THE DIMENSIONS OF WEB-BASED INFORMATION SYSTEMS AND CUSTOMERSBEHAVIOR OF STOCK EXCHANGE

Azar Rrahimzadeh, and Freidoonsalimi

Abstract: *Traditional systems have limited channels to find the information.With advances in technology and expanding the scope of expectations and the increasing number of competitors, less attention some businesses to take advantage of technology advances, in offering the product would lose the momentum share of customers.This descriptive – survey study has been done, aimed to investigating the Using the dimensions of web-based information systems in dealing with customersof Stock Exchange. The sample is243people of Borujerdcity Stock Broker Customers. To collect information from 2standard questionnaires of Web-Based Information Systems and Customer's Satisfaction with reliability of 0/870&0/926used. To prove the hypotheses, Kolmogorov - Smirnov and regression test by spss22 was used. The findings showed the dimensions ofWeb-Based Information Systems as completeness of information, information accuracy, system accessibility,has a significant and positive effect on SatisfactionCustomers. System accessibility (Beta: 0/67) has the greatest impact on Customer's Satisfaction. So,the company managers and decision-makers should pay more attention to the use of information systems based on this dimension in more customer satisfaction. The rapid development of Internet and technology and its applications, leads the companies to fulfilling the demands and customer satisfaction. Customer satisfaction resulting from correct and timely fulfilling their needs by the Company compared with competitor companies.*

Keywords: *Customer's Satisfaction, Web-Based Information Systems, Dimensions of-Web-Based Information Systems, BorujerdStock BrokerCustomers.*

1. INTRODUCTION

Several ago decades, the products and services provided by organizations, rather than be in conformity with the wishes and needs of their customers, was the result of creative thinking of their design engineers. In other words, in most cases, the role of the customer was limited to a satisfied consumer only. The engineers who played the role of the consumer in process of product

*   Master of Management, Department of Business Administration, Malayer branch, Islamic Azad University, Malayer, Iran. a_rahimzadeh_7@yahoo.com

**2 Lecturer, Faculty of Management and Economicgroups, Malayer branch, Islamic Azad University, Malayer, Iran freidoon.salimy@yahoo.com (Corresponding author)

design. But the thought lasted until the last decades of the 19th century. Competitive markets, the collapse of trade borders, economic globalization and finally increasing the level of expectation and needs of customers, led to increasing the attention and importance to customers' wants and needs(Rezaee et al, 2001).

Due to the benefits of the Internet and information technology, many information systems have focused its move direction to Web-based information systemswhich gives them access to multiple channels in the existing competitive environment (Gül.2009).

These systems are pervasive over than conventional information systems and their frequent interactive effects with the field of today business has been directed the much attention towards this branch of information systems.

1.1 Problem Statement

Traditional systems have limited channels to find the information (Taniar & Rahayu, 2004). With advances in technology and expanding the scope of expectations and the increasing number of competitors, less attention some businesses to take advantage of technology advances, in offering the product would lose the momentum share of customers.Increasing customers' awareness about their intended services/goodshave caused the possibility of comparing the offered products and increasing expand of their choices. Using the web-based services has increased customer expectations about the shortest time to reach their wants.Stock brokerages to attract the customers are facing with a challenging environment. Less attention to technology advances and lack of using it in business activities associated with the possibility of customer dissatisfaction and leave.

Information systems in addition to helping to coordinate in organizational operations, helps managers and employees to analyze or simulate the organization's issues(Laudon, Jane P.rice, 2010, 26). Website is a set of interconnected pages that puts a lot of information in the form of text, image, sound, and movies to the viewer.

If the company has a sales perspective, it takes several years to enter into partnership that have a marketing point of view. The aim is that the customer's satisfaction becomes blurred and Purdue of the company, customer's satisfaction is not a fad.according to marketing analyst it become as part of a vital American company. Such as organizational culture, information technology and strategic planning is an integral part of the company(Kotler et al, 2010).

1.2 Significance of the study

Stock brokerages as well as other businesses are in the competitive changing and complex environment. So, in these businesses the use developments of technology

is important to deal with these changes and survival in against competitors.The other hand web-based information systems increases the competitive advantage of organizationsby reducing the need transactions to conduct business and reducing the time and costs.It provides possibility the focus on customer groups or diversity of goods and services. In recent years, web-based information systems, have become one of the most important results of information systems development. Since, it has been an increase in the degree of importance of web-based businesses. The web-based information system facilitates the activities of the internal (intranets) and interaction with customers (Extranets).So it is essential be conducted the researches on this subject to be identified the role of using these systems to create more satisfaction of customers.

