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The New Classification and Size Estimation of the Sport Market: Focusing on the Sport Market Value Network

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The New Classification and Size Estimation of the Sport Market: Focusing on the sport Market Value Network

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I . Introduction

1. Purpose of Study

Sport have begun to be considered an industry beyond entertainment or culture. The sport industry increases employment and creates economic value by having positive effects on other industries. The more effects the sport industry has on the economy, the more important policies on the sport industry become.

To make a policy, it is necessary to compile statistics. However, the classification in the sport industry has to be done before compiling statistics. It is because the sport industry is not a traditional but emerging industry. Accordingly, various classification standards related to the sport industry are made and gradually developed around the world. In the beginning, there was a classification approach that first creates main categories of the sport industry and then subdivides them into smaller ones. It is the so called classification approach from the provider's perspective.

As the sport industry has been combined with a variety of industries such as manufacturing, broadcasting and tourism, new types of business in the sport industry started to appear. As a result, in the developed countries like Japan and the US, there is new classification approach, which classifies the sport industry and attempts to understand its attributes. This is because un-

derstanding the characteristics of the sport market is efficient for policy development.

However, classification standards related to the sport industry in Korea are still based on the provider's perspective, which makes it difficult to understand interrelation between industries in the sport market and to find new types of business and its background. It also disturbs making and fulfilling proper policies for the sport industry.

Accordingly, this paper will suggest the new classification system, which can help grasp its attributes and the market condition.

That is similar to the trend in developed countries where the classification of the sport industry and understanding of its attribute are conducted at the same time. This paper especially attempts to suggest the market-based approach that considers not only the consumer's position but the supplier's, because this approach can increase the efficiency and effectiveness of a policy.

2. Method of Study

The 2nd section previews the existing studies related to classification of the sport industry. It mainly examines researches of Meek, A.(1997), Milano, M. & Chelladurai, P.(2011), Ming Li et al.(2001) and Harada Munehiko(2011). And it must be noted that their researches made efforts to understand its attributes as well as classify the sport industry.

In the 3rd section, we explain the basic principle of new ap-

proach introduced in this paper. In particular, the discussion is conducted from the market-based approach, which gives consideration to both the consumer's position and supplier's. This paper takes note of the sport culture, that is, watching and participating in sport, which creates new business with industrialization. Consequently, the sport market is divided into two primary markets; the spectator sport market and participant sport market. In addition, it explains the derivative market from two primary markets. Eventually, it states that the sport market is a combination between the primary and derivative markets. By the way, we had a great number of discussions with experts in the process of understanding interrelation between the primary and derivative markets.

The 4th section suggests and explains how to utilize the classification of the sport industry (the sport market value network) separately in views of the classification standards, policy and sport filed. And it notes that the sport market value network can help to overcome limits of the classification table made from the provider's perspective such as that made by the Korean Ministry of Culture, sport and Tourism in 2010. Also, it estimates the size of the domestic sport market, using the sport market value network suggested in this paper. It has a discussion of the attribute in the sport market based on the table that shows its size in the place of the conclusion. In Chapter 5, we summarize our main results, and mention the constraints and direction of future work of our study.

II. Literature Review

Studies on the classification of the sport industry are actively conducted around the world. The UK has the classification standards determined by Key note¹⁾, sport market research institute, and others. Germany has the standard proposed by Ertel/Ebert proposed in 2003. These studies adopted the approach based on the provider's perspective. The approach first classifies the sport industry into main categories such as sporting goods, facilities, service, etc. and then divides the main categories into sub-categories. For example, sporting goods are divided into sport equipments, apparel, footwear, etc. In addition, these categories can be further divided. It could be argued that area-based approach is at an elementary level for classifying the sport industry.²⁾

The classification of Meek,A.(1997), Milano, M. & Chelladurai, P. (2011) and Ming Li et al.(2001) are well known in the USA. In Japan, the study of Harada Munehiko is noteworthy. It could be argued that the classification standards in the USA and Japan are improved, compared to those of the UK and Germany, for there are new concepts in their studies. Hence, this section overviews the classification standards of the USA and Japan, and discusses

1) <http://www.keynote.co.uk/reports/>

2) Details of area-based approach will be followed at the third section.

their meaning (or significance) and limits.

Korea also has its own classification. The representative one was reported by the Ministry of Culture, Sport and Tourism, and will be also reviewed here.

1. The classification of Meek, A.(1997) and Milano, M. & Chelladurai, P.(2011)³⁾

(1) Main contents

They estimated the size of the sport industry in the USA with the national income accounts model, as a country's output can be measured by the GDP. In other words, they calculated the size using the term, 'GDSP⁴⁾' (Gross Domestic Sport Product). To be more concrete, the national income accounts consist of consumption, investment, government expenditure and net export, so that they analyzed the sport industry by classifying it into sport consumption, sport investments, and sport net export. Meek, A.(1997) included sport-related governments expenditures in private procurement because of limits of data collection.

Before estimating the size of the sport industry, they had to classify the industry into some categories and specify its segments. The classification of Milano, M. & Chelladurai, P. (2011)⁵⁾ is noted as Figure 1. Sport consumption includes

3) This part is based on Kim and Lim (2001), pp.38-41.

4) The next section will give an explanation of the estimation method using the national income accounts

5) Meek, A.(1997) noted that it is hard to establish the definition and range

entertainment & recreation, products & services, non sport-related advertising expenditures, etc. Sport investments cover building amusement, social and recreational centers, indoor swimming pools, indoor ice rinks, outdoor swimming pools, etc. sport import & export indicates sport goods related imports and exports.

According to this classification, there is little sport-related governments expenditures and sport imports & exports are regarded as trade balance of sport goods. Therefore, it could be noted that Milano, M. & Chelladurai, P. (2011) divided the sport industry into two categories, sport consumption and investment.

The estimated size of the sport industry by Meek, A.(1997) shows that the GDSP in the USA amounted to 15.197 billion dollars in 1995. According to this result, the sport industry accounted for more than 2% of GDP and was ranked 11st in industries. Milano, M. & Chelladurai, P.(2011) insisted that its size in 2005 was conservatively estimated 19th in entire industries, and it was an significant industry.

of the sport industry and included the 3 main areas in the industry. 1. sport entertainment and recreation(sport, sport related entertainment activities and consumption); event, team, participant 2. sport good and equipment, apparel, article design, test, manufacturing and distribution 3. sport support organization; League, law firm, marketing agency.

Figure 2-1. The classification of the sport industry by Milano, M. & Chelladurai, P. (2011)



Source : Milano, M. & Chelladurai, P.(2011), p. 27

Table 2-1. *The top 25 industries and sport industry in the US*

unit : 1 billion dollar

ranking	segment	value	ranking	segment	value
1	Real estate	1461.3	14	Management of companies and enterprises	234.9
2	Retail trade	812.7	15	Food services and drinking places sport <i>sport (Liberal GDSP Estimate)</i>	225.8 207.5
3	Wholesale trade	723.7	16	Manufacturing-Chemical products sport <i>sport (Moderate GDSP Estimate)</i>	199.8 189.3
4	Construction	607.9	17	Securities, commodity contracts, and investments	183.8
5	Miscellaneous professional, scientific, and technical services	542.5	18	Legal Services <i>sport (Conservative GDSP Estimate)</i>	176.4 168.4
6	Federal Reserve banks, credit intermediation and related activities	506.1	19	Manufacturing-Food and beverage and tobacco products	163.7
7	Ambulatory healthcare services	433.6	20	Oil and gas extraction	149.6
8	Hospital and nursing and residential care facilities	334.0	21	Publishing industries (Includes software)	142.2
9	Administrative and support services	344.4	22	Computer systems design and related services	133.0
10	Broadcasting and telecommunications	324.2	23	Manufacturing-Computer and electronic products	132.7
11	Other services, except government	288.1	24	Manufacturing-Fabricated metal products	123.3
12	Insurance carriers and related activities	264.5	25	Truck transportation	118.6
13	Utilities	249.5			

Source : Milano, M. & Chelladurai, P. (2011), p. 31

(2) Review

This study made much efforts to follow the definition of GDP. In particular, their efforts showed up in the statistic process concerning the endorsement. For example, they excluded an endorsement for calculating GDSP, because it is included in consumer price when a sport goods company signs endorsements with a athlete. However, they covered some of the endorsements from non sport-related companies like McDonald's, because GDSP is not composed of sales in last stage of hamburger consumption. Therefore, the study has significance in that they made a lot of efforts estimating the size of the sport industry for accuracy, and compared the sport industry with others on the basis of the result. Futhermore, studies following the concept of GDSP appeared⁶⁾. The studies using GDPS were reported by Jung (2000) in Korea and Iketa (1999) in Japan.

However, this study has some problems. First, its classification is arbitrary. As mentioned above, it regarded sport stadium construction as one of the sport industries. But sport stadium construction can be also included in the construction industry. It is possible that sport facilities construction is calculated in both the sport industry and construction. That is, it is difficult to estimate the size of the industries correctly.

