



The University of Oxford
Centre for Competition Law and Policy

Working Paper CCLP (L) 29

Dynamic Efficiencies and Technological Progress in EC Merger Control

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It is a well-established fact that economic growth largely hinges upon technological progress, and that productivity gains are key to rising incomes and living standards. As high technology industries have significantly increased their prominence in global economic performance in the 1980s and 1990s, and economic policy has increasingly focused on innovation, merger laws have become a crucial part of antitrust enforcement on both sides of the Atlantic. In recent years, many mergers and acquisitions of control have occurred in innovation-driven industries. Hence, it is important to ask a fundamental question : how does the competition authorities' decisional practice reflect the importance of technological progress? Due to space limitations, we have restrained our review of how conventional merger control accounts for technological progress only to the European Commission's decisional practice. Our analysis provides an exhaustive review of all the phase II merger decisions taken by the European Commission from the establishment of merger control at Community level (21 December 1989) to 21 September 2008.

* The University Paris II Pantheon-Assas. I would like to thank the participants of the Conference on Empirical Legal Studies 2010 at Yale Law School for all their comments. I also gratefully acknowledge helpful comments from Professor Paul Seabright and Professor Kresimir Zigic. If you have comments, please e-mail magdalena.laskowska@onet.eu

I. INTRODUCTION

Economists relentlessly point out that, in many industries, firms engage in dynamic competition *for the market* while static competition *in the market* exists only on the margin and is thus less important. In certain industries, notably high-tech ones (also called new-economy industries), the competitive conditions are significantly different from those that prevail in statically competitive industries (most old-economy industries). In the latter, firms essentially engage only in price/output competition and innovation is incremental.

It is a well-established fact that economic growth largely hinges upon technological progress, and that productivity gains are key to rising incomes and living standards. In the 1970s and 1980s, Robert Solow (who won a Nobel Prize for his contributions to the theory of economic growth), Edward Denison, and others found that the most critical factor that explains American economic growth is innovation. The necessity to acknowledge the dynamics of industries that are undergoing rapid technological change is far from being contested, too. Quite on the contrary, the claims that innovation is king, and that antitrust policy should reflect the fact that innovation is the key driver of economic growth, have been so fashionable and repeated so often that they seem to have become economic clichés. In the same vein, lawyers like to underline that courts are open to dynamic considerations, and that antitrust enforcers can better preserve and promote technological progress by resorting to dynamic analysis, rather than static one.

Although the pontifical recognition of those noble goals is not questioned by any serious detractors, and certain concepts, such as neo-Schumpeterian competition, have been widely used and have become prominent topics in legal antitrust analysis, the efforts to take innovation seriously in antitrust enforcement are hardly reflected in legal doctrine. Indeed, neither has a fundamental legal analysis of the treatment of technological progress in the European Commission's decisional practice in the area of merger control ever been performed on the European side of the Atlantic, nor has a theory of technological progress ever been conceptualized. If we recognize that innovation and technological change have a role to play in antitrust policy, it seems rather bewildering to find out that although the need to consider market dynamics is widely recognized in legal discourse, this progressive approach is hardly reflected in merger law doctrine. Selective and unrigorous analyses of cases, as well as frequent cursory examinations that are performed even without any attempt to adopt a comparative analysis with the major innovation cases, have become the standard practice in this area. Nonetheless, this observation should be hardly surprising, since, in view of the lack of a holistic review of the European Commission's decisional practice, leading innovation cases have not even been identified. This striking negligence has given rise to many misconceptions, misinterpretations, and flagrant errors of appraisal in legal comments on EU merger cases on both sides of the Atlantic.

While it must be underlined that, at present, economists struggle to elaborate dynamic models of non-price effects,¹ and that dynamic structural analysis is still in its infancy, it

¹ Note that initial steps have already been made in this direction. See Ariel Pakes, Ulrich Doraszelski, *A Framework for Applied Dynamic Analysis in IO*, 3 HIO, 1887-1966 (2007) ; Volker Nocke, Michael D. Whinston, *Dynamic Merger Review*, NBER working paper 14526 (2008), available at <http://www.nber.org/papers/w14526.pdf>.

cannot be ignored that, in some cases, the European Commission disregarded in its decisional practice some basic economic insights, and that lawyers did not rush to point out the basic errors of appraisal and help it advance its analysis in this difficult field.

Historically, antitrust enforcement has been focused on static analysis, and despite the fact that some progress has been made, the claims that innovation is king are grossly exaggerated, as are those that the Community courts are open to dynamic considerations. As long as the reluctance to abandon what is well established in merger control results from economic uncertainties about how industries should be properly analyzed in dynamic settings, this conservative approach might be justifiable to the extent that it reflects these uncertainties. Nonetheless, it is also important for lawyers to recognize that, coupled with the inherent difficulty to perform a solid and reliable dynamic analysis, the problem of the status quo bias is likely to have long-term consequences and give rise to a dangerous stagnation of legal doctrine. Indeed, firms are not incentivized to develop economic arguments premised on dynamic competition, given the courts' reluctance to accept such claims and the Commission's mechanical focus on the short-term protection of competitors as a guarantee for R&D competition. This question calls for serious reflection in legal thought on both sides of the Atlantic.

In light of the current decisional practice, defining the notion of dynamic efficiencies is a precarious legal exercise, too. In our paper, unless otherwise specified, we tentatively refer to dynamic efficiencies as a kind of efficiency gains that occur over time, and as such cannot be reaped at a single point of time. It is important not to confuse, as it is often the case, any R&D efficiency gains with dynamic efficiencies, for the latter cannot encompass, *ex definitio*, one-time (static) R&D efficiencies. Even more importantly, note that, on the other hand, dynamic efficiencies do not amount to R&D efficiencies in that the latter, although probably most crucial, are only a category of dynamic efficiencies.²

Before proceeding to a more thorough analysis, it might be helpful to remind that static analysis takes into account the existing set of products/services and market participants, and focuses on prices and output. It thus considers only static efficiencies (productive and allocative ones) and describes the outcome of competitive interactions among these participants solely at a single point of time, capturing market configuration like a photographic shot (more precisely, in many legislations, it involves a short-time analytical framework, usually from two to five years). Static analysis also relies on the famous structure-conduct-performance (SCP) paradigm and on the presumption "concentration-competition-welfare". Based on these foundations, it aims at ensuring lower prices and higher output. As a rule, in accordance with this approach, the attainment of these goals is enabled by lower concentration and promoting static efficiencies. In contrast, dynamic analysis is the one that considers market dynamics in a longer term, including dynamic efficiencies and their effects on market conditions over time, as well as entry, expansion, and exit by firms (which often also result from innovative activities). The purpose of dynamic analysis is to capture the process of dynamic competition, which involves the creation of new and enhanced goods/services and processes (thus potentially the creation of new markets), as well as other market changes (including the potential sets of future mergers) over an extended period of time.

² One may tentatively define R&D dynamic efficiencies as efficiencies that enhance a firm's incentive and/or its ability to innovate more effectively and/or more efficiently, or those that facilitate a firm to engage in new innovative activities, expand the scope and/or the scale of existing ones.

Our analysis provides an exhaustive review of all the phase-II merger decisions³ (155 decisions) taken by the European Commission from the establishment of merger control at Community level (21 December 1989) to 21 September 2008.⁴ Based on this review, we have identified 24 decisions in which R&D and/or innovation play a *relatively* important role in the Commission's assessment, which we analyze in this paper, and 31 other cases in which the Commission only briefly refers to R&D or innovation (see Appendix I, IV). Innovation cases are qualified as such either because the Commission examines R&D dynamic efficiency claims, the nature of innovative activities, or other innovation concerns, or because it has probably overlooked potential efficiencies related to technological progress and one can state it with some certainty on the basis of the decisional material.⁵ We have limited our review to phase-II concentrations, for these mergers and acquisitions pose potentially the most serious competition concerns, and as such have not been authorized in phase I of merger control. Our review concerns solely the competitive analysis undertaken by the Commission, and does not examine the remedies proposed by the notifying parties and accepted by the Commission.

Note that, in our analysis, "control" is meant as "control within the meaning of Article 3 of the Merger Regulation", and the "Commission of the European Communities" is referred to as the "Commission". In accordance with the Merger Guidelines, a "merger" refers to a merger, an acquisition of control, and certain types of joint ventures. The division of economic activities, as considered in the Decisions concerned, is based on NACE Rev. 2 - the statistical classification of economic activities in the European Community.⁶

Pursuant to this classification, we have distinguished five categories of cases in which technological progress plays a relatively important role in the Commission's competitive assessment. These categories are the following : (1) Information and Communication, (2) the Manufacture of Transport Equipment, (3) the Manufacture of Wood and Paper Products, and Printing, (4) the Chemical Industry : -the Manufacture of Chemicals and Chemical Products, - the Manufacture of Pharmaceuticals, Medicinal Chemicals, and Botanical Products, -the Manufacture of Rubber and Plastics Products, and -Other Non-metallic Mineral Products, (5) Other activities. These categories correspond to the subsequent parts of our review.

³ In accordance with EC merger law, phase I (so-called 'light procedure') has as its object to determine whether an operation falls within the scope of the ECMR and raises serious doubts as to its compatibility with the common market. Article 6(1) thereof considers the following legal situations : (a) a concentration does not fall within the scope of the Merger Regulation ; (b) a concentration falls within the scope of the Merger Regulation, but it does not raise serious doubts as to its compatibility with the common market (in such a case, the Commission declares it compatible with the common market) ; (c) a concentration falls within the scope of the Merger Regulation and raises serious doubts as to its compatibility with the common market. In this case, the Commission decides to initiate proceedings - phase II ('in-depth investigation'). The latter is a period of negotiations between the notifying parties and a case team in charge of controlling the operation in question. In phase II, the Commission may take, upon consultation of the Advisory Committee, three sorts of decisions : a) a decision of compatibility of a concentration with the common market, subject to conditions and obligations, b) a decision of incompatibility of a concentration with the common market, or c) a decision of compatibility of a concentration with the common market.

⁴ Under Council Regulation (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (OJ L 24, 29.01.2004) and Council Regulation (EEC) No 4064/89 of 21 December 1989 on the control of concentrations between undertakings (OJ L 395, 30.12.1989. Corrected version in OJ L 257, 21.09.1990). For the texts of all the cases concerned, see <http://ec.europa.eu/competition/mergers/cases/>

⁵ Due to space limitations, we base our legal review and conclusions solely on the Commission's analysis presented in the Decisions concerned, and generally do not refer to any external studies.