1.3 Research purposes

- **The main objective:** Investigating the Impact of Web-Based Information Systems on Customer's Satisfaction in BorujerdStock Broker

- The subsidiary purposes

  ❖ Investigating the Impact of completeness of the informationof Web-Based Information Systems on Customer's Satisfaction in Borujerd Stock Broker

  ❖ Investigating the Impact of accuracy of information of Web-Based Information Systems on Customer's Satisfaction in BorujerdStock Broker

  ❖ Investigating the Impact of system accessibility of Web-Based Information Systems on Customer's Satisfaction in BorujerdStock Broker.

1.4 The research main hypothesis and sub-hypotheses

Main hypothesis*:* The Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker

The subsidiary Hypotheses:

1. The completeness of the information of Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker

2. The accuracy of information of Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker

3. The system accessibility of Web-Based Information System has an effect on Customer's Satisfaction in BorujerdStock Broker.

2. THE THEORETICAL FRAMEWORK

- **Customer Satisfaction:** Customer satisfaction is defined as a feel or attitude of customer towards a product or service after using it. Customer satisfaction is the main result of marketing activity which it acts as the relationship between different stages of purchase behavior of consumer(Jamal et al, 2002).

   Anderson (1994) argues the customer satisfaction is the degree of customer's utility that customer earning due to different characteristics of the product. The customer satisfaction leads to customer loyalty and thus increasing the reputation of the company, as well as increasing future profitability of company (Divandari, &Delkhosh, 2005).

- **Customer commitment:** Loyalty called as a strong commitment to repurchase a premier product or a service in the future, so that the same brands or product in spite of impacts and potential marketing efforts of competitors could be bought(Morrison, 2010).

- **Quality of Service:** Quality of everything is part of nature, and part of the cause naturally. All the features that satisfy the customer needs, then any product which has characteristics of providing the customer need is quality product (Mir ghafori& Maleki,65, 2007).

- **Customer expectations:** In timethe receiving a service, the customer expectation is receives valuable services also. In this respect, value is defined as a link between what customers gainingagainst what they lose.Customer expectations are expectations does not need it certainly, but meet it, creates a pleasant feeling on her/him (Mir ghafori&Maleki, 2007, 66).

- **The most important effects of customer satisfaction on the organization's processes**

   ❖ Continuous reduction of costs and shorten the time of working cycles due to the effective use of resources;

   ❖ Improving the results of operations, consistent and predictable these results (recommendations for improvement);

   ❖ Creating the possibility of paying the centralized and prioritized opportunities to improvement operations;

   ❖ Increasing the ability of value creation for both sides (Maghsoodi, 2003, 260).

Customer satisfaction is the result of a three-part system includes (Maghsoodi, 2003, 260.):

• Institute performances (processes).

• The staffs are as provider's product or service.

• Customer expectations.

The effectiveness of this three-part system depends on the proper integration of these parts with each other. The common area among the three parts represents customer satisfaction (Figure1).

Figure1. Three-part system of customer satisfaction (Maghsoodi, 2003, 260.)
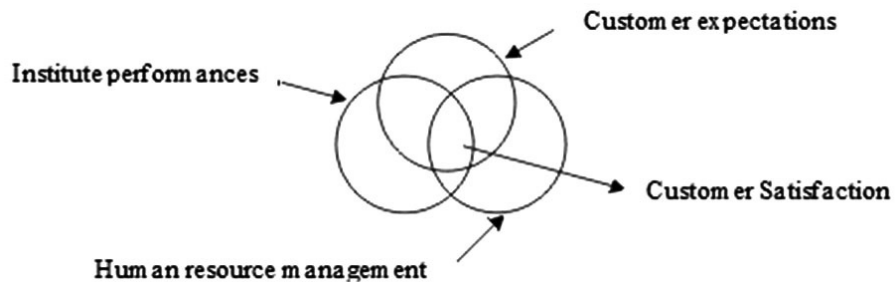
• **Web-based information systems:** Web-based information systems were based on information systems technology which contains databases and the process systems of integrated transaction (Chuan, 2008).These systems are pervasive over than conventional information systems and their frequent interactive effects with the field of today business has been directed the much attention towards this branch of information systems.

