

A Study on Integrated Physical Distribution of the Pharmaceutical Industry in Korea

Kwon, Oh-cheul* · Youn, Myoung-kil** · Namkung, Suk***

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【Abstract】

The Korean pharmaceutical industry has many pharmaceutical companies and business acquaintances, small quantity batch production and a lot of competition products having same ingredient. Under such a situation, an integrated distribution is said to be proper to lower distribution costs and deliver effectively: However, each business has different delivery conditions, timely delivery of small quantity batch order and other particular services, etc to have problems of competition of turnover increase. The study suggests measures below to lower distribution costs and to elevate sales business efficiency. First, Joint marketing of pharmaceuticals between pharmaceutical companies. Second, Joint delivery of three or less companies having similar business scales. Third, An agreement with wholesale distributors of unified distribution of pharmaceuticals being sold much. Fourthly, Wholesale distributors' pharmaceuticals distribution services. Fifthly, Cooperation of business acquaintance. In summary, the Korean pharmaceutical industry needs an integrated distribution system. Considering characteristics of the industry, however, the small pharmaceutical companies are thought to be difficult to accept the integrated distribution because complete integrated distribution may reduce sales.

Keywords : pharmaceutical industry, integrated distribution, wholesale distributors, small pharmaceutical companies

* Professor, Gangneung Yeongdong College
** Professor, Eulji University
*** Professor, Eulji University

I. Introduction

Modern business management has differentiated marketing strategies. The marketing strategies that can satisfy customers shall combine reasonably product strategies, price strategies, logistics strategies and promotion strategies, etc. The logistics has become important day by day among the marketing strategies. The physical distribution has become more important to establish customer satisfaction strategies than the commercial distribution did.

In the beginning of logistics modernization after middle of 1960's, logistics policy has been concentrated not on improvement of logistics management technique and logistics system of each individual enterprise but on expansion of social overhead capital, establishment of public organizations to modernize logistics, joint distribution policy between joint organizations and between same businesses, and reduction of social and economic distribution costs in total from macroscopic point of view.

Generally speaking, the countries that pursued rapid growth have politically adjusted distribution facilities and systems to reinforce competitiveness of the manufacturing industry. In other words, distribution cost has been reduced not by improving distribution management of individual enterprises, but by improving overall effectiveness. In particular, roads, harbors, bridges, railway and combined

cargo terminals, etc that individual enterprise cannot control should be expanded to lessen distribution difficulties of individual enterprises.

The logistics management is thought to be a marketing factor in advanced countries. Physical distribution is likely to be added to 4P, that is to say, product, price, place and promotion, etc to be 5P that are marketing mix.

The advanced countries thought much of logistics that can be the third profit source in accordance with changes of information, internationalization and other business environment. This is because the logistics can attain service levels of customers at minimum cost to be thought to be management technology that accommodates marketing profits as much as possible. The distribution channels of logistics vary depending upon kinds of industry and products. The paper examines rationalization of the pharmaceuticals distribution, customer satisfaction and better efficiency of business activities, etc. At the joint delivery of distribution of the pharmaceutical industry, joint delivery has been actively discussed to greatly contribute to cost reduction as well as rationalization of the management so that some companies are doing joint delivery.

The Korean pharmaceutical industry has many pharmaceutical companies and business acquaintances, small quantity batch production and a lot of competition products having same ingredient. Under

such a situation, an integrated distribution is said to be proper to lower distribution costs and deliver effectively: However, each business has different delivery conditions, timely delivery of small quantity batch order and other particular services, etc to have problems of competition of turnover increase. An integrated distribution of the Korean pharmaceutical industry is not denied totally, and it may not be reasonable for small pharmaceutical company to elevate turnover by customer satisfaction.

II. Theoretical Background

1. Changes of Logistics Concept

In advanced countries, the logistics has been thought to be cost down area for a long time and to be a process until delivering products to customers after finishing production. In other words, conventional thought has made efforts to find a way that can deliver finished products of the factory to customers effectively. However, business management activity can be thought to be total system of a cycle of supply of raw materials, production and sales that conventional thought is to be no more than fragmental thought of one area.

At last, the National Council of Physical Distribution Management in the United States says that physical distribution factors include

customer service demand forecast, distribution information, inventory management, order processing, selection of factory and warehouse location, supply, packing, handling of returned goods, waste disposal, freight transportation, and warehouse, etc. However, scope of physical distribution has various ideas.

The physical distribution can adjust social and economic matters based on distribution function approach in accordance with definitions of the Ministry of Economy, Trade and Industry of Japan as follow:

- ① Place difference between production and consumption;
- ② Time difference between production and consumption;
- ③ Quantity difference between production and consumption;
- ④ Quality difference between production and consumption;
- ⑤ Price difference between production and consumption;
- ⑥ Personality difference between production and consumption.

