The Comparative Study of Supply Chain between Traditional and Electronic Publishing Industry

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Abstract

The rapid development of computers and multimedia techniques makes the timely and accurate transmission of information possible. The electronic publishing becomes more and more popular in recent years. And its impact on the traditional publishing industry is enormous. This paper analyzes the characteristics between electronic publishing industry and traditional publishing industry, and gives some suggestions on how to improve the supply chain of traditional publishing industry.

Keywords: Supply Chain, Electronic Publishing, Traditional Publishing

1. Introduction

China's publishing industry has a civilized history for thousands of years. From BC, when the papermaking and print were invented, to 1718, when the West printing was introduced into China, and then to 1949 when New China was established, the publishing industry always kept moving slowly and followed the step of history.

Developing with the economic reforming in China, the demand of books consuming is now becoming much greater than before. The market of the book industry is also endowed with tremendous developing potential and growing space. All these situations can be easily figured out from the statistic data provided by the National Bureau of Statistics of China as shown in Figure 1 [1]. Figure 1 shows that a much higher rate of the book return to publishers is leading the book industry in China to an unhealthy situation, in which the rate of book returns reaches more than 40% and low sale takes place frequently.

With the development of computers and multimedia techniques, the electronic publications become popular in recent years. Electronic publishing's impact on traditional publishing industry is enormous. What could the traditional publishing industry do about this situation? To answer this question, we must make it clear that the most important difference between these two kinds of publishing is supply chain [2]. Therefore, the most crucial thing is to analyze the characteristics of supply chain between the traditional and electronic publishing industry, so that we can find the way to optimize the traditional publishing industry supply chain.

Figure 1. Book industry publications in China
2. Analysis of Traditional Publishing Industry Supply Chain

2.1. The structure of traditional publishing supply chain

Basically, the supply chain of book industry in China includes the publishing house, the mid-disk (wholesaler) and bookstore. Combining the limited data and domestic market, publishing houses choose the topics and publish based on previous experience of publishing and sales. Wholesalers buy books from publishing houses and sell them to bookstores. Bookstores purchase books from wholesalers (the situation we mainly considered in this paper) or the publishing houses and then sell them directly to readers.

All of enterprises nodes in the supply chain are linked by orders, during which there are flowing of materials flow, capital flow and information flow. The ultimate goal of business is to best meet customers’ demand, then gets profit. Structural model of its operation as shown below [3]:

![Figure 2. Supply chain structure model of publishing industry](image)

The structure of the market makes the book logistics flow to and from among the publisher, wholesaler and retailer. Although the pure sale of the book market in China is about 40 billion Yuan on the average each year, the average inventory cost exceeds 30 billion Yuan [4]. Besides, the in-transit inventory of the book is also huge, and a good deal of the overstock books are returned to the book publisher from the retailer one time at the end of each year, so that many returned books have to be as an input of paper making.

2.2. The feature of traditional publishing industry supply chain

The supply chain of traditional publishing industry is a function structure chain, which provides publications to consumers. It is made up of content, communication carriers’ supply, editing, distribution, storage and transportation etc. Compared to the other industry supply chains, traditional publishing industry supply chain has the following three features:

1. With the deepening of publishing industry reform, the structure of publishing industry supply chain is no longer the traditional linear one. The three links enterprises of supply chain, which are publishing house, the mid-disk (wholesaler) and bookstore, begin to expand to the other side of the business domain and their functions become to infiltrates with each other. The supply chain of publishing industry becomes the complex structure of ‘net-link’.

2. Publishing industry supply chain is the hybrid supply chain which combines pull with push.
(3) Both the economic and social benefits are goals of the publishing industry supply chain. It must maximize social benefits while maximize economic benefits. It must realize the effective combination of both social and economic benefits.

2.3. The problem of traditional publishing industry

Publishing industry supply chain management in China started late. So there are a lot of problems, mainly in:

(1) Huge cost. First, there is no long-term relationship among the members of supply chain [5]. The members only care about their short-term profit but do not care the strategy partnership. As the independent market entities, printing plant, publishing house, issuers and logistics companies have their different interest orientation. In order to get the system resources and maximize the benefit themselves, the members begin to keen game, because of the incomplete and asymmetric information, as well the effective monitoring mechanism. Above all things, the partnership can not keep and execute the strategy decisions for the whole supply chain. And then, the inside transaction cost and structure cost increases. Second, the concentration is low in China’s publishing industry. There is no real key enterprise which can make the whole supply chain work stable. So this situation increases the management cost because of the uncoordinated operation of publishing industry supply chain.

