COMPETITION POLICY
NEWSLETTER

INSIDE:

- Preserving and Promoting Competition: A European Response
  by Philip Lowe

- OECD peer review

- Sector inquiry in payment cards industry

- Prokent/Tomra

- T-Mobile Austria/tele.ring

MAIN DEVELOPMENTS ON

- Antitrust — Merger control — State aid control

EUROPEAN COMMISSION

Contents

Prokent/Tomra, a textbook case?
Abuse of dominance under perfect information (¹)

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Introduction:

On 29 March 2006 the Commission adopted the Prokent/Tomra decision imposing a fine of € 24 million on the Norwegian group Tomra, a supplier of so-called reverse-vending machines that are used by retail outlets to collect empty drink containers. The Commission found that Tomra abused its dominant position and therefore infringed Article 82 of the EC Treaty and Article 54 of the EEA Agreement in five different EEA markets: Austria, Germany, the Netherlands, Norway and Sweden.

The infringement committed by Tomra Systems ASA, Tomra Europe AS and its five national subsidiaries in the relevant EEA markets (together 'Tomra') consisted of the operation of a system of exclusivity agreements, individualised quantity commitments and individualised retroactive rebate schemes, restricting or at least delaying the market entry of other machine manufacturers. This in turn led to the foreclosure of the market for Tomra's competitors, in some instances even to their elimination from the market to the detriment of consumers.

The Commission's investigation was triggered in 2001 by a complaint from a German supplier of reverse vending machines, Prokent, asking the Commission to investigate whether Tomra was abusing its dominant position, in particular through agreements concluded with several large retail companies that allegedly denied Prokent access to the market. Following the inspections carried out in Tomra's premises, and several years of further investigation, the Commission found that Tomra in fact abused its dominance in the time span of five years from 1998 to 2002. The infringement was found to be serious, and a corresponding fine was imposed.

The product:

'Reverse Vending Machines' (RVMs) are installed in shops and supermarkets to facilitate the collection of empty drink containers, such as glass, plastic bottles or cans. In essence, the machine allows the customer to return empty bottles, thereby recouping the deposit, in an automated way. Upon insertion of the bottle, the machine identifies it based on parameters such as shape or bar code, and calculates the deposit that is to be reimbursed to the customer. Typically, the machine then prints a receipt that is credited back at the shop's cashier.

There exist different types of such machines, depending on the type of drink containers they can accept and their storage capacity. The basic machine model can accept one type of container, for example, either only glass bottles or cans. More complex machines can accept several types of containers and corresponding crates. Furthermore, certain types of machines can be connected to backroom equipment, that is, equipment installed in a room separated from the shop, allowing empty containers to be mechanically sorted and stored. Connection to backroom equipment increases significantly the storage capacity of a machine. While this type of machine is usually referred to as 'high-end' RVM, the single standing ones are referred to as 'low-end' RVMs.

The relevant market:

Although there were indications that high-end machines may constitute a separate market distinct from the market for low-end RVMs (³), the Commission left this question open, since the competitive assessment would substantially be the same under both market definitions. In any event, such a more encompassing market definition was more favourable to Tomra.

The development of the market for RVMs is highly dependent on the enactment of national legislation subjecting the sale of drink containers to a mandatory deposit. The types and the volumes of certain drink containers in any given country, together with consumer preferences, determine the demand for reverse vending machines and the models that are marketed in the country in

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(³) For example, the difference between the storage capacities of high-end and low-end machines usually meant that big supermarkets would not opt for a low-end machine, as the amount of containers handled by a big shop would require big storage capacity, offered only by a backroom equipment-capable machine. There are significant price differences between high-end machines and lower priced low-end machines.

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question. Each country requires specific software applications, for example, concerning the deposit amount or the language. Finally, despite recent cross-border consolidations in the retail industry, the procurement process of reverse vending solutions was predominantly organized on a national basis, at least at the time when the investigation took place. Tomra's national subsidiaries were supplying the retail companies based in the territories serviced by them. All this led to the conclusion that the relevant geographical market in this case was national in scope.

Tomra — a dominant undertaking:

Tomra had a very strong market position in the EEA in general and in particular in each national market under investigation. Tomra's competitors were a few small companies. Overall, Tomra did not face strong competition from any rivals on any of the national markets concerned.

The Commission concluded that Tomra was in a dominant position at least from 1998 to 2002, the time period under investigation. In this context, the Commission took into account the high market shares of Tomra, and other factors such as, among other aspects, the weak market position of its rivals and lacking buyer power in the market. Tomra was found to be a dominant undertaking in the national markets under investigation and in the EEA in general [4].

