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Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

04-Jun-2013

English - Or. English

DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE

DAF/COMP/WD(2013)27
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ROUNDTABLE ON THE ROLE AND MEASUREMENT OF QUALITY IN COMPETITION ANALYSIS

-- Note by Japan --

This note is submitted by Japan to the Competition Committee FOR DISCUSSION under Item VI at its forthcoming meeting to be held on 19-20 June 2013.

JT03340864

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ROUNDTABLE ON THE ROLE AND MEASUREMENT OF QUALITY IN COMPETITION ANALYSIS

-- Note by Japan --

1. Alongside prices, quality or, more broadly speaking, product attributes, have been at the center of economic analyses. Yet, the difficulty of measurement and its subjective nature have posed serious difficulties to empiricists and policy makers; consequently, it has not been the issue in competition policy as often as pricing. Still, changing commercial practices (e.g., the spread of e-commerce) and accelerating speed of innovation are increasingly forcing competition authorities worldwide to deal with the issue of quality. It is indeed apt that the Roundtable has chosen this issue as its main theme of discussion for this meeting.

1. Meaning of 'quality'

2. First, we should clarify the meaning of 'quality'. Economists have long distinguished between 'horizontal differentiation' and 'vertical differentiation'. Horizontal differentiation concerns product variety and/or product positioning. Consumers have different tastes and rank various products differently. For instance, some consumers prefer desktop PCs while others prefer notebook PCs. Or, some prefer red shirts while others prefer blue shirts. In this situation of horizontal differentiation, consumers need to decide which combination of product attributes is most suitable for their own needs or taste. Producers have to decide what combination they should apply in their products, which is the issue of product positioning.

3. Vertical differentiation is an issue of (narrowly defined) quality. All consumers agree in their ranking of products. Ceteris paribus everyone prefers PCs with more power and memory. The word 'quality' is sometimes used only in this context but sometimes used to refer to a broader issue of product characteristics including horizontal as well as vertical differentiation. In fact, many products are differentiated both horizontally and vertically, making the distinction impractical. Thus, in the following, both of the issues will be discussed.

2. Measurement of quality

4. Consumers decide which product (or brand), or which combination of products/brands, to buy depending on both the quality (positively) and the price (negatively) of the product. This simple fact leads to two important implications. First, in so far as they have complete information on the quality and price of every product/brand, they can make right decisions and, as long as producers behave competitively, there should be no worry for resource misallocation or consumer exploitation. That is, there is no market failure. Often, however, information is incomplete and this fact creates competition policy concerns as will be discussed presently.

5. Second, the monetary equivalent of quality can be measured using a basic principle. If brand A is priced at p_A and brand B at p_B ($<p_A$), and if both brands are selling equally well, then we may assume that

the quality premium of brand A over B is worth p_A-p_B. This reasonable conjecture is used as the basis of an empirical model called the hedonic model.

6. Suppose that the quality of a brand is based on measurable characteristics. Again consider PCs. The quality of a particular model may be considered as a function of its attributes, such as processor capacity, memory size, storage size, display size, the number of USB ports, whether it has wireless connection, and so forth. This is the hedonic model. Using the sample of various models, the coefficient of these attributes can be estimated. Then, by applying these estimated coefficients, one can predict what the price should be were a certain attribute inferior than the actual one. The difference between this predicted price and the actual price is the value of the increased level of the attribute.

7. This method has been used in the calculation of consumer price index (CPI) in many countries. For products like PCs, the quality (i.e. the level of attributes just mentioned) improves every year. Thus, even if the price stays the same, the real price, that is, the quality-adjusted price, should be considered to have decreased during the year. To calculate CPI changes based on real prices, many statistical offices now use hedonic models.

8. Whether the model can be directly used in competition analyses is not obvious. Suppose, for instance, that a competition authority suspects that anticompetitive behavior has caused a discrepancy between the market price and the quality-adjusted price (that is, too high a price for the quality). One may want to calculate the quality-adjusted price using the hedonic model. For this purpose, however, it is necessary to estimate the coefficients using the data of, say, other countries in which anticompetitive behavior is not taking place. Unfortunately, such data is rarely easy to obtain.

3. Imperfect information

9. In reality information is imperfect. And this imperfectness is likely more serious with quality than prices. Also, it is usually more serious with vertical differentiation than horizontal differentiation because, while the memory size of a PC can be reliably known from the catalogue, the ease of use is not. Besides, such quality can be subjective and consumer-specific. Thus, understandably, consumers will not trust the statement on quality in advertisements, such as “this PC is easy to use” or “this PC is durable”. The consequence of this information imperfectness is that consumers may choose a “low price, low quality” product over a “high price, high quality” product even if the latter in truth brings a higher level of utility.

