



## Designing a Feasible Model for Social Commerce in Developing Countries

**Maryam Niknejad**

*Master of Science (M.Sc.) in  
Information Technology  
Engineering (E-Commerce)  
Computer Science Department  
Shiraz University  
Shiraz, Iran*

**Abolfazl Zare**

*Master of Science (M.Sc.) in  
Industrial Engineering (Systems  
Management and Productivity)  
Industrial Engineering  
Department  
Amirkabir University of  
Technology  
Tehran, Iran*

**Ali Akbar Jalali**

*Associate Professor  
Electrical Engineering  
Department  
Iran University of Science and  
Technology  
Tehran, Iran*

---

**Abstract—** Today, with increasing development for application of information technology and expansion of penetration of internet in different aspects of human life, great changes have been witnessed in different domains of economical, cultural, social and other dimension of human's life in third millennium. Also in this regard, e-commerce as one of the most important applications of information technology and in area of economic from beginning until now, has been changed a lot and versions of it have evolved. Social commerce is a new phenomenon and is subset of e-commerce which in contrast with many new developing technologies in recent years, is growing rapidly. It applies the social networks for commerce and will allocate the largest share of e-business in future by exploiting from the capacities of social networks and putting them together with commerce and revenue earning. Basically, buyers are looking to acquire more information for decision marking about their purchase. social commerce which has been operated on the social networks is a reliable and trustable environment which in it consumers, makes their decisions, based on consulting with other people and with network which consists of their friends, family, and people who are reliable. In this paper, after introducing social commerce, its features and advantages and the websites which are successful in this area, will be studied and finally, a model will be offered for development of this type of commerce for developing countries.

**Keywords-component;** *Social Commerce, Social Networking, Internet, Information Technology, developing countries.*

---

### I. INTRODUCTION

In internet's world and from its beginning, there have been a lot of innovations which have caused the major changes in human life. One of the latest innovations in applied programs which is relied on the web services is social network.

A social network is a social structure made up of a set of actors (such as individuals or organizations) and the dyadic ties between these actors. The social network perspective provides a clear way of analyzing the structure of whole social entities [1]. Generally, social networks can be defined as a social structure which is made of nodes, which these nodes are usually people or organization and they have been related together by one or more special type of relations, such as financial transactions, friendship, love, business, links, air routes, entertainment and etc. Businesses are using social networks as a tool to help the employees to be in touch together or helping to customers to achieve their required information.

Use of personal social networks to gather information is fundamental to purchasing behavior [2]. Subject of social networking was out lined for the first time in Illinois university in 1960, but in 2002, explosion of commerce in social network websites like Orkut or Facebook has caused a great change in this area and social networks developed [3].

Customers build social networks in which they communicate and exchange opinions about products. This leads to a higher customer satisfaction [4], because now customers have easier and cheaper opportunities to fulfill their needs and collect the required information for decisions before and after buying products and services [5]. Also the social networks can improve trust between transaction partners and increase user satisfaction [6]. These advantages led to a new trend of commerce emerged on social networks. But the situations are different in developing countries. Usually the famous social networks are not accessible in some of developing countries like Iran [7]. Therefore, design of a model for development of social commerce in these countries is essential.

### II. SOCIAL COMMERCE

In the offline world, a customer's decision to buy a product or service is mainly influenced by friends, family, and colleagues [8]. Therefore social networks are one of the best places to accomplish these tasks, and cause a new concept that is called social commerce to be evolved. Since, now various definitions for social commerce have been offered, which of course, all of them have the same meaning.

In one of these definitions, social commerce is the use of social media, in the context of e-commerce, to assist with buying and selling products and services online [9]. In another definition, social commerce will be introduced as interpersonal

relationships, such as views, recommendations, comments, and ... which are Influence in commercial transaction [10]. Figure 1 can describe a general schematic of social commerce with the simple picture [5]:

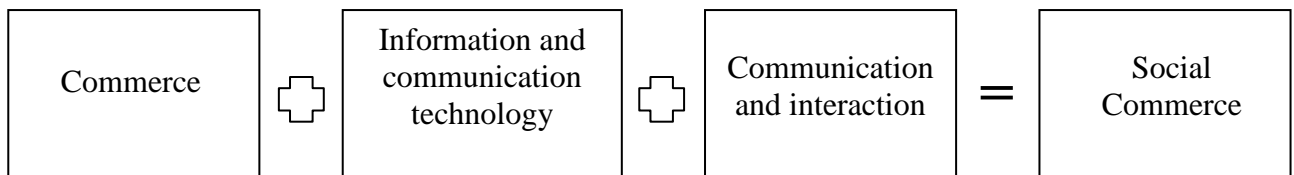


Fig 1. Definition of social commerce

### III. ADVANTAGES OF SOCIAL COMMERCE

Today social networks calling the first letter in the web environment. even these networks whose rate of visit and attraction of world users are so great, that ranks of the websites such as Alexa<sup>1</sup>, has been placed after 2 famous websites of Google and Yahoo [7]. Using the potentials of these websites in commerce, under title of social commerce, have a lot of advantages which these advantages can be classified in two distinct groups of customers and businesses.

#### A. For Business:

- Attract more visitors
- Create the strong relation and more with customer which cause the reliability to be increased and their wishes to use their competitor's product to be lessened.
- Create the ability to reach a wider audience through a friend of a friend ...
- Create motivation and increase in rate of decisions for purchasing, because of friends comments.
- Achieve and acquire information from customer's choice and their tasks and rapid response and therefore, decrease in rate of product's return.
- Providing the suitable data about the product and brand to make decisions for marketing
- Learning from customer's experience
- Using from what is produced by the user
- Free advertising (for example: such as virus advertising)
- Increase of website's traffic and as the result, increase of sales and benefit
- Saving the money for servicing to customer
- Possibility to test the product/new idea with more speed and less expenses
- Possibility to achieve very small market segments with high dispersion [11]

#### B. For the Customer:

- Acquiring enough information about product and ease of possibility of comparison for brand's names and their products
- Less payment for products and services
- Using friend's experience
- Accumulation Of dissatisfied customers and achieving power, and criticizing from the products in front of people
- Complying customer's expectations, rapidly and completely
- Possibility of enjoying from better services

### IV. SUCCESSFUL SAMPLES OF SOCIAL COMMERCE

#### A. Facebook

Facebook is a social networking service and website which was developed in 4th of February 2004 [12]. According to statistics released by Facebook this site had 901 million monthly active users at the end of March 2012 that approximately 80% of our monthly active users are outside the U.S. and Canada. This site also had 526 million daily active users on average in March 2012 and 488 million monthly active users who used Facebook mobile products in March 2012 and more than 500 million mobile monthly active users as of April 20, 2012. During March 2012, on average 398 million users were active with Facebook on at least six out of the last seven days. Facebook is available in more than 70 languages [13]. Facebook is one of virtual social networks, which you can communicate with your friends which have an account in it by this network and share picture, video clip, or message with other. Now Facebook is free of charge for people of the world and has more than 800 million active users in the world. Users in the facebook have one personal page, they can create group or can be member of other groups. Users can make photo album for themselves and choose their friends, and add to the list of friends [14]. Facebook is a social networking site initially developed for college and university students, but is now made available to anyone. People may register under various networks, such as school, place of employment, geographic region, etc. Case of Facebook shows that how an American portal college, has been revolutionized to the level of a perfect social trade. Facebook is a successful sample of e-commerce, with valued and distinct commerce position; also it shows that how e-commerce can earn money from social media's potentials.

<sup>1</sup> www.alexa.com

a) *Business model of Facebook*

In the Facebook business model diagram presented in figure2, information flow has been shown with gray arrow and revenue stream has been shown with black arrow [15].

