

# **The Integration of the Third Party Information Resources: The Informationalization Breakthrough for Enterprises Based on the Star Supply Chain Management**

Bo Jiang, Nan He, Na Zhao, Zhao Zhao, Xin-Lu Yang

School of Economics and Management

Northern Jiaotong University

Beijing, China

chinabobo1980@yahoo.com

## **Abstract**

With the development and application of the technology of computer, network and telecom, the informationalization has become the significant guarantee for enterprises to realize the continuous development and strengthen the marketing competitive power. Now, how to make full use of information remains a hot issue for the enterprises. A new idea of the third party external resources integration is brought up here. Setting up a star-supply chain with the core of the third party information resources integration enterprise helps to solve the problem of sharing information resources among enterprises, and promote economic globalization.

## **1. Introduction**

With the development of the quick steps for the global economics and the fast popularity of the network, a lot of changes have taken place in the circumstance of global trade and fierce competition. In the next round of the economic competition, we could see that, developed countries will strengthen the enterprise competitive power by applying information technology as a main lever and weapon, constantly cut the cost of products on the value chain, reduce the period, improve the efficiency and the product additional value, thus strengthening the economic energy and the developing power. On the increment chain which helps to create the value chain, the relationships between the supplier, producer, distributor, customer and the interrelated benefit groups are strengthened; and the social value trend which keeps changing influences the decision-making and operation of enterprises.

Under such kind of background, the traditional pattern is broken, and it is impossible for the enterprises to gain long-term profits through single batch manufacturing or on a large scale. The interaction and influences between enterprise and enterprise, enterprise and supplier, enterprise and customer, and enterprise and other groups is much more stronger. And the times of great change, from isolated manufacture to collaboration operation, from independent development to cooperation, has arrived. And it results in the direction and evolvement of informationalization.

## **2. The connotation of informationalization**

The informationalization means that the enterprises utilize information technology in every tache of production and management, explore and take advantage of the internal and external information resources and human resources sufficiently, and set up a corresponding organizational pattern, in order to realize the automation of production, the network of the management and intelligence of the decision-making support, improving the efficiency, level and benefits of the production, management and decision-making, and strengthen the competitive power of enterprises.

In the market economy, informationalization mainly lies in the fact that in pursuit of fastness, novelty, endurance, low costs and efficiency, the enterprises, as the principal part of marketing competition, employ the information of modern technology and communications technology in the process of daily operation and management. The advantage of it is that it can span over the boundaries of the information gathering and sharing sections, fields and industries, break through the restraints of time and space, promote the transformation of enterprise management and the innovation of technology and knowledge, integrate and optimize the resources of the enterprises, including human resources, materials, capital, etc, and as a result, make the enterprises' competitive advantage more prominent.

The informationalization of an enterprise is a complex course, covering a wide field. It may be divided into two parts—the internal informationalization and the external informationalization of an enterprise.

### **2.1 The integration of the intranet and the home information for an enterprise**

The integration of internal information means to realize the informationalization of basic management, research, and development. The foremost task for the integration of internal information is to realize the management computerization, share of the information, rational decision-making and wholeness of management. In another word, realizing linking such taches as management, research, development, production, equipment, supply, sales, transportation and service, realizing the resource optimization of human, capital, materials, and technology by means of computer management software under advanced management idea,

such as MRP, MRP II, ERP, etc, thus helping the decision-making more rational for each department on the basis of the internal shared information, and lowering the marketing risk.

## **2.2 The exploitation and analysis of the extranet and the external information for an enterprise**

The external informationalization means that through the exploitation and analysis of the external information, the enterprises make use of the information resources to guide and influence the internal activities of the enterprises. In the days of fierce competition, how to utilize the external resource is a very important issue for enterprises. By the enforcement of supply chain management and client resource management among enterprises, strengthen the relationship of enterprises, suppliers and distributors; take great advantage of the information resource of great quantity and quality from home and abroad, keeping track of the product technology and market trend, and ensuring the superiority of knowing the market changes timely, and of strengthening the ability against risk.

The internal informationalization is the basis of the external informationalization, and only by combining these two parts can we create an integration of the clients and their partners, therefore benefiting from the external informationalization, operating the enterprise systematically, helping the enterprise cut down the operation cost, exploring the market and attract the clients, and supplying the clients with satisfactory service. The exploitation of the external information is the prerequisite of the supply chain integration from the internal to external, and only on the basis of a sufficient exploitation of external resources can an enterprise truly make use of the advanced idea of supply chain management(SCM).