10. This fact suggests that seemingly anticompetitive practices may actually benefit consumers if as a consequence the information on quality and product attributes becomes more available and more reliable to consumers. Such a situation can occur both in relation to horizontal restraints and vertical restraints.

4. Horizontal restraints

11. Cooperation among competitors may help them guarantee quality and/or provide more accurate information. With such cooperation, for instance, they may avoid the prisoners’-dilemma situation in which everyone sells substandard products at low prices. Cooperation is often managed through trade associations, because consumers most likely believe that the information and product guarantees offered by trade associations are more trustworthy than those offered by individual producers. The situation is similar to that of product standardization, in which consumers take the approval by trade association or consortium as guaranteeing the quality and the connectivity to complementary products.

12. Of course, one needs to consider the fact that such activity by trade associations or consortia may have a negative impact on entry, price competition, or innovation. The Japan Fair Trade Commission (JFTC) thus published “Guidelines Concerning the Activities of Trade Associations under the

Antimonopoly Act" (hereinafter referred to as "the Trade Associations Guideline") in 1995 (revised in 2010).

13. The Trade Associations Guideline refers to "Quality" of goods or services relating to horizontal restraint. Article 8 of the Antimonopoly Act prohibits activities which restrain or impede competition by trade associations. The Trade Associations Guideline explains the outlook on the activities of trade associations in light of the Antimonopoly Act through examples of their specific activities.

14. The Trade Associations Guideline, on the one hand, states that cartels restraining the price or production quantity are not justified by purposes such as ensuring the quality of goods or services. On the other hand, in relation to the variety, quality, standards, and other aspects of goods and services, in many cases, activities of trade associations may not raise concerns with regard to the Antimonopoly Act. For example, when quality-related self-regulation, self-imposed certification or authorization would be established based on the necessity for socially beneficial purposes such as preserving the environment or ensuring safety, those activities would not raise concerns with regard to the Antimonopoly Act. However, depending on their content or the manner of their activities, such activities can restrain or impede competition in terms of the development or supply of diverse goods or services, and thereby might violate the Antimonopoly Act.

15. There is a case of a medical doctors' association in which its activity was considered anticompetitive and in violation of the Antimonopoly Act.

- Case A: Mitoyo&Kanonji Medical Association case (Decision at the Tokyo High Court, February 16, 2001)1

  Because the JFTC found that the following activities violated the Antimonopoly Act respectively, the JFTC issued a hearing decision against Medical Association X ordering to cease and desist their activities; (i) setting restrictions on the opening of medical institutions; (ii) setting restrictions on the adding of medical facilities' respective clinical departments, enhancement and refurbishment of beds/hospital bed rooms and opening rehabilitation facilities for the elderly. Medical Association X claimed that its conduct was not unfair because the activities were justified by the will to create better local medical services. Then, Medical Association X took action to have the hearing decision rescinded.

  The Tokyo High Court (hereinafter "the court") expressed their views on Medical Association X's complaint as follows. While the purpose of Medical Service Law is to secure infrastructures to provide medical services and contribute to sustaining the health of the people, a medical association is nothing more than a private organization which does not have the power to impose legal regulations. Therefore, a medical association is only allowed to provide information relating to medical service status, to advise, to exercise supervisions and to express opinions within a reasonable range without pressuring member physicians or compelling them against their will. Thereafter, the court concluded that because the conduct of Medical Association X was considered to be harmonizing the internal interest of existing member physicians for their own benefit, and through unreasonable restraints, those activities restrained competition. Consequently, the court dismissed the case with prejudice on the merits.

1 Yokkaichi Medical Association case (JFTC recommendation decision, 2004) is similar to this case.

5. Vertical restraints

16. As is well known, vertical restraints, such as resale price maintenance and exclusive clauses, may contribute to consumer welfare if they encourage the retailers to provide more services to consumers[2]. In a similar vein, they may give producers and retailers an incentive to maintain quality, provide services, and provide accurate information. Therefore, in 1991 the JFTC published "Guidelines Concerning Distribution Systems and Business Practices under The Antimonopoly Act" (hereinafter referred to as "the Distribution Guideline").

17. The Distribution Guideline explains the outlook on retailer's restriction on sales prices etc. (vertical restraint). With respect to "Restrictions on Retailers' Sales Methods", the call for the demonstration in sales of products is given as a specific example of restriction. Thereafter, the Distribution Guideline points out that there may be some cases where the restriction on the sales method of retailers can be permitted for the purpose of ensuring quality. "In cases where restrictions on the retailers' sales methods (excluding those on sales price, sales territory and customers) are recognized to have rational reasons for the purpose of ensuring proper sales of the product, such as related to assuring the safety of the product, preservation of its qualities, maintenance of credit of its trademark, and so on, and if the same restrictions are applied to other retailers -customers on equal terms, such restrictions in themselves do not present a problem under the Antimonopoly Act."

