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Defining a cluster market: The case of the Korean Internet portal service market

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ABSTRACT

In a cluster market, many related and unrelated products or services are sold. Examples of players in cluster markets are Tesco, Sears, Carrefour, Walmart, JCPenny, and Meijer. Because of some unique characteristics of cluster markets, studies of cluster market definition have been very scant. This paper reviews the market definition issues of cluster markets, proposes a statistical market definition method for cluster markets, and applies the method to the Korean Internet portal service market. The method uses all available information on cluster markets without oversimplifying market data. The results of analyses show that the Korean Internet portals can be seen as one market even though the third ranked player in the Korean Internet portal service market, Nate, is more akin to a specialty service provider, not a player competing in the cluster market squarely with Naver and Daum.

1. Introduction

In a cluster market, competing suppliers sell many related (substitutes or complements) and/or unrelated products or services to customers. Representative players in product cluster markets are big box stores (often also called super supermarkets) such as Tesco, Sears, Carrefour, Walmart, JCPenney, and Meijer, and those in service cluster markets are Internet portals and e-commerce businesses such as Google, Yahoo, Amazon, eBay, and Naver. Studies on cluster market definition have been very scarce even though numerous studies on the definition of the relevant market for competition policy purposes have been published in journals.

The lack of studies on cluster market definition stems from the intrinsic nature of a cluster market. The procedure of defining the relevant market starts with establishing the identity of a product or a service. The identity of a product is usually well known among consumers, so fixing the identity of a product is often not a difficult task. For example, a pencil is a tool to write on papers and it is easy to find substitutes. Ballpoint pen producers can be considered as belonging to the relevant market for pencils. A market in antitrust economics, then, can be defined as a set of products (or services) in which the hypothetical monopolist can increase price in order to raise its profit. This way of defining the relevant market has been implemented with the SSNIP (small but significant non-transitory increase in price) test by competition authorities. However, because many heterogeneous products are sold in cluster markets, the representative product of the hypothetical

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monopolist cannot be pinpointed at the beginning of defining the relevant market of the product. This means that the SSNIP test cannot be used to define a cluster market. In reality, however, courts or competition authorities have to define a cluster market because they need to determine whether or not mergers and acquisitions among firms in cluster markets have anticompetitive effects.

Even though there are several research papers on cluster market definition (Amel & Starr-McCluer, 2002; Ayres, 1985; Kwast, Starr-McCluer, & Wolken, 1997; Kim, Kwon, & Nam, 2013), there has not been, to the best of our knowledge, a research paper that provides a theoretical basis for cluster market definition and suggests an empirical methodology usable for defining cluster markets. The objective of this paper is to develop a method to define a cluster market, especially an Internet portal service market, and apply it to the Korean Internet portal market. The new approach developed in this paper will complement the existing methods of market definition rather than replacing them.

This paper focuses on Internet markets, especially the Korean Internet portal market, where multiple services such as search engines, dictionaries, news, blogs, and email are provided free of charge. In the past, the Korea Fair Trade Commission (KFTC) followed the traditional market definition procedure in judging if a Korean portal service provider unduly exercised its market power. The KFTC first fixed the identify (concept) of the Internet portal service as a mix of five services (1S4C: search, communication, community, commerce, and content), and it then calculated the market shares of players, providing all 1S4C services. However, this approach has been criticized by scholars and lawyers mainly because of the arbitrariness in defining the Internet portal service market based on 1S4C.

This paper reviews the literature on cluster markets, explores key features of the Internet market that should be taken into account in defining the relevant market, and proposes a practical method, utilizing all available information on cluster markets. The structure of this paper is as follows. Section 2 introduces the concept of cluster market definition, reviews previous studies on cluster market definition, and discusses the issues associated with defining cluster markets. In discussing these issues, the reasons why defining cluster markets is more difficult for Internet portal services than products are also explored. Section 3 develops an index, the revealed comparative preference, to measure the relative similarity (or substitutability) of multiproduct sellers in terms of their product or service mix and proposes a statistical method, using this index, to define a cluster market. Section 4 reports the outcomes of analysis and presents dendrograms to illustrate a possible cluster market definition for the Korean Internet portal service market. Section 5 concludes the paper with a discussion of key research findings and limitations of this paper, and directions for further research.

2. Cluster market definition

2.1. Concept of the cluster market definition

Defining a cluster market is a process of identifying a group of the sellers selling a similar mix of multiple products in an area. The method of cluster market definition, however, is not yet theoretically established. It was initially developed by courts for practical purposes to resolve legal disputes in mergers and acquisitions cases between competition authorities and firms selling multiple products or services (Ayres, 1985; Kwast et al., 1997). When a merger case among the firms selling multiple products arises, courts have to determine whether to allow that merger or not. In order to make that decision, somehow they have to define a cluster market and assess whether the merger, if allowed, would substantially reduce competition in the market and hurt consumer welfare. Therefore, as Ayres put it, “the use of such cluster definitions has preceded the development of a theoretical framework (*p*. 109).” Since Ayres' paper was published in 1985, there has been almost no progress in research on cluster market analysis.

As noted in the Introduction, this lack of progress in research was caused, we believe, by the very nature of a cluster market that prohibits competition authorities from using the traditional method of market definition. In a cluster market, sellers sell a cluster (collection) of related and unrelated goods and services at physical or virtual stores and buyers usually purchase both related and unrelated products during a visit. Therefore, the hypothetical monopolist test, often called the SSNIP test, which was developed to define markets starting from a specific good or service, cannot be used for the definition of a cluster market.

The method of traditional market definition can be deduced from the U.S. Horizontal Merger Guidelines (henceforth, the Guidelines):[1]

> “A market is defined as a set of products and a geographic area in which it is produced or sold such that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future producer or seller of those products likely would impose at least a small but significant and non-transitory increase in price on at least one product in the market, including at least one product sold by one of the merging firms.

Simply put, the traditional market definition focuses on finding a group of substitute products around a specific product produced by a merging firm, and competition authorities often use the SSNIP test in order to find relevant markets,

[1] U.S. Department of Justice and the Federal Trade Commission, Horizontal Merger Guidelines, August 19, 2010 (p. 9).