The six kinds of social and economic functions of the distribution can elevate economic efficiency by combining transportation, storage, loading and unloading, packing and information activities that are physical distribution factors in the process from production to consumption.

The functions having direct relations with flow of materials should be supported enough to do the distribution activities

effectively. And, physical distribution has been thought to be a part of marketing activity of products so far to limit scope of sales distribution mostly: These days, businesses have done various management activities to produce environmental problems in advanced countries and to expand scope of distribution activities and to be logistics.

Logistics was originated from military terminology that the Allied Forces made efforts to supply war materials effectively during the Second World War from 1941 to 1945, and it was introduced to business management to develop business logistics.

In Japan, both the Council of Physical Distribution Management of Japan and the Association of Physical Distribution of Japan were combined to establish the Association of Logistics System of Japan in 1992 and to make change of system from distribution stage to logistics stage.

Logistics has included most of material management for military operations, for instance, ordering of war supplies, production plan, purchasing, inventory management, distribution, transportation, communication, standardization and quality controls, etc.(Donald J. Bower, 1968).

The SOLE, the Society of Logistics Engineers, in the United States has defined logistics to be "management technique, science and technical activities on demand, designs, supply and maintenance of various resources to support objectives, plan and execution". Logistics generally has

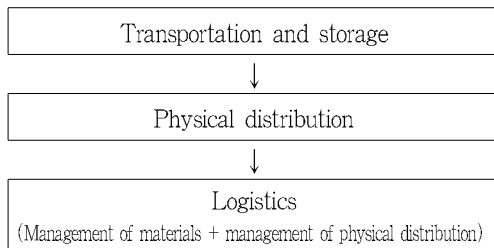
characteristics as follow:

- ① The physical distribution consists of transportation, delivery, storage, packing and loading and unloading, etc on which logistics has not limitation.
- ② Manage and review supply of raw materials and parts and delivery of purchased commodities regardless of commodity activities of sales.
- ③ Manage distribution, consumption, disposal, restoration and collection, etc at the stage after transferring ownership regardless of commodity activities between businesses.
- ④ The logistics is demanded to analyze and design an integrated system of physical distribution at trade-off of both low costs and better services. The logistics characteristics can be found at common areas with physical distribution.

When physical distribution activities include sales distribution, supply distribution, production distribution, and collection distribution, physical distribution may coincide with logistics activities. These days, the contents of distribution are mainly based on logistics concept. In other words, physical distribution is thought to be physical flow of reuse such as supply, production and sales, etc. As a matter of fact, flow of the materials belongs to all of functions of business management from point of view of all of businesses to create distribution concept based on the logistics.

The stages of physical distribution include all of processes of individual enterprise, such as supply of materials, production and sales, etc. (Fig. 1).

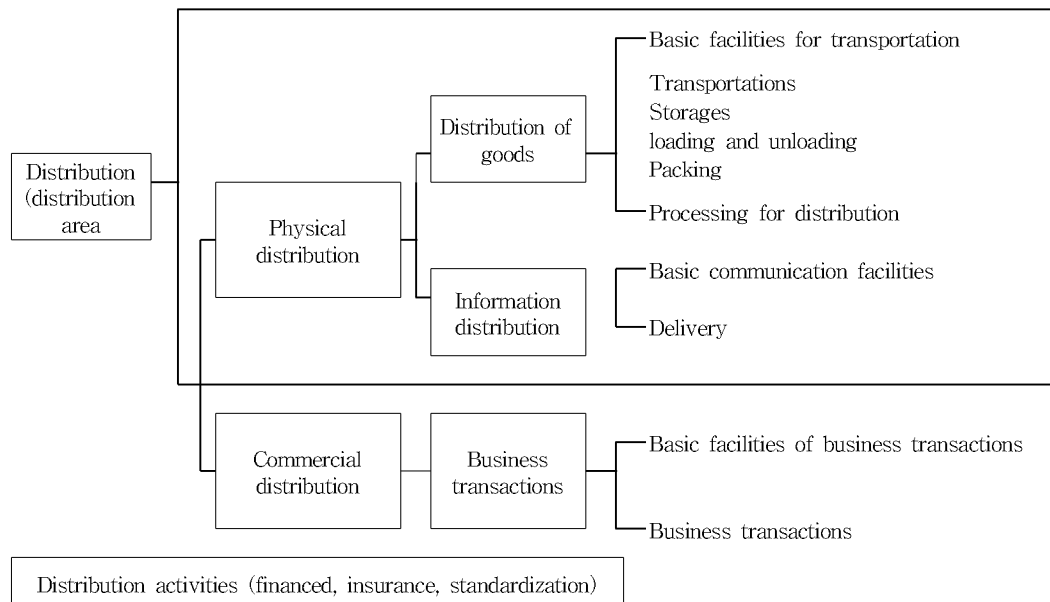
〈Fig 1〉 Stages of Physical Distribution



The physical distribution indicates a process that moves goods to end-users, such as transportation, storage, loading and unloading, packing and associated support to expand areas including supply of raw materials and parts of logistics concept: In this study, concept of the logistics has been used to be that of “physical distribution”.

