A Review on Online System for Book Distribution in Developing Countries: A New Method

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Abstract—**Book distribution is one of the main parts in the cycle of book trade. If we want to solve some problems like accumulation the books in the shelves for a long time, we should have a powerful distribution system for books among bookstores. In developed countries, they use technology based on booksellers' needs and growth the rate of their outcome. These systems can be inspiration for the developing countries without such systems. To achieve this goal, our studies divided in 3 main parts. First, evaluating some online systems and considering their features. Second, gathering and studying the opinions of booksellers as informants about their expectation of this system in Iran as one of the developing countries. Third, suggest an online system by attention to their worried about security of the same systems. It can be helpful for them to meet their customer's needs, promote their stores and get outcome more and more.**

Index Terms—**Axial Coding, Book Distribution, Controlled Trusted Center, Distribution System, Information Security, Qualitative Research and Semi-Structured Questionnaire**

I. INTRODUCTION

BOOK distribution as a part of book publishing has some problems. According to the theorists, one of them is lack of computerized distribution system in some countries like developing countries. This problem was solved in developed countries like Australia, Canada, Great Britain, Japan and The U.S. by designing a coordinated system to join bookstores. Usage of this system helps bookstores to know about their up-to-date book lists and meet their customer's needs by referring them to the other members of this system and in return of paying money, they receive their books as they like. On the other hand, this system makes selling books promoted andmakes available to have their wanted books with a little tryingand searching easily. In this study some samples of book distribution network (online system of book distribution) in some countries like Australia, Great Britain, The U.S., and Japan are reviewed. The rest of the paper is organized as follows. Section II presents related works around the samples in the other countries. Section III describes methodology and the procedures of it. Section IV presents the features of proposal online system by focus on the security of their information. Finally, section V concludes the paper.

II. RELATED WORKS

Bookstores as a connection between publishers and customers play a vital role in book distribution. Therefore, in order to have an efficient output to meet customer's needs and make publisher's products in a good way and in a few times available for customers, it's necessary to have an efficient distribution system. Bookstores as retailers beside wholesalers have special situation among customers, because customers look for their desired books according to their needs and favorites.

But, sometimes seeking their desired books waste customer's times and money and finally they don't find any books as they want. Regardless of these problems in publishing industry in some developing countries, like giving the governmental subsides, paper and cost for printing to some special publishers or attention to some issues and discarding them from bookshops, lack of efficient and professional distribution system to attract customers to make the searching process easy for them and then marketing for books in the bookstores to sell them in a good and easy way, creating such systems can be useful. We know systems with these features in the other countries such as Australia, The U.S., Japan and Great Britain that help customers to find their desired books in a short time in the best way and on the other hand they help bookstores to sell their books more than previous, in return obtain their profits.

We listed these sites to acquire with their application and gave information about their structure as the best samples of what in our mind:Abebooks, Alibris, B & N, Textbooks and eCampus. It's essential to mention that our studies are different from online bookstores like "Amazon" in the world. Then, our purpose is joining bookstores in a common site by sharing their owning to inform together when one of them doesn't have a special title in his own shop and he can search it in the site and buy it for his customer in a short time and easy way to attract customer's satisfaction and sell their books to avoid keeping books without any demands for a long time.

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Abebooks [1] is one of these sites who gathers thousands bookstores around the world. Its aim is making looking for a book easy without waste much time or money by referring to the site. It attracts their customers by exceptional and suitable prices plus existing rare and out-of-print books. It utilizes technology beside pictures of books to introduce new titles to book lovers. Customers can search their desired books in different ways by inserting their author(s), book title, publishing information, ISBN, and any information about them to order directly or go to the closest bookstores and order them to buy their books from the other shops and provide them for readers in a while in low price.

It has more than 110 million rare, used, new and out-of-print books. Book fans can find desired books according to their favorites or needs. For instance, bestsellers or collectible for collectors, new or used books for students or antiquarian books for treasure hunters exist. The purpose of launching this sit is to help people to buy any book from any book shops wherever they want then its business promoted around the world via six international sites: AbeBooks.com, AbeBooks.co.uk, AbeBooks.de, AbeBooks.fr, AbeBooks.it, and IberLibro.com. Its database and search engine is extended on the Internet. Visual Foxpro is its prototype; however, the system has since been changed to an Oracle database combinedwith Java servlets and an Alta Vista search engine. The new platform was selected particularly for its measurability - its ability to scale up to higher volumes as required. They expect kept on development faster than previous for future years.

Alibris [2] is one of the other sites that lists bookstores by locating them based on the city or province and claims that it's the first online bookstore for rare or new books, music, movies for various interests around the world, special technology help founders to have more than 100 million users to use libraries, new, out- of- print, used books and retail business partners.