Second, they divided the range of the sport industry into sport consumption, investment, government expenditure and sport imports and exports, but government expenditure and sport

6) The size of the sport industry began to be estimated using the term, GNSP (Gross national sport product), by Sandomir in 1988.

imports and exports could be excluded in the sport industry due to their attributes. Moreover, it is debatable that sport investment in the study covered some industries related to construction. It could be argued that the range of the sport industry in the study was calculated from a view of consumption. The study separated the sport industry into entertainment & recreation, products & services and non sport-related advertising expenditures, and then broke them down into smaller ones. Therefore, it did not overcome limits of area-based approach remarkably. Although the study is useful for grasping the size of the sport market, it is unuseful for establishing the characteristics of sport-related industry and the interrelation between industries.

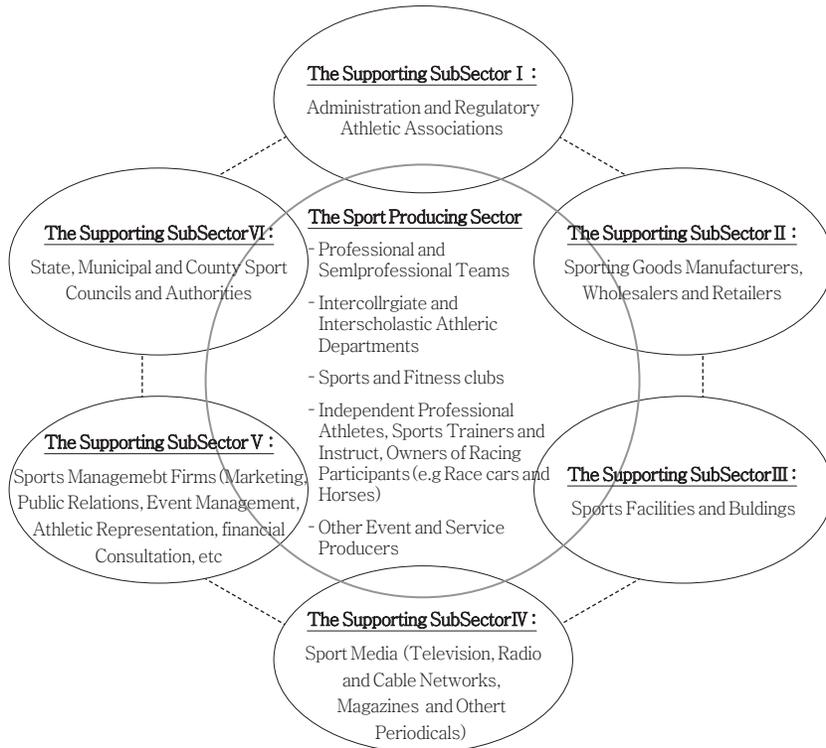
2. The classification of Ming Li et al.(2001)

(1) Main contents

The study explained the sport industry with sport producing sector and supporting subsector. sport producing sector produces and offers sport related activities; professional sport, college leagues, fitness club, horse race · racing, etc. The supporting subsector is another that supports sport producing sector; sport goods and distribution, sport facilities, media, marketing companies, government organizations, etc. It could be classified into 6 sub categories.

It insisted that enterprises and organizations, producing and offering sport activities, are central in the sport industry, while the other ones support the center in the other 6 sectors. In

Figure 2-2. Sport producing sector and supporting subsector



Source : Ming Li et al. (2001), p.7.

conclusion, the 6 sectors exist to encourage the center to produce sport activities and to help increase its profit.

The enterprises and organizations of 6 sectors can also produce and offer sport activities itself, so that can be seen in overlapped parts of Figure 2-2. However, Ming Li et al.(2001) underlined that the sport producing sector has to be distinguished from the 6 sectors as they mainly support the center and increase its profits. After all, the sport industry here is where the center and

subsectors form clusters around sport activities.

(2) Review

It is remarkable that the study tried to establish the attribute of the sport industry through the relation between the center and the subsectors (Cluster), not area-based approach. In the study, the center includes both spectator and participant sport, and that showed the attribute of sport culture at an advance stage of sport industrialization⁷⁾. If the center sector is a primary industry, 6 subsectors can be considered as things derived from one. The study has a great significance in that the study noted the sport industry forms clusters, and also has its attributes between primary and subsectors. It could be argued that its classification is from new approach compared with area-based approach.

The study is likely to be more improved than that of Meek, A. (1997) and Milano, M. & Chelladurai, P. (2011) in that it did not underline construction industry, one of the supporting organization and enterprise, in sport facilities.

Nevertheless, the study still has a defect. The sport industry starts from sport culture and can form new industry, combining with a variety of businesses. For instance, there are sport journalism and sport tourism. However, the study overlooked this point and only made static analysis of attribute of sport industry, not dynamic.

In addition, there is another limit that the study did not con-

7) The relation between the sport culture and sport industry will be described in next section.

sider—the ability of the supporting sectors acting as derivative markets. For example, media, one of the subsectors, can be formed from dealing with broadcasting rights and can also form new organizations and enterprises with media contents itself. But the study did not make a discussion about that.

Although the spectator and participant sport belong to the center sector together, but they need different supporting organizations in each case. This means the center sector has to be broke down. Future research in this part is needed.

Eventually, it will be difficult to specify segments of the sport industry following the approach in the study.

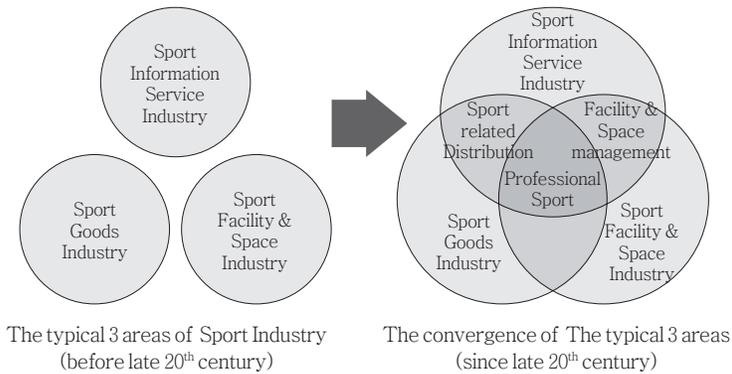
3. The classification of Harada(2011)

(1) Main contents

The classification of Harada(2011) started from 3 typical areas of the sport industry; sport goods, sport service & information and sport facility & space. sport goods refers to fitness equipments, and it is divided into equipments for outdoor sport, sport competition and health. sport service & information includes not only news and magazine but also various media required for broadcasting license fee. sport facility & space provides consumers with a space for sport, and is divided into two types of hosing for urban or resort under local conditions.

According to Harada(2011), the 3 areas of the sport industry developed individually and then, in the late 20th century, started to be in harmony with each other. For this reason, the

Figure 2-3. The change of sport industry classification in Harada(2011)



Source : Harada(2011)

classification of the sport industry appeared differently. For example, distribution industry related to the sport industry emerged with convergence of sport goods and sport service & information, and sport facility management industry did with that of sport service & information and sport facility & space industry. Harada (2011) noted that professional sport industry is an converged industry of 3 typical sport areas.

Futhermore, Harada(2011) insisted that rapid convergence has been underway in the sport industry since the 21st century. It also stated that the current convergence emerges between sport and non-sport related industries as well as 3 typical sport areas. So to speak, new industry emerges through change of consumer needs and its lifestyle, and can also be combined with the sport industry. Of course, the study insisted that IT industry played a significant role in the process. In the conclusion, the

classification of Harada(2011) showed the convergence between the sport related industries or sport-related and non-sport related industries.

(2) Review

The study showed how the sport market (or the sport industry) changes over time. It is considerable that the study reflected the variability and diversity of the sport related market with a dynamic approach. Harada(2011) made use of a new approach unlike that of Meek, A. (1997), Milano, M. & Chelladurai, P. (2011) and Ming Li et al. (2001). It is noted that the study did not include sport stadium construction in the industry unlike Ming Li et al. (2001).

However, it also had some problems. For example, it regarded sport-related distribution as the combination of sport goods and sport service & information. Although it made a discussion of the sport information industry, but did not give a specific explanation of sport service. It seems like that the study considered sport-related distribution as the combination of manufacturing (producing sport equipments) and service industry (distribution). But it is difficult to call it the convergence, as this combination has existed since late 20th century.

Although Harada(2011) presented the convergence as its main method, it is not easy to decide whether convergence or derivative in some cases. For instance, sport facility management was considered as the convergence of sport service & information and sport facility & space, but it is wonder that it must be regarded as a derivation from sport facility & space. These

problems resulted from artificially explaining the overlapped parts of 3 typical sport areas through the concept, convergence.

Following the study, the classification of the sport industry started from 3 typical areas. Although Harada(2011) stated that different types of businesses emerge due to convergence, it did not establish segments of the industry. Eventually, specifying segment of the sport industry cannot help depending on the 3 typical areas. It means that it is difficult for Harada(2011) to overcome limits of existing area-based approach.

4. The classification of MCST(2010)

(1) Main contents

The Ministry of Culture, sport and Tourism(MCST) suggested the classification of the sport industry in the process of conducting sport Industry Survey 2011. The purpose of survey 2011 is to make and fulfill a policy related to sport. The classification of MCST first specified 4 segments; sport & athletic goods, sport game & entertainment, sport goods distribution & lease and sport & recreation institutions, and then subdivided them(Figure 3-1). For example, sport goods has small categories; non-alcoholic beverages, textiles and apparel manufacturing, bags & shoes, exercise & competition equipment. The classification of MCST would be a kind of area-based classification, for it is conducted by sorting sport-related industries included in KSIC(Korea Standard Industrial Classification).

