E-Business Barriers in Iran's Free Trade Zones
Mohammad Ali Sarlak, Asghar Abolhasani Hastiani
Payame Noor University, Iran

Abstract: Currently there are 24 free trade and special economic zones in Iran. Problem Statement: of these zones is lack of e-business and this is in spite of managements’ desire to have proper infrastructure for e-business in these zones. The goal of this study is to determine and explain e-business barriers in free trade and special economic zones in Iran. Approach: Our approach in this study is based-on Delphi method. We used Delphi method to conduct our study and chose 25 members for our Delphi panel, who were given the outcomes of literature review. We asked the panel group to rank the barriers by importance and provide any other problems or issues they found during their studies. Results: The result of four rounds of Delphi panels declared five main barriers for implementing e-business in the regions including: Infrastructural barriers, Property rights issues, Mistrust in E-payments, financial barriers and Shortage of IT skills. Conclusions/Recommendations: We concluded that to implement e-business in the Iranian free zones and special economical districts, there are some infrastructure requirements such as high speed internet, wide internet band, proper laws and regulations; so that small and medium size enterprises (SMEs) could utilize e-business.

Key words: E-business, E-commerce, free trade zones, special economic zones, Delphi method

INTRODUCTION

At the present time, most countries with similar goals have acted to establish free trade and special economic zones. Islamic republic of Iran too, understanding the importance of establishment of free trade zones has initiated remarkable efforts in providing the necessary infrastructures for the activities relating to free trade zones. The results of these efforts, up to the time of writing this essay had been designing of 6 free trade zones and 20 special economic zones in Iran (Table 1).

The nature of free zone and special economic zones are almost the same. The only difference is that retail trade is allowed in the free zones and it is not allowed in the special economic zone. Special economic zones are also for more of a larger activity for trade and industry A key challenge that has arisen within Iran’s Free trade and special economic zones is encouraging Small and Medium sized Enterprises (SMEs) to adopt more advanced E-business applications and for these to integrate better with business processes and applications. With the emergence of Internet, companies are facing new challenges such as intensive global competition, more demanding customers, rapidly shrinking product Life cycles and short response time. As a result, companies are racing against time to achieve the competitive advantage by offering a wider range customer of product and service portfolio.

MATERIALS AND METHODS

Definition of E-business: E-business can be described as the new business logic that operates in a world without boundaries. It refers to a broader definition of Electronic Commerce, not just buying and selling but also servicing customers, providing an integrated business environment and offering added value services[1].

E-Business, as an area of research, is still evolving with many researchers disagreeing to the Benefits or boundaries. Many benefits from the utilization of e-commerce for SMEs are suggested[2]. Figure 1 explains Categories of E-business.

There is an extensive literature that discusses the potential benefits of E-business[3,4,5]. However, organizations need to consider a range of challenges presented by E-business adoption[6]. It is observed that most of the E-business studies are largely based upon the experience of E-business implementation in the developed countries[7].

The current research tries to identify the key barriers to adoption E-business in Iran’s free trade and special economic zones using Delphi Method.

Delphi method: Delphi method is a group decision-making process that involves circulating questionnaires on a specific problem until a consensus regarding the problem is reached[8]. In current research 25 experts were selected as Delphi panel members.
Table 1: Iran’s free trade and special economic zones