Abuse:

Tomra's strategy:

The infringement consisted of agreements and arrangements, systematically aiming at and restricting, or at least delaying the market entry of Tomra's rivals. The strategy of limiting market entry or restricting the growth of competitors was expressly mentioned in the internal documents of Tomra collected by the Commission during inspections. The means used by Tomra to implement its strategy included (i) exclusivity or preferred supplier agreements with customers, (ii) individualised high-volume orders, and (iii) individualised retroactive rebate schemes, both of which were adapted to expected customer demand.

Exclusivity agreements:

During 1998-2002 Tomra concluded a number of single branding agreements with its customers,

according to which it became the sole or preferred supplier of machines for the collection of used drink containers to the retail outlets belonging to those customers. In some agreements Tomra was not foreseen as 'exclusive' or 'sole' RVM supplier, although customers were expected to exclusively purchase from Tomra and this was generally understood and accepted by all parties. By agreeing to Tomra's exclusivity or to its preferred supplier status, customers' would receive discounts on their purchases or other rewards, such as, for instance, free machines or free upgrades for the installed machines. If the customer were to purchase competing machines, he would be reminded that the discounts granted in the agreement would have to be paid back.[5]

Quantity commitments:

The second category of agreements employed by Tomra imposed purchase targets upon its customers, which usually corresponded to total or almost total demand of a customer during a specific time frame. Similarly to exclusivity agreements, customers were offered better prices if they agreed to Tomra's quantity requirements. The quantity targets were individualised for every client, resulting, in some cases, in higher unit prices for larger volumes purchased compared to the unit prices for much smaller quantities of machines bought by other customers. The volumes were based either on demand estimations or on the customers past purchases.

Retroactive rebate schemes:

The third category of agreements used by Tomra were agreements containing rebate schemes that entitled the customers to retroactive discounts or bonuses depending on them reaching a specific individualised purchasing target (threshold) by the end of a given reference period. Just as the quantity targets, the rebate scheme thresholds were individualised, and adapted to the estimated demand of each customer. The bonuses were paid at the end of the reference period and took the form of a cash refund, or bonuses in kind, such as, for example, free machines.

In order to describe the effects of such schemes on average unit prices, the following three-dimensional Figure (Figure 1) is introduced. It depicts what is typically referred to as suction effect for a range of different rebate percentages. Such a presentation is useful when considering rebate schemes and was also used by the Commission in *Prokent/Tomra.* Figure 1 depicts the unit price that a competitor

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[4] Tomra was not in a dominant position in two national markets under investigation during a few years. This stands in contrast to the general development of Tomra's market shares in the EEA. With respect to overall market shares in the EEA, Tomra was dominant during the entire period under investigation.

[5] Some agreements contained clauses that went as far as explicitly forbidding the installation of free test machines by competing manufacturers.

would need to offer for the remaining quantity up to the threshold in order to render the buyer indifferent between buying from the dominant firm and the competitor. Alternatively the curve can be interpreted as the average unit price that the dominant firm offers for the remaining quantity up to the threshold. The threshold in a rebate scheme is the quantity that triggers the retroactive rebate on all previous units purchased once reached. By assessing the strength of the suction effect, i.e. the unit price that a competitor would at least have to offer to compete, it is possible to establish whether any particular rebate scheme has the capability of effectively foreclosing competitors.

For instance, under homogenous products such an analysis allows to gauge the likely effects of rebate schemes if the minimum quantity that unavoidably will need to be purchased from the dominant firm can be determined ([6]). In other words, the dominant firm has to be an unavoidable trading partner for rebate schemes to be capable of developing their full anti-competitive effects. This could, among other factors, be due to the necessity to offer products from the dominant firm (must stock brand), or, as for instance in this case, to capacity constraints of competitors, or to the competitors' reputation, depriving them from competing *ex ante* on high volumes before their machines have been tested by the buyer on a smaller scale.

Figure 1: 3D Suction effect ([7])

Assessment of Tomra's practices:

The Commission found that Tomra's policy and its practices were designed to, were clearly capable of, and were likely to restrict market access for competitors, to foreclose the RVM market and to affect the competition structure on it.

Although the agreements, arrangements and conditions found in this case contained different features such as explicit or *de facto* exclusivity clauses, undertakings to purchase volume targets or retroactive rebate schemes, or a combination of them, they were all seen by the Commission in the context of Tomra's general strategy directed at preventing market entry, market access and growth opportunities for existing and potential competitors and eventually driving them out of the market so as to create a situation of quasi-monopoly. Where the customer would refuse to accept exclusivity, Tomra did achieve the same result by offering the customer attractive high-volume quantity targets, which corresponded to the customer's forecasted demand. By using different types of arrangements and tailoring them to the specific conditions, Tomra did achieve overall foreclosure of the market.