(2) Review

The classification of Survey 2011 was formed through re-arranging the classification reported by KISS (Korea Institute for Sport Science) in 1998. KISS categorized the sport industry into 3 main groups, sport goods, sport facilities and sport service, then divided them into smaller ones, and suggested specified sport industries. On the other hand, MCST set 4 main categories, sport goods, sport game & entertainment, sport goods distribution & lease and sport & recreation institutions, and accepted new sport industries generated actually in the market. MCST excluded sport facility construction while KISS included it in its classification. Therefore, the classification of MCST is likely to be more improved than that of KISS.

However, it is debatable that the sport goods industry belonged to the sport industry in the study. This is because of the fact that there is a dominant opinion which argues that the basis of the sport industry is service. Even if sport goods industry can be included there, the study had a lack of accuracy in that other apparel and shoes was considered as sport goods.

Recently, the classification standard of the sport industry has been studied around the world with other approach that tries to understand its position in GDP, establish industrial attribute, and grasp the interrelation between industries. Unfortunately, studies in Korea still use area-based approach, and that leaves a lot to be desired.

Meanwhile, to compare our classification with that of MCST, Next section gives an detailed explanation and discusses its problems.

III. The new classification principles and analysis

This section makes an attempt to set new classification of the sport industry(or the sport market). Before doing this, the attribute and limits of the existing classification must be reviewed. New classification has to contribute to make and fulfill a sport related policy. It should also be compared with the domestic classification of sport industry. For these reasons, this section will preview the history, attribute and limits of domestic classification, and make a discussion of new classification.

1. Review of the existing classification system

According to Article 2 of the sport Industry Promotion Act, the sport industry is engaged in creating added value with producing and distributing tangible and intangible property, such as sport goods and articles, sport facility and service, sport competitions, sport institution, etc.

Based on the definition, National Statistical Office classified the sport industry into sport goods, sport facility and sport service industry. KSIC2000(Korea Standard Industrial Classification 2000) particularly categorized new industries that exists in modern society, and the sport industry is one of them. The

Table 3-1. The Korean classification system of sport industry and its categories

Segment	Definition	Sub-categories
sport Goods	an industry engaged in producing and selling sport equipment, apparel, footwear, etc. targeted at athletes	<ul style="list-style-type: none"> · sport goods manufacturing, sport equipment manufacturing, sport apparel manufacturing · sport goods distribution, sport goods wholesales and Retails, sport goods rental, sport goods importing business
sport Facility	an industry engaging in construction and management of sport field where any kind of sport competition can be performed	<ul style="list-style-type: none"> · sport facility construction, sport facility installation, stadium facility construction
sport Service	an industry mainly comprised of Spectator sport; sport marketing, Event planning and management, Athletic business, etc.	<ul style="list-style-type: none"> · sport competition, professional sport, amateur sport, bicycle racing, motorboat racing, horse racing, sport events · sport marketing, sport marketing agency, sport agency, athlete training service · sport information service, sport newspapers, publishing, sport broadcasting, sport internet business, sport lottery, membership sales, sport software development

Source : Park (2004), Analysis of the sport industry

classification of KSIC depended largely on that of KISS (Park, 1998) that was based on the definition and classification of sport Vision 21 by Industrial Policy Bureau (1990) in Japan. Table 3-1 shows roughly the classification approach and sport related industries in Korea.

This classification standard has changed a little since Survey 2011 by MCST. It specified 4 segments, sport & athletic goods, sport games & entertainment, sport goods distribution & lease and sport & recreation institutions, and then subdivided them

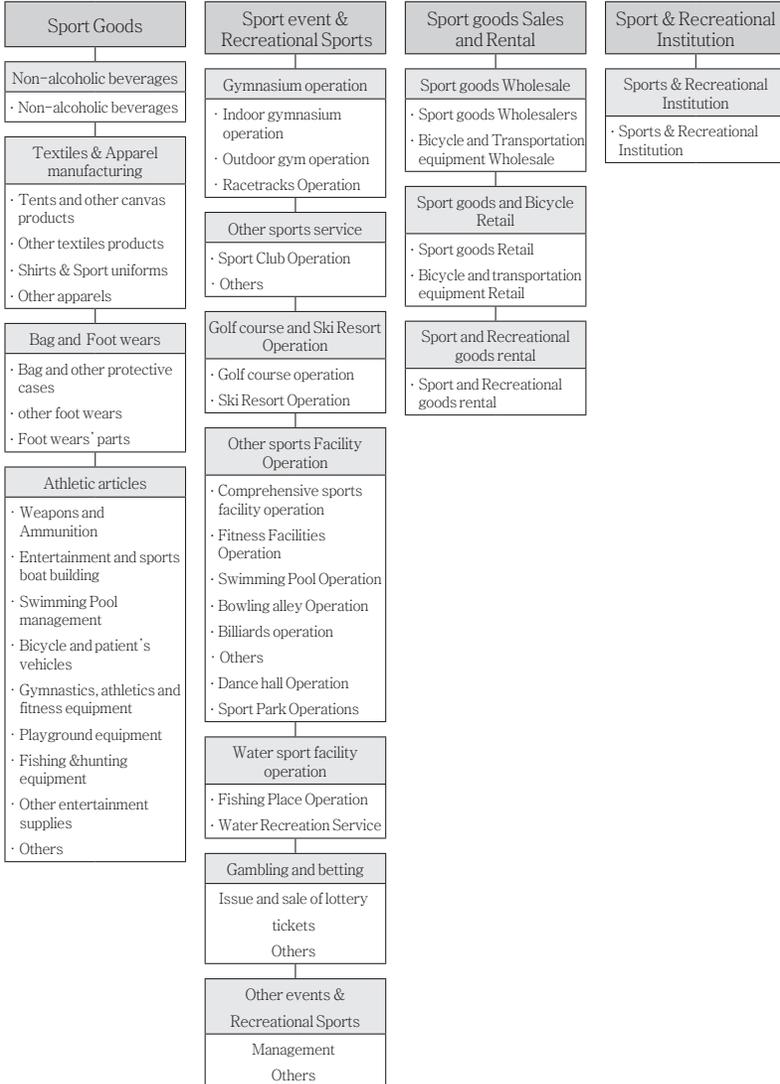
smaller. Figure 3-1 shows Korea sport Industry Classification (MCST, 2010).

The classification standard was made of sport related industries selected from KSIC for political purposes. Also, the sport industry was recognized as an industry by establishing the classification standard, and that became the touch stone to conduct a macroscopic study on the economic position and role of the sport industry. However, there are limits as follows.

First of all, it has difficulty grasping the interrelation between industries in the sport market. The sport market creates a variety of industries through a convergence of the sport industry and others such as manufacturing, broadcasting, tourism, information service, etc. Though, the standard of MCST(2010) must have limits to understanding their interrelations and background. For example, contents of spectator and participant sport should be fascinating in order to generate sport tourism. However, the classification of MCST(2010) has problems with explaining how tourism and sport industry establish their relation. For another example, athlete management services belonged to others in sport game & entertainment, and MCST(2010) did not suggest how it emerges and has relation with others.

Second, it is also hard to select segments of newly rising sport related market with the classification of MCST. New market will generate depending on the change of circumstance, such as the convergence of sport industry and other. Nevertheless, the classification has trouble with investigating the position of new market. MCST(2010) expanded the 3 segments of KISS(1998) to 4 categories and rearranged them.

Figure 3-1. The classification of sport industry survey 2010 by MCST



Source : MCST(2010), sport Industry Survey 2010

Finally, the existing classification cannot reflect the changing trend of industrial policies. In response to globalization, WTO regulation, etc., the recent policies go against the trend that the supplier in a certain industry is supported and promoted by their government or policies. New trend focuses on building up a network between all of participants like researchers and consumers in supply chain to value network. However, the classification of MCST (2010) from suppliers' perspectives has to face problems reflecting this trend.⁸⁾

2. The new classification system: sport market value network

(1) The need of new classification system: market perspective

At present, there is no sport industrial classification system that is internationally accepted. The domestic system is a typical classification system in view of suppliers and was established with referring that of Ministry of Education, Culture, sport, Science and Technology in Japan. The existing classification approach has troubles in reflecting the need of market, because it figures out problems in the market only from suppliers' perspectives.

An industry generally produces a single product, whereas the sport industry does not. It is a complex industrial group in

8) Kim, Kang and Kim (2013)

which different types of products get organized based on sport culture. Accordingly, it is impossible to grasp the nature of the sport industry only from suppliers' perspectives. Meanwhile, it is possible to understand the nature accurately from a market-oriented perspective. That is, the new classification on a market-oriented perspective, which can reflect both suppliers' and consumers' side, is needed for understanding exactly the sport industry and making an effective policy.