(2) Disconnection of supply and demand. Supply and demand of book industry has been so prominent because of the low market-oriented.
   a. The topics demonstration is not proved strictly. As the information communicated of supply chain is not enough and timely, most publishing houses can not know the demand of consumers in time. Publishing houses only can take the wholesales’ orders as basis to choose topics. The topics demonstration is too simply to reflect the consumer demand. Something results in the wrong topic and bullwhip effect, including the lack of demand for the readership survey, the lack of effective data to support decision and the all sense decision.
   b. Demand and supply channel is unreasonable and communication is so poor. The most usually situation is that the consumers complain no books they want while there are many books the publishing houses could not sell. No matter the marketing or advertising is not good enough.
   c. Demand and supply structure is distorted [6]. Because the sales situation of books can not be forecast exactly, the first-printed books issued by the publishing houses are often too much or too little. Then the books which consumers need and could solve their practical problems are scarce. At the same time, the books which consumers do not need are printed over and over again. This also results in the high stock.

(3) High stock. The basic reason of high stock is disconnection of supply and demand. Publishing industry overstock has been very serious in China. For example, in 2003, storage rate was 87% which was far beyond of average rate 30%-50% [7]. The increasing of stock is not only caused the resources wasting, but also becomes the bottleneck of book industry development. The stock has become the most important problem that we must highly value. So, stock optimization is the key issue to decrease the management cost.

(4) The participants in book supply chain in China hold such weak control capacity to the book logistics and reverse logistics that the whole book industry has to be fed up with the high inventory level and rate of book returns.

(5) The book supply chain structure causes a complicated operating process. The book flow is always running to and from over the whole supply chain.

(6) The participants of the book supply chain can not carry out the real time scheduling and monitoring the information of the book logistics and reverse logistics information. And the supply chain structure makes the information sharing so difficult that the book flow information is scarce to every node which then becomes the lonely information island out of control the book flow information [8].

From the above analysis we can see that, publishing industry supply chain must be reformed and optimized through management point. Only that could reduce the huge lost and the risk of bankruptcy which caused by cost problem.
3. The Analysis of Electronic Publishing Supply Chain

3.1. Definition of electronic publishing

Electronic publishing (or epublishing) is the combination of computer technology and publishing activity. It originated between the late 1950s and the early 1960s when the scientific publishing became electroneze [9]. With the improvement of information technology, the definition of electronic publishing is changing, until now there is not a unifying one for all researches. The calling of electronic publishing was seen first in English in 1977, when the computer technology was used for the work of editing before printing. And the electronic publishing we say now is the publishing form, which stores all of the information in magnetic, optical and electrical media with binary in the whole publishing procedure, and the process and transmit of information is used by computers and other similar machines from editing to making to publishing.

3.2. Current situation of electronic publishing

Electronic publishing is concerned about the area of IT, Internet, wireless mobile networks and traditional publishing et al. There are many kinds of content and types of electronic publishing, including Internet journal, e-book, e-newspaper, weblog, online music, mobile phone publishing, network game and Internet advertisement and so on. The second Digital Publishing Base, which established at Chongqing in April 26th, 2010, proposes to build ten kinds of industry which are digital library, digital newspapers and periodicals, Internet publishing, mobile phone publishing, database publishing, printing on demand, digital printing, network game, digital music, digital education and complex cross-media publishing. From these types we can also see that electronic publishing is so widely and diverse.

Electronic publishing has been emerged for more than 10 years in China. According to the <2010 Annual report of China's digital publishing industry>, the output value of digital publishing industry was more than 79.94 billion Yuan in 2009, which is 50.6% increase over 2008. Among them, the output value of digital journal is 0.6 billion Yuan, digital book is 1.4 billion Yuan, digital newspaper is 0.31 billion Yuan, network game is 25.62 billion Yuan, network advertisement is 20.61 billion Yuan, and mobile phone publishing (including music, game, rendering and so on) is 31.4 billion Yuan. The output value of electronic publishing was more than traditional publishing in 2008.

