers have acceptable prices offered for the services					
7.We believe that Jordan has an adequate number of IT vendors that can provide us with needed hardware and software					
8.We believe that Jordan has an adequate IT training centers to help us knowing how to run our E-commerce business					
9.We believe that transportation companies such as FedEx, Aramex, DHL have the required capabilities and can help us in our E-commerce business					
10.We believe that the National Information Center helps us in our e-commerce business through offering web sites registration locally					

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11. We believe that connection speed supported by Jordanian telecommunication companies is suited to what e-commerce requires					
12. We believe that the number of Internet connection failure is small when using services offered by Jordanian telecommunication companies					
13. We believe that the possibility of not being able to access the company web site is rare when using services offered by Jordanian telecommunication companies					
14. We believe that our community perceive that E-commerce business is very useful for them					
15. We believe that our community have the ability to shop online					
16. We believe that the temporary E-commerce law encourage companies to think about starting E-commerce business					
17. We believe that Jordanian telecommunication companies and Internet service providers trying to offer a secured services over the internet as possible					
18. We believe that our community have the know-how of internet usage					
19. We believe that our community perceive that internet allow them to shop multiple channels and markets with little effort					
20. We believe that our community access the internet in a high rate					
21. We believe that we need to price our products or services on the site less than in our physical places					

Section Seven

This section used to determine the degree of importance for each one of the E-commerce requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organization Readiness and Support, and Community Culture) for reaching E-commerce Readiness Stage.

1. From your perspective, please insert in the following table the percentages that indicate the degree of importance (Materiality) for each one of the E-commerce requirements for reaching E-commerce readiness stage.

E-commerce Requirements	Percentage
1. **_Technology and Telecommunication Infrastructure_** in terms of types of cabling and transmission, speed, internet service providers' services and prices, security, and reliability.	
2. **_Institutional and Governmental Support_** _in_ terms of banks and financial institutions, regulatory and legislative bodies, information technology vendors, education establishment, national information center, and logistics and transportation services.	
3. **_Organization Readiness and Support_** in terms of company awareness about E-commerce benefits, information about E-commerce requirements , organization strategy, personnel within the organization, senior management commitment and support, site merchandising (functionality and features), ability to make and receive payments, and flexibility and the scalability of the company technology infrastructure.	
4. **_Community Culture_** in terms of public awareness of E-commerce, public perception of E-commerce benefits, and accessibility to internet.	
Total Score	**100%**

Annex2

Operational Definitions

Independent Variables

1- Technology & Telecommunication Infrastructure

Technology & Telecommunication infrastructure will be measured through some questions in the Organizations Questionnaire (See table 1, pp. 46-47) that covers the following aspects:

1- Types of cabling and transmission
2- Bandwidth and Speed
3- Internet service providers (ISP's) services and prices
4- Network backbone, servers
5- Wireless application protocol (WAP)
6- Quality of service, Reliability
7- Security / Fraud

2- Institutional and Governmental Support

Institutional and governmental support can be branches out into:

☑ <u>Banks and financial institutions</u>
It can be measured through the following:
1- Credit cards transactions and E-Payments
2- Incubators/ venture capitalist

☑ <u>Regulatory and legislative bodies</u>
It can be measured through the following:
1- Intellectual properties protection
2- Control of frauds, misuse
3- E-commerce law
4- Tax
☑ <u>Information technology vendors</u>
It can be measured through the following:
5- Hardware and software retailers
6- Customized services
7- Consulting, installation and maintenance
☑ <u>Education establishment</u>
It can be measured through the following:
1- Universities, college
2- Training centers
☑ <u>Logistics and Transportation Services</u>
☑ National Information Center (NIC)

The institutional and governmental support variable will be measured and covered through some questions in the <u>Organizations Questionnaire.</u> (See table 1, pp. 46-47).

3- **Organization Readiness and Support**

Organization readiness and support can be branches out and measured through the following:
1- Company awareness about e-commerce benefits
2- Information about e-commerce requirements
3- Organization strategy
4- Personnel within the organization
5- Senior management commitment and support
6- Site merchandising (Functionality and Features)
7- Flexibility and scalability of the company technology infrastructure
8- Ability to make and receive payments

The Organizational readiness and support variable will be measured and covered through <u>Organizations Questionnaire.</u> (See table 1, pp. 46-47).

4- **Community Culture**

Community culture will be measured through the following:
1- Public awareness of e-commerce
2- Public perception of e-commerce benefits
3- Accessibility to internet

The community Culture variable will be measured and covered through some questions in the <u>Organizations Questionnaire.</u> (See table 1, pp. 46-47).

Dependent Variable

This will be measured through determining the extent to which the e-commerce readiness requirements (Technology and Telecommunication Infrastructure, Institutional and Governmental Support, Organization Readiness and Support, and Community Culture) are exist. Both requirements inside Jordanian organizations and other related requirements in the external environment of the organizations (Independent Variables). This variable will be measured through all questions used to measure each of the e-commerce readiness requirements.

Annex4

Questionnaire Reference Summary

The following table demonstrates the model variables and the questions used to measure these variables:

Table 1. Questionnaire Reference Summary.

Variables and other issues to be measured	Factors within variable	Measurement tool	Questions in Organization Questionnaire
Technology & Telecommunication Infrastructure		Organizations Questionnaire.	Section One (S1): Q4.1, Q4.2, Q4.9, and Q4.11. (S6): Q5, Q6, Q11, Q12, Q13 and Q17.
Institutional and Governmental Support		Organizations Questionnaire.	(S1): Q4.6, and Q4.10. (S6): Q3, Q4, Q7, Q8, Q9, Q10, and Q16.
Organization Readiness and Support		Organizations Questionnaire.	(S1): Q4.4, Q4.5, Q4.6, Q4.7, Q4.8, Q6, Q7, and Q8. (S2): Q1-Q6. (S3): Q1.1 – Q1.15. (S4), Q1, Q2, Q3, Q5, Q6, Q7, Q8, Q9, and Q10. (S6): Q21.
	Internal Human Resources	Organizations Questionnaire.	(S1): Q4.8, and Q7. (S2): Q1 - Q6.
	Site Merchandising	Organizations Questionnaire.	(S3): Q1.1 – Q1.15. (S6): Q21.
	Technology	Organizations Questionnaire.	(S4), Q1, Q2, Q3, Q5, Q6, Q7, Q8, Q9, and Q10.

Variables and other issues to be measured	Factors within variable	Measurement tool	Questions in Organization Questionnaire
Community Culture		Organizations Questionnaire.	(S1): Q4.3, Q4.12, and Q9. (S6): Q1, Q2, Q14, Q15, Q18, Q19, and Q20.
Variables and other issues to be measured	**Factors within variable**	**Measurement tool**	**Questions in Organization Questionnaire**
Type of Company		Organizations Questionnaire.	Front Page: A1
Company Internet Presence		Organizations Questionnaire.	(S1): Q1
Degree of Importance for each of the e-commerce Readiness Requirements		Organizations Questionnaire.	(S7): Q1.
Other questions helps in shaping a composite e-commerce indicator		Organizations Questionnaire.	(S1): Q1, Q2, Q3, Q5 and Q6. (S4): Q4, and Q9. (S5): Q1, and Q2.