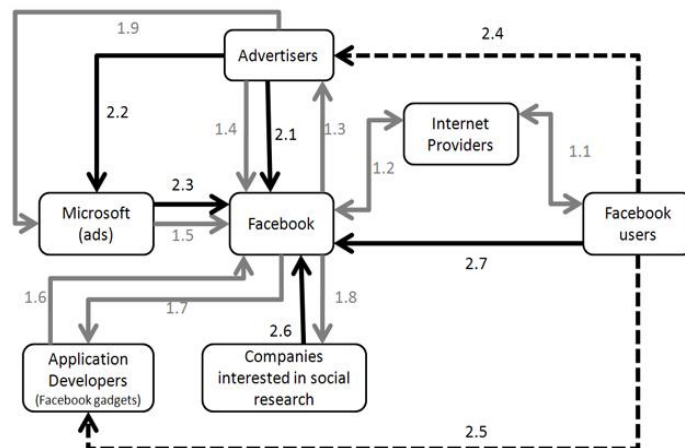


Fig 2. Facebook business model

- (1.1, 1.2), Transformation of data from Face book to user with the helping internet services provider
- (1.3), preparing advertisements by the Facebook with using some information
- (1.4), developing advertisement in Facebook sites.
- (1.5), supplying advertisement banners by Microsoft.
- (1.6), Application developers create services and applications which are used on Facebook platform
- (1.7), Facebook needs to give appropriate tools and the API to the developers (with documentation)
- (1.8), Facebook sends results of the survey poll to those who paid for them
- (1.9) Advertisers using Microsoft banners need to create the content for them
- (2.1) Conventional ads from Facebook
- (2.2, 2.3), Banners
- (2.4, 2.5), needs
- (2.6), "Facebook polls"
- (2.7), Facebook users can pay directly money to Facebook when buying the virtual gifts (around USD 30 million annually)

B. *Twitter*

Twitter is a social network based on allowing users to post short messages and read messages from others. Twitter was founded in March 2006 and was introduced as a public service in October same year. The core services offered by Twitter are not very different from those offered on Facebook: Users can create their own homepage describing their profile. They can read and post messages (tweets), and they can send messages directly to another user. Posted messages are sent to all ‘followers’, i.e. those who have chosen to follow a certain user. The concept of followers is different from the concept of friends used on other social networking sites such as Facebook, ‘Friends’ indicates a symmetric relationship, while you do not need to follow your followers on Twitter and vice versa. Furthermore, you can choose to follow any user without his prior acceptance. As other social networks, Twitter can be accessed on the Internet, but Twitter is deliberately designed as a mobile service [16].

C. *YouTube<sup>1</sup>*

YouTube is an Internet based public video-sharing service, where the end-users upload and share video clips. On YouTube people can experience varying degrees of engagement: One can chose only to view the available content, or also to share videos with others and even to develop social relationships. YouTube was created in mid-February 2005 by three former PayPal employees and in October 2006 YouTube was acquired by Google Inc for US\$ 1.65 billion [16].

D. *GooglePlus<sup>2</sup>*

This popular service was launched as pilot by invitation letter on 28 June 2011 [17]. The independent analysis estimated that the sum of about 625000 profiles each day adds up to this social network. Is predicted Google Plus will have 400 million users by the end of 2012 [18]. Google+ has provided new tools for users, such as Circles, Sparks, Hangouts, Huddle and Mobile. Circles enable users to organize people into groups for sharing across various Google products and services. Although other users may be able to view a list of people in a user's collection of Circles, they cannot view the names of those Circles. Sparks is a front-end to Google Search, enabling users to identify topics they might be interested in sharing with others. Hangouts are places used to facilitate group video chat (with a maximum of 10 people participating in a single Hangout at any point in time). Huddle is a feature available to Android, iPhone, and SMS devices for communicating through instant messaging within Circles. Additionally, you can now share photos in Messenger between

<sup>1</sup> www.youtube.com

<sup>2</sup> plus.google.com

your Circles. New Features for Google+ Mobile Since the launch of Google+, Google has been adding and improving many features [19].

#### V. DESIGNING A MODEL

To design the model of social commerce, first we must review and analyze those limitations, restrictions, conditions and characteristics of developing countries, which are effective in this type of commerce. These cases have been reviewed under title of considerations and depends on the type of them, they will categorize in different branches. Then social commerce model which has been offered by Jacopo Paoletti, would be become native, based on these results. This model has four main aspects [20]:

**Economic:** Accurate measures of cost–benefits, beside items such as budget, and return of investment (ROI), are items which will be placed in this aspect.

**Technologic:** selection of suitable software, Tools, required technologies and as whole aspects of model’s technology will be considered in this section.

**Sociologic:** is a review and study of a behavior in a society and scientific research in market and trading of goods and products, beside as the related researches of sociology are some of the items that must be considered.

**Legally and Security:** This aspect includes the (statutory) issues which are related to areas of legally, security and politics.

##### A. Cultural Considerations

Important consequence of the spread of modern information and communication technologies based on the transformation of cultures. Result in the creation and development of information superhighway, a new culture is emerging (21). In developing countries, attention to cultural issues must be considered. In this regard, the major issue that must be considered is as follows:

- Level of people’s awareness of opportunities and advantages of social commerce
- Rate of suitable cultural by The related organizations in society for develop of general knowledge about information technology
- Computer Penetration
- Informed by the mass medias
- Relevant and suitable contents compatible with people’s religious and culture.