## **3. The actuality of enterprises' informationalization**

With the arrival of new economy, the enterprises are trying hard on the informationalization, and have made outstanding progress, which represents in the following two ways:

### **3.1 The internal resource integration develops rapidly**

In view of software resource, most enterprises have set up modernized system of production management and working, and the software resource they have mainly focuses on some fundamental software, such as operation system, system maintenance software, office automation software and finance software. On one side, enterprises select useful information from various information sources through modern technology, and set up large-scaled database of high density in order to store a large amount of original information and useful information; on the other hand, enterprises promote the management and operation by robots and computers in production, assembly and storage, which helps the products be yielded according to the right time and right quantity, and be delivered to the

clients in time. At the same time, automation is realized on office system by combining computer and modern telecom technology, and terminal equipment is set up on every position, which strengthens the efficiency and accuracy of information. Nowadays, many large-scaled and medium-scaled enterprises have elementarily realized the internal informationalization, which means they have purchased a certain amount of ERP software, made the internal resources integrated to some degree, and realized the internal management computerization, etc.

In the part of network construction, as the internal and external information of an enterprise piles up and up and competition information ranks especially high in the enterprise activities, more and more enterprises are beginning to set up such departments as information center, which help to make the internal information service more professional and scientific, in order to manage the information resource synthetically. At the present, most enterprises have had LAN(Local Area Net), and many of them are connected to internet.

### **3.2 The exploitation of external resources remains a low level**

Although the integration of internal resource has improved a lot gradually, the integration of external resource remains a low level. The external informationalization construction of most enterprises stays as an internet platform which issues news or an E-business platform, and most enterprises lack the information source of themselves.

In order to overcome the fixed shortcomings of multiple production, it is necessary for enterprises to find a breakthrough of right decision-making, and only on the basis of complete information can they make wise decision. No matter whether the scale of the enterprise is large or small, the content of management is almost the same. However, different information is needed according to different levels of management. What the senior leaders of an enterprise need is strategy information, the middle-class leaders favor tactics information, and the profession and task information is for the basic managers. The complete degree of information for an enterprise determines the wise degree of decision-making, and as a result determines the operation risk. Therefore, there are three kinds of information that are necessary for an enterprise: macroscopic economy policy of the country, market information, and the information of the enterprise itself and its competitors. The general channel for information is rather simple, such as some publications, technology communication materials, and some materials gained on business. The patent information and some modern means and equipments such as online search are of such small number, and the materials got in these ways are not complete. The contents of some publications which are compiled and issued by the enterprises themselves are picked up from many sources with low quality, lacking the necessary technology analysis. This results in information contamination, and makes the enterprises lack fixed

information source of themselves. And on the other hand, due to the lack of management of information resource among enterprises, there are a great number of overlaps, dispersion, waste and deficiency. So, the exploitation of external resources is an imperative issue.

#### **4. The background of the external resources integration for an enterprise**

Since the 1980's, there has been a great trend worthy of being noticed—the integration trend in circulation industry. Resource integration means that in the specified field, space and time, under the direction of market system, optimizing the investment environment, taking good advantage of various resources, and strengthening the relationship between them, making them regulated in the marketing competition, compensate for each other and influence each other, in order to reach the status of optimization.

The information resource of an enterprise not only includes the internal information arisen from the course of production and operation, but also includes the external information, such as macroscopic social information, market information, finance information, production resource distribution information, relevant scientific and technological information and the information of the competitors, and this information has become the basis of operation decision-making and long-term strategy for an enterprise. So, the velocity ,quality and ability for an enterprise to handle, integrate and utilize information have become one of the important symbols of enterprise competitive power.

##### **4.1 the favorite condition for external resource integration—the economy globalization**

The application of modern telecom technology and network technology, together with the development of E-business, has promoted the procedure of informationalization of an enterprise; the trend of globalization, informationalization, and integration of the world economy have brought the production elements into circulation at an unimaginable speed, so that broaden the visual field of the enterprise, provide new market opportunities ,new external information and new partners, and also represent a larger scale competition and challenge. From the information expressway plan and enterprise "Digital Nervous System " of the USA, to the enterprise informationalization strategy of Japan, the European Union, and many developing countries, a global informationalization revolution has taken place on a large scale. All of these have become the favorite condition for external resource integration.

##### **4.2 the internal reason for external resource integration—the competition of circulation industry**

The integration of circulation industry has provided the third profits source, a new way to cut cost, improve

efficiency and gain more profits. In our traditional opinion, the first way to cut cost, is to reduce the variable cost of operation, such as reducing the number of staff, cutting down the material and management consumption. The second way is to reduce the fixed cost, such as running a shop in a marginal region of city with convenient transportation. In nowadays, it has turned to cutting down the operation and logistics cost of the whole circulation procedure by integration of the internal and external information resources, and try to improve the service simultaneously.

