

## **Readiness Assessment of Iran's Insurance Industry for E-Commerce and E-Insurance Success**

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### **Abstract**

This paper attempts to develop a method for readiness assessment of potential electronic commerce (e-commerce) success of Iran's insurance industry. This method can expand in other industries. Key factors impacting e-commerce are identified from Wells, D. and Thomann, j. (2006) researches. This model is a two-dimension 3\*4 matrix. Each dimension consists of variables that influence on insurance industries readiness. These variables on horizontal dimension are: People Readiness, IT Readiness, and Business Readiness and on vertical dimension are: Business Imperative, Executive Sponsorship, Development Method and Business Process Orientation. Each cells of this matrix evaluated by 5 questions. This research's data are collected via a 60-questions questionnaire-based survey from Iranian insurance companies. At the end of the research, the Iranian insurance companies were strongly recommended by us to invest on e-commerce and e-insurance area.

**Keywords:** Electronic Commerce, Internet, Insurance, Electronic Insurance.

### **Introduction**

In 2006, insurance companies worldwide wrote \$2,444 billion in direct premiums. In other words, the equivalent of 7.8 percent of global gross domestic product (GDP) was used to purchase insurance products (SIGMA, 2001). During the same year, insurance companies in Islamic Republic of Iran generated premiums worth \$4.5 billion representing 4.3 percent of gross domestic product (GDP).

### ***Perceived Strategic Value of E-Commerce***

Many studies have focused on the relationship between e-commerce investment and firm's performance in large corporations. For example, Hitt and Brynjolfsson (1996) investigated how e-commerce affects productivity, profitability, and consumer surplus.

They found that e-commerce increases productivity and consumer surplus but not necessarily business profits. Barua et al. concluded that the productivity gains from e-commerce investments have generally been neutral or negative, while Tallon, Kraemer, and Gurbaxani (2000) measured e-commerce payoffs through perceptual measures and argued that executives rely on their perceptions in determining whether a particular e-commerce investment creates value for the firm. The majority of the research has proposed a direct causal link between e-commerce investment and firm performance. However, Li and Ye (1999) empirically tested the moderating effects of environmental dynamism, firm strategy, and CIO/CEO relationship on the effect of e-commerce investment on firm performance and found that e-commerce investment appears to have a stronger positive impact on financial performance when there are greater environmental changes, the strategy of the company is more proactive, and there are closer CIO/CEO ties. In a similar line of inquiry, Lee (2001) created a multi-level value model that connects the use of e-commerce to a firm's profit; she pointed out that the effect of incorporating e-commerce should not be considered alone and argued that there are other variables that can influence the relationship. Her e-commerce business value model (Lee, 2001) incorporated other variables, such as origination cost, cycle time, loan officer retention, control over external partners, and marketing effort and she found that e-commerce can reduce cycle time and cost, and change the way business is run. She concluded that "one has to know what other variables manage and how to manage them in order to make e-commerce investments profitable." Few studies have focused on the perceptions of top management regarding the strategic value of e-commerce. Amit and Zott (2001) is one of the few that has tried to deal with this and even though they focused on e-business, their results can be generalized to e-commerce (Huff, Wade, Parent, Schneberger, and Newson, 2000). They examined how 59 American and European publicly traded e-business firms, create value. Approximately, 80% were SMEs (with less than 500 employees) (Taylor, McWilliam, England, and Akomode, 2004). They developed a value-drivers model which included four factors found to be sources of value creation: transaction efficiency, complementarities, lock-in, and novelty. Some of these factors are also found in Saloner and Spence's (2002) work.

Through an empirical study of 73 firms (some of them SMEs), Subramanian and Nosek (2001) identified three factors that were found to create strategic value in IS: operational support, managerial productivity, and strategic decision aid. In each of these factors they utilized different items that were found to have high convergent validity and reliability. Their factors seem to be applicable to e-commerce.

### *Development Perspective of Insurance*

A developed and functioning insurance sector is a fundamental condition for

economic success (Outreville, 1990). The objective of insurance is to provide financial stability to individuals, organizations and businesses. As a risk pooling and transfer mechanism, insurance allows the insured to mitigate pure risks (i.e. risks that involve only the possibilities of loss or no loss). Examples of such risks are fires, flooding, ill health and unintentional damage to a third party. Insurance helps business to stay open and individuals to continue their work or education by providing financial compensation if an insured risk occurs and causes damage.