The scope of control of the logistics has included supply of raw materials, physical distribution and others (Fig 2).

〈Fig 2〉 Scope of the logistics activities



Source : 上井左衛(1986), p.3.

2. Objectives of Logistics Management

These days, enterprises are interested in the logistics to cognize importance of logistics system and to be free from scope

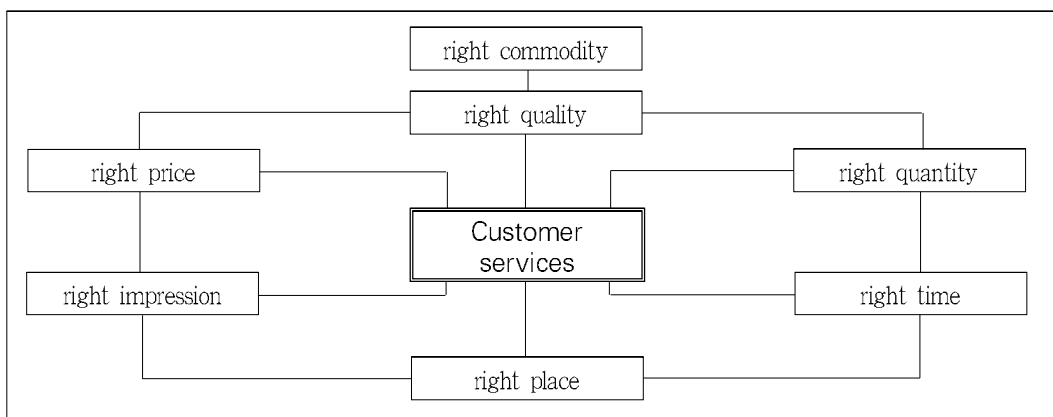
of cost-down and expand distribution activities to strategical decision-making. The objective of logistics management is to lessen distribution costs as much as possible and to maximize services for

customers.

However, better services for customers are accompanied by higher distribution costs. To reduce the costs as much as possible, transportation costs, inventory costs, ordering, delayed delivery and low turnover because of inventory shortage should be improved. Therefore, the

objective of the logistics is to optimize direct and indirect system efficiency of all of logistics activities and to express it by output to input, in other words, ratio of customer service level. The system efficiency has been optimized at the highest ratio of system output.

〈Fig 3〉 7R principle of the logistics



Source : Roy D. Shapiro & J. L. Heskett(1985), "Logistics Strategy : Cases and concepts", St. Paul, Minniwest, p.6.

Therefore, the purpose of the logistics is to optimize overall logistics system and to keep balance between customer service levels and costs.

The 7R principle of professor Smykay has expressed the purpose the most properly (Fig 3). The principle consists of right commodity, right quality, right quantity, right time, right place, right impression and right price, etc. To follow the 7R principle, basic functions of the logistics, for instance, transportation, storage, packing,

loading and unloading, information and production, etc should be integrated to attain the objectives well.

Therefore, the objectives of reasonable logistics management of enterprises are to reduce distribution costs and create place and time efficiency and to reinforce goods market: The logistics management consists of good service, speed, effective use of space, stock control, and scales optimization, etc.

The logistics plays roles in marketing activities:

Firstly, promote sales function.

The logistics has become important at customer services to create opportunity of reorder. Keeping delivery time and exact display at specific place are important to do marketing.

Secondly, produce the third profits by rational logistics management.

Low distribution costs can contribute to cost down greatly.

Thirdly, keep proper inventory by logistics management.

Excessive inventory may increase financial costs, while too small inventory may not deliver goods to business acquaintance in time.

Proper level of inventory should be kept by linking Production department with Sales department. To play the roles of the logistics, an integrated system is required to produce, store and transport effectively, and it can attain competitive advantages to be system-oriented.

3. The Nature of Integrated Logistics of Physical Distribution

The integrated logistics means logistics activities in which two or more persons participate to elevate efficiency of transportation and delivery and to lower costs.