##### **4.3 The technology support of the external information resource integration—the development of modern information and network technology**

The rapid development of information technology has reduced the cost of information research, information storage, information transfer, and information analysis greatly. In the circulation field, the developed technologies are: POS,CAO,EOS,ASN,EFT,GPS, RF,AI, DSS, and EDI, etc. Besides, there are intranet, extranet and internet. As regard to software, there are MRP, MRP II , ERP, and CRM, which are developing with great potential in Europe and America. Modern information and network technology have provided a potent technology support for the external information resource integration.

##### **4.4 the concept basis of external resource integration ---supply chain management**

The supply chain management has become a main subject for the enterprise competition. The supply chain is an integral net-chain function pattern which links the supplier, manufacturer, logistics enterprise and the terminal consumer. Focused on the core enterprise, it begins with purchasing materials, manufactures the unfinished and finished products, and delivers them to the consumers through internet, by control of information stream, material stream, and capital stream.

The supply chain is made up of all the member enterprises, among which there's a core enterprise generally. Spurred on by the demanding information and by media of capital stream, material stream and information, the node enterprises realize the incessant incrementing of the whole supply chain through division of labour and cooperation. The supply chain is a net-chain structure, which has the character of complexity, mobility, customer orientation and intersection.

All of the enterprises on the supply chain share the common information, especially the terminal consumption information of the common mobile change. Try to make the information exact, timely ,and visible, eliminate the unnecessary commodity transfer, overstock, by promoting the information sufficient circulation among the enterprises. The information management with accuracy and specification, can weaken the uncertainty between the supply and demand, realize the fact of “replacing the

storage with information” ,reduce the storage of products, cut down the possession of flowing capital ,and reduce the economic loss caused by the invalidity and damage in the storage, in order to make the material stream on supply chain flow rationally and optimally, and shorten the production cycle and lower the production cost.

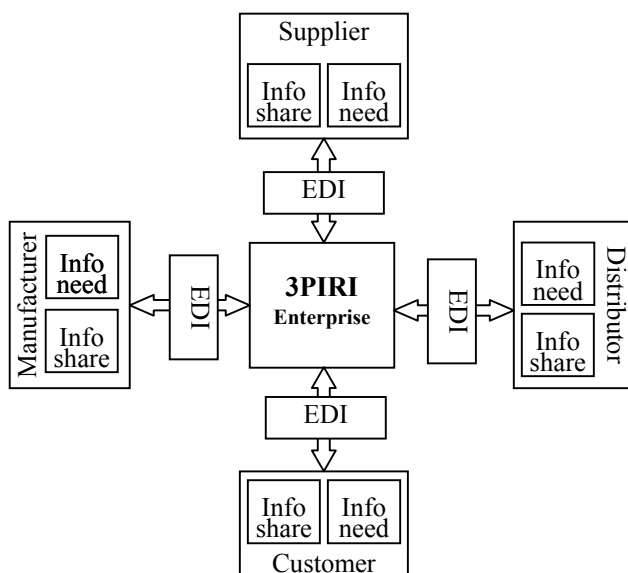
## 5. The settlement plan of external resources integration for an enterprise

The external resources represent to be very multiple and unordered, in another word, the demands of every enterprise for the external resources are so different. Meantime, an enterprise should meet different needs of others, too. Therefore, enterprises should build up several supply chains. In this way, a multiple-to-multiple relationship of resource utilization among enterprises is set up. So, how to deal with this kind of relationship? A third party enterprise is required. By disposing and integrating a great amount of external resources, the Third Party Information Resources Integration(3PIRI) enterprises will surely meet the individual demand for external resources, set up a corresponding external resource platform, and help to run a truly global supply chain management.

3PIRI enterprises can provide services as follows:

### 5.1 Establish an information database through the membership-system

The establishment of 3PIRI enterprises will lead to the formation of a Star Supply Chain Management(SSCM) system( Figure1), of which 3PIRI enterprise will be the core. Resources can be shared among different enterprises who are the members of the alliance. In this way, each enterprise acts as a member of 3PIRI enterprise, so it



**Figure 1: Star Supply Chain Management**

should announce its own inner information to 3PIRI enterprise, so as to meet the needs of the other members in it.

### 5.2 Dispose, integrate and allocate the enterprise's resources

With their ascendant technology, the third party enterprises can dispose and integrate various information resources collected and fulfill individual needs of the members.

### 5.3 Provide the enterprises with individual external resources

According to the demands of its members, and with the permission of the resource owner, 3PIRI enterprise can provide useful resources to the demanders with a certain kind of recompense. Thus, an enterprise's individual need for the external resources is perfectly met, and an external resource platform is precisely built.