| Iran’s free Zones         | Type                               | Websites                                      |
|---------------------------|------------------------------------|----------------------------------------------|
| Kish                      | Free Trade Zone                    | www.kishfreezone.org                         |
| Qeshm                     | Free Trade Zone                    | www.qeshm.ir                                 |
| Chahabar Free Zone        | Free Trade Zone                    | (www.chabaharfz.com)                        |
| Anzali Free Zone          | Free Trade Zone                    | http://www.iftiz.org.ir                      |
| Aras Free Zone            | Free Trade Zone                    | www.jolfa.org                               |
| Arvand Free Zone          | Free Trade Zone                    | www.arvandfreezone.ir                       |
| Sirjan                    | Special Economic Zone              | www.kdo.ir info@kdo.ir                      |
| Sarakhs                   | Special Economic Zone              | Astan-e Ghods Razavi                         |
| Payam                     | Special Economic Zone              | www.payamaviation.ir                         |
| Khuzistan                 | Special Economic Zone              | http://www.iftiz.org.ir                      |
| Salafchegan               | Special Economic Zone              | www.pasez.com                                |
| Khorrumshahr              | Special Economic Zone              | www.khorramshahrport.com                     |
| Persian gulf ship building| Special Economic Zone              | Persian Gulf Ship Building S.E.Z             |
| Arg-E-jadid               | Special Economic Zone              | www.arg-jadid.com                            |
| Petrochemical             | Special Economic Zone              | www.mpjc.com                                 |
| Bandar bushehr            | Special Economic Zone              | www.pso-bushehr.ir                           |
| Bushehr                   | Special Economic Zone              | www.bsez.ir                                  |
| Bandar amirabad behshahr  | Special Economic Zone              | http://www.iftiz.org.ir                      |
| Bandar shahid raja/ee     | Special Economic Zone              | www.shahidrajaeeport.ir                     |
| Mines and metals          | Special Economic Zone              | Mines and Metals S.E.Z                       |
| Pars                      | Special Economic Zone              | Mines and Metals S.E.Z                       |
| Sang-e-foresan            | Special Economic Zone              | http://www.iftiz.org.ir                      |
| Shiraz electric and electronics | Special Economic Zone          | www.seez.ir                                  |
| Yazd textile industries   | Special Economic Zone              | www.yazdiec.ir                               |

Fig. 1: Categories of E-business

Fig. 2: Research methodology

Research methodology: The present research methodology is shown in Fig. 2.

Research problem: What are the key barriers to adoption E-business in Iran’s Free trade and special economic zones.

Literature review: Table 2 The results of literature review on barriers of E-business adoption is shown[9].

The first round results: In the first round of Delphi method, 24 experts from 25 members of panel did participate. In first round, the ideas of panelist about importance of E-business old barriers that mentioned in pervious studies and as well E-business new barriers that not mentioned in pervious studies were collected. In Table 3, the panelist ideas regarding importance of barriers to adoption E-business Based on pervious studies after classifying is shown the panelist’s new ideas regarding the barriers of E-business adoption are as follow: Structural barriers, Financial barriers, Infrastructural barriers, Behavioral barriers, Experimental barriers, Environmental barriers, bureaucratic barriers, Technological barriers, Employee attitudes, Political barriers, Short term goals, No credit cards, Cultural barriers, Economical barriers, Managerial barriers.

The second round results: In the second round, 23 experts from 25 members of panel did participate. In Table 4, the panelist’s new ideas regarding importance of E-business barriers in Iran’s free trade and special economic zones is shown.

The Third Round Results: In round three, 22 experts from 25 members of panel did participate. In the first part of the questionnaire of the third round of Delphi
Table 2: The results of literature review on barriers of E-business adoption

| Barriers                  | B2B | B2C | C2C | G2B | G2G | G2C |
|---------------------------|-----|-----|-----|-----|-----|-----|
| Cross border legal issues | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Cultural differences      | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Lack of Payment           | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Cost of telecommunications | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Currency risks            | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Feasibility hard to justify | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Lack of resources         | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| TCO too high              | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| IT illiteracy among decision maker | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Shortage of IT skills     | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Unable to recognize benefits of e-business | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Intellectual Property rights | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Mistrust of electronic payments | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| High illiteracy rate      | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Digital divide            | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Local Customer base too small | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Low credit card culture   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |
| Warranty issues           | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |

Table 3: First round results: panelist ideas regarding importance E-business barriers

| Description                  | No. of Answers | Average of answers | Order of importance |
|------------------------------|----------------|--------------------|--------------------|
| Shortage of IT skills        | 24             | 4.88               | 1                  |
| Intellectual Property rights | 24             | 4.58               | 2                  |
| Mistrust of electronic payments | 23             | 4.11               | 3                  |
| Language                     | 24             | 3.90               | 4                  |
| Currency risks               | 23             | 3.83               | 5                  |
| Feasibility hard to justify  | 23             | 3.78               | 6                  |
| Lack of resources            | 23             | 3.78               | 7                  |
| Cultural differences         | 22             | 3.77               | 8                  |
| Unable to recognize benefits of e-business | 23             | 3.74               | 9                  |
| Lack of Payment vehicles e.g. Paypal | 24             | 3.21               | 10                 |
| Cost of telecommunications    | 21             | 2.52               | 11                 |
| Low credit card culture      | 21             | 2.43               | 12                 |

Table 4: Second round results

| Description                  | No. of answers | Average of answers | Standard deviation | Order of importance |
|------------------------------|----------------|--------------------|--------------------|--------------------|
| Structural barriers          | 23             | 3.43               | 0.73               | 1                  |
| Financial barriers           | 22             | 4.23               | 0.92               | 3                  |
| Infrastructural barriers     | 23             | 4.17               | 0.65               | 5                  |
| Behavioral barriers          | 23             | 3.96               | 0.71               | 10                 |
| Experimental barriers        | 23             | 3.91               | 1.20               | 11                 |
| Environmental barriers       | 23             | 3.87               | 0.92               | 12                 |
| Bureaucratic barriers        | 23             | 3.87               | 0.97               | 13                 |
| Technological barriers       | 23             | 3.74               | 0.81               | 14                 |
| Employee attitudes           | 22             | 3.73               | 0.88               | 15                 |
| Political barriers           | 22             | 3.64               | 0.95               | 16                 |
| Short term goals             | 23             | 3.52               | 0.95               | 17                 |
| No credit cards              | 21             | 3.48               | 1.03               | 18                 |
| Cultural barriers            | 22             | 3.32               | 0.78               | 19                 |
| Economical barriers          | 23             | 2.96               | 0.77               | 20                 |
| Managerial barriers          | 21             | 2.90               | 1.04               | 21                 |

Table 5: Third round results

| Description                  | No. of answers | Average of answers | Standard deviation | Order of importance |
|------------------------------|----------------|--------------------|--------------------|--------------------|
| Structural barriers          | 22             | 4.86               | 0.35               | 1                  |
| Intellectual Property rights | 22             | 4.69               | 0.48               | 2                  |
| Mistrust of e-payments       | 21             | 4.50               | 0.91               | 3                  |
| Financial barriers           | 22             | 4.23               | 0.69               | 4                  |
| Infrastructural barriers     | 22             | 4.18               | 0.66               | 5                  |

Table 6: Fourth round results

| Description                  | No. of answers | Average of answers | S.D of answers | Order of importance |
|------------------------------|----------------|--------------------|----------------|--------------------|
| Structural barriers          | 20             | 4.88               | 0.32            | 1                  |
| Intellectual Property rights | 20             | 4.65               | 0.50            | 2                  |
| Mistrust of E-Payments       | 19             | 4.62               | 0.84            | 3                  |
| Financial barriers           | 20             | 4.26               | 0.73            | 4                  |
| Shortage of IT skills        | 20             | 4.20               | 0.60            | 5                  |

method, ensemble of factors were introduced which participants in the first and the second rounds did recognize those as a key barriers of E-business adoption in Iran’s Free trade and special economic zones. Only those responses receiving a median score of 4 or higher remained for the third round[10]. In Table 5 the results of third round is shown.

In this round, Kendal’s Coefficient of Concordance is 0.711.

The fourth round results: In fourth round of Delphi method, only 20 experts from 25 members of panel did participate.