Since founding in 1998, this site developed as one of the largest independent bookstore and now it does some activities for a long time like following:

- Supporting thousands of independent sellers
- Providing buyers with sellers' great prices and unbeatable selection
- Giving customers the space of mind of its proven track record of satisfying customers just like them.

B & N [3] is another site that joins bookstores. It says that the reason of its successes is attending to different favorites to present many titles of books for them. Now, it claims that it's the largest and the most active online bookstore because of owing large stocks around the U. S. and able to deliver more than 1 million titles immediately. Despite of having many titles in this site, it's so important to provide an easy way to find books in a short time. Then, it has a powerful search engine to find books as customers want, like fields of author(s), title and keywords so soon. In 2009, Barnes & Noble.com also is a pioneer in eBooks, by more than 1 million titles in its eBooks store and sending book. Its customers can read their favorite eBooks by using advanced technology and download books in a few times. It has an incredible arrange in contents. It has hundreds of video author interviews; Emmy- winning documentaries and hold weekly book show.

Textbooks [4] is the premier source of new and used textbooks for students with a great discount. By referring to this site we see more than 7 million titles available. When customers choose and buy their books, they prepare to deliver to them. It means that clients can find books in an easy and comfortable way and make them available immediately. Its goal is to take the stress out of saving on customers' textbooks. Practically, its mission is to ensure customers get the right book at the right price, quickly & easily. By using Textbooks.com customers can save their money and meet their needs. It claims that it has the most second- hand textbooks around the world. Also it says that it has many types of books as customers want around the USA by delivering fast without paying any money.

eCampus [5] is the most dependable site to supply textbooks for college students in the world. This site contain a variety lists of bookstores and it tries to provide the fastest, cheapest and convenient way to have textbooks in the best way. Although it is one of the best sources to provide high quality textbooks, it continuously tries to make better the way that it works and the services and products they can provide. About the system architect we can say that the eCampus technical architecture is created to continue operational and secure every day and every time non-stop.

The web servers and site application are running on the Microsoft ASP/SQL Server platform. eCampus keep multiple server and databases backups to make certain about all data exist. Due to being more security, all web transactions are encrypted using Secure Socket Layer (SSL) Technology. The web site and servers for eCampus are hosted in a strength environment with OC-3 fiber optic Internet circuits' non- stop power, diesel backup generators and Halon fire suppression systems. Network routing and security is through a host of Cisco routers and switches, and net screen firewalls. The network is monitored 24-7 to prevent forbidden entry.

In Great Britain, The U.S. and Australia expand such systems to be mentioned. They have different kinds of application to attract customer's attention and become famous in the world. Sometimes they claim that they have global services and they can cover all materials in any language wherever their customers want. These systems are introduced above as the best samples of it, have the necessary properties that called information security means that they have the power of protection against some illegal things. It's so important to be alive in the virtual world for online systems.

Table1: A list of online system of book distribution

No.	Company	Materials	Coverage
1	Abebooks (2008)	All types of books: rare, old, used, collectible, new	110 million titles
2	Alibris (1998)	All types of books, films, music	More than 100 million titles
3	B& N(1997)	All types of books, films, music	More than 1 million titles
4	eCampus (1999)	Textbooks	
5	Textbooks(2006)	New, old& used textbooks	7 million titles

III. METHODOLOGY

We used qualitative research instead of quantitative research; because the first purpose was exploring answers and we didn't have information about it then it was useful for us [6]. So, according to the implemented points in the last section and by attention to the level of facilities in some developing countries, we studied the number of bookstores in Iran as one of them to know bookseller's opinion about the features of online system among them to distribute their books. To obtain all probable answers decided to use semi-structured interview and direct observation based on qualitative research. Semi-structured interview is flexible, means during the interview if a new question bring up, interviewer can ask it and find new points [7].

Then, at first we prepare open questions to receive various replications. It's necessary to notice that these kind of researches don't need to have a specific sampling, so that, we started the interviews with booksellers as informants and continue it to arrive the saturation data. Their reactions towards the questions of interviews are different. In order to make clear their replication, we use axial coding to classify and determine relevant and irrelevant them. Axial coding is the process of relating codes (categories and concepts) to each other, via a combination of inductive and deductive thinking [8]. After that, the classified and extracted codes were analyzed to make decision. Consideration to the codes, give us 4basic areas to launch this system. These areas were:

1. Opinions about customers
2. Opinions about booksellers
3. Opinions about online system
4. Opinions about book and book distribution

According to the answers, they had some expectations like provide the security of their information in online system, reduce the additional costs like staff's salary and book delivery, keep bookstores' independence and increase their outcome more than before.