In accordance with the case-law of the Community Courts, the Commission concluded that Tomra's practices were exclusionary because they were designed to block access to customers and thereby to hinder existing competition or the development of new competition, and therefore should be qualified as an abuse of dominant position and an infringement of Article 82 EC Treaty. Following the *Hoffman-La Roche* and *Michelin I* judgments, the Commission stated that Tomra abused its dominant position by tying its customers by an obligation or promise on their part to obtain all or most of their requirements exclusively from Tomra ([8]). This was also considered to be true in cases where purchase targets, expressed in absolute figures, represented all or a large proportion of the customer's requirements in the contract period in question.

Impact of Tomra's practices:

According to Michelin II, *'it is sufficient to show that the abusive conduct of the undertaking in a dominant position tends to restrict competition or, in other words, that the conduct is capable of hav-*

([6]) Once that quantity is determined, the price a competitor would need to offer can directly be read off the figure graphing the suction effect.

([7]) The Figure depicts a three dimensional suction effect in a rebate scheme with a threshold of 10,000 units, a normalized base price of 1 and rebates ranging from 0 to 50%. The 'suction-wave' in the Figure indicates the price a competitor would need to offer to make the customer indifferent. This price decreases with an increase in quantity bought from the dominant firm and may fall below 0, as indicated by the light blue plane.

([8]) Case 85/76, *Hoffmann-La Roche,* [1979] ECR-461, and Case T-203/01, *Manufacture française des pneumatiques Michelin* v. *Commission (Michelin II),* judgment of 30 September 2003.

ing that effect' (⁹). The Commission, however, also investigated the likely effects of Tomra's practices on the market as well.

That Tomra's exclusionary strategy did have the intended effects was demonstrated by several developments on the market as, for instance, the evolution of Tomra's market position. The market shares of Tomra have remained rather stable, compared to the weak market position of its rivals. Its market share always remained very high in all individual markets and in the EEA in general, especially considering the characteristics of the RVM market where demand is essentially non-recurring (¹⁰) and generally does not remain stable over the course of several years.

Second, compared to Tomra's strong position, the position of its few competitors continued to be weak over the time of investigation, notwithstanding periodic positive demand shocks on most of the markets that occurred due to the introduction of mandatory deposit systems and that could have attracted entry. There was, actually, no successful entry into any of the relevant national markets during the time frame covered by the decision. On the contrary, some of the competitors left the market due to either insolvency or acquisition.

Finally, the Commission also observed that Tomra would sell a higher number of machines during the years where more of the total market demand was covered by its exclusionary agreements. On the contrary, when less demand on the market was covered by Tomra's anti-competitive arrangements, Tomra's market share would decrease. In other instances, the Commission noted that customers began purchasing larger numbers of competing machines when they were no longer restrained by the exclusionary agreements concluded with Tomra. In general, Tomra's rivals were observed to be able to sell more machines, the smaller the portion of total market demand covered by exclusionary arrangements was. This relationship between non-contestable market share (i.e. the market share covered by exclusive practices and no longer accessible to Tomra's competitors), competitor market share and Tomra's market share is depicted in Figure 2 for one country. The Figure shows the development of market shares of 3 competitors and Tomra for the years between 1998 and 2002. In addition, the Figure shows the portion of Tomra's market share that the Commission considered as foreclosed to competitors. Overall, non-

contestable market shares went as high as 93% in individual years and countries while amounting to 32% averaged over all years and countries considered.

Figure 2: Development of Tomra's and its competitors' market shares (¹¹)
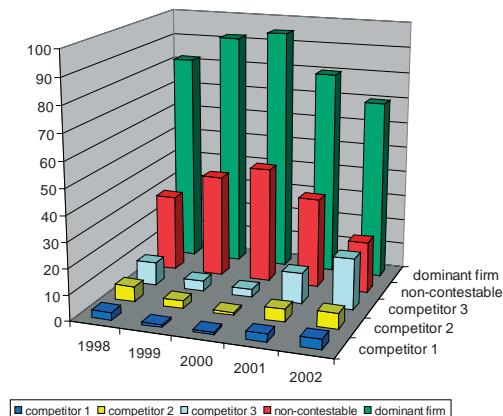
Considering all the above, and the fact that notwithstanding occasional surges in demand, several unsuccessful entries into the market, while entry is neither technically particularly difficult, nor exceedingly costly, the RVM market remained quasi-monopolistic throughout the time under investigation, the Commission concluded that Tomra's practices in fact were likely to foreclose the market to its competitors.