⁶ The brief introductory part to the analysis of each Decision (namely the presentation of the merging parties) is entirely based on the information provided for by the Commission in the examined Decision, and we assume that this information is correct.

We conclude that the challenge facing antitrust enforcement in the area of dynamic competition in merger control is not at all, as some have suggested, to refine analytical tools in order to take better account of, and promote, technological progress. Rather, having thoroughly analyzed the Commission's decisional practice, it is indispensable to unambiguously establish how, and in which cases, it is inconsistent with current economic insights, and what challenges it poses for enhancing analysis in this field. As a matter of evidence, in conjunction with the behavioral control of anticompetitive practices in dynamic settings, merger analysis shapes the relationship between antitrust and innovation, thereby having a direct and probably tremendous impact on consumer welfare. Therefore, this prominent topic in competition law deserves legal treatment that reflects its economic importance for firms and consumers alike. Indeed, if a serious reconsideration of the unserious treatment of innovation in legal doctrine is any longer delayed, it will be so to the detriment of those whose welfare it aims at protecting. A proper understanding of the economic reasoning underlying the European Commission's decisions in the field of dynamic efficiencies might be the first step in this direction.

II. TECHNOLOGICAL PROGRESS IN EC MERGER CASES IN INFORMATION AND COMMUNICATION BUSINESS

This part of our paper deals with technological progress in EC phase II merger cases in the field of information and communication from the establishment of merger control at Community level (21 December 1989) to 21 September 2008. The following cases pertain to this field : Case No IV/M.469-MSG Media Service of 9 November 1994, Case No IV/M.490-Nordic Satellite Distribution of 19 July 1995, Case No IV/M.993-Bertelsmann/Kirch/Premiere of 27 May 1998, Case No COMP/M.4403-Thales/Finmeccanica/Alcatel Alenia Space & Telespazio of 4 April 2007, Case No COMP/M.4747-IBM/Teleologic of 5 March 2008.

1. Case No IV/M.469-MSG Media Service of 9 November 1994

Bertelsmann AG (hereinafter "Bertelsmann"), Taurus Beteiligungs GmbH (hereinafter "Taurus"), and Deutsche Bundespost Telekom (hereinafter "Telekom") proposed to set up a joint venture, MSG Media Service Gesellschaft für Abwicklung von Pay-TV und verbundenen Diensten mbH (hereinafter "MSG"). Bertelsmann is the parent company of the leading German media group. Taurus is a holding company belonging to the Kirch group (hereinafter "Kirch"), which is the leading German supplier of feature films and television programming. Telekom is the public telecommunications operator in Germany, the owner and operator of nearly all the German cable television networks, and enjoys a monopoly of the German telephone network.

In a separate part, VII. "Development of Technical and Economic Progress", the Commission examines the merging parties' efficiency claim that the services offered by MSG

will promote the rapid acceptance of digital television.⁷ It recognizes that “an enterprise with the business object of MSG⁸ [the establishment of a digital infrastructure for pay-TV by MSG] can contribute to technical and economic progress”,⁹ for the successful spread of digital television presupposes a digital infrastructure.¹⁰ However, like in the Case *Danish Crown/Vestjyske Slagterier of 9 March 1999*, the Commission is concerned with the merger-related obstacle to competition as it considers that the concentration in question would lead to a sealing-off of, and an early creation of, a dominant position on the future market for technical and administrative services and to a substantial hindering of effective competition on the future market for pay-TV.¹¹ Our conclusions concerning the obstacle to competition in the form of a dominant position as presented in the Case *Danish Crown/Vestjyske Slagterier* are also relevant to this Case.¹²

In the Decision concerned, the Commission estimates that “This hindering of effective competition does in fact make even the achievement of technical and economic progress questionable. It is extremely doubtful whether, under the conditions given, the establishment of a digital infrastructure for pay-TV by MSG will actually contribute in a positive manner to the development of technical and economic progress.”¹³ This analysis is perplexing. On the one hand, the Commission states that no progress would be attained due to a significant impediment to competition ; on the other hand, the above-mentioned anticompetitive effects would emerge only if it turned out that the efficiency claims were not mere claims, but the merging parties did succeed in the establishment of a digital infrastructure for pay-TV.

Finally, the Commission fears that “potential suppliers of digital pay-TV will not decide to enter the market to the same extent as would be the case with a service supplier whose shareholder structure would ensure strict neutrality”,¹⁴ as result of which “The successful spread of digital television would, in such a situation, be hindered rather than promoted.”¹⁵ The Commission supports this statement with a series of opinions from the enterprises surveyed,¹⁶ which claim, not surprisingly, that “in the event of the concentration being carried out, they would have to review and possibly abandon existing plans or thoughts on future pay-TV supply in the digital television area.”¹⁷ An opinion of any competitors has limited, if any, evidentiary value, though, and it cannot be considered as a piece of evidence that is sufficient to establish any anticompetitive effects. In order to substantiate the conclusion in question, the causality link between the shareholder structure of the new entity and an impediment to a successful spread of digital television should have been established, in particular the impact of this structure on the ability and incentive of other companies to enter the market concerned, and how this impact hinders the spread of digital television.

⁷ Case No IV/M.469-MSG Media Service of 9 November 1994, at point 100.

⁸ *See id.* at point 8.

⁹ *Id.* at point 100.

¹⁰ *Id.*

¹¹ *Id.*

¹² Nevertheless, note that the assessment of the Commission’s reasoning in this Case requires also analyzing its examination of a significant impediment to effective competition, which is not invoked in the former Decision.

¹³ Case MSG Media Service, *supra* note 7, at point 101.

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ Of course, in order to adopt a legal approach, the Commission should have specified the source of information, and not state it in general terms.

¹⁷ Case MSG Media Service, *supra* note 7, at point 101.

2. Case No IV/M.490-Nordic Satellite Distribution of 19 July 1995

The concentration concerned consists in the creation of a joint venture called Nordic Satellite Distribution (hereinafter “NDC”). The object of the new entity is to provide transponder capacity, as well as transmit and distribute satellite TV channels, via cable networks or direct-to-home broadcasts, to the Nordic region (Denmark, Sweden, Norway, and Finland).¹⁸ Unlike the great majority of the merger decisions, the Decision in question comprises a separate part dedicated to efficiency gains (“Economic and Technical Progress”).¹⁹ The merging parties claim that they would achieve efficiencies both over the short- to medium term and over the long term. First, in the short- to medium-term, the creation of a Nordic “Hot Bird” (a leading satellite position) would enhance the distribution of satellite TV in the Nordic region. Second, in the long term (after the introduction of digital technology), owing to the establishment of an integrated infrastructure for the distribution of satellite TV and other related services, NSD would enable cable TV operators and SMATV networks to make substantial rationalizations to the benefit of consumers.²⁰ The Commission rejects both claims as, in its estimation, the conditions of Article 2(1)(b) of the Merger Regulation are not met.²¹ The operation concerned is one of the infrequent cases in which the Commission took a prohibition decision (20 Decisions out of 155 within the period examined).

As regards the former claim, the Commission does not accept even the possibility of such progress, for NSD does not add any new transponder capacity, which implies that the number of satellite TV channels would not be modified by the operation. This means that the Commission does not recognize any possibility to improve the distribution of TV satellite other than an increase in transponder capacity. The merging parties do not contest this conclusion, however.²² Moreover, the Commission estimates that what it calls “the vertical integration of the operation” is not indispensable to promote the satellite position by an operator, which it recognizes as a legitimate objective in itself.²³ Therefore, the transaction concerned is not merger-specific in its evaluation.

As to the long-term efficiencies, the Commission also evaluates negatively the parties’ claim that they would implement a joint Nordic system for encryption in the direct-to-home, SMATV, and cable TV market.²⁴ It identifies, nevertheless, three types of gains resulting from such a system,²⁵ and does recognize the long-term economic benefits of an integrated system for the transmission of satellite TV.²⁶ However, in the Commission’s estimation, these economic advantages of the system NSD would result in the creation of a dominant position of the new entity in the Nordic region, since the majority of Nordic viewers would opt for this system. In fact, the Commission states that the viewers would not choose the advantageous system ; rather, “it is most likely that the majority of direct-to-home households and

¹⁸ Case No IV/M.490-Nordic Satellite Distribution of 19 July 1995, at point 4 in conjunction with point 8.

¹⁹ *See id.* at points 145-152.

²⁰ *Id.* at point 145 in conjunction with point 147. *See id.* at point 17.

²¹ *Id.* at point 152.

²² *See also id.* at point 50.

²³ *Id.* at point 146.

²⁴ *Id.* at point 148. *Compare with id.* at point 130.

²⁵ *For more details, see id.* at point 148.

²⁶ *Id.* at point 150.

independent cable operators in the Nordic countries will be forced to use an encryption system used by NSD”, and “Broadcasters who want to target Nordic viewers will have to lease NDS's system.”²⁷ Besides, the Commission is concerned with exclusionary conduct that NSD could adopt vis-à-vis broadcasters, even though it estimates that in view of long-term economic advantages of the integrated system for the satellite transmission of television, “it is impossible to assess to what degree NSD's plans for a joint Nordic encryption system would enable NSD to exclude broadcasters from transmitting TV channels to Nordic viewers.”²⁸

Even more interestingly, the Commission considers that the new infrastructure could be highly anticompetitive, be it closed or open,²⁹ despite the fact that most of Nordic viewers would use the new system because of its economic advantages, which the Commission recognizes unequivocally. On the other hand, the Commission moderates its concerns about the anticompetitive effects of NSD by advancing that “it is also difficult to assess the competitive and economic aspects of transparent transmission”.³⁰ In light of this ambiguous assessment, it is, nonetheless, clear that a potential source of anticompetitive effects would result from the fact that “by controlling such a system NSD will be in a position to strengthen its function as a ‘gate keeper’ for broadcasters wishing to get access to Nordic cable networks. It would be very difficult for a broadcaster without access to NSD's system for encryption to get access to cable networks should such a system be developed ; the Commission underlines that “Undoubtedly, many cable operators would be reluctant to give up providing the SMS themselves, since this is a critical part of most cable TV operations and would make them dependent on NSD”.³¹ By contrast, the merging parties claim that “the system will allow independent cable TV operators to use NSD as a supplier and at the same time still be able to run their own SMS systems”.³²

In light of the foregoing, it is clear that the Commission attaches more importance to the interests of broadcasters than to those of consumers in this case (“an infrastructure as described by the parties could be highly efficient and beneficial to consumers”).³³ If it refers to anticompetitive effects, it considers the impact of the concentration in question on the position of broadcasters, even though the interests of the latter and those of consumers may be divergent. Nonetheless, it must be noticed that the Commission equates the interests of competitors with those of consumers, since the underlying assumption in its reasoning, as evidenced notably in the general conclusion in the Decision concerned, is that the creation of a dominant position would harm consumers in the long run. *In summa*, the Commission recognizes the prevalence of long-term consumer harm over long-term advantages resulting from the new system.