##### B. User Considerations

The next item (subject) that must be considered is situation of internet users. First we look at the internet population in the world. Currently, 2.2 billion Internet users worldwide are that compared to the year 2000, 528.1% has grown. By considering the population, china with more than 513 million internet users, has the highest rate of user, which the rate of growth in population, has reached to 2280 percent in years between 2000 to 2010. Also United States has been placed in second Rank with 425 Million users, which is almost 78.3% of its population and from internet penetration point of view, Norway with the rate of 97.2% from its total population, has the most internet user [22]. The world is home to 7 billion people, one third of which are using the Internet. Over the last five years, developing countries have increased their share of the world’s total number of Internet users from 44% in 2006, to 62% in 2011. In developing countries, 25% of homes have a computer and 20% have Internet access, compared to 20% and 13%, respectively, 3 years ago [23]. Beside as number of internet users, there are some other parameters that interfering this issue, which are as below:

- Population factors (such as high average Age for high efficiency)
- Percent of housewife’s access to internet
- Rate of information technology experts and their technical quality
- Amount of training and expertise necessary in relation to employing the techniques of e-commerce.
- Type of user’s interaction with commerce tool

##### C. Technical Considerations

We review the technical remarks from tow aspects of internet speed and technical infrastructures:

**Internet Speed:** According to Akamai<sup>1</sup> company researches, in South Korea with average speed of 14.6 Megabit per second, has been placed on the top of internet speed provider. Then Japan with an average 7.9 Mbps and Hong Kong with the speed of 7.6 Mbps have been ranked second and third. In table 1, situation of internet users in Middle East and world have been compared [24].

Table 1.  
Comparison of Internet users in the Middle East and the world (22)

Region	Population	% Of total world Population	Internet Users	% Internet Penetration
Middle east	216,258,843	%3.1	77,020,995	%35,6
Other	6,713,796,311	%96.9	2,190,212,747	%32.6

<sup>1</sup> <http://www.akamai.com/>

countries				
Sum	6,930,055,154	% 100.0	2,267,233,742	%32.7

Also in figure 3, internet speed in some of developing countries has been illustrated.

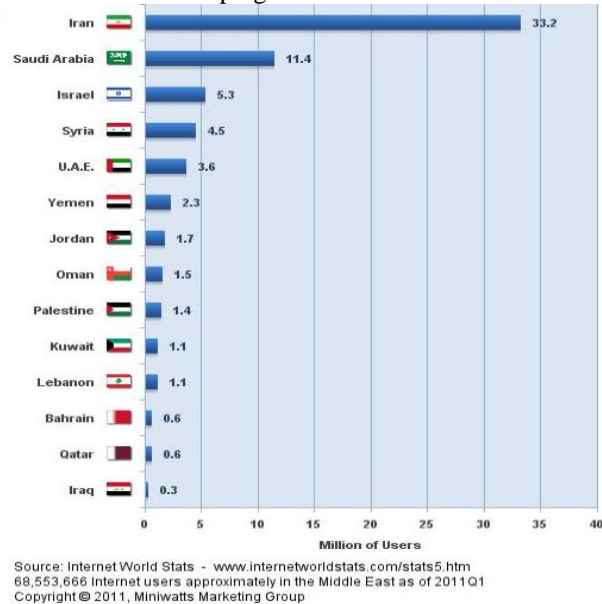


Fig 3. Situation of internet speed in some countries

Technical infrastructures: The next issue is required technical infrastructures to conduct the tasks which are related to commerce such as e-banking, online payment and etc. In General technical remarks that must consider are as below:

- Situation of infrastructures for communication networks and satellites in country
- Speed and quality of the network
- Possibility of access to high speed internet
- Internet penetration
- Satisfying the bandwidth
- Number of internet service provider's centers
- Impacts of economic sanction on development of infrastructures on e-commerce

Existence (availability) of precise, fast and fluent banking system which is accessible through internet and without the need to be available physically

#### D. Legally, Security and Political Considerations

For the purpose of adjust the legal and Business relations, based on electronic interchanges (exchanges), commerce by internet must have a legal and specified frameworks and its gaps to be filled so both general people employ this kind of business and their rights to be insure [25]. In the other hand, providing general trust and reliability has a special role in expansion of exchanges in virtual environment and one of significant factors which could be effective in this matter is same legal support from internet users. In the other words, Electronic exchange's platform must have legal support which both sides of business trust it, their rights not destroyed or in case of breaking some of the right, there would be a legal support to compensate their financial; and spiritual losses. Also there are some issues about security and politics that they must be considered. The main issues in this area are as below:

- Providing the security for information
- Providing the trust and reliability (by having parallel servers, high technologies, and strong firewalls).
- Giving the required information to people about security of exchange of personal and confidential data, such as in formation for e-payment including account no, password for the cards and etc.
- Defining the personal rights in relation to Privacy of personal information
- Providing and conducting the comprehensive laws about electronic crimes
- Providing a law for Intellectual property
- Establishment of a comprehensive framework which is regulating the laws and policies
- Solving the legal issues about e-commerce
- Justification for not to filter (filtering) the social networks
- Coordination about making policies, execution (conduction) and supervision
- Offering enough priority and importance to ICT in organizational policy making
- Correct decision making by government in encountering with new phenomena's

### E. Economical considerations

Like all other issues about the commerce, Economic is one of the basic aspects of this type of business. The most important factors in this area are:

- Computer's price
- Total people's revenue
- Rate of competition in area of software industry
- Situation of empowering of electronic organizations offer an acceptable price
- Price of connection to internet
- Cost of telephone bills

Finally, the survey and researches that have been conducted resulted in localization of social commerce model, by considering all of above mentioned considerations which this model has been represented in figure 4.

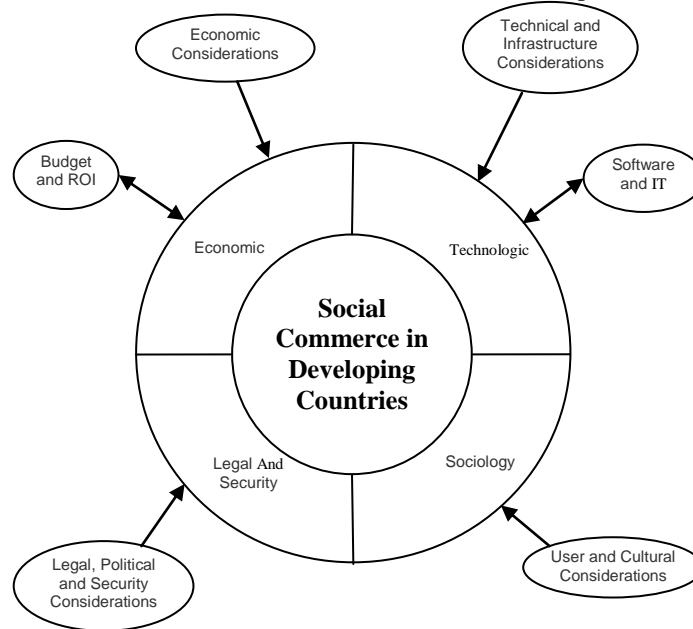


Fig 4. Native model for development of social commerce in developing countries

## VI. ADVANTAGES OF SOCIAL COMMERCE

As mentioned before, social commerce is selling a product or transactions to generate revenue with social media's influential. The value created with this type of commerce, generates using the less expensive products for the customers and exploiting this value to return back the consumers (satisfied customers and consumers, create a type of reliability for their friends who are still in process of decision making). At this moment, by considering that social Medias are transforming to main flow of Medias and innovations in technologies, it is possible to combine the commerce with social Medias. In the other hand, because of lack of compatibility of social commerce websites with culture and its special features of some developing Countries and as a result filtering of these websites in these countries, Design a model to develop this type of commerce is inevitable. In this paper after review of general concepts about social commerce, and its features and advantages, Successful websites of the world been reviewed and finally by considering the cultural, technological, infrastructural, and other considerations a model has been offered which by employing this model for development of social commerce, there would be a great jump in e-commerce, and will bring some advantage such as increase in business speed and efficiency, Reduction of the costs, exploiting from short time opportunities and etc.