• **Dimensions of web-based information system:** Completeness of information: the extent which system provides necessary and sufficient information. Information accuracy: the extent which information systems are update.

System accessibility: the extent to which system can be available (Moghimi, 2011, 212).

The overall approach to measuring the effectiveness of web-based information systems

In the literature related to information systems researches, numerous performance measures is presented entitled "Effectiveness", "success" or "Impact" of management information systems (Henderson, 1999). These measures are summarized in the following table1:

Table 1.
The overall approach to the performance measures

Beneficiary		*Measure*
	The primary measures of performance	The secondary measures of performance
Organization	Cost / benefit	Profitability, productivity (Application of investment analysis, performance audits etc.)
	Usefulness	The concerned with the main issues, competitive advantage.
User	Benefit	The number of requested reports
	The quality of decisions or performance	Deviations from the goals, the time of implementation of procedure, Working errors, trust in decisions
	User satisfaction	Accuracy, reliability, timeliness, relevance and comprehensiveness of information

Liu (2008) in his article,he evaluates the quality of services, customer satisfaction and customer loyalty in swimming pools in Taiwan. He concluded the satisfaction is stronger predictor of customer loyalty compared with services quality.

Azar and Nematnezhad (2001), in their article entitled "The Role of management information systems on organizational productivity of students' mobilize wrote: in the past, organizations have paid attention to issues such as greater production, capital, supervision of labor and raw materials in order to increase the efficiency. But today, scientists of management have addressed important factors,parallel with the development of information technology.They concluded information system is mechanism which appropriate and accurately information by creating, storage, retrieval and rapid distribution puts for managers of all levels in order to support the organizationmanagers to decision-making, strategic planning, tactical and operational plan.

Binazirgajiarjanki(2014), in his article "Providinga solution for integration of information systems and applications in the cloud computing-based organizations" wrote: Today, organizations used many software and applications to meet the needs of their own business. The software and systems often by different people and using different languages have been written different technologies and capabilities. Maintenance and support of software at long term can lead to related uncontrolled increase in costs and undesirable response to customers.Therefore software integration and sharing them in terms of process and data is presented as a strategic approach for organizations. In the integration strategy rather than organization's attention on information technology, the organization focused on information and technology serve only as a means of receiving, processing

and presentation of information. In this paper, we introduce organizational web operating system, a cloud computing-based proposed architecture and all the expected functionality for a system of applications management, taking into account all restrictions and obstacles are presented.

2.1 Conceptual model of the research

Fung et al (2000), kavoosi&saghaei (2005) in their investigations know the completeness of the information, accuracy of information, system accessibility as dimensions of web-based information systems. In this study, customer's satisfaction considered as the dependent variable. Some researchers as shahin&teymori (2008), Wang et all (2003), know customer's satisfaction consists of three dimensions of customer's loyalty, quality of service and expectations of customers. The dimensions shown in the figure2:

Figure 2. Conceptual model of the research (Source: Fung et al, 2000; kavoosi & saghaei (2005),Shahin, (2008), wang, et al. (2003)
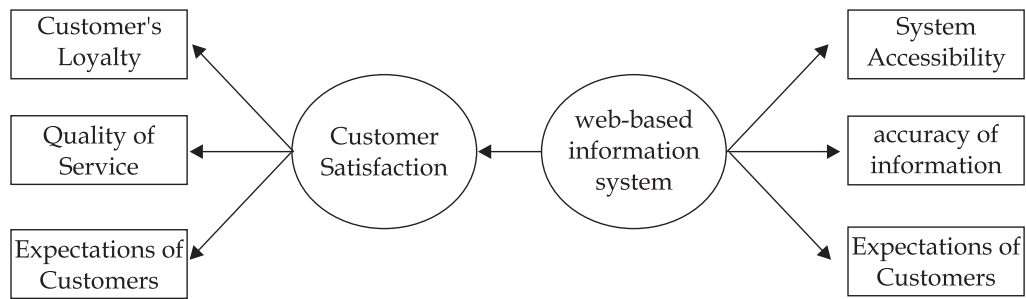
3.   RESEARCH METHODOLOGY

This research in term of goal is applied and how to do is descriptive-survey. The population of the study consisted of stockbroker customers of Boroujerd city who buy via the Internet and the Website or in person, that they were 621 people. Random sampling method used. To determine sample size, according to the population of customers from 621 who considered, according to Morgan table, 234 individuals were chosen and during June, 250 questionnaires among customers of these stockbroker have been distributed in person or email which 212 questionnaires were returned.