18. There are even cases in which consumers have wrong knowledge, so that the sellers have to find out what the consumers' real needs are or what combination of product attributes are most suitable to them. In such cases, only with certain consulting services, the seller may be able to recommend the most suitable product to each consumer so that the consumer would be satisfied with the product, thereby protecting its brand reputation. Also, the seller may be willing to provide such consulting services and train sales staff only when it is protected with exclusive manufacturer-retailer relationship. The following cosmetics case gives such an example.

- <u>Case B: Fujiki vs Shiseido case (Appeal court decision at the Supreme Court, December 18, 1998)</u>

  Company X, a cosmetics manufacturer, had a special agency contract with the retailers, which obliged them face-to-face selling to the customers. X stopped forwarding their cosmetics to retailer Y on the grounds that it breached the special agency contract. In response to this action by X, Y claimed that the special agency contract was invalid because it fell under "Trading on Restrictive Terms" and violated Article 19 of the Antimonopoly Act.

  The Supreme Court found that X obliges face-to-face selling under the special agency contract in order to meet customers' needs to enhance the beauty effects of using X's cosmetics by using them in the best possible conditions, because customers would be satisfied with X's products and would continue to trust them (i.e., brand images). Therefore, the Supreme Court held that it was obvious that keeping customers' trust would have an impact on competition in the cosmetics market, considering the nature of cosmetics. Thus, the Supreme Court stated that there was a certain rational in X's choice to adopt a face-to-face selling system and concluded that the special agency contract in question did not fall under Trading on Restrictive Terms that unfairly restrains retailer's business activities.

2 Patrick Ray and Thibaud Vergé "Economics of Vertical Restraints" in Paolo Buccirossi [ed.] *Handbook of Antitrust Economics*, The MIT Press, 2008, 353-390.

19. Recently, a few cases appeared involving e-commerce. Manufacturers want to restrict e-sales of their products on the ground that the necessary services cannot be provided by the e-retailers. Of course, since such restrictions may have anticompetitive effects by restricting price competition from e-retailers, the competition authority needs to assess the cost and benefits gained from the proposed restrictive clause. The following two cases in which JFTC gave opposite answers to prior consultation from the manufacturers will show the difficulty of this assessment.

- <u>Case C: Case No.1 of the JFTC consultation case book 2011 (Prohibition set by medical device manufacturer on its trade partners to sell to customers through internet-order services)</u>

  Medical device manufacturer X consulted with the JFTC concerning its plan to prohibit its trade partners from selling to internet retailers X's product (medical device P) that requires adjustments which cannot be made through internet-order services. In response to their consultation, the JFTC answered as follows: Based on the three reasons, - (i) if the medical device P is put on the market without necessary adjustments, it would significantly decrease its capacity to be correctly used, and the degree of potential disadvantage this may cause to customers is deemed high ; (ii) adjustment to the device P cannot be made through internet-order services; (iii) the restriction is minimal - , X's prohibition in question has rational grounds. Thus, the JFTC answered that X's imposed prohibition on trade partners would not unreasonably restrain X's trading partners' business activities and was not deemed as problematic under the Antimonopoly Act.

- <u>Case D: Case No.2 of the JFTC consultation case book 2011(obligation of face-to-face selling set by a medical pharmaceuticals manufacturer)</u>

  Medical pharmaceuticals manufacturer Y consulted with the JFTC as to its plan to set an obligation on its trade partners to proactively provide full explanations in a face-to-face environment regarding Y's medical pharmaceuticals B. In response to their consultation, the JFTC answered as follows: Based on two reasons, - (i) B is not legally prohibited to sell through internet-order services, (ii) it is considered that explanations on the feature of B can be sufficiently provided through internet-order services - , there are no grounds to justify such a restriction. Therefore, the JFTC responded to Y that because setting such obligation on trading partners would unreasonably restrain Y's trading partners' business activities, the proposed contract may be problematic in terms of the Antimonopoly Act.

20. The two cases are different in several respects but the most important point is that while the cost of failing to provide necessary services (adjustment to the product by the seller) was considered significant in Case C, such a cost is limited in Case D because all the products (medicines) are subject to the safety regulations of the Ministry of Health, Labour and Welfare and the fact that the product in question was approved for over-the-counter sales implies that the cost of not receiving the service is minimal. Generally speaking, the competition authority needs to evaluate the merit and cost of the proposed services carefully, as well as the possible cost from the restriction of retail activities. Such evaluation is rarely easy and sometimes may be subject to errors. Still, it has to be done because the prohibition of all vertical restraint on a per-se illegal basis may actually hurt consumer welfare by depriving them of valuable services.