To conclude, it seems fair to argue that the Commission effectively applies a kind of efficiency offense in the Decision concerned. In the general conclusion,³⁴ the Commission

²⁷ *Id.* at point 149.

²⁸ *Id.* at point 150.

²⁹ According to the Commission, an open system will also be highly anticompetitive if the system becomes dominant (and this would be the case in the Commission’s estimation as a result of the operation concerned), and third parties cannot get access to such a system (*Id.*). This conclusion is called into question in the following point, in which the Commission states that “an infrastructure as described by the parties could be highly efficient and beneficial to consumers. However, it must be an open infrastructure accessible for all interested parties.” (*Id.* at point 151).

³⁰ *Id.* at point 131.

³¹ *See id.* at points 130-131.

³² *Id.* at point 148.

³³ *Id.* at point 151.

³⁴ *Id.* at points 161-163.

claims to establish the creation of a dominant position (within the meaning of the Merger Regulation, that is, “the creation of a dominant position as a consequence of which effective competition is significantly impeded in the common market or in a substantial part of it”) when referring to the new NSD system. In accordance with this conclusion, the Commission does not prohibit the operation concerned on the basis of the long-term benefits to consumers and high efficiency of NSD, however, it does estimate that the mere participation of such a strong broadcaster as Kinnevik in NSD means that there is a high risk that NSD would not be an open infrastructure, and that, consequently, “it is likely that the operation will lead to less variety in the offer to Nordic TV households in the future.”³⁵ As regards the application of efficiency offense, despite the fact that this aspect of the Decision is not invoked in the general conclusion, it cannot be ignored that the Commission’s global analysis relies heavily on a speculative theory of anticompetitive effects that is strongly linked to the long-term advantages of the new system.

3. Case No IV/M.993-Bertelsmann/Kirch/Premiere of 27 May 1998

By means of the operation concerned, CLT-UFA SA (hereinafter “CLT-UFA”) and Taurus Beteiligungs-GmbH & Co. KG (hereinafter “Taurus”) would acquire joint control of Premiere Medien GmbH & Co. KG (hereinafter “Premiere”), BetaDigital Gesellschaft für digitale Fernsehdienste mbH (hereinafter “BetaDigital”), and BetaResearch Gesellschaft für Entwicklung und Vermarktung digitaler Infrastrukturen mbH (hereinafter “BetaResearch”). CLT-UFA is a joint venture between Bertelsmann and Audiofina SA, in which the parent companies have merged their European television interests.³⁶ The transaction is declared incompatible with the common market and the functioning of the EEA Agreement.

In a distinct part entitled VI. “Promoting Technical and Economic Progress”, the Commission analyzes the merging parties’ claims that (1) the infrastructure necessary for the breakthrough of digital television can be established only by pooling the resources of Bertelsmann and Kirch, and that (2) “only Bertelsmann and Kirch together are capable of supplying the attractive programmes necessary for the breakthrough of digital television”.³⁷

³⁵ *Id.* at point 151. This Decision should be compared with Case No IV/M.1439-Telia/Telenor of 13 October 1999, in which the Commission also states that “it is likely that broadcasters will have reduced incentives to invest in improving quality and/or in innovation of new content” (at point 368), and that, as a result of the concentration, “the Scandinavian markets for TV distribution may therefore enter the digital era with a prognosis of reduced consumer choice, instead of, as foreseen, an increased choice” (*Id.*). In spite of very rare references to innovation/innovative content (3 instances) and a lack of a separate part dedicated to efficiency gains (“Economic and Technical Progress”), it is worth analyzing this Decision and comparing it with the Decision Nordic Satellite Distribution. In the Case Telia/Telenor, the merging parties did not make any efficiency claims, which appears to be a prudent approach in view of the analysis performed by the Commission in the Case Nordic Satellite Distribution.

³⁶ See Case No IV/M.993-Bertelsmann/Kirch/Premiere of 27 May 1998, at points 8-10. As regards the merging parties, see Case MSG Media Service of 9 November 1994, *supra* note 7, introduction.

³⁷ Case Bertelsmann/Kirch/Premiere, *supra* note 36, at point 119 in conjunction with point 121. For the amount of the necessary investments, see *id.* The Commission also adds that “after the parties have made the investments to establish a digital infrastructure, other persons would be able to provide a vast range of supplementary services at relatively low cost, particularly as viewers. [sic] psychological barriers to additional payments are progressively lowered with the penetration of digital pay-TV.” This extract is particularly obscure ; the terms employed, such as “other persons”, “additional payments”, or the notion of psychological barriers should have been specified.

The Commission aims at casting doubt on the former claim by advancing the following arguments : 1) the financing costs cannot possibly correspond to those indicated by the parties ; for the five-year period, costs amount to DEM 200-500 million, assuming 2-5 million subscribers, 2) it is possible that, in the first years of digital television, the decoders will have to be financed in advance due to leasing (as opposed to purchase), 3) the purchase price to be financed in advance would be written off after 1-5 years, and it is only after this period that the leasing of a decoder would show a profit. However, none of these arguments indicates *per se* that the merging parties do not have the incentive or ability to attain the claimed progress. Both the five-year period and the costs concerned do not appear to be indicative of exceptional business circumstances, either. Rather, it seems *prima facie* that the pooling of resources would effectively help the firms to attain the progress considered. In order to properly substantiate its conclusion, the Commission should have presented economic data showing that each of the companies (or other companies) had sufficient resources and incentives to achieve the efficiency gains concerned on its own, or it should have indicated why the question could be left open without prejudice to the competitive assessment in this Case.

As to the latter claim, the Commission indicates that the claim considered has not been substantiated, and also calls into question the likelihood that the technological progress would materialize.³⁸ Furthermore, the Commission advances the following “classic” argument in innovation cases : “if the parties, by establishing a digital infrastructure and jointly offering an attractive programme, are successful in securing the general acceptance of digital television, (...) they will in fact wall off the future market in digital pay-TV and bring it under their control on a lasting basis. The concentration therefore makes it impossible for this market to develop on a competitive basis.”³⁹ This reasoning reveals the same type of a serious error of economic appraisal as the one discussed in the Case *Nordic Satellite Distribution of 19 July 1995*. Indeed, the technological progress claimed is *de facto* ignored, for the successful attainment thereof would result - in the Commission’s evaluation - in the durable control over the market ; like in the 1995 case, the Commission estimates that the technical and economic progress would form an obstacle to competition (meant *in casu* as “walling off the future market in digital pay-TV” and its consequences).⁴⁰ It is thus clear that the Commission gives preference to a speculative theory of anticompetitive effects. On the other hand, as shown above, the Commission does not put enough weight on the most questionable aspect of the merging parties’ claims - the one that is related to the merger-specificity of the operation.

Furthermore, the Commission finds the attainment itself of the progress claimed extremely doubtful by resorting to a flawed logic of economic reasoning that is similar to that applied in the Case *MSG Media Service of 9 November 1994* : “Since the parties will wall off and control the market, other potential providers of digital pay-TV and multimedia services will be unable to develop freely and without restriction. There is reason to fear that technical and economic aspects of the development of digital television and other digital services will be adversely affected by this.”⁴¹ On the other hand, the merging parties should have

³⁸ The Commission’s reply is peculiar, irrelevant, and badly formulated, even abstracting from its irrelevance : “The claim may well be correct if Kirch, on the one hand, completely withheld its programme resources, particularly its premium rights, from Premiere and, on the other, got into financial difficulties as a result of such a blockade policy based on its wide-ranging financing commitments arising from the output deals concluded by it.” (*Id.* at point 121).

³⁹ *Id.* at point 122.

⁴⁰ *Id.*

⁴¹ *Id.* See also the Commission’s assessment of the undertakings proposed by the merging parties, *id.* at point 155.

sufficiently substantiated their efficiency claims if they expected these claims to be taken into account. Due to the asymmetry of information, even in the absence of an explicit provision to this effect, as it was before 2004, the Commission could legitimately expect that efficiency claims should be supported by evidentiary material delivered by the companies that put forward such claims. Indeed, it would be highly debatable to maintain that the competition authority has the obligation to examine the claims as to which the merging parties have not even made any effort to produce elements of proof supporting their allegations.

4. Case No COMP/M.4403-Thales/Finmeccanica/Alcatel Alenia Space & Telespazio of 4 April 2007

The object of the concentration concerned is the acquisition, by the undertakings Thales S.A. (hereinafter “Thales”) and Finmeccanica Società per Azioni (hereinafter “Finmeccanica”), of joint control of Alcatel Alenia Space SAS (hereinafter “AAS”) and Telespazio Holding srl (hereinafter “Telespazio”).⁴² For the purposes of our analysis, note that (a) Electronic Power Conditioners (hereinafter “EPCs”) are an essential component for producing TWTAs and MPMs, that (b) Travelling Wave Tubes (hereinafter “TWTs”) are produced by Thales’ wholly-owned subsidiaries Thales Electron Devices, SA France and Thales ED GmbH (“TED”), and that (c) the markets that are downstream of TWTs are at two levels : (i) Travelling Wave Tube Amplifiers (hereinafter “TWTAs”) and other TWT-based subsystems, such as Microwave Power Modules (hereinafter “MPMs”), (ii) satellite prime contracting.⁴³

In this Case, the Commission notes significant R&D economies of scale and economies of scope in the satellite markets.⁴⁴ In its estimation, these economies result from access to the U.S. massive institutional and military satellite funding by U.S. dominant suppliers.⁴⁵ It also indicates that Tesat, subsidiary of EADS, is likely to offer better pricing, for it benefits from technological improvements and economies of scale, which contributes to its competitiveness.⁴⁶ The Commission specifies that “Pre-merger, AAS also had the incentive to source EPCs and TWTAs from Tesat and L3 whenever their subsystems were more competitive than ETCA’s (due to ETCA’s limited economies of scale and scarce production capacities) and could provide AAS with a competitive advantage at the prime contracting level.”⁴⁷ The Commission points out that L3 is also likely to have a superior cost structure due to economies of scale, and along with Tesat, it will therefore be able to restrain the new entity’s market behavior.⁴⁸

⁴² Thales and AAS are French companies which are active, particularly, in defence, aeronautics, and communication while Finmeccanica and Telespazio are Italian ones that also operate, among other things, in the domain of defence systems, aerospace, and communication. In order to comprehend the references below to various players in the commercial telecommunications satellite market, see Decision, point 125. In particular, Tesat SpaceCom GmbH & Co (hereinafter “Tesat”) is an EADS’ subsidiary, and the U.S. company L3 Communications Electron Technologies, Inc ETI (hereinafter “L3”) is a subsidiary of the group L3 Communications.