In Table 6 the results of fourth round is shown. The brief results of Delphi fourth round are shown in Table 6. In fourth round, Kendal’s Coefficient of Concordance is 0.734, compared to the third round coefficient (0.711) was increased up to 2.3%.
RESULTS AND DISCUSSION

The results of four rounds of Delphi shown that according to the following reasons, consensus amongst the panel members was obtained and can terminate the repetition of rounds:

- According to Table 7, More than 50 Percentage of members have determined the arrangement of factors like the arrangement of group
- According to the Table 7, the standard deviation of panelist answers regarding the importance of barriers has decreased from 0.666 in the first and second round to 0.598 in the fourth round
- The Kendal’s Coefficient of Concordance for the panelist answers regarding the arrangement and importance of barriers to E-business adoption in the fourth round is 0.734. With attention to the number of panelist, which is more than 10 people, this level of Kendal’s Coefficient is significantly meaningful [11]. The Kendal’s Coefficient of Concordance for the arrangement of success factors in the fourth round (0.734) in comparison to the third round (0.711) is just 0. increased up to 0.23

CONCLUSION

E-business has significantly transformed the way in which firms conduct business, allowing them to gain more business opportunities and competitive advantage. However, results from the study revealed a lack of or slow uptake of E-business strategy among the SMEs in Iran’s free trade and special economic zones. Among the different variables studied, Infrastructural barriers, Property rights issues, Mistrust in E-payments, Financial barriers and Shortage of IT skills were reported to have significant influence in the context of e-business development among the SMEs in these zones. It was found that infrastructural barriers played a key role in explaining non-adoption of e-business by firms. The study can have an implication for free zones and government authorities engaged in promoting e-business development. Given the unique context of SMEs, such an understanding could be useful for government in drawing guidelines, approaches, and developing more practical and effective framework to promote SME-e-business development.

REFERENCES

1. Turban, E., J. Lee, D. King, M.H. Chung, 2006, Electronic Commerce: A Managerial Perspective, 4th Edn., Prentice-Hall, Upper Saddle River Hall, NJ, ISBN: 0131976672.
2. Currie, W., 2000. The Global Information Society, Wiley, New York, pp: 270. ISBN: 0-471-89507-5.
3. De Ruyter, K., M. Wetzels and M. Kleijnen, 2001. Customer adoption of e-services: An Experimental Study. Int. J. Service Industry Manage., 12:184-207. http://www.emeraldinsight.com/Insight/viewCon tainer.do?containerType=Journal&containerId=10861
4. Gefen, D., 2003. Managing user trust in B2C E-Services. E-Service J., 2: 7-24. http://www.e-sj.org/JouConVol22.html
5. Huang, et al., 2004. An E-readiness assessment framework and two field studies. Communicat. Associat. Informat. Sys., 14: 364-386. http://web.njit.edu/~bieber/CIS677F04/huang-cais2004.pdf
6. Keoy, K.H. et al., 2006. An empirical study of the key drivers and inhibitors towards E-business adoption: A multi-country comparison. IADIS Int. J. WWW/Internet, 5: 113-128. http://www.iadis.org/ijwi/files/vol5_issue1/2007510108.pdf.
7. Linston, Harold A. and Murray Turoff, 1975. Introduction to the Delphi Method. In: Techniques and Applications, Harold A.L. and M. Turoff, (Eds.). Addison-Wesley, London, pp: 3-13.
8. Richard, L. Daft., 2006. The New Area of Management, second edition. Thomson-South, Western. USA., ISBN-13:978-0-324-53777-2
9. Bharadwaj, Prashanth Nagendra and Soni, Ramesh G., 2007. E-Commerce Usage and Perception of E-Commerce Issues among Small Firms: Results and Implications from an Empirical Study. J. Small Business Manage., 45: 501-521. DOI: 10.1111/j.1540-627X.2007.00225.x.
10. Stansfield, M. and Grant, K. 2003. An investigation into issues influencing the use of the Internet and E-commerce among small-medium sized enterprises. J. Electr. Commerce Res., 4: 15-33. http://www.csulb.edu/journals/jecr/p_i.htm
11. Schmidt, Roy C., 1997. Managing Delphi surveys using nonparametric statistical techniques. Decision Sci., 28: 763-773. DOI: 10.1111/j.1540-5915.1997.tb01330.x