(2) The principle of sport market value network

□ Definition of concept

To organize new classification system, related terms must be redefined clearly. sport is used mixed with similar terms like leisure, fitness, etc. sport related terms are not yet established in academic world of Physical Education. If the sport industry is defined as a physical activity that is institutionalized and has competitions like in North America, it must be composed of only those areas to ensure consistency. However, there are conceptual contradictions. For instance, running shoes, which a consumer buys for participating in marathon tournament, must be included in sport goods industry, but running shoes, purchased for only consumer's health, must not in the industry. It is because that running for one's health does not has competition and is not institutionalized. Likewise, the concept and range of the sport industry depend on how the term, sport, is defined. Thus, to conceptualize and specify the sport industry, the clear definition of 'sport' is first needed.

The definition of sport is mainly composed of two types; North

American and European. In North America, it means physical activities that is institutionalized and have competitions as noted above. Otherwise, in Europe, it refers to all types of physical activities as sport. Korea has variety definitions and the North American term is common in Korean academic world. However, the European definition is used in other cases: ‘sport for all’ is regarded as all of physical activities.

To logically define and classify the sport industry, this paper follows the study of Kang (2005) in which sport is regarded as physical activity whose goal is physical achievement. Physical achievement means the relative achievements as well as the absolute ones. The former is got through competition with others (e.g., a football game) while the latter is fulfilled on one’s own (e.g., jogging). This is close to European definition including sport as well as leisure, fitness, etc.

If sport participants increase or outstanding sport performers appear, sport spectators do also . Spectating is not necessarily conducted by only participants. This is similar that someone would like listening music and appreciating a painting although he does not plays music and draws a picture. In other words, it means participating and spectating cultures, so called ‘sport

Figure 3-2. The sport industrialization process



culture', are generated and established throughout the society.

As a result, sport is a term that get involved with cultural phenomenon and does not mean a product. However, as demand for this sport culture grows, a certain product appears and new market is built. Likewise, sport culture is industrialized and shows another side, the sport market⁹⁾.

Based on concepts of sport, sport culture and sport industry noted above, the sport market can be defined as a market in which products, made on cultural ground of sport, are traded¹⁰⁾. As interest in sport increases and high-quality sport events are provided, it makes someone watch sport, although he does not take part in. This means spectator sport market generates. Also, if the number of joggers, who run alone around their house, increases and a great sport facility or health club is built there with good programs, the market of participants sport emerges. Likewise, the markets of spectator and participants sport can appear separately¹¹⁾.

However, products in the sport market are not simple like this. Because the market has a variety of products as well as many different events¹²⁾. Especially, there is a hierarchy (primary-

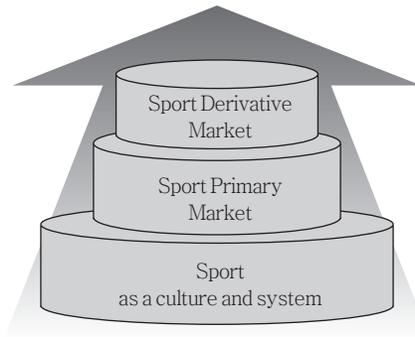
9) Kang (2005)

10) The sport industry is considered an industry cluster where heterogeneous products are provided and distributed (Kang, 2005).

11) The market of participant sport promote a market of spectator sport, and vice versa. For instance, if golfers (participating) increase, a potential market for PGA tour (spectating) also grows. On the contrary, star players (spectating) like Tiger Woods can lead to increased participation in golf.

12) The sport industry is regarded as not an single industry but an industrial group.

Figure 3-3. Relationship of sport culture and market



derivation relation) among sport products. Accordingly, the sport market is not built with a simple structure, and the primary market and derived market exist differently depending on the attribute of products dealt there.

□ The principle of sport market value network¹³⁾

Primary products in the market are goods that first comes from sport culture. The sport primary market is where these goods are traded. The primary market can be largely divided into spectator and participant sport market in accordance with the nature of objects who produce or consume products (speciality or non-speciality). Spectator sport market means where primary products, made by professional objects (athletes), are distributed. For example, professional baseball, the Olympics and the football university league belong there. Spectator

¹³⁾ It is based on Kang, Kim and Oh (2012)

sport market can be classified into professional, amateur and international sport events depending on the objects' (athletes) level and activity areas.

The participant sport market is where primary products are dealt, and the products are produced or consumed by general participants, not professional objects(athletes). Its typical products are to work out, climb, swim, jog, etc. Participant sport market can be distinguished between event-type participant sport market and non-event-type.

The sport derivative market is newly formed in the process of managing, operating the sport primary market and increasing its profit. It can make other derivative markets generate. In other words, the 1st derivative market emerges from primary market, the 2nd derivative market does from the 1st. The 1st derivative market consists of broadcasting, sponsorship, licensing, star athletes, athlete training service, goods/facility, facility operation/development, sport information service, sport tourism,

Table 3-2. The background and segments of sport primary market

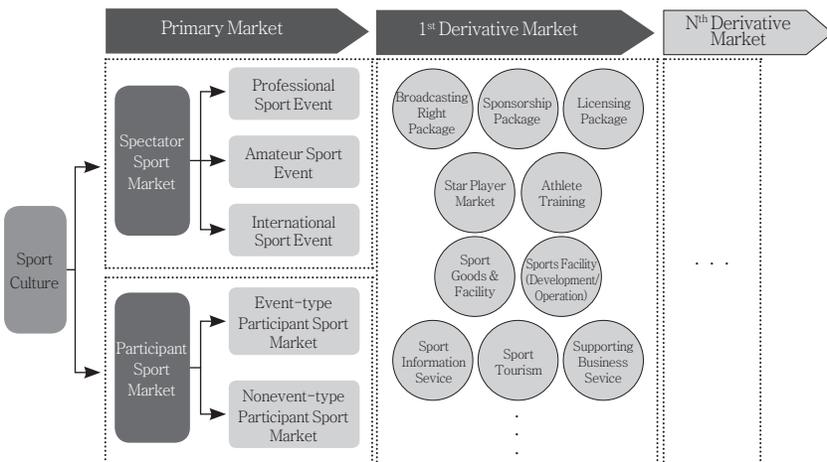
The Relationship of sport and Market			
Culture		Primary Market	
		Derivation from Culture	Segments of Primary Market
sport	Spectator sport	Spectator sport Market	Professional sport Event
			Amateur sport Event
			International sport Event
	Participant sport	Participant sport Market	Event-type participant sport
			Non-event-type participant sport

Source : Kang, Kim and Oh (2012)

supporting business service, etc.

The primary market emerges from sport culture, the 1st derivative market does from the primary, the 2nd does from the 1st, and the Nth market does from (N-1)th market. These markets, linked together, create ‘sport market value network’¹⁴⁾. The 5 primary markets sorted by the network are mutually exclusive. Primary markets have effects on the derivative markets, and the derivative one bring influences to another one. As a result, the sport market value network indicates that the sport market is not just the sum of primary and derivative markets, but also an organic system.

Figure 3-4. Sport market value network



Source : Kang, Kim and Oh (2012)

14) The sport market makes new market through new product, and the product means new value, the value of derived product (Kang, 2005; Kang, Kim, & Oh, 2012).

petition between participants, while the latter is composed of non-competitive activities. Each size of primary market can be calculated with ticket sales (spectator sport), entrance fee (event-type participant sport), service fee and tuition fee (non-event-type participant sport). The figure 3-3 shows the primary markets' position of spectator sport (a painted part) in the sport market value network. The figure 3-4 also does that of participant sport there²⁰.

(2) The classification standard of the derivative market

The derivative market (DS_n) has a structure in which the 1st derivative market is generated from the primary market, the 2nd is stemmed from 1st, and the nth is derived from (n-1)th in this way.

1) The spectator sport derivative market

□ The 1st derivative market

The 1st derivative market includes a variety of markets formed from the event market of spectator sport in which professional, amateur and international sport events are included. However, this section only makes an explanation on the market from professional sport event in that the derivative markets from the others, amateur and international sport events, are similar with the derivative market from professional ones.

20) sport market value network is the sum of primary and derivative market, that is, the sum of colored parts.

Table 3-6. The 1st derivative market of the professional sporting event market

Primary Market (Sn)	Derivative Market (DSn)			
	The 1 st Derivative Market (DS1)			
	DS1	DS11	DS111	
S11. Professional sport Event Market	Broadcasting Rights	...	...
	Sponsorship	...	...
	Licensing	...	...
	Athlete Training	...	...
	Star Player	Star Player Sponsorship	...	...
		Star Player Licensing	Products Service	...
	sport Goods /Equipment	sport Goods	...	...
		sport Equipment1)	...	...
	sport Facility Use · Operation Rights	...	...	...
	
	sport Facility Development	Construction	...	...
	sport Information Service	(sport) Newspaper Publication	...	...
	sport Tourism	...	...	...
	Supporting Business Service	Agency	Ticket Sales	...
			sport Event Operation	...
Market Research			...	
	Transfer Agency	...	...
	Consulting	...	...

note : 1) It means equipments for sport events that are not privately owned, such as safety cushions, baseball pitching machines, safety mats for judo and taekwondo.

kets(DS11) and classified into smaller ones(DS111). DS11 and DS111 mean a type of the 1st derivative product, and do not mean the Nth derivative product. For example, sport goods/facility market is separated into 2 markets; sport goods market and sport facility market. Star player market is divided into sponsorship

market and licensing market for star player, and licensing market can be also subdivided into products and service markets. As a result, these markets are generated from the primary market at first, and belong to the 1st derivative market, not the 2nd and 3rd market.