⁴³ Case No COMP/M.4403-Thales/Finmeccanica/Alcatel Alenia Space & Telespazio of 4 April 2007, at point 11 in conjunction with point 16.

⁴⁴ *Id.* at point 127.

⁴⁵ *Id.* Compare with Case No IV/M.877-Boeing/McDonnell Douglas of 30 July 1997.

⁴⁶ *Id.* at point 321.

⁴⁷ *Id.* at point 322.

⁴⁸ *Id.* at point 327.

In light of this observation, it is legitimate to conclude that the Commission's approach to efficiencies *in casu* can be framed as an efficiency defense, in the sense that the efficiencies considered are positively evaluated and regarded as a countervailing factor. However, it must also be underlined that it is not the "classic" efficiency defense as it is not any efficiencies resulting from the transaction concerned that are viewed as the factor that is likely to counterbalance the exercise of market power by the new entity. Rather, the Commission considers that the efficiencies that are attained by competitors will offset potential anticompetitive effects arising from the operation concerned. At any rate, as a substantial factor contributory to competitive pressures, efficiencies play a positive role in the Commission's assessment in this Case, and this approach obviously merits approval.

More generally, according to the Commission, R&D efforts are crucial in the race for competitiveness in the sector concerned. First, it observes that continual R&D to enhance the performance of TWTs is important so as to keep a competitive product offering, and TED and L3 are both continuously developing new products.⁴⁹ TWTs' characteristics such as output power capability, efficiency, and bandwidth appear critical for customers, who opt for TWTs based on performance criteria.⁵⁰ Second, the Commission notes that TED's internal documents compare TED's and L3's TWT product offering in terms of size, mass, design, efficiency, and flight heritage. These documents show that TED, market leader, considers L3 as a credible competitor for TWTs, and even indicate its relative competitive advantages in certain areas.⁵¹ This observation suggests that competition based on performance criteria is intensive on this market.

Further, the Commission points out lengthy⁵² and massive R&D investments in the satellite markets, which entail a certain degree of specialization and concentration in the industry.⁵³ It also notes that "This aspect is particularly accentuated in Europe, where space companies have developed particular expertises as equipment manufacturers, payload suppliers and solution providers."⁵⁴

What is more, the Commission describes other general features of R&D activities in the satellite industry : (1) it is a highly cyclical and uncertain industry, in which "satellite manufacturers and equipment manufacturers always take the risk that future market conditions will not make it possible to recoup short-term expenditure into capacity increases or new product developments, because future demand for that product or technology may fail to materialise", (2) R&D expenditure and significant sunk costs, combined with a two-year order-to-delivery cycle, require that major satellite manufacturers maintain a minimum order book of about 2 satellites per year, (3) "Maintaining a 'minimum scale of operation' is also instrumental for the satellite manufacturer to be perceived in the institutional and military satellites market as a reliable source of supply that is capable of providing technical solutions that can be adapted to institutional and military needs. The progressive decline of a satellite

⁴⁹ *Id.* at point 65. For other technological and product development programs, *see id.* at points 273-275 and 280-286 (ETCA's development plans related to EPCs).

⁵⁰ *For more details, see id.* at point 59 and at note 26.

⁵¹ *Id.* at point 184.

⁵² For the length of time needed for ETCA to present a qualified product available for the commercial market, *see id.* at points 286, 282.

⁵³ *Id.* at point 128.

⁵⁴ *Id.*

manufacturer in the commercial market therefore has a spill-over effect on the abilities of the satellite manufacturer in the military and institutional markets.”⁵⁵

Finally, the Commission also takes into account some basic consequences of the dynamic character of the satellite markets, and contrary to many other cases, in which such a reference appears incidentally, these consequences cannot be considered to be of marginal importance : “while TED or L3 may have developed, qualified and gained heritage on a new TWT product (higher power TWT or TWT with greater efficiency), this is normally only a temporary lead,⁵⁶ in particular if there is substantial market demand for the product. It is true that such first mover advantage may prove important on the market but this is more relevant for competitive assessment than for market definition.”⁵⁷ In addition, the Commission observes that TWT suppliers “dedicate significant R&D efforts to continuously improve their products. As a result, any performance improvement from a supplier results in a loss of market share for the competitor”,⁵⁸ and that “TWTs manufacturers are running R&D programs and if one can obtain a better TWT with higher power or greater efficiency, there is no reason to believe that other manufacturer with similar capabilities and sufficient time will not obtain it”.⁵⁹ This analysis is in stark contrast with the one adopted, for instance, in the famous *GE/Honeywell* Case, and although it undermines the proclaimed continuity of decisional practice, it shows at the same time a more economically rational approach to innovation concerns.

5. Case No COMP/M.4747-IBM/Teleologic of 5 March 2008

The transaction concerned consists in the acquisition, by the U.S. International Business Machines Corporation (hereinafter “IBM”), of sole control over the Swedish undertaking Telelogic. IBM is active worldwide in the development, production, and marketing of a variety of information technology products and services. Telelogic develops and sells software development tools.

Increased incentives for innovation and enhancements in the interoperability of products are generally considered as efficiency gains. The Decision concerned does not contain any separate part dedicated to such efficiencies, and the merging parties have not made any efficiency claims ; by contrast, two out of the three theories of competitive harm applied concern decreased incentives for innovation⁶⁰ and reduced interoperability of software tools.⁶¹ Since the examination of these market power-related effects exceeds the scope of our paper, we do not proceed to a detailed analysis thereof. We note, however, some interesting and relevant points raised in the Commission’s analysis of innovation incentives.

First of all, one of the potential negative effects that are examined by the Commission is reduced innovation as a direct consequence of the lack of effective competition in Requirements Management and Modelling tools. The Commission analyzes whether or not

⁵⁵ *Id.* at point 133.

⁵⁶ *Compare with id.* at point 343.

⁵⁷ *Id.* at point 65.

⁵⁸ Response of ESA to question 5 of the request for information of 22 December 2006.

⁵⁹ Response of Hispasat to question 5 of the request for information of 22 December 2006. As to competition in innovation, *see also id.* at points 274, 276.

⁶⁰ *See id.* at points 231-243.

⁶¹ *Id.* at point 127. *See* Case No COMP/M.4747-IBM/Teleologic of 5 March 2008, at points 244-269.

the new entity would have diminished incentives to innovate compared to the incentives of the parties in the absence of the concentration, and concludes that the concentration in question is unlikely to reduce the pace of innovation in the markets for Requirements Management and Modelling tools in the near future.⁶²

According to the notifying party, it is customer needs, rather than competition between IBM and Telelogic, that have been, and will continue to be, the most important driver for innovation in the software development tools area. IBM indicates, particularly, that MKS and IRqA are examples of companies that have successfully increased their market presence by developing state-of-the-art user interfaces.⁶³ The Commission's investigation, which is supported by extensive and convincing evidence,⁶⁴ confirms that competition between IBM and Telelogic has not been the major driver for innovation in the recent past, and concludes that "innovation in the software development industry has been spurred by the evolution of Modelling languages (in particular, the creation of the standardized UML language) and the ever increasing needs of customers, notably those focusing on systems software development."⁶⁵ Customers specialized both in IT software and in systems software also confirm that competition is mainly driven by customers' needs.⁶⁶

Another crucial finding raised by the Commission is that IBM's and Telelogic's products are not close substitutes,⁶⁷ and that there should be increasing innovation in the near future : "although open-source products do not seem to directly compete with IBM's and Telelogic's Modelling and Requirements Management tools, further development of open-source offerings for these two categories of tools is expected in the near future. This should directly contribute to more innovation in the coming years, as suppliers of commercial software would need to add new features to their products in order to justify the price differences between their products and the open-source products."⁶⁸ Finally, a study commissioned by the Commission also notes that (1) open-source software "potentially saves industry over 36% in software R&D investment that can result in increased profits or be more usefully spent in further innovation", and that (2) there is evidence on the relationship between open-source software development, innovation, and the ICT industry ; the study concludes that open-source software "provides far more diffusion of technology than proprietary software, especially to potential future innovators who are not faced with the search costs of locating sources of new innovation buried within proprietary software".⁶⁹ We do not observe any manifest errors of economic appraisal in the Commission's analysis as presented above.

III. TECHNOLOGICAL PROGRESS IN EC MERGER CASES IN THE CHEMICAL INDUSTRIES

⁶² *Id.* at point 243.

⁶³ *Id.* at note 211.

⁶⁵ *Id.* at point 237. For the Commission's argumentation and evidence, *see id.* at points 237-239 and multiple references cited therein.

⁶⁶ *See id.* at points 238-239.

⁶⁷ *See id.* at point 242.

⁶⁸ *Id.* at point 240.

⁶⁹ *Id.* at point 241.

This part of our paper discusses technological progress in EC phase II merger cases in the chemical industry *sensu largo* from the establishment of merger control at Community level (21 December 1989) to 21 September 2008. In accordance with the current statistical classification of economic activities in the European Community, we have divided the merger cases in this field as follows : 1) the Manufacture of Chemicals and Chemical Products : Case No IV/M.214-Du Pont/ICI of 30 September 1992, Case No IV/M.269-Shell/Montecatini of 8 June 1994, Case No IV/M.774-Saint-Gobain/Wacker-Chemie/NOM of 4 December 1996, Case No COMP/M.1630-Air Liquide/BOC of 18 January 2000, Case No COMP/M.2547-Bayer/Aventis Crop Science of 17 April 2002, Case No COMP/M.2972-DSM/Roche Vitamins of 23 July 2003 ; 2) the Manufacture of Pharmaceuticals, Medicinal Chemicals, and Botanical Products : Case No IV/M.737-Ciba-Geigy/Sandoz of 17 July 1996 ; 3) the Manufacture of Rubber and Plastics Products, and Other Non-metallic Mineral Products : Case No COMP/M.3436-Continental/Phoenix of 26 October 2004.