3.3. The composing of electronic publishing supply chain

Electronic publishing supply chain is made up of five parts, which are content providers (publishing houses), content resources (writer and their books), sellers (online bookstores and distribution agents), buyers (readers and Digital Library) and technology providers (software technology providers and terminal equipment manufacturers). Electronic publishing houses just like the highway, and the other four parts like the cars, goods, stores, consumers and the highway maintainers, which ran on the highway.

Technology providers are the highway maintainers, who are the tie to defend the industry chain. They are in charge of the technical support of packaging, transportation, distribution and statistics. They also undertake how to bring the goods to consumers safely and effectively. Highway can not do anything without cars. Cars can not do anything without goods. Goods can not do anything without stores. If there is only highway, cars, goods and stores, but no highway maintainers, we still can not take the goods to consumers safely and effectively. So, all parts on the industry chain are indispensable. They must cooperate with each other to make the electronic publishing stronger and bigger.

3.4. The features of electronic publishing supply chain

Reforms in modern society are changing people's spiritual and cultural track of life. The cultural needs of modern society make the birth of a new type of media carrier. The traditional publishing industry is dependent on words, papers and printing etc.. With the developing of electronic technology,
the carrier of publishing is changing. In the supply chain of electronic publishing, software technology providers and terminal equipment manufacturers become more and more important and invent a lot of new techniques and equipments. The biggest feature of electronic publishing is that it makes the procedure of publishing simple and makes the circulation links short. Readers and writers who are on the two sides of industry chain can communicate directly. Publishing changes to information flow from the traditional material flow. The transmit changes to double way from single way, even to the multiple way. The main production changes to goods plus service from goods. And the production changes to digital products from papers. The publishing activities changes to the part of network information services from book industry on the supply chain. This is not only the change of carrier form, but also the new idea and run model of publishing. The changing directly impacts on the existing production process, which set up the publishing system and industrial structure according to a paper book.

3.5. The advantages of electronic publishing compared to traditional publishing

The obvious advantages of electronic publishing compared to traditional publishing as following:
(1) Limitless total publishing. The maximized utilization of information resources are achieved through Internet. Theoretically, electronic publishing which relies on the Internet is limitless on publishing resources. One hand, the works which were given up before because of the economic line can be re-published. On the other hand, the works which had been published before can be refreshed on the Internet. Through this way, the total amount of electronic publishing increased and it is limitless from theory.

(2) Real-time interactive communication. Real-time interactive feature of the Internet has been known by everybody. McLuhan proposed Global Village first based on power media. Paul Levinson who was known at the digital age McLuhan said, “… TV viewers are isolated families. They keep distance to things in TV. And the distance can not be compressed. Internet completes the McLuhan’s analogy to make the Global Village come true. The villagers on Internet can change their ideas and talk etc. with any villagers who live in anywhere, just through a computer, a line and a browser…” He also expatiated on the interactive of internet and said, “the computer screen was coming. It not only received information, but also sent information, at home, at office, everywhere…”

As the combination of Internet and publishing, electronic publishing does have the above features and it compensates for the drawbacks of traditional publishing. Electronic publishing increases the real-time feature of publishing. After the edited manuscript is uploaded on the Internet, the issue of electronic book is finished. Readers all over the world can read the newest electronic books at the same time. Meanwhile, readers can make the notes at anytime, can choose their favorite reading style, can change their reading environments, and can even give comments. Comments can be sent to the server of publisher immediately. The writers and editors can communicate with each other on Internet and change their comments. The interactive feature of electronic publishing is shown from the above procedure.

(3) Multimedia communication and nonlinear reading. Electronic publishing can send information more real and vivid by means of words, sound, pictures, figures and flash etc. Readers can read books non-linear according to their interests and needs, as the non-linear and three-dimensional structure of information is edited and created in electronic publishing.

4. Some Suggestions

Based on upon analysis, we think we should consider the successful experience of abroad and search a new and effective way to develop our publishing industry supply chain. And experience of the developed companies overseas shows that information technique is the previous condition to improve the supply chain, information shares is belt, win-win cooperation between enterprises is basic, good logistics is guaranty, and the combination of e-commerce and logistics management is trend. So we give some suggestions for the improvement of traditional publishing industry supply chain as following:
(1) Ideas Revolution
People are the most important factor in all of the process. So the people who work for traditional publishing must overcome the problems of idea. We have to realize the rapid development of electronic publishing, and believe it is the certain trend of traditional publishing.