□ The 2nd derivative market

The 2nd market of spectator sport is derived from the 1st once again. For example, business supporting service market is derived from the sponsorship market. Although sponsorship rights and packages are dealt in the 1st market, a business supporting service, which do business for the rights and packages, cannot be considered as things derived directly from spectator sport. Accordingly, a Business supporting service in the sponsorship market is the 2nd market. Figure 3-7 shows the 2nd derivative market of spectator sport classified in this way.

Figure 3-7 shows that the sport information market is in both the 1st and 2nd derivative market (licensing goods-products-service-information). The sport information market in the 1st market provides the result and article of sport games, and does not have a business relationship between the publisher and event organizer. That is, the news publishment is derived directly from a event. On the other hand, the sport information market in the 2nd market has a business relationship between event organizers, before a supplier provides a derivative product. For instance, when someone provides the results of sport game with the market through a statistical analysis, he must pay a event organizer for using raw data. Because the use rights of raw data

Table 3-7. The 2nd derivative market of the professional sporting event market

Derivative Market (DSn)			
The 1 st Derivative Market (DS1)	The 2 nd Derivative Market (DS2)		
DS1	DS2	DS21	DS211
Broadcasting Rights	Media Contents	Broadcasting	...
		New Media	...
		Syndicated Tv	...
	Supporting Business Service	Broadcasting Rights Agency	...
Sponsorship	Supporting Business Service	Sponsorship Agency	...
Licensing	Licensed Goods Market	Products	sport Goods
		Service	Lottery
			Game
			Information
	Finance & Others		
Supporting Business Service	Licensing Agency		
Athlete Training	Supporting Business Service	Instructor Education	...
Star Player	Supporting Business Service	Intangible Assets – Related Legal Affair	...
		Management	...
		Portrait Rights Agency	...
sport Goods /Equipment	sport Goods/Equipment Distribution · Rental	Finance	...
		Lease	...
sport Facility Use · Operation Rights	sport Facility Operation	Maintenance	...
		Facility Lease	
sport Facility Development	Supporting Business Service	Maintenance	...
		Distribution	
		Design	
sport Information Service	(sport) Newspaper Distribution	...	...
sport Tourism	Supporting Business Service	sport Tour Package Sales Agency	...
Supporting Business Service	...	...	...

is the 1st derivative product, the sport information market here belongs to the 2nd derivative market.

2) The participant sport derivative market

Derivative market of the event-type participant sport event market

Participant sport can be also classified into derivative markets in the way noted above. Table 3-8 indicates the 1st market and its types derived from the event-type participant sport market. Its structure is similar with that of professional sport event

Table 3-8. The 1st derivative market of the event - type participant sport market

Primary Market (Sn)	Derivative Market (DSn)		
	The 1 st Derivative Market (DS1)		
	DS1	DS11	DS111
S21. Event-Type Participant sport Market	Broadcasting Rights	...	...
	Sponsorship	...	...
	Licensing	...	...
	sport Goods /Equipment	sport Goods sport Equipment	...
	sport Facility Use Operation Rights	...	...
	sport Facility Development	Construction	...
	sport Information	Newspaper Publication	...
	sport Tourism	...	
	Supporting Business Service	Agency	Ticket Sales
			sport Event Operation
			Market Research
		Consulting	...

market (spectator sport market). Nevertheless, the two market have a difference in that the event-type participant sport market does not have a star player market.

Table 3-9. The 2nd derivative market of the event - type participant sport market

Derivative Market (DSn)			
The 1 st Derivative Market (DS1)	The 2 nd Derivative Market (DS2)		
DS1	DS2	DS21	DS211
Broadcasting Rights	Media Contents	Broadcasting	...
		New Media	...
		Syndicated Tv	...
	Supporting Business Service	Broadcasting Rights Agency	...
Sponsorship	Supporting Business Service	Sponsorship Agency	...
Licensing	Licensed Goods	Products	sport Goods
			Non-sport Goods
		Service	Lottery
			Game
	Information		
Supporting Business Service	Licensing Agency	...	
sport Goods /Equipment	sport Goods/Equipment Distribution · Rental	...	...
	
sport Facility Use · Operation Rights	sport Facility Operation	Maintenance	...
		Facility Lease	...
sport Facility Development	Supporting Business Service	Maintenance	...
		Repair	
		Design	
sport Information	...	...	...
sport Tourism	Supporting Business Service	sport Tour Package Sales Agency	...
Supporting Business Service	...	...	...

In the case of the 1st derivative market (DS1) from the event-type participant sport, the size of markets (e.g. sponsorship, li-censing and broadcasting rights) is inconspicuous in the early stage. But, through a stage of development, the 1st market evolves with the same structure of the derivative market from spectator sport event market. For example, even though 'SBS alumni golf tournament' is a event for the public, it has a market structure, similar with spectator sport market such as broadcasting rights, sponsorship and licensing. If the size of the event-type participant sport is expanded, it is expected that the sport information service and sport tourism is derived from that.

The 2nd derivative market (DS2) from the event-type participant sport is a derived market from the 1st again (Figure 3-9). Even though the size of 2nd market is insignificant²²⁾, it is a rising market due to growing national income. For example, there is a market derived from sport facility operation market (DS1). Recently, the activities in the event-type participant sport has increased and it encourages a market to emerge, such as facility management and lease. Another example is the management and lease service of indoor practice facilities for baseball competition and soccer club for citizens.

□ Derivative market of the non-event-type participant sport market

Table 3-10 shows the structure of the 1st derivative market of non-event-type participant sport. There are no broadcasting

22) It mainly consists of a type of self consumption; blog, non-profit broadca

rights, licensing, sponsorship market, etc. It is because that its main purpose is to improve one’s sport ability and health. Meanwhile, the other derived market is more active. It is remarkable that the facility management and lease is formed in the 1st derived market, not the 2nd one, unlike other derived markets. It is because that the facility management market is not the derivative but the primary market. This means the facility management in the non-event-type participant sport market belongs to the primary one.

A sport instructor is needed to operate a sport facility, and an institution for sport instructor education is in the 1st derived market. It has a difference, comparing with spectator sport

Table 3-10. The 1st derivative market of the non - event - type participant sport market

Primary Market (Sn)	Derivative Market (DSn)		
	The 1 st Derivative Market (DS1)		
	DS1	DS11	DS111
S22. Non-Event-Type Participant sport Market - sport Facility Operation	Activity maintenance and lease	Facility Maintenance	...
		Facility Lease	...
	Education Service	Instructor Training	...
	Sponsorship	...	...
	sport Facility Development	Construction	...
	sport Goods /Equipment	sport Goods	...
		sport Equipment	...
	sport Information Service	Newsletter Publication, Information Solution Providing	...
	sport Tourism	Tour	...
	Supporting Business Service	Agency	Market Research
		Consulting	Operation Agency
		...	

market. In the spectator sport market, athlete training belongs to the 1st derived market, and coaching does to the 2nd. It is also because that the facility operation market in the non-event-type participant sport is the primary market.

‘Information solution providing’ refers to a market of interface solutions with internet which enables people to measure and share their athletic performance at the same time.

Meanwhile, it is controversial where game-type sport market, based on physical activity (e.g., Screen golf), should be positioned. In this paper, game equipment/program belongs to sport

Table 3-11. The 2nd derivative market of the non-event-type participant sport market

Derivative Market (DSn)			
The 1 st Derivative Market (DS1)	The 2 nd Derivative Market (DS1)		
DS1	DS2	DS21	DS211
Activity maintenance and lease	...	...	...
	
Education Service	...	...	...
Sponsorship	Supporting Business Service	Agency	...
sport Facility Development	sport Goods/Equipment Distribution · Rental	...	...
	
sport Goods /Equipment	Supporting Business Service	Maintenance	...
		Distribution	
		Design	
sport Information Service	...	...	...
sport Tourism	Supporting Business Service	sport Tour Package Sales Agency	...
Supporting Business Service	...	...	...

goods/facility (the derivative market), and a place for games (e.g., an screen golf driving range) does to sport facility operation (the primary market). Non-event-type participant sport can be classified into the public sector (free or low price) and private sector (charged). However, from the consumer's point of view, it is meaningless to separate them, so that this paper regards 2 sector equally and classifies them. This is because it is paid for by a party such as the government, even if it is free or low price products.

In non-event-type participant sport, the number of the 1st derived market is relatively small, so the 2nd is also simpler than that of others. In spite of the few number, its size is greater than others, for its primary and derivative market have a great number of small and medium businesses.

(3) The new classification system of the sport market: sport market value network

The sport market value network is a connection of the primary and derived markets. This network has differences from supply value chain, because the derivative markets spreads out like the spokes of a wheel simultaneously in the network²³⁾. However, in the supply value chain, the value is added in order along a single line. By the way, table 3-12 shows the sport market value network.

23) In other words, the derivative markets, such as broadcasting, licensing and sport goods market, can be generated simultaneously.