The purpose of integrated logistics is to make use of labor forces, warehouse,

vehicles and other distribution resources jointly and to lower costs and to minimize problems of air contamination, traffic congestion and environmental protection and satisfy social demand.

To attain the purposes, multiple shippers are demanded to participate in the integrated logistics at specific place and to be delivery place at same area and to have similar delivery conditions and goods specifications of participating enterprises. And, the business that is in charge of an integrated logistics can adjust interests between businesses to lessen problems of allocation of shipping charges as much as possible. And, in Japan, problems of low integrated logistics should be cognized in advance. This is because of keeping confidential in the business, commodity management, service quality and management of public facilities.

The integrated logistics has effects: Firstly, reduce distribution costs. High loading rate of vehicles can reduce delivery costs to save costs by making use of distribution facilities as well as labor forces together.

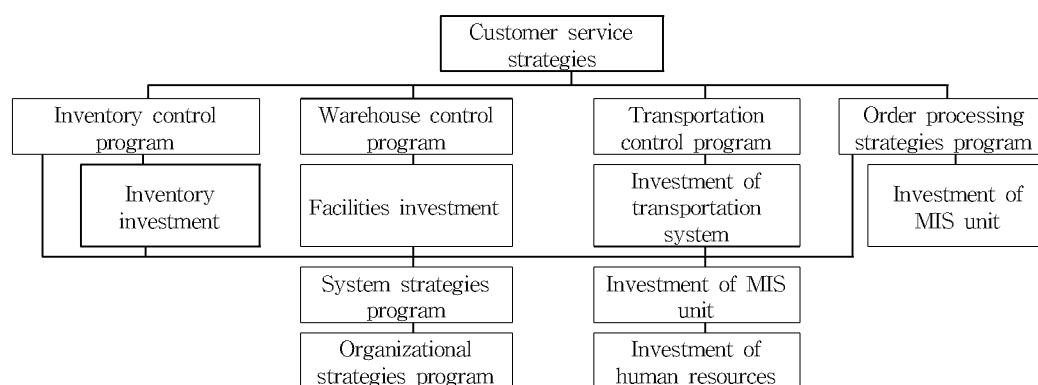
Secondly, reinforce sales function. The business that does delivery and sales at the same time can reinforce sales. The medical supplies can be supplied by wholesale distributors. In addition, logistics job is to be rationalized, and not only shipping time but also delivery time is to be shortened.

4. Roles of Logistics at Establishment of Business Strategies

To promote supply of raw materials, produce, sell, collect and promote logistics activities strategically, enterprises are

demanded to have independent logistics activities and to design logistics system under independent organization and to manage distribution effectively. The process of logistics strategies(唐澤豊 1989, p.41) is as follow (Fig 4):

〈Fig 4〉 A Procedure to establish logistics strategies.

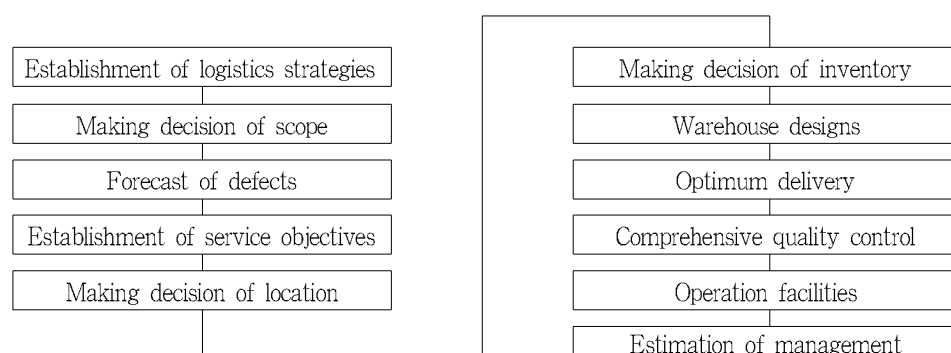


Source : 唐澤豊(1989), p.40.

At first, customer service strategies are to be established to develop inventory strategy programs. Then, warehouse strategy program for facility investment is

to be developed to establish order strategies reviewing transportation system as well as logistics strategies based on the program. (Fig 5).

〈Fig 5〉 Establishment of Logistics Strategies



Source : 唐澤豊(1989), p.41.

5. Precedent Researches on Logistics

1) The maturity of distribution functions, strategic plan of top management of the logistics and participation of other organizations had relations with use of distribution companies (Daugherty, 1988, pp.27-28). The maturity of distribution had positive relations with inventory management, and strategic plan of top management of the logistics and participation of other organizations had also positive relations with order as well

as delivery services.