A. Manufacture of Chemicals and Chemical Products

1. Case No IV/M.214-Du Pont/ICI of 30 September 1992

The concentration consists in the acquisition of the worldwide nylon operations of the U.K.-based Imperial Chemical Industries PLC (hereinafter “ICI”) by the U.S.-based E.I. du Pont de Nemours and Company (hereinafter “Du Pont”), one of the world’s largest chemical and petroleum companies. Fundamentally, the Commission assesses the strength of Du Pont in the EC nylon carpet fibre market in light of Du Pont’s global position in the nylon industry ; in particular, the Commission points out that Du Pont’s nylon facilities in different regions of the world can rely on its large U.S. R&D activity.⁷⁰

First of all, it is important to note some general characteristics of the relevant market : according to the Commission, competition in the reference market is exercised in prices, quality, and innovation.⁷¹ Product differentiation and innovation are essential parameters and the driving forces in the relevant market.⁷² The Commission estimates that “The success of the EC carpet manufacturers, at least in the medium to high end of the overall carpet market, depends on their ability to offer a broad range of different products”, and that “The existence and further development of a large variety of nylon fibres is very important for the EC carpet manufacturers since this is a factor which enables them in turn to differentiate their products.”⁷³

The Commission considers that, prior to the transaction concerned, the EC nylon carpet fibre market is being competitive :⁷⁴ Du Pont is a strong competitor and ICI has been Du Pont’s most likely source of quality and innovation competition.⁷⁵ Both Du Pont and ICI are the leading companies in terms of product quality and technological development, sell a

⁷⁰ Case No IV/M.214-Du Pont/ICI of 30 September 1992, at point 36.

⁷¹ *Id.* at point 47. *See also id.* at point 46.

⁷² *Id.* at point 47.

⁷³ *Id.* at point 41.

⁷⁴ The use of the present continuous tense by the Commission suggests that it regards the market as only temporarily competitive.

⁷⁵ Case Du Pont/ICI, *supra* note 71, at point 34 in conjunction with point 47.

wide variety of differentiated products, and are the closest competitors in the reference market.⁷⁶ An example that shows the importance of technological development pursued by the merging parties may be ICI's research project that has allowed the development of the largest selection of carpet yarns and fibres in the world.⁷⁷ The level of R&D spending of both Du Pont and ICI is above the nylon industry average, and part of the expenses is dedicated to technical service to assist customers in product enhancement and differentiation ; the merging parties also collaborate with third parties (manufacturers, wholesalers, and retailers) much more broadly than their competitors.⁷⁸ The Commission observes that the parties' product range results from their R&D efforts, and that these efforts were enabled by their extensive sales base, and subsequently relativizes it with respect to the product ranges offered by competitors.⁷⁹

Most importantly, the Commission states that competition in product development between Du Pont and ICI has thus far been a vital source of innovation, and that the concentration in question would enable Du Pont to act independently of its competitors and of its customers (that is, the operation would result in the competitive harm within the meaning of Regulation No 4064/89).⁸⁰ Indeed, as a result of the transaction in question, Du Pont would be the strongest player in the relevant market.⁸¹ In the Commission's estimation, the strengthening of Du Pont in the EC nylon carpet fibre market would lead to a considerable reduction in competition, in particular with regard to the competition in product development. The Commission is particularly concerned with Du Pont's ability to determine the degree of product development and innovation in the relevant market.⁸² However, neither does the Commission examine the new entity's financial incentives to adopt such a customer-unfriendly strategy, nor does it specify in any way how innovation would be affected as a result of the transaction concerned.

Finally, the Commission also refers to R&D in the part of the Decision dedicated to commitments by declaring that the objective thereof is to enhance the competitiveness of a third party, which is explicitly treated in terms of the above-mentioned competitive factors (product development, product range, R&D-related quality, client assistance).⁸³

⁷⁶ *Id.* at points 33-34, 37.

⁷⁷ *Id.* at point 33.

⁷⁸ *Id.* [confidential data] "Both ICI and Du Pont incorporate technical support into their mainstream development activity. They are recognized in the industry as working with manufacturers, wholesalers and retailers to a much greater extent than their other competitors. This technical collaboration involves, inter alia, the joint development of new fibres and carpets, and the examination of new production methods for carpets." (*Id.*).

⁷⁹ According to the Commission, "The range of fibres which both Du Pont and ICI are currently able to offer has been built up over a long time, and is a result of research and development justified by the large sales base of both companies" (*Id.* at point 41). By contrast, the competitors do not generally cover the whole range of fibres supplied by Du Pont and ICI, and, in the Commission's estimation, they are not likely to develop a significantly broader range of high-quality fibres across the board in the short- to medium-term.

⁸⁰ *Id.* at point 41 in conjunction with point 47.

⁸¹ *Id.* at point 47. *See also id.* at point 37.

⁸² *See* the Commission's conclusion concerning the commitments : "these undertakings will substantially reduce the likelihood that Du Pont could be able to determine the degree of product development and innovation in the market" (*Id.* at point 48).

⁸³ According to the Commission,

"The undertakings will immediately enable a third party to replace ICI partially as a supplier of high quality fibres by the transfer of the equivalent of [...] of the existing staple fibre production of ICI at its main nylon carpet fibre facility at Oestringen, in Germany. This third party will be able to maintain and build on this position in the segment of the market which is closest to that of Du Pont in terms of quality through the research and development facility and development and support expertise also to be transferred. This would significantly

2. Case No IV/M.269-Shell/Montecatini of 8 June 1994

The concentration concerned consists in the creation of a joint venture (called Sophia) between Shell Petroleum N.V. (hereinafter “Shell”) and Montedison Nederland N.V. (hereinafter “Montedison”). Sophia is to operate in the polyolefins sector. The polyolefins interests of Montedison are owned by Montecatini Nederland B.V. through two subsidiaries : Himont Inc. (polyolefins) and Moplefan Spa (downstream applications).

The Commission’s competitive assessment in this case focuses on the effects of the concentration on the market for the production and sale of polypropylene (PP) and the market for PP technology.⁸⁴ The latter is an upstream market in relation to the market for the production and sale of PP.⁸⁵ It is also worth noting in this context that a new technology determines the boundaries of the reference market in the Decision concerned : the Commission has delimited the relevant product market for PP technology solely on the basis of advanced technology (“new technology”), excluding slurry technology (“old technology”) from this definition.⁸⁶

Both R&D and IPR play a crucial role in this Case, however, many aspects of the Commission’s analysis go well beyond the scope of our paper. First, the Decision concerned is rich in the references to IPR (see, for instance, those regarding patent rights,⁸⁷ the licensing of PP technology,⁸⁸ “licensing rounds”,⁸⁹ demand for new licenses⁹⁰). Moreover, the Commission refers to technological sophistication and R&D when analyzing buyer power as a countervailing factor.⁹¹ Finally, the question of R&D and IPR also plays an important role in the commitments entered into by the notifying parties.⁹² Our examination of R&D is only restrained to those aspects of the Decision that are relevant to the scope of our paper.

a. Benefits of innovation

When delimiting the boundaries of the market for PP technology, the Commission invokes past innovations (both product and process technology) and the benefits arising from technological progress in this market. These benefits are embodied by substantially higher catalyst yield, the development of superior properties of the PP, a more simplified and efficient PP production process (owing to an increase in catalyst yield and a reduction in the polymerization steps), lower energy consumption, lower capital investment per ton of

improve the competitiveness of the third party, in particular as regards its product range and future product development. These undertakings therefore will substantially reduce the likelihood that Du Pont could be able to determine the degree of product development and innovation in the market.” (*Id.* at point 48).

⁸⁴ Case No IV/M.269-Shell/Montecatini of 8 June 1994, at point 22. *Compare with id.* at points 18-21.

⁸⁵ *Id.* at point 44.

⁸⁶ *Id.* at point 29 in conjunction with point 43.

⁸⁷ *Id.* at points 68, 88.

⁸⁸ *In particular, see id.* at point 50.

⁸⁹ *Id.* at point 39.

⁹⁰ *Id.* at points 92-99.

⁹¹ *Id.* at points 100-101.

⁹² As regards the commitments and obligations entered into by the parties, *see also* Commission’s Decision of 24 April 1996, which modifies the Decision of 8 June 1994, declaring the concentration compatible with the common market subject to commitments and obligations (Case No IV/M.269-Shell/Montecatini).

capacity, and better environmental protection.⁹³ According to the Commission, not only is the development of new products and processes valuable, but also “Improvements can themselves represent a significant technological breakthrough (*e.g.*, the introduction of electron donors that resulted in a substantial increase in the catalyst yield).”⁹⁴ The competition authority does not specify the impact of those facts on the global legal assessment of the Case.

b. Nature of innovative activities in the market for PP technology

The analysis of the nature of innovative activities in the market for PP technology occupies a relatively important place in the Decision concerned. We present beneath the main arguments advanced by the Commission in this respect. First, in principle, PP technology is developed and licensed as a package encompassing both a production process and a catalyst (“Process-plus-catalyst” package).⁹⁵ The Commission notes that the amount of time, uncertainty, and costs involved in the production of PP technology are substantial. Significant research is presently performed in the field of advanced materials and in order to develop a new generation of catalysts (metallocenes).⁹⁶ The Commission points out that it is not expected that a fundamentally new PP resin production process will be developed and commercialized within the next ten years (despite the substantial research), and that it will take several years before the innovative potential of new catalysts can be fully exploited.⁹⁷ More generally, the Commission remarks that “catalyst development normally takes at least several years (typically a minimum of 3-5 years), requires considerable R&D expenditure, substantial prior technological expertise and is risky”.⁹⁸ It also observes that the extent of use of the new technology cannot be precisely forecast, and that, in view of the substantial costs represented by original R&D, of the prior expertise needed, and of the uncertain results of development work, a number of PP producers prefer not to develop their own R&D ; therefore, they license from companies that have the required technology.⁹⁹ A PP producer that has not developed its own technology thus operates under a license from a PP technology provider¹⁰⁰ (the market functions under “innovate or license formula”). On the other hand, the Commission estimates that the ownership of patents may be an entry barrier into the technology market.¹⁰¹

Second, when examining potential entry, the Commission also points to R&D activities in the market for PP technology : “A number of companies are currently engaged in R & D in the PP sector. The focus of this research depends on the expertise and financial or

⁹³ Case Shell/Montecatini, *supra* note 85, at point 29 in conjunction with point 43. *For more details, see id.* at point 29.

⁹⁴ *Id.* at point 32.

⁹⁵ *Id.* at point 53. *See also id.* at points 41, 36.

⁹⁶ *Id.* at point 30.

⁹⁷ *For more details, see id.* at point 30.

⁹⁸ *Id.* at point 42.

⁹⁹ *Id.* at point 35.

¹⁰⁰ *See id.* at points 31, 36.