Even when no loss occurs, insurance provides peace of mind, a service of considerable, if unquantifiable, value. As a financial sector, insurance is a major investor. Life insurance can stimulate and mobilize personal savings that may, in its absence, become sterile assets. It can also relieve pressure on social welfare systems. Insurance is also needed for trade and commerce where it enhances the creditworthiness of trading partners and can reduce the risk of failure of start-ups and small and medium-sized enterprises (SMEs) as non-diversified risk-takers.

### ***E-Insurance***

E-insurance can be broadly defined as the application of Internet and related information technologies (IT) to the production and distribution of insurance services. In a narrower sense, it can be defined as the provision of an insurance cover whereby an insurance policy is solicited, offered, negotiated and contracted online. While payment, policy delivery and claims processing may all be done online as well, technical and regulatory constraints may not allow these elements to be subjected to full e-commerce application in certain countries.

However, insurance legislation worldwide is being continuously modified to accommodate online payment and policy delivery, and outside the discussion of e-insurance metrics, these elements should be included in the narrow definition. The anticipated efficiency effect of e-insurance is twofold. First, e-insurance should reduce internal administration and management costs by automating business processes, permitting real-time networking of company departments, and improving management information. Secondly, it should reduce the commissions paid to intermediaries since it can be sold directly to clients. For insurance sold to individuals, agents typically receive a commission of 10 to 15 percent for non-life policy sales and renewals and from 35 to 100 percent for life insurance policies in the first policy year, but much less on renewal (Bender and Marks, 2000; SIGMA, 2001; Fery, 2000).

However, some of the income gained in commissions that are not paid to intermediaries must be spent on online customer acquisition and marketing. Assuming cost savings do materialize in a competitive market, they would be passed on to consumers thereby allowing them to buy more insurance, or other products or services.

Since insurance penetration (Premiums as a percentage of GDP) in developing countries is only of that in developed countries, the efficiency gains created by e-insurance may contribute substantially to growth in insurance spending and thus intensify its indisputable role in promoting trade and development.

Of the \$2.5 trillion worth of global insurance premiums, about 1 percent could qualify as e-insurance, according to the broad definition. Little, if any of the premiums earned in developing countries, could be described as e-insurance according to the narrow definition (Bender and Marks, 2000; SIGMA, 2001). In stark contrast, the majority of the \$100 billion global reinsurance business is traded using some form of electronic medium. Considered along with initial reports indicating that online premium rates are more competitive, this could point to acceleration in online distribution of insurance covers measured by the overall value of insured assets. Considered along with initial reports indicating that online premium rates are more competitive, this could point to an acceleration in online distribution of insurance covers measured by the overall value of insured assets.

During the height of the dot.com euphoria, expectations for e-insurance growth were very strong, and many insurance and reinsurance companies and intermediaries have continued to invest in their e-commerce capabilities. Swiss Re's research arm SIGMA estimates that by 2007 e-insurance will have 5 to 10 percent market share in standardized personal lines insurance (LOMA Sybertalk, 2006).

Figure 1 indicates forecasts that 7 percent of global premiums will qualify as e-insurance by 2007. However, online premium volumes are still modest today, and this begs a number of questions. Are insurance products suitable for e-commerce? Is the insurance industry ready and willing to embrace Internet technology? Is the adoption of e-commerce practice important for insurers operating in developing countries and for their clients? How do clients benefit from purchasing insurance online and what are the pitfalls that require improved regulation?

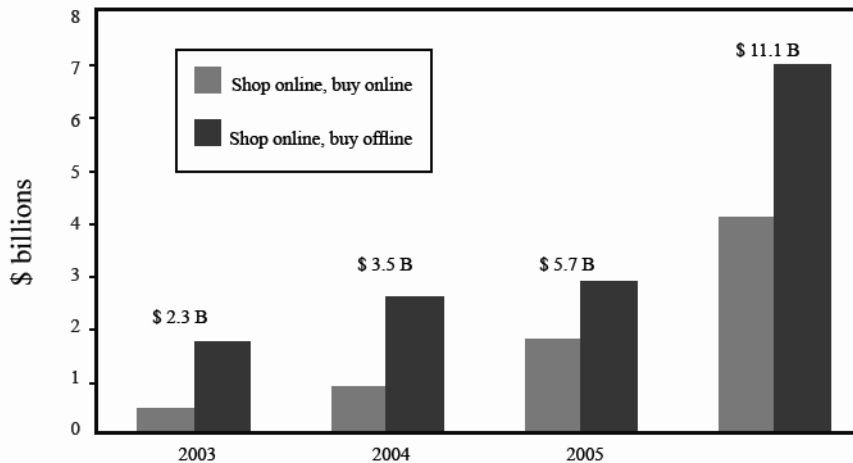


Figure 1. (United Nations, 2006).