Tomra's defence:

To rebut the Commission's allegations, Tomra invoked several arguments in its defence, for instance, that the agreements identified by the Commission were not enforced and did not carry any sanctions for the customers not reaching the stipulated target, or that the quantity commitments or rebate schemes did not have any loyalty inducing effect. To support its arguments, Tomra submitted an economic assessment mainly focussing on rebate schemes.

This economic assessment was essentially based on a static model of suction effects in rebate schemes under perfect information. This model was produced by the parties in response to the analysis of potential suction effects by the Commission (see Figure 1). Given the individualized nature of the rebate schemes employed, the main aim of the report produced by Tomra was to reduce the amount of schemes deemed problematic from the Commis-

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(⁹) *Michelin II,* par 239, and Case T-219/99, *British Airways,* judgment of 17 December 2003, par. 250.

(¹⁰) That is, initial big volume orders, and not periodic orders evenly distributed over time. Initial orders are, however, replaced one by one according to the life-span of the machine.

(¹¹) Similar Figures have been used in the decision. The Figure demonstrates the relationship between the market shares of a dominant company, the size of the non-contestable market demand (i.e. the units sold under the anti-competitive agreements), and the evolution of competitors' market shares. For reasons of confidentiality, the values in the Figure presented are purely fictional.

sion's perspective by demonstrating that a substantial amount of schemes had no foreclosure impact and that the remaining schemes did not result in sufficient coverage to have such an impact either.

The case can be considered a textbook case for rebates in the sense that neither asymmetric information nor uncertainty nor resale of the product, were present and therefore a simplified analysis was possible ([12]). This is an essential factual element of the case because uncertainty would typically require a dynamic analysis of rebate schemes that is more complicated than the analysis conducted in this case. Indeed, from the evidence in the file, demand was fairly accurately and easily known to all market participants, as supermarket size typically determines the need for RVMs and the number of existing and planned supermarkets is also easily known. It is also clear that supermarkets do not resell RVMs. This is also reflected in the model proposed in the economic report by the parties, where uncertainty and asymmetric information were neither discussed nor considered relevant to the case.

Nevertheless, the main line of argument followed in the economic submission by Tomra relied on the fact that in some cases, *ex post* demand deviated positively from the fixed threshold level, i.e. $D > x^T$, where D denotes demand and x^T the threshold quantity. Although in itself inconclusive, this evidence (interpreted by the Commission as implying foreclosure only up to the quantity x^T but not D) was used by the authors of the economic report to argue that this *ex post* deviation effectively rendered the complete scheme, including quantities up to x^T innocuous.

Upon a detailed analysis of the model submitted by Tomra, three problematic aspects underlying the reasoning could be identified, allowing a rejection of the argument and maintaining the number of schemes deemed problematic ([13]).

The first two arguments relate to the use of *ex post* data in assessing foreclosure and the behaviour of Tomra in setting the rebate threshold. Under perfect information of individual customers demand it is difficult to see why Tomra would want to set the rebate threshold systematically below demand. If, however, Tomra sets the threshold at expected demand and this demand corresponds to the quantity the customer expects to buy, it is difficult to see why the scheme would not potentially develop a suction effect, thereby foreclosing the market, even if demand *ex post* deviates, i.e. the threshold was not reached or actual demand was above the predicted level.

The third argument hinges critically on $D > x^T$. In a mathematically correct way the economic report presented by Tomra establishes that the price a competitor would need to offer to make the customer indifferent between Tomra and a rival supplier within the rebate scheme increases with an increase in demand above the threshold. Indeed, the authors of the study claim that this price approaches p^T, that is the price granted from the threshold on ([14]), as demand goes to infinity ([15]). If found to be true, this could have a substantial impact on the amount of schemes considered problematic because prices calculated in that fashion may no longer foreclose competitors. As the Commission demonstrated in the decision, such an argument can, however, not be considered economically meaningful.

Figure 3: Price schedule and revenues

For simplicity imagine a situation where demand is indeed above the threshold, i.e. demand is 120 and the threshold is 100. The base price p is assumed
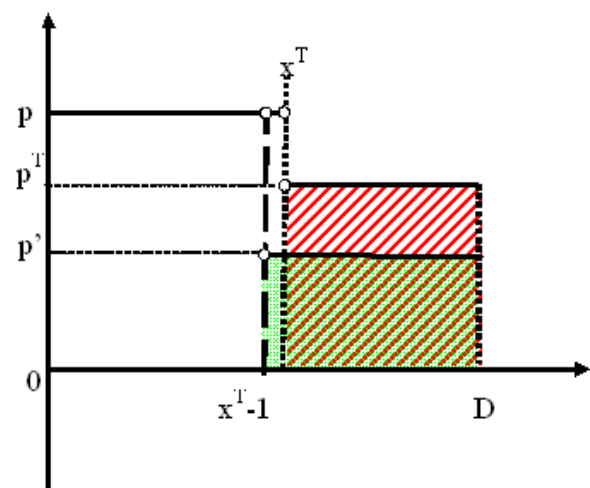