¹⁰¹ *Id.* at point 32. According to the Commission,

“These patents can delay or even indefinitely postpone new entry by operators who seek to develop new technology that does not infringe them. In this respect, the risk of lengthy and expensive patent litigation would seriously undermine future licensing activities, because both the licensor and the licensee could be sued by the owner of the intellectual property right for patent infringement. A non-assertion agreement with the initial patent holder would remove this uncertainty but this in fact makes potential entry and its conditions dependent on the patent holder's consent.” (*Id.*).

other resources of the company. In most cases, research will tend to focus on market-driven product differentiation, while a company with a substantial fundamental research effort, such as Himont, may also develop new products or processes which can supersede existing technologies and create new market opportunities. A number of companies are currently working on a new generation of catalysts, metallocenes.”¹⁰² However, the Commission concludes that this estimation does not affect the competition assessment in this case “since the potential of metallocenes cannot be precisely determined and in any case it is not expected to be fully exploited in the short to medium term.”¹⁰³

c. Rivalry between leading technologies before the concentration

As a result of the operation concerned, the joint venture Sophia will be a world leader in the PP market.¹⁰⁴ Pre-concentration, the two leading PP technologies are the Spheripol technology (licensed by Himont, Montedison's subsidiary) and the Unipol technology (developed by Union Carbide Corporation and Shell).¹⁰⁵ Himont has been at the forefront of PP technology since the early years of PP production, and its Spheripol process is the most widely licensed PP technology.¹⁰⁶ Shell is currently using Unipol in some of its own PP plants.¹⁰⁷

d. Effects of the concentration

α. PP technology market

Primo, according to the Commission, prior to the concentration, the rivalry between Spheripol and Unipol was the main competitive relationship on the market for PP technology.¹⁰⁸ After the concentration, these two technologies would no longer be sufficiently independent of each other because of the incorporation of Himont's PP technology business in Sophia.¹⁰⁹

In the Commission's estimation, Spheripol and Unipol are the two technologies that appear to best combine the elements determining the choice of technology,¹¹⁰ and are generally considered as broad substitutes.¹¹¹ According to the Commission, active competition between Spheripol and Unipol has been the main driving force on the PP technology market.¹¹²

¹⁰² *Id.* at point 85.

¹⁰³ *Id.*

¹⁰⁴ *Id.* at point 103.

¹⁰⁵ *Id.* at point 53.

¹⁰⁶ *Id.* at point 54.

¹⁰⁷ *Id.* at point 16 in conjunction with point 56.

¹⁰⁸ *Id.* at point 60.

¹⁰⁹ *Id.*

¹¹⁰ *See id.* at point 65.

¹¹¹ *Id.* at point 66. They are global licensors with presence in different geographic markets and knowledge of the specificities of these markets and of the product needs of licensees. They also enjoy the most extensive grade coverage, the best commercial track record, and a number of plants of various sizes (*Id.*).

¹¹² *Id.* at point 66. For PP manufacturers' views in this respect, *see id.* at point 69.

Moreover, the licensing power completes the arsenal of the merging parties' strengths. In light of its decisional practice, which tends to stress the importance of firms' past performance even in dynamic markets, it is not surprising that the Commission estimates that the current Spheripol and Unipol licensees may have a disincentive to switch to alternative technology providers. Such a disincentive would result from the advantages in choosing the technology already used in existing plants for an expansion of capacity, inasmuch as these advantages imply cost savings and optimal production results.¹¹³ Further, the Commission indicates that the large number of licenses granted by Spheripol and Unipol generates licensing revenue, which can support their R&D.¹¹⁴

The Commission also takes account of R&D links between competitors when examining actual competition as a countervailing factor. Particularly, Japanese company Mitsui Petrochemical Industries (hereinafter "Mitsui"), one of the competitors providing advanced PP technology identified by the merging parties, cannot be considered as an effective competitor, for Himont has successfully collaborated in R&D with this company since 1975.¹¹⁵ Moreover, the Shell Oil has a joint venture with the U.S. company Union Carbide Corporation (UCC).¹¹⁶

Secundo, the Commission estimates that dominance itself on the PP technology market might have adverse effects on this market and on the market for the production and sale of PP (a downstream market).¹¹⁷ In particular, dominance in the PP technology market would enable a PP technology provider to exercise market power with regard to an essential element of PP production.¹¹⁸

The parties object that the concentration in question will create or strengthen dominance by invoking, among other things, the dynamic character of the market for PP technology ("the technology market is inherently volatile and fast changing. New entry is possible and likely").¹¹⁹ The Commission recognizes that the technology market is to some extent dynamic, however, it estimates that new entry is not likely to constitute a countervailing power:¹²⁰ only a small number of PP producers currently developing *both* a process and a catalyst,¹²¹ and R&D process has not yet been completed with the result that

¹¹³ "These advantages are technological -e.g. knowledge of the capabilities and operation of the technology-, or other -e.g. avoidance of delays due to the need to retrain staff and re-qualify grades for established customers" (*Id.* at point 67). The Commission expresses, nevertheless, the reservation that the technology used in existing plants is up-to-date and suited to the licensee's future product range (*Id.*). For PP manufacturers' views in this respect, *see id.* at point 71.

¹¹⁴ *Id.* at point 67. The Commission also refers to PP producers' views. In addition to the risk of restriction of the available technologies as a result of the transaction concerned, they claim, in particular, that (1) Sophia would gain a competitive advantage through access to technology information and feedback from the much larger licensing pool of both leading technologies, and that (2) the combination of the technological strength of Shell and Himont and the established position of their technologies on the market would place other licensors at a significant competitive disadvantage (*See id.* at points 70-71).

¹¹⁵ *See id.* at point 54.

¹¹⁶ *See id.* at point 55.

¹¹⁷ "Dominance on the PP technology market might have a restraining effect on the PP industry's future plans and opportunities for expansion and would thus have negative repercussions on the market for the production and sale of PP." (*Id.* at point 52).

¹¹⁸ *Id.* at point 44.

¹¹⁹ *Id.* at point 63.

¹²⁰ *Id.* at point 64.

¹²¹ According to the Commission, both a process and a catalyst are indispensable to successfully enter the market.

entry is uncertain or will at least be delayed for a considerable period of time.¹²² The Commission does not specify in this context, although it should have, what it means by the “partial dynamics” of the market concerned and why it considers that a great number of producers is necessary for it to recognize that entry would take place (conclusion *a contrario*).¹²³ The remark that R&D is not terminated yet is vague as well, and as such does not demonstrate the Commission’s conclusion.

The Commission concludes that the concentration would create a dominant position on the market for PP technology within the meaning of the Merger Regulation, however, authorizes it subject to commitments.¹²⁴

β. PP production and sale market

The merged entity will be a market leader combining the substantial assets of its parent companies. The Commission points to a number of competitive advantages of the new entity, and presents the conclusions it draws therefrom, as indicated below.

First, the merged entity will combine largely complementary strengths of Himont's technological leadership and R&D success with Shell's strong worldwide presence as one of the largest petrochemical companies, its feedstock availability, and its extensive financial resources.¹²⁵ As a consequence, Sophia will offer the broadest product line in the industry and will benefit from the combined financial resources, strengthened by its technology position and licensing income, as a result of which it will be able to focus on the development of specialized products and advanced materials ; also, it could use general profits to subsidize niche markets.¹²⁶ This description of the post-concentration effects indicates rather the potential generation of synergies. However, the Commission does not invoke any efficiencies, nor do the merging parties raise such claims. At any rate, contrary to the Commission’s estimation, these conclusions do not demonstrate *per se* any source of post-merger anti-competitive effects.

Second, owing to the size and geographic spread of its plants, Sophia will enjoy particularly competitive production costs and efficient distribution in many locations. It will gain considerable relative advantages owing to the size of its sales, marketing organization, and technological position.¹²⁷ Third, the ability to spread R&D costs over a large production base would place the parties at a significant relative advantage, and this advantageous position will be further strengthened as older PP products are replaced by new ones with superior properties.¹²⁸ Fourth, the Commission estimates that Sophia will be able to determine the pace of future technological development by controlling the two worldwide leading technologies, for its licensing policy will be insufficiently controlled by other competitors.¹²⁹ Finally, all

¹²² *Id.* at point 88.

¹²³ This conclusion is not clear since a small number of dynamic PP producers could exercise competitive pressure on the merging parties.

¹²⁴ *Id.* at point 102.

¹²⁵ *Id.* at point 111.

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ *Id.* at point 112.

¹²⁹ *Id.* at point 113.

innovation and product development could be retained for use by Sophia, since there would be no competitive pressure on its licensing policy.¹³⁰

Having presented those arguments, the Commission reaches a conclusion that abstracts from its analysis to a certain extent. Namely, as to the PP production market, the Commission considers that the relative market part,¹³¹ combined with a number of structural factors (the network of joint ventures, Sophia's extensive product coverage, and *especially* Sophia's leading position in technology), will substantially reinforce the parties' position on this market, thereby possibly creating a dominant position on this market.¹³²

As above-mentioned, the transaction in question is likely to give rise to potentially strong efficiencies, including dynamic ones, and these efficiencies have not been given full consideration. The Commission only underscores the relative competitive advantages arising from efficiencies, and its global analysis suggests that these advantages would rather contribute to giving the red light to operation, absent the commitments. This approach is evidently not efficiency-friendly, and may be qualified as a manifest error of economic appraisal. By contrast, the question of combination of the leading competing technologies seems more problematic. The Commission's analysis should have focused on the loss of competition between the major technologies as the potentially main anticompetitive effect resulting from the concentration concerned. On the whole, the examination of the impact of the concentration in question on innovation is perfunctory, as it does not sufficiently consider the effects of the combination of the leading technologies and the major constraining factors, such as the innovative potential of competitors and behavioral constraints that the new entity would face due to the risk of being leapfrogged.

3. Case No IV/M.774-Saint-Gobain/Wacker-Chemie/NOM of 4 December 1996

The Decision concerned is based upon the notification, by Société Européenne des Produits Réfractaires (hereinafter "SEPR"), Elektroschmelzwerk Kempten GmbH (hereinafter "ESK"), and NV Noordelijke Ontwikkelingsmaatschappij (hereinafter "NOM"), of the creation of a joint venture for the manufacture, processing, marketing, and sale of silicon carbide.¹³³

The merging parties claim that the concentration concerned would result in synergies in both the production and processing of SiC. It is impossible to state on the basis of the Decision concerned whether or not the claimed efficiencies would be dynamic, for the relevant allegations are either utterly unsubstantiated or confidential. First, the Decision

¹³⁰ *Id.*

¹³¹ *i.e.*, a considerable gap with the market share of the next largest competitor

¹³² *Id.* at point 114.