### *Suitability*

If we can establish that the insurance product has the potential to benefit from the application of IT and e-commerce, then we can review e-insurance business and supervisory practice in a cross-comparative manner. We may find it difficult to conclude why certain e-insurance applications work and others do not. However, can we definitely exclude the fallback of unsuitability of insurance products as an explanation for modest e-commerce growth in the insurance industry?

### *Information and risk*

The business of insurance is pure risk. In insurance theory, risk is often defined as the variation between actual losses and expected losses (Green and Treischmann, 2004; Reigel, Miller, and Williams, 2004; Rejda, 2005). Insurers' premium rates are based on an assessment of average expected losses and damage. However, premiums collected based on such an average rate may not be sufficient to pay for all the damages in a year, if that year generates greater-than-average losses. Thus, insurers need to have additional funds in reserve. Such reserves are established when an insurer incorporates its business and are often addressed by government insurance regulation and supervision. More importantly, reserves may be replenished during years when losses are less severe than the expected average.

There are several fundamental steps an insurer must take. First, it must calculate a premium rate for the risk it intends to insure against particular causes of damage (e.g. when insuring vehicles or homes against theft or fire). It must also establish adequate reserves to cover deviations from average, expected losses. Finally, the insurer must determine whether any particular clients are likely to attract greater than average misfortune and must decide how to adjust the rates it proposes to them individually.

As this simplified outline shows, the fundamental machinery of insurance involves

mathematical treatment and statistical analysis of numerous events and the processing of large amounts of data about existing or potential clients. Not surprisingly the application of proprietary IT is widespread and has been a natural development among insurers in developed countries with competitive financial services markets. Today, IT is widely used to handle communication with intermediaries, policy processing, premium notices, market analysis, sales forecasts, and accounting. Clearly, insurance is an information-intensive enterprise and is thus suitable for e-commerce.

### *The information contract*

The establishment of an insurance contract does not require much more than an exchange of information. As long as no damage occurs, most insurance contracts, and their performance as un-invoked promises, remain in the sphere of pure information and are therefore highly amenable to the application of IT. Like any other contract, an insurance contract or policy needs to satisfy the four basic conditions of legality, capacity, offer and acceptance, and consideration. To ensure legality, the client needs to have an insurable interest: the asset to be insured has to be the property of the client and some information confirming this is usually submitted. The requirement of capacity is satisfied by an exchange of information showing that the insurer, agent or broker is licensed and that the client is not a minor, insane, intoxicated or acting outside the scope of assigned authority.

The condition of offer and acceptance is satisfied by having the insurer offer coverage terms and conditions for an insurable interest, against a loss caused by general or named perils under particular conditions of hazard. The client reciprocates the offer by expressing an acceptance of the proposed contract. (Sometimes the offer is preceded by a solicitation of an offer by the client. The subsequent offer of the insurer should not be understood as an acceptance: it is the client that must express acceptance.) It is apparent that an enormous amount of information may be exchanged to satisfy this contract condition. The consideration of the insurer consists of the promise of financial compensation for the loss events defined by the policy. The consideration of the client is to pay a premium. The promise is a non-physical information service. Similarly, the transfer of funds is often electronic, and even cash itself has a nominal value unrelated to its physicality. When a loss occurs, the damage is assessed and a claim is submitted. Large amounts of data are again transmitted between policyholders, intermediaries and insurers. E-insurance requires modern e-commerce legislation that permits insurers and the insured to safely and unambiguously exchange information, makes electronic payments and validates their responsibilities through digital signatures.