2) The organizations that were less official to have low authorization were much opened to be easy to accept innovation, and they were difficult to perform innovation (Sapalsk, 1967).

3) The measurement results of distribution results had mutual relations: The measurement result of distribution results was based on measurement standards that top management of distribution cognized (Buzzell, Gale and Sultan et al, 1975).

〈Table 1〉 Measurements of Distribution Results

Results	Internal measurements	External measurements
Strategies		
Cost approach	Measurements of a company's own expenses(costs, productivity, asset management)	Measurements of competitor's costs
Differentiation approach	Measurements of differentiation factors(services, quality)	Measurements of differentiation factors of competitor

Source : Germain, Richard(1989), pp.20-29.

4) Overall logistics strategies such as cost down, differentiation and introduction strategies of new products were discussed(Shapiro, 1984).

The stage paradigm of logistics strategies was [Table 2] (A. T. Kearner, Inc., 1982 : Bowersox, Closs & Heferich, 1986).

〈Table 2〉 The Stage Paradigm of Logistics Strategies

Stage 1: The logistics activities can be classified into many functions. Not only overseas transportation but also finished products warehouse management has been integrated into typical type of logistics function to be operation-oriented.
Stage 2: Not only physical distribution but also physical supply has been integrated to control local transportation as well as overseas transportation by single system. The trade-off is to be done by each function.
Stage 3: Physical supply, physical distribution and materials management, etc have been integrated by single logistics system. The strategic values of the logistics are cognized to make use of it.

The stage paradigm of logistics strategies is: Firstly, the physical distribution stage has been focused on operations to reduce costs by keeping balance of number and places of warehouses.

Secondly, not only local transportation but also overseas transportation has been integrated by single system to lower costs. Lastly, materials management, etc has been integrated into single logistics system.

5) The frequency that updated logistics strategies plans had no relations with expected use of logistics business such as transportation services. And, decentralized enterprises were likely to make use of logistics business often that can give logistics services(Daugherty, 1988).

There were no present researches on logistics that measured only from point of view of logistics strategies. But, integration between business strategies and distribution functions is likely to increase depending upon changes and attitudes of top management who has influence upon

establishment and performance of long-term objectives and strategies.

III. Actual Conditions and Trends of the Korean Pharmaceutical Industry

1. Structure and Scales of the Pharmaceutical Industry

1) Industrial Structure

At the end of 2002, as many as 711 pharmaceutical companies in Korea produced 14,658 pharmaceuticals to reach total production amounting to 9,1964 trillion Won to be 40% up in number of the companies and 12% up in number of items than six years ago to increase production as much as 44% and expand business scales greatly.

Therefore, the pharmaceutical industry in Korea has a lot of items to follow small quantity batch production [Table 3].

〈Table 3〉 Scales of the Korean Pharmaceutical Industry (Unit: number of pharmaceutical company, items, 100million Won) (based on net finished medical supplies)

Classification	1997	2002
Number of pharmaceutical company (A)	307	711
Number of items (B)	12,391	14,658
Production amount (C)	68,055	91,969
Average production amount per item (C/B)	5.49	7.42
Average production amount per company (C/A)	221.68	129,344

Source : Health and welfare statistical yearbook No.44 pp.154-155 of the Ministry of Health and Welfare.

2. Industrial Scales

The ratio of pharmaceuticals to GDP is: In 2002, pharmaceuticals production of 9,1964 trillion Won occupied 1.54% of GDP

of 596 trillion Won: The pharmaceutical industry has a lot of companies and production items to occupy low ratio of GDP [Table 4].

〈Table 4〉 Ratio of Pharmaceuticals Production to GDP

Year	GDP	Pharmaceuticals production	Ratio (to GDP)
2000	5,219,592	78,912	1.51
2002	5,963,812	91,964	1.54

Source : The Health News(2005), The Health Yearbook No.68, pp.233-231.

3. Features of Physical Distribution

Local pharmaceutical business has different features of physical distribution comparing with that of large business and small business. Therefore, local pharmaceutical business has turnover of small business as well as features of large business. In other words, small business occupies large number among all of manufacturers to help develop large business and reinforce competitiveness in exports by specialization as well as systematization, and it has disadvantages such as small scale, premodern management organization, weak financial structure, excessive competition between businesses, and underdeveloped technology levels, etc and most of small business has subordinate relationship with large business to be a subcontract company. Therefore, large business that follows the logic of capital has often established unilateral relations with small business that has weak existence base. Even if pharmaceutical business is small, it has market economy system under control being equivalent to

perfect competition, for instance, complete independence, permit and approval, production, sales and consumption, etc. The buyers of common industrial products are individuals to have an option, while the ones of pharmaceuticals are doctors and pharmacists who are qualified to have the rights to give patients pharmaceuticals. In other words, pharmaceutical business has adopted legally indirect distribution channel.