IV. FEATURES OF PROPOSAL MODEL FOR ONLINE SYSTEM OF BOOK DISTRIBUTION

Booksellers had some expectations that were mentioned above. Then, by attention to them, we suggest a basic system for bookstores. This system can reduce their additional costs, when a book was sold; its information was removed automatically without staff. Also, it can be increased their outcome by expand their services to the customers and attract their customer's satisfaction. The most important issue for bookstores was being independent. When they receive individual ID to insert their information means that they are separate and they cannot interfere in their own booklist. By considering to the bookstore's need to keeping their private information and the problem of online systems in general, we suggested an online system for bookstores in some developing countries that don't have it with these features and it has two main parts in general:

1. Bookstores: in this system they play as a client with the most important and basic features: all bookstores must have individual ID and Password to log in and allow entering into the Control Trusted Center (CTC), and bookstores' booklists to make the basic database.
   The most important point should be mentioned is that all bookstores are exactly independent. Then, any bookstore cannot access to the other confidential information directly.

2. Controlled Trusted Center (CTC) - "a higher level of security can be achieved if there are added controls on the distribution of the public key. The public- key announcements include a timestamp and are signed by an authority to prevent interception and modification of the response" [9]. There are many approaches to improve the security level of online systems that one of them is Controlled Trusted Center that was explained above. All systems should consider these features to enhance the security level:
   a. *Confidentiality*: it means that in order to protection of personal privacy, online systems try to restrict the level of accessibility to client's information to respect the client's right and ensure them to use these systems.
   b. *Integrity*: it means if these systems want their clients to ensure to use them, they must be able to protect the non-repudiation and authenticity of information against to inaccurate and incomplete information or destruction them.
   c. *Availability*: it means that all online systems to attract their clients' satisfaction try to emphasis on accessibility of credible information timely

So, it's necessary to send information to Controlled Trusted Center by bookstores such as; ID, daily up-to-date booklist, public key, signature and etc. CTC plays a vital role in connection bookstores with each other indirectly as well as keeping bookstores' independency. The detailed procedure is illustrated in the following example:

A customer goes to a bookstore that is member in this system and look for desired book(s). At first bookseller send its information to his own internal database, if it's not found, it's sent to the CTC to search comprehensively. This request should be encrypted by digital signature. If the authentication of bookstore is confirmed, the title or other information filled in the other fields will be searched among all booklists that make the basic database, at the end of this path, the encrypted result(s) - book(s) found- by public key will be sent to the bookstore and bookseller can reply yes to customer and provide customer's need so soon.

The strength points of this system are:
1. Saving customer's time
2. Attraction of customer's satisfaction
3. Prevention of accumulation of books in the shelves
4. Increasing their outcome
5. Being independence and have individual ID
6. Being sure of their information

The weak points of this system are:
1. Cost of maintenance
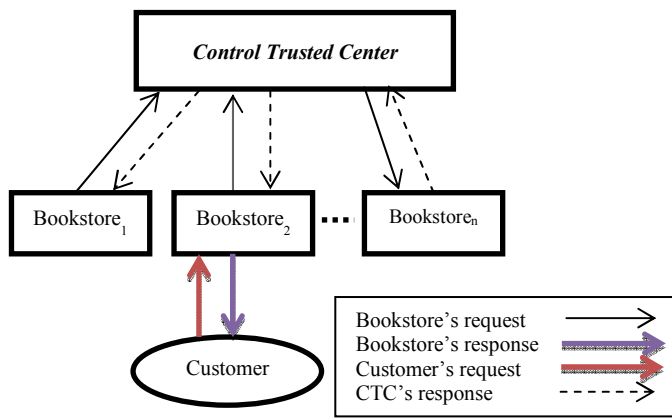2. Cost of launching at first step
3. Cost of implement

Fig. 1. A diagram for online book distribution system

V. CONCLUSION

When we look at the book distribution system in developed countries, they are so useful to receive books in the fastest and convenient way that these attract customers' satisfaction and attention to use these systems and their marketing will be in progress, then they expand their distribution network in the global level as they claim and they obtain enough profits as they can't imagine. Wholly, one of the most necessity features to be succeed in launching and booting online systems is being secured against probable problems. We considered it in proposal online system of book distribution for bookstores to ensure bookstores to protect their information against probable attacks. It can be possible if we keep bookstores individually without any interference from one of them or non- members. Then by set a Controlled Trusted Center, their independency kept and bookstores can be sure about their privacy information.

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