### *Is insurance bought or sold?*

A frequently cited aspect of insurance that may detract from its suitability for e-commerce is that its products are often said to be “sold rather than bought”. The assumption is that without the sales push of a physical agent, consumers would buy fewer and less valuable insurance policies. Business-to-consumer (B2C) e-insurance is not considered pushy enough, and potential clients are only a mouse click away from other unrelated Internet content. Certain issues relating to the legal and regulatory environment of a national insurance market can be overcome by having a system of physical agencies. Insurance is difficult to sell online if some or all of the following conditions exist:

- Electronic signatures are not legal
- Credit card payment is not accepted for insurance purchases
- Physical documents (policies) have to be delivered to clients and paper copies archived by the agent and insurer
  - Document formats are over-regulated
  - Agents and insurers have to display their license physically
  - Remuneration of insurance portals or markets is prohibited if they do not possess an agent or broker license
- Physical proof of coverage is requested by third parties (e.g. law enforcement or estate agents) (Walker, 1999).

The agency system is deeply ingrained in the insurance industry, and the insurance agent community supports the notion that insurance is sold, not bought. Insurers do not want to alienate their agents, who remain their most important sales channels. Often, insurers define the agent, not the policyholder, as their customer. It is difficult to predict whether direct Internet purchasing by consumers can replace agents.

The establishment of an insurance contract requires the exchange of large amounts of data, often of a personal nature. While the electronic medium is perfect for data transfer, consumers often worry about the extent to which information submitted by them will be kept private, both at the time of contracting and in the future. When submitting data to an agent, clients assume that they can hold the agent responsible and can seek legal remedy if their privacy is transgressed.

The anonymous nature of a website can provoke the opposite assumption in that behind the monitor there is nobody to hold responsible. Clients may also suffer data fatigue when filling out lengthy online forms and may, as a result, give up on soliciting a quote without the coaching of an agent.

Thus, many insurers have opted to provide only policy information and insurance education on their websites and leave the actual selling to intermediaries. When clients decide to ask for a quote, they are asked for their postal or zip code and are directed to a nearby agent. The problem with this strategy is that insurance agents may not be highly

regarded by consumers for their professional honesty and ethics. In the United States, Gallup polls conducted yearly from 1993 to 2000 ranked insurance agents at the very bottom of the credibility scale. Only 9 to 12 per cent of respondents gave insurance agents very high or high marks for honesty and ethics, in comparison with 25 to 37 percent for bankers and 13 to 19 percent for stockbrokers, in consecutive polls during the same period (Carlson, 2000).

Consumers may be dealing with insurance agents purely for a lack of a better option. This may be their destiny in developing countries for the foreseeable future due to relatively low levels of Internet and credit card penetration.

The modest progress in e-insurance, in developed countries, compared to the online banking sector, can also be explained by the notion that insurance companies consider the use of e-commerce, and its non-intermediating effect, a fairly risky business strategy. A recent Swiss Re SIGMA report on e-insurance concluded that "re-engineering traditional business processes is expensive and often meets with considerable opposition from within the (insurance) company itself." A similar report by CSFB pointed out that "legacy systems are inflexible and expensive to change... the (insurance) culture is understandably risk averse... (while) the Internet threatens existing distribution systems, creating a thorny channel conflict" (Bender and Marks, 2000; SIGMA, 2001).

A recent survey by KMPG revealed that, while the industry is planning and preparing for e-insurance, for 40 percent of companies e-business actually is a threat because of a lack of strategic vision. Further, a quarter of the 175 insurance executives interviewed affirmed that their companies lacked e-business competencies (www.ivans.com). In a recent joint study by the Economist Intelligence Unit and PricewaterhouseCoopers, two-thirds of the insurance managers interviewed said that their own companies do not have sufficient e-business leadership capabilities for success in e-insurance.

The same study noted that few insurers believed they had the requisite in-house technological skills for e-business. It is worth noting that, while insurers employ on average 48 percent more IT staff than banks do, the majority are used to service and manage unique proprietary IT systems where it is difficult to achieve economies of scale (Insurance Networking, 2001).