4. Logistics Environment and Problems

1) Logistics Environment

The Korean pharmaceutical industry has high ratio of direct transaction because of poor financial status of wholesalers to increase distribution costs, so that large distributive systems of foreign countries are making efforts to enter the Korean market.

Under such phenomenon, the pharmaceutical industry has been given good opportunity as well as dangers. The pharmaceutical distribution has opportunities, dangers, advantages and disadvantages [Table 5].

〈Table 5〉 The Korean Pharmaceutical Industry

〈Dangers〉 Foreign distribution business' entry into the Korean market High distribution costs Low margin	〈Opportunities〉 Reinforced R&D Researches on new logistics system Encourage to grow up wholesalers
〈Disadvantages〉 High ratio of direct transaction Poor financial status of wholesalers Unofficial distribution is prevailed. Both physical distribution and commercial distribution have not been separated.	〈Advantages〉 KGSP system Unified distribution system Support modernization of physical distribution.

Source : KGSP(Korea Good Supply and Storage Practice) : Management Standards of Good Pharmaceuticals

2) Problems

The Korean pharmaceutical industry has physical distribution problems:

(1) High physical distribution cost by direct transactions

The pharmaceutical industry is forced to bear labor costs as well as distribution costs more than before because of small quantity batch production, delivery of small quantity of pharmaceuticals to a lot of business acquaintances, and short delivery time, etc.

Firstly, the physical distribution has not established unit system. Secondly, job burden increased because of frequent delivery of small quantity order.

(2) Difficulties at loading/unloading and parking at delivery

When pharmaceuticals is delivered to drugstores, hospitals and clinics at downtown in the Metropolitan Area, two persons or more shall drive cars and deliver even small quantity order to require a lot

of labor costs and time.

(3) Brokerage and loss of the products at consignment delivery by transport company:

When small quantity orders are delivered to a lot of business acquaintances at local areas, consignment delivery is less expensive than direct delivery is: Therefore, consignment delivery is often used, and it has problems of brokerage and loss to lose reliability.

(4) Problems of storage and delivery:

The soft drink that weighs much is much sold out, so that drug stores having small space cannot keep it to ask for storage often.

(5) A lot of labor force at loading/unloading

Loading and unloading can be done not by material handling equipment but by labor force because of small quantity order with many items. In 2006, the Ministry of Health and Welfare suggested establishment of

cooperative of pharmaceuticals distribution for modernization. The Ministry announced that joint delivery complex of pharmaceuticals would be constructed with governmental supports.

The pharmaceutical companies devote them to R&D and production, while the wholesalers do to physical distribution.

5. Problems of Joint Delivery

The integrated distribution system makes pharmaceutical companies invest jointly to establish an integrated distribution company that can deliver order to same business acquaintance after collecting orders from each pharmaceutical company.

However, a lot of small pharmaceutical companies are reluctant to adopt integrated distribution system because of features of the products and business transaction as follow:

1) Small pharmaceutical companies usually keep average stock for 10 days or less. The companies do not keep enough stock because of small size and poor financial status. The seasonal diseases such as cold can suspend supply of pharmaceuticals immediately to increase orders suddenly and rapidly. Delivery sequence cannot be made depending upon each region.

The order shall be preferentially delivered to business acquaintance that has good reliability and has paid in advance. The integrated distribution system cannot

satisfy desires of business acquaintance.

2) The companies are not permitted to decide on delivery time at their discretion.

When the pharmaceutical companies replace their own products with competitors' products to develop new business acquaintance, they should deliver the products on the day after being given order. The integrated distribution system cannot do it.

3) The small pharmaceutical companies are unable to take advantages of small business.

The small quantity order from many business acquaintances is increasing day by day. Each doctor gives different prescription under separation system of dispensary from medical practice so that drugstores are forced to keep more kinds of small quantity of pharmaceuticals and to ask for immediate delivery sometimes in 1 to 2 hours over phone. The companies can win in the competition by immediate delivery. The integrated distribution is difficult to satisfy the demand.

4) The joint delivery is likely to create frequent conflict and complicated problems with physical distribution company.

Considering business characteristics of the Korean pharmaceutical industry, small pharmaceutical companies may worsen efficiency of business activities by completely integrated physical distribution that is difficult to be effective. Japan and other advanced countries also did not succeed in

the integrated physical distribution.