([12]) Note that if products are not sold for final consumption, the analysis of suction effects becomes more demanding because the relevant parameter is no longer the difference in prices of rival suppliers but the difference in the margin obtained by selling the various (branded) products by the retailer. Under uncertainty one would also have to weigh the costs of deviations from expected demand to determine the optimal threshold because under such circumstances the optimal threshold is typically no longer equal to expected demand.

([13]) The main argument put forth in the economic report has been replicated in Federico, G. (2005) When are Rebates Exclusionary? *European Competition Law Review* 26(9), 477-480. See Maier-Rigaud, F. (2006) Article 82 Rebates: Four Common Fallacies, forthcoming in the special issue on Article 82 of the *European Competition Journal, 2 (2), 67-82 (special issue on Article 82)* for a critique of that paper and more details on the theoretical analysis presented only shortly here.

([14]) I.e. p — α p, where α denotes the percentage rebate, i.e. .05, that is 5% for example and p the base price.

([15]) Formally, $\lim_{D \to \infty} \dfrac{p^T D - p(x^T - 1)}{(D - (x^T - 1))} = p^T.$

to be 1 and the rebate is 10%. Tomra now considers the worst case scenario, where a customer has bought 99 units from Tomra at a price of 1 and thus requires 21 more units by definition. Tomra now claims that the unit price a competitor would need to offer to make the customer indifferent between that competitor and Tomra is $(21\times.9-99\times.1)/21 = 3/7 = 0.43$ [16], a price that may well be above cost and feasible for any competitor. Unfortunately, it is far from clear why a competitor would want to do so to begin with. Assuming profit maximizing behaviour on the part of the competitor, it would make much more sense to forego the last unit and sell only 20 units at a price of .9 for total revenues of 18. Clearly revenues of 18 are to be preferred to revenues of 9, especially since with revenues of 18, Tomra has revenues of 90 (5 times higher), whereas under revenues of 9, Tomra has revenues of 99 (10 times higher) [17]. For better understanding, this is also depicted in Figure 3, where the bigger, striped area is the revenue corresponding to the scenario where the competitor foregoes the last unit and the smaller shaded area corresponds to the revenues when the competitor decides to also sell within the rebate threshold.

The argument advanced violates individual rationality (profit maximizing principle), that is, the constraint typically imposed on actors in economic models. The question of whether foreclosure is likely within the rebate scheme has to be distinguished from the uncontroversial fact that competition on any quantity above the threshold will typically be possible. Demonstrating that averaging prices between units above and below the threshold, as described above, is not a rational option, allowed to refocus the discussion on the question whether foreclosure is likely to occur within the rebate schemes or not [18]. As a result, the Commission was able to maintain its findings concerning likely foreclosure effects in the schemes where such likely effects were contested.

Conclusion:

In summary, the Commission found that Tomra group abused its dominant position in five national markets of the EEA (Austria, Germany, the Netherlands, Sweden and Norway) by employing a system of exclusivity agreements, individualised quantity commitments and individualised retroactive rebate systems, thresholds of which were usually adapted to the customers' requirements. This in turn led to the foreclosure of the market for Tomra's competitors, in some instances even to their elimination from the market to the detriment of consumers.

The decision demonstrates how a general system of several types of abusive conduct can achieve a strong cumulative effect on the market. This effect, likely and actual effect of foreclosing the market, was analysed following the previous case law of the European Court of Justice, in addition to being based and supported by economic analysis in the spirit of the recently publicised DG Competition Discussion paper on the application of Article 82 to exclusionary abuses. The case can be considered an important step towards the envisaged reform of the application of Article 82 EC Treaty.

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[16] The price is calculated by multiplying the rebated unit price of .9 with the sold quantity of 21 units and subtracting the foregone rebate of .1 on all 99 units purchased from the dominant firm.

[17] Revenues of 9 are calculated in the following way: $21\times.9 - 99\times.1 = 9$. Note that revenues do not take costs, which will be higher for 21 than for 20 units, into account.

[18] In fact, averaging is unproblematic (but also meaningless to the question of interest here) if there is no likely foreclosure within the rebate scheme, i.e. if it is possible and rational to induce buyers to switch, begging in turn the question under what conditions that is the case.