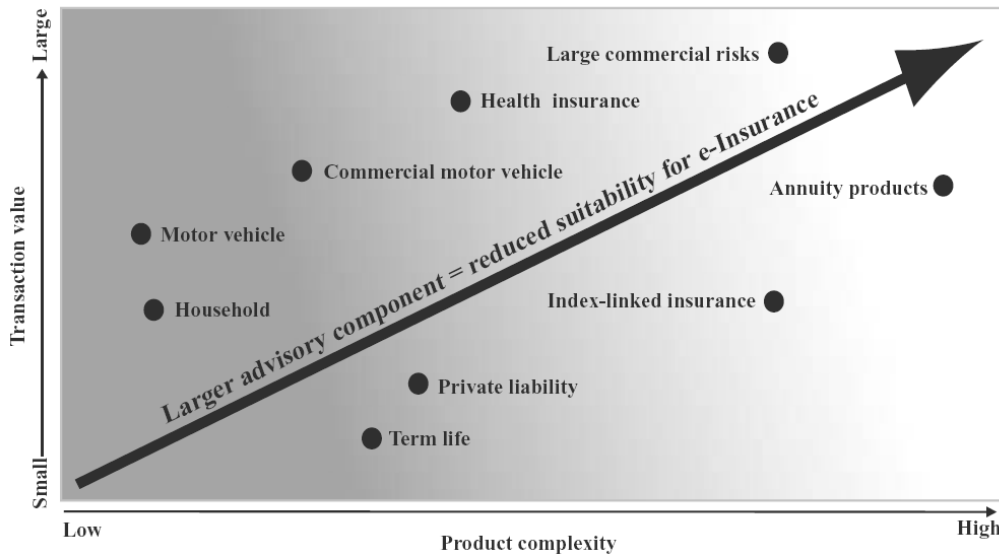


Figure 2. (Donaldson et al., 2000).

It may be true that insurance consumers may find certain products difficult to understand and may be hesitant to buy online. However, the research cited indicates that insurers have not yet found a way to put the “e” into insurance. Results in banking, stock broking and tourism show that the online consumer in developed countries has the technology and willingness to engage in e-commerce (Newsfactor.com, 2001).

There are ongoing debates about the suitability of individual insurance product for e-commerce. The conventional wisdom is that obligatory, very simple or low-price products do not require a seller’s push and thus can be distributed through e-commerce. The greatest demand is for motor vehicle insurance, followed by health, homeowner’s and term life insurance (Technology decisions for insurance, 2006; brown, 2000). In line with the general relationship established in Figure 2, insurers selling online directly to clients are offering a very restricted portfolio of products.

## Methodology

### *Evaluating E-Commerce Readiness (Wells and Thomann, 2006)*

Evaluating organization’s readiness to success in e-commerce field is the first step in preparing for success. This evaluation is a systematic measurement of perceptions regarding e-commerce success factors. The four categories of e-commerce success factors, based on Wells and Thomann (2006) researches, are:

- **Business imperative** - Understanding and communicating of sound business reasons for e-commerce is essential for success. The business imperative is found in the strategic vision and planned business impacts for the e-commerce. Clarity of the business goals, the forces that make them imperative to continued business success, and the contributions of e-commerce technology are all essential elements of this readiness

factor.

- Executive sponsorship - Successful e-commerce implementation efforts are sponsored as business initiatives, not as technology projects. The sponsor of a data warehouse initiative sets the tone of e-commerce acceptance for the entire organization. Sponsoring a e-commerce initiative demands clear business goals and the ability to communicate those goals. The sponsor should be an advocate of the initiative, highly visible, actively supportive, and in a position to affect policy decisions and acquire funding needed for the e-commerce project.

- E-commerce development method – E-commerce project planning and management demands a formal process for e-commerce development and implementation. That process must begin with the business and conclude with implemented e-commerce increments. The method must identify deliverables at each phase of e-commerce development, and provide techniques and guidelines for production of those deliverables.

- Business process orientation - People and organizations who already think in terms of business processes help to position you for e-commerce success. E-commerce goals are expressed in terms of the impacts on one or more business processes. Information needs are identified from a business process perspective. And process perspective helps ensure that the e-commerce goals is aligned with business needs (Wells and Thomann, 2006).

- Evaluate each of these factors from three points of view:

- People readiness - The organization has, or can obtain people with the skills and desires necessary to implement an e-commerce initiative.

- Information technology readiness - The IT organization is prepared to participate in an e-commerce initiative and respond to the impacts of such an initiative.

- Business readiness - The business organization(s) understand the role of the proposed e-commerce project and are prepared to participate in every way necessary to contribute to the initiative's success (Wells and Thomann, 2006).

Table 1 illustrates twelve points of measurement (the non-shaded cells in the matrix) to evaluate e-commerce readiness. To get the measures, survey people actively involved in the e-commerce initiative.