Table 3-12. Sport market value network

S	Primary Market (Sn)		Derived Market (Dn)						Notes		
			The 1 st Derivative Market (DS1)			The 2 nd Derivative Market (DS2)				The 3 rd Derivative Market	
			DS1	DS11	DS111	DS2	DS21	DS211		DS3	
S sport Market	S1 Spectator sport Market	S11. Professional sport Event Market	Broadcasting Rights	Media Contents	Broadcasting	...	Supporting Business Service	Including Sponsorship For A Team	
							New Media	...			
						Syndicated Tv	...				
					Supporting Business Service	Supporting Business Service	Sponsorship Agency		
			Sponsorship	Licensed Goods Market	Products	sport Goods Non-sport Goods	Supporting Business Service		
			Licensing						Service	Lottery
							Game				
							Information				
							Finance & Others				
					Supporting Business Service	Licensing Agency			
		Athlete Training	...	...	Supporting Business Service	Instructor Education	...		
		Star Player	Star Player Sponsorship	...	Supporting Business Service	Intangible Assets- Related Legal Affair	...	...	
			Star Player Licensing	Products Service			Management		...		
				Portrait Rights Agency	...						
		sport Goods /Equipment	sport Goods	...	sport Goods/ Equipment Distribution · Rental	Finance	...	...	
			sport Equipment	...		Lease					
		sport Facility Use · Operation Rights	...	...	Supporting Business Service	Maintenance	...		
						Facility Lease					
		sport Facility Development	Construction	...	Supporting Business Service	Maintenance	...	...	
						Distribution					
		Design									
sport Information Service	(sport) Newspaper Publication	...	Supporting Business Service	(sport) Newspaper Distribution	...	...			
sport Tourism		...	Supporting Business Service	sport Tour Package Sales Agency	...	...			
Supporting Business Service	Agency	Ticket Sales	...	...	...	...	
		sport Event Operation		...	...				
		Market Research		...	...				
		Transfer Agency		...	...				
		Consulting		...	...		...
S12. Amateur sport Event Market											
S13. International sport Event Market		1)									

<continue>

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S sport Market	S2 Participant sport Market	S21. Event-Type Participant sport Market	Broadcasting Rights	Media Contents	Broadcasting	...	Supporting Business Service
							New Media	...	
				Syndicated Tv	...				
				Supporting Business Service	Broadcasting Rights Agency	...	...
			Licensing	Licensed Goods	Products	sport Goods Non-sport Goods	Supporting Business Service
				Game					
				Information					
				Finance & Others					
				Supporting Business Service	Licensing Agency	...	...
			Sponsorship	Supporting Business Service	Sponsorship Agency
			sport Goods /Equipment	sport Goods	...	sport Goods/ Equipment Distribution · Rental
			sport Facility Use · Operation Rights	Facility Operation	Direct Operation	...	Facility Maintenance
		Facility Lease							
		sport Facility Development	Construction	...	Supporting Business Service	Maintenance	...	...
						Repair			
			Design						
		sport Information Service	Newspaper Publication	...	...	...	...	...
		sport Tourism		...	Supporting Business Service	sport Tour Package Sales Agency	...	...
		Supporting Business Service	Agency	Ticket Sales	...	...	...	...
				sport Event Operation					
			Market Research						
			Consulting	...					
		Facility maintenance and lease	Facility Maintenance	...	...	...	...	...
				Facility Lease	...	...	...	...
		Education Service	Instructor Training	...	...	...	...	...
		Sponsorship	...	...	Supporting Business Service	Advertising Agency	...	...
sport Facility Development	Construction	...	Supporting Business Service	Maintenance	...	...	
				Distribution					
	Design								
sport Goods /Equipment	sport Goods	...	sport Goods/ Equipment Distribution · Rental	...	...	...
							...		
	Newsletter Publication	...							
sport Information Service	Information Solution Providing	...							
sport Tourism		...	Supporting Business Service	sport Tour Package Sales Agency	...	...	
Supporting Business Service	Agency	Market Research	...	...	...	...
		Operation Agency							
	Consulting	...							

Including
Climbing, Gym,
Health Club,
Yoga, Etc.

note : 1) It is similar to the structure of professional sport event market.

IV. Application of sport Market Value Network and Estimation of the Market Size

1. Characteristics of sport Market Value Network and its Applications

The new classification system using the sport market value network has various merits and characteristics in analysis of the sport market. These merits and characteristics can be applied to aspects of the sport industry (market) classification, policy, and sport and sport industry.

(1) Industry(market) classification aspects

Identification of market characteristics

The new classification system enables capturing the backgrounds of formation of each market and inter-market relationships, since it clearly shows vertical relationships between the primary market and the sub-market. For example, we can observe from the market value network that broadcasting market is derived from sport event which is a primary market, and media contents market, along with broadcasting intermediaries market, are markets derived again from the broadcasting market. These characteristics reflect the fact that classification system under market value network is advanced than previous simple listing method of domestic 'sector based method' and

trend (especially the recent foreign trend) that the characteristics of the sport market want to show.

Easiness of adding market

A merit is easiness of newly emerging sport market. Various markets can be emerged according to changes of intrinsic and extrinsic conditions. These can be easily denoted by adding S_n (primary market), DS (n -th derived market), $DS1_n$ (n -th classification of derived market), and the others under sport market value network.

(2) Policy aspects

Easiness of satisfying policy task demand

The sport market value network can easily find political tasks since it depicts the relationship among markets by flow. Moreover, formulating policies in the sport market considering forward and backward linkage effects is also possible. For example, if the licensing market which is derived from the sport events market is considered weak and needs vitalization, then reasonable policy formulation considering both relationship and situation of upper-class primary market and lower-class sub-market is possible. That is, sport market value network can be used to preemptive reduction of factors that disturbs flow. This characteristics appears because using sport market value network makes understanding and diagnosing problems and state of the sport market.²⁴⁾

24) Three characteristics and merits discovered so far, also overcomes the

□ Discovering hidden market

Sport market value network is useful in finding hidden markets. For example, previous classification system is not suitable to analyze characteristics and relationships between derived sectors and self-consumed products such as mountaineering. If many people are involved with mountaineering activities, the directive market size of mountaineering market is not clearly seen, but outdoor market which is derived from mountaineering market will be of a considerable size. Also, choice of policy (regarding both mountaineering market and outdoor market derived from mountaineering market) adoption and its implementation will bring significantly different outcomes. A similar example can be found in marine sport. Recent advance in marine markets saw boom in demand of fuels exclusively for motors of leisure boats, but previous classification system do not give solution to how we can perceive those markets. That is, outdoor market and fuel exclusively for motors market²⁵⁾ will be unidentified in the previous classification system but they can be easily understood in sport market value network and contribute to planning and adopting policies.

□ Specifying scope of research · policy

When analyzing market size and their relationships, we can easily adjust scope of the analysis. Scope of related markets can

restraints of previous classification system.

25) This is applicable to derived product market from non-event participating sport market

be different by researchers or related policy makers, and this value network approach can clarify objective of researcher or policy planners. For example, we can adjust number of primary and sub markets, and level of derived markets.

Reflecting recent trend of industrial policy

Because sport market value network puts market at the center of analysis, it can also consider the demand side whereas previous approaches only care supply side. For example, is a certain sport market is considered to need expansion, modification of exceptional tax law can be implemented. Characteristics of sport market value network which also considers demand side apply with recent industrial policy which focus on making cooperative network of participators.

(3) Sport and sport industry aspect

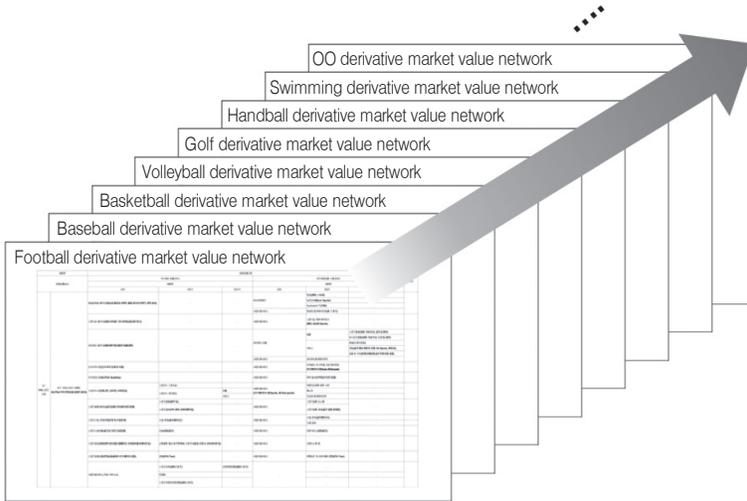
Contribution of strategy making of firms

We should also note that relative position of each supplier in sport market is also possible. Each sport firm can be benefited by easily establishing more efficient managing strategies by realizing relationships between other categories.

Analysis of individual category

Sport market value network understands characteristics and relationships of categories in each sector and it is also an aggregate of sport market value network for each sport. This implies that sport market value network can be also applied to analyzing market of each category. Applying sport market value

Figure 4-1. Market value network for each sport (Kang, 2005)



network while limiting a subject (for example, soccer) makes independent analysis that certain subject (soccer) possible.