IV. Improvement and Models of Joint Delivery

1. Measures of Each Pharmaceutical Company

The Korean pharmaceutical companies are demanded to solve two problems, that is to say, cost down of the physical distribution and high efficiency of sales business. In this study, measures have been suggested:

1) Joint marketing of pharmaceutical items shall be done between the pharmaceutical companies.

Each pharmaceutical company has different business acquaintance, that is to say, drugstores and hospitals. The joint marketing of pharmaceuticals has advantages of mutual dependence to increase sales and lower distribution costs: In other words, the company that has advantages of drugstore pharmaceuticals to have many business acquaintance of drugstore can sell drugstore pharmaceuticals, while the one that has advantages of hospital pharmaceuticals can do hospital pharmaceuticals.

2) Joint delivery is to be done between the pharmaceutical companies that have no imitation to have similar sales and number of business acquaintance. To do so, each

region (cities under direct control of the central government, the seat of provincial government) shall have joint delivery services. And, the joint delivery services had better deliver pharmaceuticals of 2 to 3 companies only.

3) Detail men shall be trained in preparation for long term integrated distribution to let them introduce characteristics of new medicine to business acquaintance and to overcome excessive competition to sell same kinds of pharmaceuticals.

4) The agreement of unified distribution with 1 to 2 wholesalers at each region shall be made to sell pharmaceuticals having competitiveness and to apply to physical distribution service.

2. Measures of Pharmaceuticals Wholesale Distributors

1) The pharmaceuticals wholesale distributors shall recover reliability to supply physical distribution services on behalf of the pharmaceutical companies.

The wholesale distributors are demanded to recover reliability to elevate ratio of wholesale business of pharmaceuticals distribution and to revitalize their roles. To prevent the wholesale distributors from failing in payment, not only their own efforts but also systematic tools are required.

Not only new distributors but also existing distributors shall raise asset threshold to have mutual investment and

credit guarantee funds and to apply to the credit guarantee insurance, for which both private businesses and the government are demanded to make efforts.

2) The revolving time of the payment that the wholesale distributors pay to the pharmaceutical companies should be shortened.

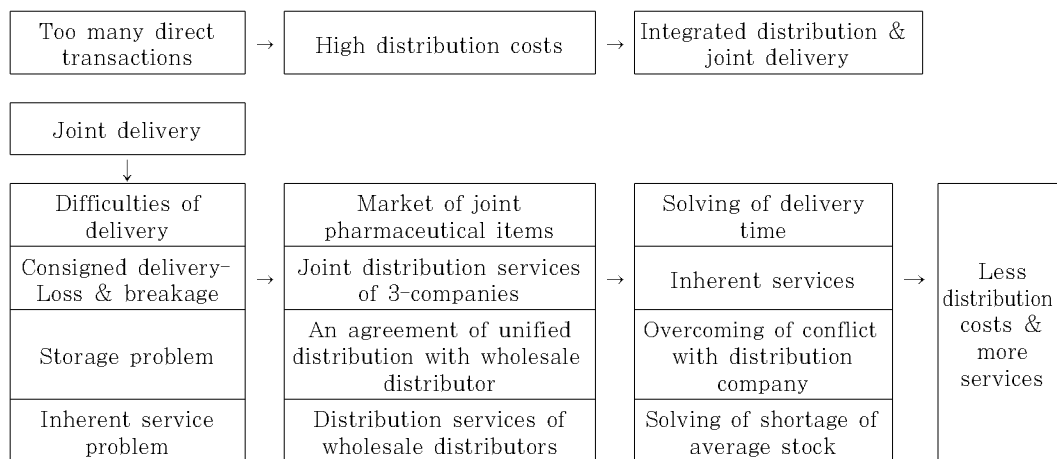
When the physical distribution is normalized, the revolving time of the payment of wholesale business can be shortened: At first, the wholesale distributors should be ready to do distribution finance. Short revolving time can promote pharmaceutical distribution services.

3) Cooperation of Drugstores and Hospitals

High distribution costs may raise pharmaceuticals prices to fail in satisfying consumers and to lessen margin of business acquaintance such as drugstores and hospitals. The wholesale distributors shall inspect monthly use of small quantity order with many items 1 to 2 times every month to keep a little space of warehouse and to avoid one time delivery every week by the pharmaceutical company.

A model of the improvement of joint delivery is: (Fig 6).

〈Fig 6〉 A Model of the Improvement of Joint Delivery



Source : A material made by the author based on theoretical background and distribution characteristics

V. Conclusion and Summary

The Korean pharmaceutical industry has distribution problems:

(1) High distribution costs because of

too many direct transactions;

(2) Difficulties at loading/unloading and parking at delivery;

(3) Brokerage and loss at consigned delivery;

(4) Difficult storage and delivery;

(5) A lot of labor force at loading/unloading

The small pharmaceutical companies are reluctant to accept integrated distribution because of the problems below even if they want to reduce distribution costs:

- (1) Shortage of average stock.
- (2) The companies are unable to decide on delivery time at their discretion.
- (3) The companies are unable to supply their own special services.
- (4) The joint delivery is likely to create conflicts and problems with distribution company frequently.