Table 1  
 Matrix for Obtaining a Data Warehouse Readiness Rating

<b>Cell scoring rules: Obtain the average score for all statements for each of the measurement points</b>	<b>People Readiness</b>	<b>Information technology readiness</b>	<b>Business readiness</b>	<b>Row scoring rule</b>
<b>Business imperative</b>	Each individual involved in the e-commerce initiative clearly understands the need for the initiative and is willing to support it.	IT understands the business' need for e-commerce and is willing to support it.	The business area has a clearly understood need for the proposed e-commerce	<i>Sum the cell scores for this row and multiply by 2.33</i>
<b>Executive sponsorship</b>	The sponsor understands his/her role in the e-commerce initiative and is willing to exercise it fully.	The sponsor understands the IT requirements for e-commerce, understands which ones are missing, and supports the means to obtain them.	The business area sponsors the e-commerce initiative, leads the effort and takes ownership for the results of e-commerce project.	<i>Sum the cell scores for this row and multiply by 2.33</i>
<b>DW development method</b>	Each individual who participate in the e-commerce project understand the method and his/her role in relation to it.	IT has an e-commerce development method that accounts for all the necessary components of a e-commerce initiative, and is willing to use it.	The business area has a clear role in the development method and agrees to exercise that role.	<i>Sum the cell scores for this row and multiply by 1.33</i>
<b>Business process orientation</b>	Each individual understands the organization's business in terms of its business processes.	IT focuses its efforts to support the business based on the business processes.	The business operates based on business processes.	<i>Sum the cell scores for this row and multiply by 0.67</i>
<b>Column scoring rules</b>	<i>Sum the cell scores for this column and multiply by 1.5</i>	<i>Sum the cell scores for this column and multiply by 1.5</i>	<i>Sum the cell scores for this column and multiply by 2.0</i>	<i>Readiness Score Calculation: Sum up the row scores and column scores and average them</i>

### *Data Collection and Analysis*

To develop the survey, we used a 60-questions questionnaire. (Five questions for each measurement point). To conduct the survey, we targeted a 50-members group of people (between 2 to 5, depend on their market share) from each insurance company who would be e-commerce project participants. (Include both business and technical people as participants). Each participant responds to the statements on a scale of one to five. One indicates strong disagreement with the statement; five indicates strong agreement.

To determine industry readiness score, we built a matrix based on Table 1, and used the following steps:

1. Determine a score for each cell in the matrix by calculating the average of all responses to all survey statements for the measurement point.
2. Determine the score for each row using the row scoring formulas provided.
3. Determine the score for each column using the column scoring formulas.
4. Total all row scores and total all column scores.
5. Average the row total score and the column total score to develop your overall readiness score.

Having calculated a readiness score, evaluate overall readiness by placing industry total score on the scale described in Table 2. Examine the individual row and column scores to identify areas of strength and areas of risk. Tailor e-commerce plans to leverage the strengths and mitigate the risks.

Table 2

#### *The Wells-Thomann Readiness Scale*

<b>Level</b>	<b>Readiness score</b>	<b>Explanation</b>
5	81 – 100	E-commerce is used as integral part of the business processes
4	61 – 80	E-commerce is used as a point solution to business information needs
3	41 – 60	The business is ready to use E-commerce increments and learn from each increment project
2	21 – 40	The business is ready to try a pilot project and learn from this experience
1	0 – 20	The business needs more investigation into, education about and understanding of E-commerce before proceeding

## Results

Data gathered in the previous stage were analyzed using the research model and the summary of results shown in Table 2 describes the general readiness of Iran's insurance industry to implement and use e-commerce and e-insurance regarding the mentioned variables.

Table 3

*Final Matrix*

	People readiness	IT readiness	Business readiness	Row scores
Business imperative	4.56	4.16	4.56	30.94
Executive sponsorship	3.52	3.28	3.48	23.95
Development method	3.96	3.32	3.48	14.31
Business process orientation	4.08	3.80	3.76	7.80
Column scores	24.18	21.84	30.56	76.79 Total score

As shown in Table 3, the scores for general readiness of Iran's insurance industry regarding the 4 main factors in vertical dimension are as follow: Business Imperative: 30.94, Executive Sponsorship: 23.95, Development Method: 14.31 and Business Process Orientation: 7.80.

Their scores regarding the 3 main factors in horizontal dimension are as follow: People Readiness: 24.18, IT Readiness: 21.84 and Business Readiness: 30.56.

Therefore the score for general readiness of insurance industry is equivalent to 76.79 which is a remarkable figure, according the Table2 the industry is in the third stage of readiness, in this stage the business is ready to use e-commerce increments and learn from each increment project. Therefore the Iranian insurance companies were strongly recommended by us to invest on e-commerce and e-insurance area.

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