Data collection method in this research was field method. Data using a standard questionnaire were collected.web-basedInformation systems questionnaire was adaptedfrom Fang et al. (2000) and customer satisfaction questionnaire, was adapted from shahin&teymori (2008); wang (2003)Moqimi, (2011).

Questionnaires were used in this study was standard but for set a valid questionnaire it is necessary have another time and place, with the guidance of professors ambiguity of the questions in this matter was resolved and to ensure its validity content analysis was used and in order to final assessment and measuring reliability in the early stages of research to collect data from 40 questionnaires were acting and Cronbach's alpha coefficient was calculated (see table 2), it shows that the questionnaire is reliable:

Table 2.
Calculating Cronbach Alpha Coefficient to Determine the Reliability Questionnaire

Cronbach Alpha Coefficient	Variables
0/870	web-based Information systems
0/926	customer satisfaction

Data analysis and hypothesis testing using SPSS software have been carried.

• Kolmogorov-Smirnov test for normality of data:

$H_{0:}$ the variable distribution is normal

H_1: the variable distribution is not normal.

Table3.
Kolmogorov-Smirnov test results for research variables

Sig	Variables	Distribution Status
0/076	web-based Information systems	Normal
0/085	Customer's satisfaction	Normal

Judgment: because the amount of significant level is higher than 0.05 at all variables so we conclude that null hypothesis that is research variables all are normal.

4. TESTING RESEARCH HYPOTHESES

Multiple variables regression analysis

H_0: the Web-Based Information Systems has no effect on Customer's Satisfaction in BorujerdStock Broker

H_1: the Web-Based Information Systems has A effect on Customer's Satisfaction in BorujerdStock Broker

Table 4.
Stepwise multi variable regression analysis for the main hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Significant Level	R^2	Durbin Watson
Regression	403/6511	1				
Remaining	619/4121	210	51/268	0/000	0/75	2
Total	310/9541	211				

Regression analysis results presented in the table4, indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R^2 the web-based information systems variable collectively explained 75 percent of the variance in customer's satisfaction scores. Unexplained amount is equal to 25 percent. So the web-based information systems affect customer's satisfaction.

Table 5.
Stepwise multi variable regression analysis for the main hypothesis

Sig	t	Beta	B	Predictive variable
0/001	4/52		10/16	Fixed amount
000/0	21/43	0/71	0/63	web-based information systems

As can be seen from the table5, according to the amount of B,web-based information systems variable positively affects the customer's satisfaction variable. According to the above regression equation can be written as follows:

Customer's Satisfaction = 10/16 + 0/63 (web-based information systems)

So the research hypothesi]s is confirmed.

The subsidiary Hypotheses:

1. H_0: the completeness of information of Web-Based Information Systems has no effect on Customer's Satisfaction in Borujerd Stock Broker

    H_1: the completeness of information of Web-Based Information Systems has a effect on Customer's Satisfaction in Borujerd Stock Broker

Table 6.
Stepwise multi variable regression analysis for the 1subsidiary hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Significant Level	R^2	Durbin Watson
Regression	1461/87	1				
Remaining	8769/44	210	35	0/000	0/37	1/7
Total	10231/32	211				

Regression analysis results presented in the table6, indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R2 the completeness of the information of web-based information systems variable collectively explained 37 percent of the variance in customer's satisfaction scores. Unexplained amount is equal to 63 percent. So the completeness of the information of web-based information systems effect customer's satisfaction.

Table 7.
Stepwise multi variable regression analysis for 1subsidiary hypothesis

Sig	t	Beta	B	Predictive variable
0/000	4/919		25/44	Fixed amount
0/000	5/917	0/378	2/16	web-based information systems

As can be seen from the table7, according to the amount of B, the completeness of the information of web-based information systems variable positively affects the customer's satisfaction variable. According to the above regression equation can be written as follows:

Customer's satisfaction= 25/44+21/16 (the completeness of the information of web-based information systems)

So the research hypothesis is confirmed.