The study suggests measures below to lower distribution costs and to elevate sales business efficiency:

- (1) Joint marketing of pharmaceuticals between pharmaceutical companies;
- (2) Joint delivery of three or less companies having similar business scales (joint distribution services);
- (3) An agreement with wholesale distributors of unified distribution of pharmaceuticals being sold much;
- (4) Wholesale distributors' pharmaceuticals distribution services;
- (5) Cooperation of business acquaintance.

In summary, the Korean pharmaceutical industry needs an integrated distribution system. Considering characteristics of the industry, however, the small pharmaceutical companies are thought to be difficult to accept the integrated distribution because

complete integrated distribution may reduce sales.

References

- Kwon, Oh Cheul and Youn, Myoung Kil(2007), "A study on Logistics Task and Policy for Integrated Physical Distribution: Focused on the Pharmaceutical Industry in Korea", ICKODISA 2007, yantai, pp.15-33.
- The Health and Welfare statistical yearbook (2005), No.68, pp.233-231.
- 唐澤豊(1989), 物流概論 有文閣, pp.40-41.
- 通商産業省(1973), "大規模物流基地適定配置構想", 東京, p.39.
- 横山保編(1981), "物流 Service 意思決定", 日本中央經濟史, p.3.
- 上井左衛門(1986), "Contents and actual conditions of the logistics", 八千出版, p.3.
- Alan J. Stenger(1989), "Information Systems in Logistics Management: Post Present and Future", Transportation Journal, Fall.
- D. J Bowersox(1968), "Physical Distribution Management", MacMillan Co., pp.273-274.
- D. J Bowersox(1978), "Logistical Management", Second edition, MacMillan Co., p.164.
- D. B Livingston(1987), "Logistical As a Competitive Weapon : The Total Cost Approach", Council or Logistics Management, Vol.1.
- Germain, Richard(1989), "The Effect of Output Standardization Logistical Structure, Strategy, and performance", international Journal of Physical Distribution and Materials Management, pp.20-29.

- IMD(1993), "World Competition Report".
- J. F. Magee(1985), "Modern Logistics Management", New York, John Wiley, p.8.
- J. T. Mentzer and Brenda Ponsford Konrad (1991), "An Efficiency Effectiveness Approach to Logistics Performance Analysis", *Journal of Business Logistics*, Vol 12, No.1, p.39.
- Macmillan(1985), "The Distribution Handbook".
- R. H. Ballou(1985), "Business Logistics Management", Englewood Cliffs, New Jersey, Prentice-Hall, Inc, p.7.

국문초록

한국제약산업의 통합물류에 관한 연구

권 오 철(Kwon, Oh-cheul)* · 윤 명 길(Youn, Myoung-kil)**
· 남 궁 석(Namkung, Suk)***

한국 제약산업은 제약회사의 수와 거래선의 수가 많고, 다품종 소량생산체제이며 동일성분의 경쟁품이 많은 실정이다. 이러한 실정 하에서 통합물류가 물류원가 절감 및 효율적인 배송에는 적절한 방안이라고 할 수 있으나 기업마다 다른 배송 조건 문제, 다품종 소량주문의 적기 배송 문제 등 회사 특유의 서비스 제공 등에 한계가 있어서 경쟁적 매출증가에 문제점이 있다 하겠다. 이와 같이 물류원가는 절감해야하고 영업효율성은 증대시켜야 하는 두 가지 문제를 두고 다음과 같은 대처방안을 제시하고자 한다. 첫째, 제약회사 간 품목 공동마케팅 실시. 둘째, 규모가 비슷한 3개 회사 이하 합동 배송실시. 셋째, 매출이 큰 제품은 도매상과 유통일원화 협약. 넷째, 도매상이 제약 물류 서비스하도록 준비. 다섯째, 거래선의 협조 등이다. 결론적으로 한국제약산업에서 통합물류가 필요하지만 산업의 특성상 중소제약회사는 완전 통합물류는 매출이 감소할 것이라는 가정하에 그 시행이 어려울 것으로 판단되는 것이다.

주제어 : 제약산업, 통합물류, 도매업자, 소규모 제약회사

* 강릉영동대학 유통경영과 교수
** 을지대학교 보건산업대학 교수
*** 을지대학교 보건산업대학 교수