Meanwhile, if market vague boundaries which are not a sport game, for example, sport markets related with horses, are given as a task, related analysis is possible. Horse racing has characteristics of watching and those characteristics can be classified, and classified characteristics in the sport market value network can be aggregated to total structure of horse related sport market.

Contribution to development strategy of game organization

Sport market value network divides primary market to watching and participation sport market, and it is associated with Korean Olympic Committee (watching market), and Korean Coun-

cil of sport for All(participation sport) so that it can applied to establishing development strategies and improvement of regulations of organizations.

For example, adjustment of promotion of category and priority of market-making is possible while checking market conditions.

2. Estimating size by sport market value network

As mentioned so far, new classification system(market value network) can be applied to various fields ranging in classification, policy and sport industry. However, to specify those applications, statistics for sport market value network should be provided first. Hence, this chapter depicts size of the market and analyze current Korean sport market characteristics based on estimated statistics.

(1) Methodology of estimating market size

Size of primary market

We figured out primary pro sport event market size by gross ticket sales of subjects such as baseball, soccer, volleyball, basket ball, and etc. We excluded golf since most of the tickets are given free in most of the situations. We also figured out primary amateur sport market by gross ticket sales of various competitions, and specifically we projected those by the balance sheets of the sport associations registered in Korean Olympic Committee.

In the case of event-participation sport, gross participation fees

for competitions were used to estimate the size of the primary market. We constrained the markets to competitions regularly held by public institutions and corporate organizations. Actual estimations were done by applying members of sport society in sport white paper and participation fees per person (10,000won for year 2005, 12,000won for year 2007, 15000won for year 2010 when considering annual inflation rates. Size of primary markets of non-event participation sport is estimated by gross lesson fees and service fees using sales of these industry according to service industry statistics analysis of statistics bureau and aggregate economy analysis data. Meanwhile, inter-national sport event market estimation is excluded because of irregularity of competitions and limitations of data.

□ First derivative market (pro sport event)

Size of the broadcasting market is gross broadcasting rights sales of professional clubs and related organizations, and used data noted on balance sheets. Sponsorship market size is analyzed by advertisement, mother-company's support fund, association's title sponsorship sales. Specifically, balance sheet of each professional clubs data are used and data for clubs that do not officially publish balance sheet are substituted by average of officially publishing clubs.

Licensing market size is estimated by sport Toto dividend to each subject, royalty for product sales, and etc. Size of markets for players cultivation is estimated by sales from juvenile program operated by professional clubs, and sport academy operated by individuals.

Star player market, especially including advertisement sales of star player into club's advertisement sales, applied sport market ratio (broadcasting ratio) and professional sport ratio (reflecting result of delphi expert analysis mentioning that star players are likely to be from professional clubs). sport appliances/facilities market is estimated by gross training utilities expenditures of professional clubs. Specifically, training expenditures of amateur organizations registered in Korean Olympic Associations appearing in balance sheets converted to training expenditure per person, and multiplied number of professional players by ten. This is because of the assumption (reflecting delphi expert research outcome) that support fund for professional players will be ten times larger than that of amateur players.

The sport facilities operation market is analyzed by home field fees and game fees of each club. Specifically, we converted field facility fees and game fees to per person and applied it to overall clubs based on official releases of professional clubs.

The sport facilities operation market occurs irregularly so, we employed indirect estimation method. Sales of other civil engineering which includes sport facilities were applied with ratio to sport (expert delphi research) and estimated.

The sport information market was analyzed according to sales of new paper, database and online information providing, portal and other internet information intermediaries service, and other sport in standard industry classification. Distinguishing professional and amateur was difficult, so we first estimated overall market size and then applied sport and professional and amateur ratio (expert delphi research) to estimate. sport tourism

market is unexplored market and was not able to be analyzed, so we took note on domestic tourism market to estimate. Specifically, sales of domestic tourism, sport ratio, ratio of professional and amateur were applied and estimated.

In the case of business assistance market, sales of sport ticket purchasing service, sport consulting, sport event operation service were required and additional investigation of individual firm is needed. However, most of the firms are small and medium sized firms and they are reluctant to provide information which led to us to select alternative method. That is, based on stand industry classification, we multiplied certain portion to related industries to estimate.

□ First derivative market (amateur sport event)

The broadcasting market is analyzed by gross broadcasting fees of amateur game organization and related associations. Sponsorship market is analyzed by various association's advertisement sales, sponsorship and support funds, association's title sponsorship gross sales. Star player market size is projected by applying sales of advertisement service of standard industry classification and sport market ratio (broadcasting ratio), and professionals ratio (reflecting research result of delphi investigation). sport appliances/facilities market size is projected by reflecting expenditures related to amateur players' use of sport appliances/facilities. sport facilities operation market is estimated by rental fee of each sport subject's play-grounds. This includes sport facilities rental fee and game fee noted on balance sheet of sport associations registered in Korean Olympic

Associations.

Meanwhile, estimation of size of sport facilities development market, facilities operation market, sport information market, sport tourism market, and sport business support market is done under same method used in markets of professional sport events.

□ First derivative market (event-participation sport)

Event-participation sport share many characteristics of public goods which makes it to have underdeveloped broadcasting market, sponsorship market, licensing market. Knowing specific size of market was difficult, so method of taking note of domestic immaterial properties rental market.

Specifically, we applied sport ratio (expert delphi investigation) to domestic immaterial properties rental market under standard industry classification, and subtracted market size of professional and amateur spectating market. sport goods/facilities market size is written based on “sport goods (33301, 33309, 33409, 14191, 15219) market” under standard industry classification. Sales and imports of sport goods market under standard industry classification were combined and deducted supplies expense of professional sport and amateur sport.

The sport facilities operation market is realized by each subject’s competition grounds’ gross rental fees.

To estimate size, sales of sport facilities operation (91111, 91112, 91113, 91121, 91122, 91131, 91132, 91133, 91134, 91135, 91136, 91139) under standard industries classification were applied together with professional sport, amateur sport, and sport ratio of event and nonevent. sport facilities development

market, sport information market, sport tourism market, and business support service market were applied same method in professional markets.

□ First derivative market (nonevent-participation sport)

Analyzing business support service (agency of facilities operation) market size requires investigation of each company as in case of other markets. However, due to uncooperative mood of related firms, identifying market size was impossible so we selected method of dividing sales of related industries under standard industries classification. Derivative market of business support service (education service) implies market of nurturing instructors. This case was also difficult to investigate individual firms, so we used similar method with facilities operation agency market.

Estimation of market size of sport facilities development market is done with identical method to sport facilities development market of other sport events, estimation of market size of sport goods/facilities market is done with identical method of sport goods/facilities market of event-participation market. sport information market, sport tourism market, sport business support market size was estimated by same methods discussed in the previous parts.

□ Second derivative market (nonevent-participation sport)

We skip estimating size of second derivative market of nonevent-participation sport. This is because of limitation in data and difficulty in classifying first and second derivative market.

However, it is reflecting the current market situation, so consistent market investigation and statistical methods in the future will make providing statistics of n-th derivative market in the future.

Meanwhile, estimating market size of second derivative market of non-event participation market is possible. Specifically, we used supplier sales under standard industry classification, and the data includes mining & manufacturing statistics from Korean Statistical Bureau, sport industry state investigation, and others.

(2) Estimation results and description

<Table4-1> shows the domestic sport market value network

Table 4-1. Size of sport market value network

Classification		Market Size (Scale: Million Won)			Market size (proportion)	Average
		2005	2007	2010		
Professional sport	Primary market (Ticket)	22,643	28,690	60,149	0.33%	21.6%
	Broadcasting market	17,529	20,780	27,575	0.15%	9.5%
	Sponsorship market	184,358	257,629	283,719	1.55%	9.0%
	Licensing market	46,706	65,269	71,879	0.39%	9.0%
	sport lottery (Toto) market	440,217	1,337,198	1,853,348	10.10%	33.3%
	sporting goods/facilities market	7,626	8,792	8,991	0.05%	3.3%
	sport facility development / operation market	13,584	20,634	27,167	0.15%	14.9%
	Star Player market	4,198	4,809	6,372	0.03%	8.7%
	Athlete Training	3,697	4,953	4,305	0.02%	3.1%
	sport information market	52,697	56,763	62,213	0.34%	3.4%
	sport tourism market	2,317	4,898	10,353	0.06%	34.9%
	supporting business service market	52,461	39,804	73,567	0.40%	7.0%
Sum (Average for growth rates)		848,032	1,850,218	2,489,638	13.57%	24%