¹³³ SEPR is a French company that is active in the manufacture of fused-cast refractory products and handles the worldwide activities of Saint-Gobain's industrial ceramics division. The French Compagnie de Saint-Gobain SA (hereinafter "Saint-Gobain") is SEPR's ultimate parent company. ESK incorporates the material business unit of the German chemicals group Wacker-Chemie GmbH (hereinafter "Wacker Chemie"), and also operates in the manufacture and sale of silicones, polymers, hyper-pure silicon-based semiconductors, and poly-silicon. NOM is an investment and development company that offers advisory and financing services to entrepreneurs in the northern provinces of the Netherlands.

concerned contains no information about synergies in the area of the processing of SiC.¹³⁴ Second, with respect to the alleged synergies in the production of SiC, the Commission only mentions an indicative list of the means whereby those efficiencies would be attained, and this part of the Decision is confidential.¹³⁵ Hence, this Decision is qualified as relevant to the scope of our paper solely on the basis of a purely formal criterion : the Commission's analysis of the efficiencies concerned is entitled "Economic and Technological Progress".¹³⁶

The Commission does not contest that some synergies are achievable, however, it rejects the efficiency claims, since, in its appraisal, there is no mechanism whereby the benefits of the synergies could be passed on to the consumers, and the possibility of a merger-related price increase of SiC would outweigh the potential synergies. This estimation is not substantiated,¹³⁷ which adds to the lack of substantiation of the claimed efficiencies by the merging parties.

Furthermore, as regards research and development, the Commission points out that, generally, such activities are of minor significance in the production and processing of SiC for abrasive applications, and indicates the part of the parties' annual turnover invested in research and development.¹³⁸ This general observation is contrasted with the important role of R&D in the downstream production of abrasive end-products, where there is a steady flow of new products and product varieties.¹³⁹ The Commission also adds that "considering the size of the competitors remaining after the operation, it seems clear that the parties will be the technological leader in the production of SiC grains for abrasive applications",¹⁴⁰ however, it does not draw any meaningful conclusions therefrom and does not determine the impact of this evaluation on the competitive appraisal in this Case.

Finally, the Commission refers to intangible assets, such as patents, know-how, and trademarks, when examining the full-function character of the notified joint venture.¹⁴¹

¹³⁴ Case No IV/M.774-Saint-Gobain/Wacker-Chemie/NOM, at point 244.

¹³⁵ *Id.* The only public information is that (1) the main synergies relate to the Delfzijl plant, which is structurally disadvantaged compared to those of the merging parties' competitors, and that (2) the parties expect significant efficiencies and cost savings from a restructuring and streamlining of the production process in the Delfzijl plant by integrating it into the European SiC operations of Saint-Gobain (*Id.*, at point 245 and at note 83).

¹³⁶ *Id.*, see E. "Economic and Technological Progress", at points 244-246.

¹³⁷ The Commission confuses the alleged causes and consequences (which, in any case, are not rigorously demonstrated). First, on the basis of the preceding evaluation of the merger-related price increase of SiC, the Commission concludes that the global effect of the concentration in question would be harmful. Subsequently, it states that "In assessing the potential efficiencies of the merger, therefore, it is important also to take into account the competitiveness of the down-stream EU producers of abrasive and refractory products. Since these producers have a much higher level of employment and value added than the SiC production itself, the overall effect of the operation would be likely to be more harmful than beneficial." (*Id.*, at point 246).

¹³⁸ *Id.*, at point 173.

¹³⁹ *Id.*, at point 174. The Commission also points to potential dynamic synergies : "A supplier of SiC abrasive grains can profit from the knowledge he acquires on the market for abrasive end-products, because it enables him to adapt his production of abrasive minerals more easily to the developments on the downstream market." (*Id.*). However, this evaluation is not substantiated in any way.

¹⁴⁰ *Id.*, at point 173. See also *id.*, at point 174.

¹⁴¹ *Id.*, at point 12. Full-function joint venture : *enterprise commune concentrative/de plein exercice, Gemeinschaftsunternehmen* [See Commission notice on the concept of full-function joint ventures under Council Regulation No 4064/89 on the control of concentrations between undertakings, Official Journal C 66, 02.03.1998, p. 7]. A full-function (concentrative) joint venture was meant as an undertaking that fulfilled in a

4. Case No COMP/M.1630-Air Liquide/BOC of 18 January 2000

The concentration consists in the acquisition of control, by Air Liquide S.A. (hereinafter “Air Liquide”), the world’s largest producer and distributor of industrial gases (in terms of turnover), of parts of the undertaking BOC Group plc (hereinafter “BOC”), the world’s second largest producer and distributor of industrial gases. The transaction is to be implemented jointly with the undertaking Air Products and Chemicals Inc. (hereinafter “Air Products”) : the assets of BOC will be divided between Air Liquide and Air Products.

a. Role of technology and technological change

In the tonnage sector, one of the relevant markets, technology is an important means to differentiate oneself from competitors, and production technology (process technology) is a key competitive parameter.¹⁴² Due to capital-intensity of the supply of industrial gases using large on-site facilities, advanced process technology can offer a cost advantage to a supplier (for instance, in terms of power consumption, reduced emissions, and capital expenditure).¹⁴³

Similarly, according to the market players operating in the bulk and cylinder gases markets, technology is one of the main drivers of competition in these markets “given that the products are largely homogenous and new customers can be acquired by offering new or more economical application solutions, thereby reducing the customer’s costs and increasing productivity.”¹⁴⁴ Also, an entrant’s ability to compete on applications technology by offering low prices is crucial in order to build upon customer base.¹⁴⁵

durable manner all the functions of an autonomous economic entity and did not entail coordination of competitive behaviour between the founding undertakings or between the founding undertakings and the joint venture (Article 3§2 of Regulation No 4064/89). As set out by the Commission in the Notice concerned, a joint venture had to possess all the necessary resources in terms of financing, personnel, and assets in order to be recognized as the one that exercises an economic activity in a durable fashion. Another criterion utilized by the Commission so as to appraise whether or not a joint venture constituted an autonomous economic entity was the extent of its powers of decision on its strategy, R&D, and commercial policy. *A contrario*, a joint venture was not concentrative, and as such was not governed by the rules established in the former ECMR, if it was in charge of only one specific function within the economic activities of the founding undertakings, such as R&D (see, for example, *Asahi/Saint Gobain*, Decision of 16 December 1994, OJCE L.354, 31.12.1994, p. 87). In practice, more often than not the distinction between the two types of joint ventures was difficult to apply. It was, therefore, essential that a reform simplifies the treatment of full-function joint ventures. As a result of the reform of 1st March 1998 (Council Regulation EC, No 1310/97 of 30 June 1997, amending Regulation No 4064/89 on the control of concentrations between undertakings, Official Journal L 180, 09.07.1997, p. 0001/0006), the above-mentioned distinction was not any more appropriate to determine whether or not a joint venture constituted a concentration within the meaning of the Merger Regulation. The latter was applied to all full-function joint ventures (that is, those that fulfilled in a durable manner all the functions of an autonomous economic entity) of Community dimension. However, the reform abandoned the distinction between cooperative and full-function joint ventures only in relation to the criterion determining the obligation of notification ; by contrast, it was maintained in Article 2&4 of the Merger Regulation.

¹⁴² Case No COMP/M.1630-Air Liquide/BOC of 18 January 2000, at point 92.

¹⁴³ *Id.*

¹⁴⁴ *Id.* at point 217.

¹⁴⁵ *See id.*

Finally, with respect to electronic specialty gases, the Commission notes that the technological competence of the leading suppliers confers them an important advantage.¹⁴⁶ Interestingly, the Commission also points to the ability to make *continuous* innovations : “[Air Products has confirmed that BOC is very competitive with respect to smaller plants in the 150-350 tpd range.] Even though cryogenic production technology used for large on-site plants may not change fundamentally in the near future, the ability to make and implement continuous improvements is an important asset.”¹⁴⁷

b. Effects of the concentration

1. Allocation of BOC’s intellectual property between Air Liquide and Air Products

The Commission recognizes a specific character of the operation in question, since the latter involves two competitors that make a bid in order to acquire parts of another competitor. From a competition perspective, this bid is problematic, as “in order to be able to bid for, and subsequently split up BOC, both Air Liquide and Air Products may have to acquire extensive knowledge of BOC’s activities and have extensive contact with each other. This may endanger the confidentiality of information relating to each other’s operations, and thus effective competition between the companies.”¹⁴⁸ As a result of the concentration concerned, the intellectual property (IP) of BOC would be shared by Air Liquide and Air Products on equal terms ; the Commission understands IP in this Decision as “patents, patent applications, technology, know-how (including operational know-how), trade secrets, copyrights, software, trademarks, trade names and other intellectual property owned by BOC or its affiliates.”¹⁴⁹ Consequently, the Commission estimates that the operation concerned would create important structural links between Air Liquide and Air Products.¹⁵⁰

2. Position of the merging parties prior to the transaction

The Commission thoroughly analyzes the market position of Air Liquide and BOC prior to the concentration concerned. We present beneath a synopsis of the Commission’s observations that are relevant to the scope of our paper. First of all, according to the Commission, Air Liquide has leading technological expertise, allowing it to enter foreign markets more effectively, and a leading position with respect to application technologies in the bulk and cylinder gases markets.¹⁵¹ BOC enjoys significant technical knowledge and advanced technologies, which it often developed together with customers, as well as a wide range of patents, trademarks, and know-how relating to both process and application technologies.¹⁵²

The Commission examines the R&D potential of Air Liquide and BOC in terms of budget and the number of researchers, research centers, on-going worldwide R&D cooperation agreements with third parties, international cooperation agreements with

¹⁴⁶ *See id.* at points 280-289.

¹⁴⁷ *Id.* at point 94.

¹⁴⁸ *Id.* at point 234. *See also id.* at point 293.

¹⁴⁹ *Id.* at point 229. As to the allocation of BOC’s IP, *see, in particular, id.* at points 223, 227, 293-294.

¹⁵⁰ *Id.* at points 235-243 [confidential] and 270-272 [confidential].

¹⁵¹ *Id.* at point 217.