3. H_0: the accuracy of information of Web-Based Information Systems has no effect on Customer's Satisfaction in Borujerd Stock Broker.

    H_1: The accuracy of information of Web-Based Information Systems has a effect on Customer's Satisfaction in BorujerdStock Broker.

Table8. Stepwise multi variable regression analysis for 2sub hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Signifi-cant Level	R2	Durbin Watson
Regression	3226/399	1				
Remaining	7004/922	210	96/7	0/000	0/56	2/1
Total	10231/321	211				

Regression analysis results presented in the table8, indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R2 theaccuracy of information of web-based information systems variable

collectively explained 56 percent of the variance in customer's satisfaction scores. Unexplained amount is equal to 44 percent. So the accuracy of information of web-based information systems affect customer's satisfaction.

Table 9.
Stepwise multi variable regression analysis for 2 sub hypothesis

sig	T	Beta	B	Predictive variable
0.000	5/680		30/55	Fixed amount
0/000	9/835	0/562	3/347	web-based information systems

As can be seen from the table9, according to the amount of B, accuracy of information of web-based information systems variable positively affects the customer's satisfaction variable. So the research hypothesis is confirmed.

H_0: the system accessibility of Web-Based Information Systems has no effect on Customer's Satisfaction in Borujerd Stock Broker.

H_1: the system accessibility of Web-Based Information Systems has an effect on Customer's Satisfaction in BorujerdStock Broker.

Table 10.
Stepwise multi variable regression analysis for 3 sub hypothesis

Variance Source	Sum of squares	Degrees of freedom	F	Significant Level	R^2	Durbin Watson
Regression	4717/151	1				
Remaining	5514/170	210	179/64	0/000	0.67	1/7
Total	10231/321	211				

Regression analysis results presented in the table10, indicates that significant levels achieved, that is amount of 0.000 with a degree of freedom 1 and 210 less than 0.05. So created regression model statistically is significant. Due to R2 the system accessibility web-based information systems variable collectively explained 67 percent of the variance in customer's satisfaction scores. Unexplained amount is equal to 33percent. So the system accessibility web-based information systems affect customer's satisfaction.

Table 11.
Stepwise multi variable regression analysis for 3sub hypothesis

Sig	T	Beta	B	Predictive variable
0/001	7/551		20/27	Fixed amount
0/000	13/403	0/679	1/74	web-based information systems

As can be seen from the table11, according to the amount of B, system accessibility of web-based information systems variable positively affects the customer's satisfaction variable.

So the research hypothesis is confirmed.

5. CONCLUSIONS AND SUGGESTIONS

Based on the analysis of findings, the system accessibility (with beta: 0/67), compared to the accuracy of information and completeness of information, have a greater impact on customer satisfaction of Borujerdstock brokers. So, the company managers and decision-makers should pay more attention to the use of information systems based on this dimension in more customer satisfaction. Results of the findings of this study, consistent with results Liu (2008) and Azar&Nematnezhad(2003), shows the rapid development of Internet and technology and its applications, leads the companies to fulfilling the demands and customer satisfaction. Customer satisfaction resulting from correct and timely fulfilling their needs by the Company compared with competitor companies. Customer satisfaction leads to his loyalty and maintaining and expanding market share, which caused profitability and competitive advantage for these companies in the future. The following suggestions are based on hypotheses results.

- Based on the results of hypothesis can be suggested that:
  - ❖ Based on the results of main hypothesis:
  - ❖ Necessary education for individuals interested in a career in brokerage
  - ❖ Support services given to clients
  - ❖ Access to fast and accurate information to the public on the website of the Stock Exchange Organization
- Based on the results of 1 sub hypothesis:
  - ❖ Adequate and complete information placed on the website of the Stock Exchange Organization
  - ❖ The information on the website of Stock Exchange Organization should be completely transparent
- Based on the results of 2 sub hypothesis:
  - ❖ Information is updated every minute on the website of Stock Exchange Organization
  - ❖ Relevance of the information on the website of Stock Exchange Organization to be given more importance

- Based on the results of 3sub hypothesis:

    ❖ Levels of options on the website of Stock Exchange Organization increased and access to them become easier

    ❖ Speed data download rise on the website of Stock Exchange Organization

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