### 5.4 Set up a synthesized electronic commerce platform of enterprise information

On the basis of a great deal of information, 3PIRI can steadily set up a synthesized electronic commerce platform. For one thing ,it can precisely and transparently combine the information of different members through the platform; and for another, this platform can become a synthesized electronic commerce web site, which can proclaim supplying and demanding information to the members.

The establishment of the electronic commerce platform is the foremost mission of 3PIRI enterprise. And This will be a tache which ties the inner and outer information resources of the SSCM system. Consequently, the safety of the platform, the integrality of the data and the management of the interface, will all become vital problems to be solved for 3PIRI enterprise.

## 6. The significance of setting up 3PIRI Enterprise

3PIRI enterprises will become the core of the SSCM system. And it is of great importance to the course of enterprises' information construction and supply chain management.

### 6.1 Integrate enterprises' external resources to make them efficient members of the SSCM system

With 3PIRI enterprise's entry into the system, a new structure of the supply chain will be created. In this case, there's no need for a common enterprise to spend so much time, money and energy integrating the external resources. What they do is just to think over “ what do I need and what should I supply?” Therefore, it is much easier for a common enterprise to join in the global system of the supply chain management. Also, it results in realizing the integration of provision, production and marketing, lowering the business cost and decreasing the risk of administration.

### 6.2 Meet the enterprises' individual needs for external resources

Different types of enterprises require different kinds of external resources. 3PIRI enterprises can provide transparent interface according to various needs to achieve the goal of realizing individual service. Consequently, only by introducing the third party enterprises can we satisfy the individual needs perfectly.

### **6.3 Establish synthesized electronic commerce platform**

Making full use of its information resources, 3PIRI enterprise helps to establish a synthesized electronic commerce platform. In this way, enterprise may operate with E-commerce, and on the other hand, it can be service platform for customers. With this synthesized platform, enterprises can advertise their corporation images and products, and proclaim their demanding information. And customers can enjoy a kind of synthesized service, such as acquiring large amounts of information of different products, services and so on.

### **6.4 The affiliation of 3PIRI enterprises will make the information resources integration more professional**

3PIRI enterprises will become the main subject of the information integration. They can make full use of their professional personnel, technology and management so as to professionalize the work of integration. Meanwhile the data redundancy and the incompatibility in data coding can be efficiently reduced or avoided, and the safety of the data can be well ensured. As the information resources are integrated by 3PIRI enterprises, a common enterprise need not reintegrate its own inner resources when several supply chains are set up, and all the external resources it get can be utilized directly as well, which makes the construction of the supply chains much easier than before.

## **7. The Third Party Information Resources Integration enterprises**

The business of integrating external resources can be undertaken by the following two types of enterprises.

### **7.1 The Third Party Logistics(3PL) Enterprise**

3PL enterprise is a kind of enterprise which can realize the integration of its external logistics. Accordingly, it has a great advantage in the external resources integration management. Moreover, this will grow into a new increasing point of profit in 3PL enterprise.

The membership-system of 3PL provides a prerequisite for the external resources integration. The member corporation is not only the provider of all kinds of information resources, but also the user of the resource. This can make the information supply, demand and acquisition far more simple. At the same time, 3PL enterprise has advanced technology and management, so that it can bring various information resources into the supply chain management.

There are various members in the 3PL enterprises, such as material-supply enterprises, manufacturers, distributors, customers and other benefit interrelated entities. They are all nodes in the supply chain, which makes the Star Supply Chain set up more easily.

### **7.2 Application Service Provider(ASP) enterprises**

For a small-scaled enterprise, obviously, it can not afford to take part in the SSCM system with its own limited resources. When ASP first appeared in the USA, it inaugurated a vast space in traditional enterprises using the internet and realizing information construction. Also, ASP has the ability to integrate the external resources in moderate enterprises.

An ASP enterprise owns all or most of the information resources of its member enterprises, which is a most important factor for an ASP enterprise's becoming the core of the external resource integration. ASP sets up supply chains for various enterprises of small scale and medium scale, and helps them realize SSCM with few human resources and little money.

An ASP enterprise has a great advantage in resources and meanwhile in technology. An ASP enterprise holds a set of advanced hardware and software, which will be the technical condition in the resources integration. Accordingly, an ASP enterprise will build up an integration system to deal with all kinds of information more operationally.

## **8. Conclusion**

The affiliation of 3PIRI enterprises and the establishment of the SSCM will inevitably result in a new revolution in the enterprise's supply chain management. In this new revolution, external resource integration is an imperative request in a enterprise's management of its information construction. To gain the advantage in competition, a modern enterprise must combine its core ability and technology with other useful resources appropriately, for there comes a new era of cooperative competition, where benefit can be shared in a certain scope.

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