6. Mergers

21. As the consumers make the choice of price-quality combinations to decide which products they buy, producers determine the p-q combinations of the products they sell. Mergers likely affect this decision. We may separate short-run effects, the effects on prices given quality, and long-run effects, the effects on quality. Since such effects are more likely to occur with horizontal differentiation, we will consider the effects on product attributes; that is, the effects on the product positioning strategy of firms.

22. Suppose that two firms of substitutable products, that is, differentiated products in a market (as defined in competition policy analyses), are combined; say, firm X selling product A and firm Y selling B. The combined firm, say XY, will want to minimize the cannibalization effect, that is, the possibility that former buyers of A now buy B instead of A (or vice versa). Instead, XY will want to attract former buyers of rival products (say, C) to buy A or B. For this purpose, XY will try to pull the price-attribute combinations of A and B further apart in the price-attribute space. The following case suggests that this has in fact happened.

- Case E: Acquisition in a seasoning market

  JFTC's Competition Policy Research Center (CPRC) conducted a study of post-merger price changes of household flavor seasonings (hereafter, seasonings) using the point-of-sales data of about 3,000 items (products of different brands, different packages, etc.)[3]. In 2007, the largest producer (X) acquired 33.4 percent of the share of the third largest (Y). The study showed that the prices of X's products increased after the acquisition whereas those of Y's declined. A likely interpretation of this contrasting result is that the combined firm reorganized its product positioning strategy so as to sell X's products as high-end ones and Y's as low-end ones. In fact, before the acquisition, the average price of X's products was higher than that of Y's, implying that the consumers evaluated X's brands more highly than Y's. After the acquisition, the firm apparently decided to exploit this consumer evaluation to its advantage, by widening the price differential, suggesting that, in a market with differentiated products, a merger affects not only the price in general, it also affects the price structure of the firm's various products.

23. No study has been made on the long-run effect, that is, the effects of merger on product characteristics and product introductions[4]. However, it seems likely that, as an analogy to the short-run effect, the firm will set the attributes of their multiple products further apart from each other. Simply speaking, they will try to sell two products of distinctly differentiated products; for instance, red shirts and blue shirts instead of light blue shirts and dark blue shirts, so that they can sell to a wider spectrum of consumers. They may also try introducing a greater variety of products so as to fill the niche and utilize the complementary R&D and marketing assets of the merger partners. However, empirical studies are yet to be made.

24. The implications of these studies on competition policy are unclear. As long as the average price level is not increased, consumer welfare is unlikely to be hurt on average. However, if the prices of certain products are increased while those of others are decreased as in Case E, there must be a distributional effect because the consumers of X's high-end products now have to pay higher prices even though those of Y's low-end products now benefit from lower prices. We hardly know how to incorporate such distributional effects of mergers in merger regulation. Besides, it is usually very difficult to predict the effects of mergers on quality or product positioning, both in the short run and long run.

3 Hiroyuki Odagiri, et al., "The Impact of Mergers on Profits, Share Value, Innovation, and Product Prices in Japan in the 2000s, " Competition Policy Research Center Discussion Paper, CPDP-51-E, 2011, available at www.jftc.go.jp/en/cprc/discussionpapers/index.html. In the other two markets studied in this paper, sugar and instant noodles, no similar effects across producers were observed.

4 An exception is Andrew Sweeting "The Effects of Mergers on Product Positioning: Evidence from the Music Radio Industry," *RAND Journal of Economics*, 41, 2010, 372-397. For a theoretical study on the effect of merger on product positioning, see Amit Gandhi, Luke Froeb, Steven Tschantz, and Gregory J. Werden "Post-Merger Product Repositioning," *Journal of Industrial Economics*, 56(1), 2008, 49-67

7. Conclusion

25. Considerations on quality (including product attributes) have to be an essential part of competition policy. Undoubtedly, quality is more difficult to measure than prices, the evaluation of quality is rarely the same for all consumers, and the effect of quality on competition is difficult to predict. Still, every competition authority is frequently obliged to evaluate the effects on quality of both horizontal restriction and vertical restriction. In this evaluation, one needs to take into account the fact that information imperfectness is more serious when assessing quality than when assessing prices and, consequently, a seemingly anticompetitive behavior may benefit consumers if it serves them with more accurate information. In this paper, guidelines and a few cases that JFTC dealt with were discussed. We are eager to learn from the experience of other countries and look forward to the exchange of ideas and views.