<continue>

Amateur sport	Primary market (Ticket)	2,678	4,045	3,962	0.02%	8.1%
	Broadcasting market	3,442	3,782	10,282	0.06%	24.5%
	Sponsorship market	46,230	58,119	87,568	0.48%	13.6%
	Licensing market	1,309	1,591	5,159	0.03%	31.6%
	sport lottery (Toto) market	17,641	27,702	19,752	0.11%	2.3%
	sporting goods/facilities market	65,157	77,882	79,465	0.43%	4.1%
	sport facility development / operation market	7,170	8,903	10,733	0.06%	8.4%
	Star Player market	42	49	64	0.00%	8.7%
	Athlete Training	218,132	292,239	254,005	1.38%	3.1%
	sport information market	11,292	12,163	13,331	0.07%	3.4%
	sport tourism market	2,317	4,898	10,353	0.06%	34.9%
	supporting business service market	11,514	9,105	16,980	0.09%	8.1%
Sum (Average for growth rates)	386,925	500,477	511,656	2.79%	13.4%	
Event-type participant sport	Primary market	995	1,501	1,868	0.01%	13.4%
	Broadcasting market	–	–	–	0.00%	
	Sponsorship market	158	210	286	0.00%	12.7%
	Licensing market	–	–	–	0.00%	
	sport goods/facilities market	363	544	894	0.00%	19.8%
	sport facility development / operation market	453,365	481,781	549,939	3.00%	3.9%
	sport information market	1,506	1,622	1,778	0.01%	3.4%
	sport tourism market	2,663	5,630	11,901	0.06%	34.9%
	supporting business service market	1,835	1,848	3,605	0.02%	14.5%
	Sum (Average for growth rates)	460,885	493,136	570,271	3.11%	4.4%
Non event-type participant sport	Primary market (Facilities use)	8,533,331	9,051,982	10,315,989	56.24%	3.9%
	Primary market (Education service)	615,177	886,100	822,575	4.48%	6.0%
	Business support service (Facilities operation agency) market	10,992	15,659	17,046	0.09%	9.20%
	Business support service (Education service) market	49,639	21,825	25,373	0.14%	-12.6%
	Sponsorship market	6,353	7,971	6,809	0.04%	1.4%
	sport facility development market	76,359	96,494	125,869	0.69%	10.5%
	sport goods/facilities market	1,681,971	2,019,125	3,420,172	18.65%	15.3%
	sport information market	9,787	10,542	11,554	0.06%	3.4%
	sport tourism market	2,663	5,630	11,901	0.06%	34.9%
	supporting business market	9,678	7,256	13,375	0.07%	6.7%
	Sum (average for growth rates)	10,995,951	12,122,583	14,770,661	80.53%	6.1%
Gross sum (average for growth rates)		12,691,793	14,966,414	18,342,226	100%	7.6%

Note : International sport events market from the spectating sport market.

Derivative markets are restricted to first order. Non-event participation sport includes second order derivative market. sport Toto market is included in licensing market, but denoted separately from other licensing market due to its importance.

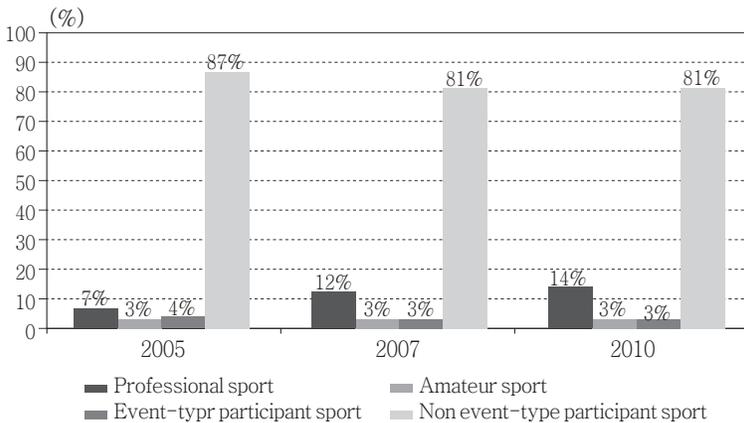
Market size (proportion) data shows the values of the year 2010.

which is estimated by methods mentioned in the previous sections.

□ Overall market trend

Examining overall trends of main markets(primary + derivative), non event-type participant sport has dominant share, and the share of professional sport is gradually increasing. Shares of amateur sport market and event-type participant sport market are similar and relatively low.

<Figure4-2> Change in shares of main(primary+derivative) markets



□ Characteristics by primary markets

• Professional sport event market

Growth rate of professional sport primary market is 21.6% which is significantly larger than other primary markets. This reflects rapid increase of professional sport market in Korea. Meanwhile, growth rates of most of the derivatives markets of professionals markets are lower than primary market excluding sport Toto market. This reflects the fragile nature of industrialization of professional sport event market.

• Amateur sport event market

The proportion of amateur sport event market(primary + derivative) to overall sport market is 2.79 percent which is lowest among primary markets. If we exclude sport A match which is similar to professional soccer event, the size gets much more smaller. This is because domestic amateur sport event is similar to public goods.

• Event- type participant sport market

The proportion of event-participation market in overall sport market is about 3.11 percent, but it exhibits rapid growth trend over 13 percent. This reflects increasing interest to sport, especially the trend(also affected by professional sport) of social sport activities which gives sense of achievement by competition with others.

Main revenue of this market, other than participation fee, which is sponsorship market shows rapid growth(average 12.7 percent in year) in growth and creation. If market conditions change, new revenue model is developed in event-participation market, then

this market can be changed to private goods market from public goods or semi-public goods market.

- Non-event type participant sport market

This market has the largest share of 80.53 percent in the overall sport market. This is because of the fact that sport market using facilities of fitness club and yoga classes are small in individual firms but are large in aggregate level. Hence this market has high contribution in big spread effect to other markets and employment effects.

- Characteristics by derivative markets

- Broadcasting market

Size of broadcasting market (Professional sport + Amateur sport) is 37.8 billion won in year 2010, and 0.2% of overall market which is under than expectation. Observing broadcasting market of professionals, the proportion is 0.15% which is far less than 0.39% of licensing market and 0.34% of sport information market. As we can see, inactive feature of broadcasting market negatively effects not just the broadcasting market itself but also the revenue of primary market (especially professional sport market). However, broadcasting market will be directive revenue source of the sport market in the future by future development of IT technology, so a big change is foreseen.

- Sponsorship market

The share of market size of professional sport sponsorship market to overall market size is about 1.6 percent and growth rate is also high which is about 9.0 percent. This size and high

growth rate is due to mother company's support funds. If we exclude support fund of mother company, then the size and share of sponsorship market greatly decreases. Share of sponsorship market in amateur market is also high which is about 0.48%, but greatly decreases if we exclude A match sponsorship in soccer games. Meanwhile, we cannot expect growth of sponsorship market of participation sport.

- Licensing market (sport Toto)

The sport Toto market shows significant share in both professional sport and amateur sport measured by both size and growth rate. Because sport Toto is not applicable to licensing in participation sport, it is not directly seen in the statistical table, but it acts as revenue source of the market by sport promotion fund. The role of financial basis of sport Toto will be increase in the overall sport market.

- sport goods/facilities market

Share of sporting goods/facilities market to overall sport market is about 19 percent which is the biggest market. Especially, it has high share in non-event participation market which is largely due to mountaineering goods. Meanwhile, the market size is large, but related imported goods has high competitive advantage in domestic market. For example, foreign brands are strong in goods/facilities of high price, and developing countries (especially China) brands are strong in goods/facilities of low price.

- sport tourism/sport information market

The market size, 0.06%, is small but its growth rate is in leading group along with sport Toto and licensing market. Especially

sport tourism market growth rate is 35% percent which is one of the biggest. The high growth rate implies that this market can be developed as future prospective market. To improve value-added and to maximize market value of this market, combination with other fields will be prominent.

- sport management service market

This market do not show any considerable results in both size and growth rates. This situation is because of deficiency in demand of business support service market by inactive feature of primary sport market. Previous primary market is dominated by advertisement firms of big corporations so business performance of medium and small sport enterprises in this field cannot be expected. However the number of medium and small enterprises entering in this market is large compared to other types of markets.

V. Conclusion

This paper focuses on developing a new classification system of the sport market and trial of constructing statistical data. This is because of shortcomings of previous sport market classification system which were irrelevant with constructing statistical data, and inadaptable in application process.

Under previous sport market classification system it was difficult to understand new trend in industrial policy and relationships between businesses in sport market, and setting classification domain for newly added markets. To overcome these weakness, and to consider both supply and demand side of the market, we proposed new classification system centered in the market.

This new classification system employs notions of primary and derivative sport market where primary market indicates first business market in the sport culture which can be devided to spectator sport market and participant sport market. Spectator sport market is further classified into professional, amateur, and international sport events, and participant sport market is classified into event type participant sport and non-event type participant sport.

The derivative market is a subordinate notion of the primary market, which is a newly generated market in the process of operation and revenue making of the primary market. Derivative

market can be derived in the order from first to n-th, and it is composed of broadcasting rights, sponsorship, licensing, athlete training, star player, sport goods/equipment, sport facility operation and development, sport information service, sport tourism, supporting business service markets.

As described above, a higher ranked primary market and lower ranked derivative market is the sport market value network which is the primary concern of development in this paper.

Meanwhile, this paper presents statistics for three years: year 2005, year 2007, and year 2010. The order of derivative markets are restricted for first order except the sport Toto market. This reflects the experimental feature of this paper and limits in collecting relevant data.

However, we can see the differentiated characteristics of professional sport sponsorship market, sport Toto market, and non-event type participant market compared to other markets.

To enable full functioning of the sport market value network and support efficient policy-making, we should develop statistical data collecting methods for derivative markets over second order. Also, regular inspection should be paralleled with the data collecting processes.

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