In nowadays, although the paper-based books are still the leader, the electronic publishing is increasing very fast. We must know that it is not only about the new techniques, but also the new ideas and new operating. We should open our mind to cooperate with the related industry of electronic publishing, so that the traditional publishing will be developed well.

(2) Print on Demand.
Print on demand (POD), sometimes called publish on demand, is a printing technology and business process in which new copies of a book (or other document) are not printed until an order has been received. "Print on Demand" developed only after digital printing began,[10] because it was not economical to print single copies using traditional printing technology such as letterpress and offset printing.

Because of Internet, most books can realize Print on Demand and it reduces the risk and stock of issue so much. Print on Demand not only satisfies the consumers’ habit of reading paper-based books, but also gives a new marketing approach to publishers and bookstores. We can sale split the paper-based books through Internet. For instance, we can sale law books, tool books and dictionaries on items.

(3) Digital Copyright
The digital copyright is one of the biggest barriers to stop the development of electronic publishing developing. Before electronic publishing emerging, the copyright is only for paper-based publishing. Now, the copyright of original book is divided into two parts: the paper-based copyright which owns in publishing house, and digital copyright which belongs to technique providers. Because of this separation of copyright, the publishing houses can not publish their books into electronic form. In order to solve this problem, publishing houses should establish the copyright idea as soon as possible, and focus on the maintenance and development of digital copyright.

(4) Build the comment system of suppliers.
First, publishing houses must choose the right suppliers, because a good supplier is one of them most important factors to ensure high quality books. Long-term cooperation is the standard to choose right supplier, including production capacity, management, technology, product quality, service level and financial strength. And the details can be discussed according to the needs of every different publishing house.

(5) Establish an information channel which is free and can be shared.
In order to improve the quality of books and to meet the needs of consumers, the information between publishing houses and suppliers should be free and shared. Publishing houses and suppliers should build a fixed channel by modern communication tools. Publishing houses should tell suppliers the information in time which includes production schedule, delivery time, production requirements and production plans, the same as suppliers. So that, publishing houses and suppliers could assign their production schedule, deploy their staff, as well the material procurement plan. Furthermore, they could improve the supply chain efficiency and guarantee the quality of production.

(6) Establish the special research institutions and make sure there are enough professional people work in there.
The perfect information platform should be established, especially the database of their own resources which includes words, images, audio, video files. They should be classified to be easily found and checked. Furthermore, the process should be adjusted according to the electronic publishing. And the last but not the least, professional people who could operate the machines and business should be brought in time.

(7) Improve the environment of implement and the utilization of resources
Because of the delay of China’s law about electronic publishing, the right problems of electronic publishing during the procedure of publishing keep coming out. Plus, some companies have the protocols with original writer of paper books, these paper books make the additional balk to right to electronic publishing and it is not good for the improvement of electronic publishing. Furthermore, the standard of electronic books is not unified, so the general standard and the format problem becomes the core of development of electronic publishing. For example, the CEB of FOUNDER, PDG of
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CHAOXING, PFD of Adobe and CAJ of CNKI, all of the above things have their own format which increases the cost of reading for users who use the different reader units, and it is not good for the integrate and changing of content.

To sum up, the relationship between publishing houses and suppliers is cooperation, is long-term development. The supply chain between them is such a mode of operation, which could increase the whole strength, could adapt market competition, could complement superior resources each other, and could develop together. Publishing houses should value this management pattern, and keep perfecting it in practice.

5. Conclusions

Because of the coming of electronic publishing, the traditional publishing was hit badly. But it is also a promotion of paper-based publishing. Network model with many advantages and characteristics will bring more promotion, and not replace it. In a very long time period, paper-based publishing will still dominate the market. But from the long-term point, they will coexistence, complement and promote of each other in such a long period.

This paper analyzes the drawbacks and the challenge for traditional publishing when the electronic publishing becomes more and more popular. We also discuss the supply chain of both paper-based and electronic publishing. From all of these works, we give six suggestions to improve the traditional publishing supply chain, and the most important thing is cooperation.

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7. References