## REFERENCES

- [1]. S Wasserman, K Faust. *Social Network Analysis in the Social and Behavioral Sciences. Social Network Analysis: Methods and Applications.* Cambridge University Press. 1994;: p. 1–27.
- [2]. Niknejad M, Akbarian R. Social networks, new trends in electronicmarketing. *e-Commerce and Computer Journal.* 2011 September.
- [3]. S Guo, M Wang, J Leskovec. The Role of Social Networks in Online Shopping:Information Passing, Price of Trust, and Consumer Choice. In *ACM Conference on Electronic Commerce; 2011; San Jose, CA.*
- [4]. P Leitner, T Grechenig. Collaborative Shopping Networks: Sharing the Wisdom of Crowds in E-Commerce Environments. In *21st Bled eConference-eCollaboration:Overcoming Boundaries through Multi-Channel Interaction; 2008; Bled, Slovenia.*
- [5]. H Ickler, S Schülke, S Wilfling, U Baumöl. New Challenges in E-Commerce: How Social Commerce Influences the Customer process. In *The 5th National Conference on Computing and Information Technology; 2009; Germany.*
- [6]. G Swamynathan, C Wilson, B Boe, K Almeroth, BY Zhao. Do Social Networks Improve e-Commerce?A Study on Social Marketplaces. In *WOSN'08; 2008; Seattle, Washington, USA.*
- [7]. B Rauf. New avenues of advertising in social networks: Business Like. *World Economy Journal.* 2011 November.
- [8]. A Afrasiabi Rad, M Benyoucef. A Model for Understanding Social Commerce. In *Conference on Information Systems Applied Research Nashville Tennessee; 2010; USA.*

- [9]. LAI L Sau-ling. Social Commerce – E-Commerce in Social Media Context. World Academy of Science, Engineering and Technology 72 2010. 2010 February;; p. 39-44.
- [10]. Richter A, Koch M, Krisch J. Social Commerce Eine Analyse des Wandels im ECommerce: Technischer Bericht Nr, Fakultät für Informatik, Universität der Bundeswehr München; 2007.
- [11]. HA Napier, Rivers O, Wagner S. Creating a Winning E-Business Boston, MA, United States: Course Technology Press; 2005.
- [12]. E Eldon. 2008 Growth Puts Facebook In Better Position to Make Money. [Online].; 2008 [cited 2012 April 29. Available from: <http://venturebeat.com/2008/12/18/2008-growth-puts-facebook-in-better-position-to-make-money/>.
- [13]. Facebook. Facebook Fact Sheet. [Online].; 2012 [cited 2012 April 29. Available from: <http://newsroom.fb.com/content/default.aspx?NewsAreaId=22>.
- [14]. T A Yang, DJ Kim, V Dhalwani. Social Networking as a New Trend in E-Marketing. University of Houston – Clear Lake ,Houston, Texas, USA. 2007.
- [15]. A Heleniak, O Dmitricenko, P Olaf Looms. Exploring the Facebook. [Online].; 2009 [cited 2012 April 29. Available from: [http://www.rthk.org.hk/mediadigest/20090212\\_76\\_122165.html](http://www.rthk.org.hk/mediadigest/20090212_76_122165.html).
- [16]. Falch M, Henten A, Tadayoni R, Windekilde I. Business Models in Social Networking. In CMI International Conference, Social Networking and Communities; 2009; Ballerup, Denmark. p. 26-27.
- [17]. GoogleBlog. Introducing google project real life. [Online].; 2011 [cited 2012 April 29. Available from: <http://googleblog.blogspot.com/2011/06/introducing-google-project-real-life.html>.
- [18]. J Guynn. Google+ may reach 400 million users by end of 2012. The Los Angeles Times. 2011 December 27.
- [19]. OfficialGoogle+Website. Join Google+ by creating your public profile. [Online].; 2011 [cited 2012 April 29. Available from: <https://plus.google.com>.
- [20]. J Paoletti. Social Commerce Model: a first analysis. [Online].; 2011 [cited 2012 April 29. Available from: <http://www.social-commerce.it/2011/06/social-commerce-model-una-prima-analisi.html>.
- [21]. M Castells. The Rise of the Network Society, The Information Age: Economy, Society and Culture. Second ed. Cambridge: Oxford; 2000.
- [22]. InternetWorldStats. Internet usage statistics: World internet users and population stats. [Online].; 2011 [cited 2012 April 29. Available from: <http://www.internetworldstats.com>.
- [23]. ITU. The ICT Facts and Figures: ITU Telecom World; 2011.
- [24]. A Habibi. Reporting on the Internet and its users Tehran; 2010.
- [25]. S Zarklam. The law of electronic commerce and electronic signature. In Proceedings of the conference examined the legal aspects of Information Technology; 2004; Tehran.