¹⁵² *Id.* at point 225 in conjunction with points 226, 228.

universities, as well as inventions and patent applications.¹⁵³ It evaluates this potential as considerable.¹⁵⁴

As regards technological competence, the Commission points out that both Air Liquide and BOC : a) have comprehensive state-of-the-art plant construction technology and engineering know-how, b) are leaders, for instance, in the production of high-purity gases for the electronics industry, c) belong to the group of the four industrial gases companies considered by industry analysts to be leading in terms of the capability to plan, manage, and execute large on-site projects, which is at least as important as a broad portfolio of technologies, d) have leading non-cryogenic production technology.¹⁵⁵ The Commission also notes that as a result of its R&D results, BOC's production costs have significantly diminished.¹⁵⁶

3. Competitive effects of the operation

The concentration concerned leads to the combination of technologies, R&D capabilities, and know-how by the world's leading suppliers.¹⁵⁷ As a consequence, the new entity would be a leader in many areas¹⁵⁸ and best placed among its competitors to serve customers in key industries, such as the electronics industry, in which high-volume contracts can be won (note that Air Liquide, Air Products, and BOC are leading competitors in the technology for electronic specialty gases).¹⁵⁹ From this perspective, the concentration concerned would pose competition problems in the market for electronic specialty gases and the tonnage market.

As regards the former, in accordance with its constant decisional practice, the Commission estimates that the combination of leading technologies resulting from the operation concerned would eliminate effective competition between Air Liquide and Air Products,¹⁶⁰ and that the high combined market share, global presence, and leadership in technology are elements constitutive of a dominant position held jointly by Air Liquide/BOC and Air Products.¹⁶¹

As to the tonnage market, aside from the combination of technologies, the concentration concerned would entail the following consequences : 1) it would remove the competitive potential of a large and competent industrial gases company, 2) it would significantly increase Air Liquide's market share, creating by far the largest tonnage supplier and enhancing its lead over the competitors (in terms of market parts), 3) the new entity could use as leverage its stronger regional presence throughout Europe in competing for new contracts, 4) the merged entity would be able to rely on additional strengths that are not available to its competitors, 5) the new entity would have a larger size, which implies that : a) it would be better positioned to compete in a capital-intensive market that requires large

¹⁵³ As regards BOC, the Commission does not refer to international cooperation agreements with universities, inventions, and patent applications.

¹⁵⁴ *Id.* at point 93 [confidential].

¹⁵⁵ *Id.* at points 94-97.

¹⁵⁶ *For more details, see id.* at point 226.

¹⁵⁷ *See, e.g., id.* at point 150.

¹⁵⁸ *See id.* at point 288.

¹⁵⁹ *Id.* at point 97. *See also id.* at points 288-289.

¹⁶⁰ *See id.* at points 280-289.

¹⁶¹ *Id.* at point 294.

investments, b) its size, which is larger than that of most of its competitors, would discourage vigorous competition.¹⁶²

The concentration concerned is authorized subject to commitments. The Commission's analysis in this case reflects its "classic" logic of its economic reasoning, which tends to be concerned with the loss of competition between market leaders, the leveraging capabilities of global market players, as well as relative competitive advantages. One of the most alarming aspects of the Commission's examination is its excessive concern with size-related effects. As above-mentioned, the Commission has gone so far as to assert that the larger size of the new entity would *per se* deter vigorous competition. On the other hand, the Commission's analysis does not put enough weight on the effects arising from the combination of the leading and competing technologies in spite of the fact that the concentration in question is exceptional as it involves three major competitors, which are innovative world leaders. The questions related to the loss of rivalry between global competitors and the combination of their amazing technological capabilities are the critical aspect of the concentration concerned ; however, the Commission focuses rather on the effects of the operation that are of secondary importance (such as size, global presence, market parts, etc.) in highly dynamic markets and identifies potential competition problems where there is a actually a potential source of efficiencies (*i.e.* a larger size in a capital intensive market).

5. Case No COMP/M.2547-Bayer/Aventis Crop Science of 17 April 2002

Bayer AG (hereinafter "Bayer") submitted to the Commission a notification expressing its interest in acquiring all the shares in the agrochemical business Aventis Crop Science Holding S.A. (hereinafter "ACS" or "Aventis"). The former is active worldwide in healthcare, agricultural business, polymers, and chemical business. ACS, which results from the combination of AgrEvo (the former Hoechst/Schering joint venture) and the Rhône-Poulenc agriculture division, operates in the areas of crop protection, seeds, as well as environmental and biosciences business.

a. Notion of innovation, R&D competition, and market entry

In the Commission's estimation, the dynamics of the agrochemicals industry results largely from R&D and market access [entry].¹⁶³ In particular, the Commission draws attention to the long and costly R&D and registration process in the agricultural crop protection industry (especially as regards combination products).¹⁶⁴ Moreover, it points out that, according to the merging parties, the markets for agricultural products are characterized by intense R&D activity, which results in new products being launched onto the market in quick

¹⁶² *Id.* at point 150.

¹⁶³ Case No COMP/M.2547-Bayer/Aventis Crop Science of 17 April 2002, at point 151.

¹⁶⁴ According to the Commission, "the costs of R&D of a new product and registration programs vary widely, but for innovative products, the cost can exceed EUR 100 million and the total time can exceed 10 years. Once a product is introduced in the market, several years are often required to gain customer acceptance through demonstrated safety, performance and reliability over a variety of weather conditions." (*Id.* at point 15). As to the combination of products, *see id.* at point 121.

succession.¹⁶⁵ Indeed, R&D expenses of large agrochemical companies (like the merging parties) account for a considerable proportion of the total costs.¹⁶⁶ Third parties indicate, however, that many of the new product launches are actually new formulations or combinations of existing active ingredients rather than new active ingredients,¹⁶⁷ and the Commission does not contest this observation. Also, due to a ten-year R&D process and the total number of pipeline products under development for the EEA insecticides markets, the Commission explicitly rejects the allegations about the launching of new products in quick succession.¹⁶⁸ Nonetheless, the Commission does recognize that “in crop protection industry, new product launches are the primary driver of market share growth. The more money a company can afford to invest in R&D, the more new molecules it will discover and can afford to bring to market.”¹⁶⁹

In addition, the Commission mentions R&D competition when examining adulticides and combination products as well as seed treatment. As regards the market for adulticides and combination products, the Commission states that “in such a market competition takes place mainly at the R&D and promotional level. Consumers are not price sensitive. Their choice depends on the effectiveness of the product and on the notoriety of the brand.”¹⁷⁰ As to seed treatment, the merging parties claim that the existence of only a few market players does not enable manufacturers with sufficient market power to raise prices and foreclose competition due to the fact that (1) the purchasers are sophisticated customers with significant buyer power, and that (2) strong competition can be expected from generic suppliers and from large competitors with the R&D capabilities and economic strength that are sufficient to enter the European market and/or to expand market share if one of the leading suppliers on those markets attempts to raise prices.¹⁷¹

The Commission also points to the relationship between the effectiveness of new products and the successfulness of market entry, thereby recognizing that firm entry is a reliable engine for an efficient allocation of resources in the markets considered : producing a more effective product permits gaining a considerable market share, which is lost by competitors that are less successful in terms of valuable innovation output.¹⁷²

The Commission estimates, however, that in markets subject to intensive R&D, market entry by means of innovative products is extremely difficult and resource-intensive,

¹⁶⁵ *Id.* at point 148.

¹⁶⁶ *Id.* at point 1007.

¹⁶⁷ *Id.* at point 150. *Compare with id.* at points 176, 187, in which the Commission refers to the combination of off-patent products with proprietary products. Such a mixture under patent protection creates the “second life” for off-patent products and is intended to fend off generic competition. This question has also been raised in Case No COMP/M.1806-Astra Zeneca/Novartis of 26 July 2000.

¹⁶⁸ *Id.* at point 149. It is unclear why the Commission partially draws a general conclusion on the markets for agricultural products on the basis of the argument concerning only the EEA insecticides markets, which form only a part of all the markets for agricultural products.

¹⁶⁹ *Id.* at point 16.

¹⁷⁰ *Id.* at point 1036. *See also id.* at point 1037 *in fine*.

¹⁷¹ *Id.* at point 805.

¹⁷² “New products can successfully enter the market and achieve a reasonable market share only if their active ingredient produces more effective results against parasites than the active ingredient of existing products, if their level of toxicity is acceptable, if their administration to the pet appears easy and safe from a pet owner point of view, and if the brand is well promoted to the public.” Even more, the Commission admits that “Bayer and Merial have gained a strong position on the adulticide and combination product market precisely because their products Advantage and Frontline met all these conditions. If Frontline has been more successful than Advantage in most national markets that is because, besides combating adult fleas, Frontline is also effective against ticks.” (*Id.* at point 1037).

and can solely occur in the long run (due to the length of time and costs involved in the development of effective and competitive substances).¹⁷³ As a consequence, “Only R&D based firms seem to have the capabilities and sufficient economic strength to conduct these activities and enter the various European product and geographic markets and/or to expand sales and market share.”¹⁷⁴ Apart from R&D barriers, other entry barriers include the need to build a brand, to educate the sales forces, and to establish solid relationships with veterinarians.¹⁷⁵

b. Effects of the concentration in terms of R&D

In the Decision concerned, the Commission recognizes that, in its decisional practice, it has often seen reasons for concern in the grouping of companies with strengths in R&D and innovation.¹⁷⁶ As regards the effects of the concentration in question, the Commission advances two major arguments : 1) the parties’ R&D capabilities and incentives have to be taken into account with respect to the potential elimination of future competition in *the current and future product markets*, 2) it may be indispensable to focus on the effects of the concentration on R&D competition between the parties and the overall R&D potential.¹⁷⁷ In particular, third parties argue that the combination of the merging parties’ R&D activities would strengthen the competitive position of the new entity in the market for insecticides.¹⁷⁸

First, the Commission evaluates the relative R&D capabilities of the new entity, as measured by its R&D budget.¹⁷⁹ These capabilities will be one of the most significant in the industry : similar to those of Syngenta and twice as those of BASF and DuPont. Second, the R&D strength is important especially due to a “virtuous circle” of finance and innovation : as above-mentioned, the more a company can invest in R&D, the more new molecules it will discover and bring to market, and the more molecules it produces, the more financial resources it will have.¹⁸⁰ Third, when examining R&D competition, the Commission also takes into account relative actual and potential innovations in the insecticides market.¹⁸¹ It concludes that in view of the foregoing and given the parties’ successful insecticides pipeline, the new entity will be one of the few leaders to launch new compounds onto the market concerned.¹⁸² Subsequently, the Commission adds that generic competition is not a countervailing factor.¹⁸³ The Commission has legitimately raised those innovation concerns, however, it has not proceeded to a proper examination thereof. The Commission’s analysis circumvents the major innovation issues in this Case, and is like an unfinished novel, put aside by the author before it reaches its climax.

¹⁷³ *Id.* at point 15. *See also id.* at points 172, 536. *Compare with id.* at point 151.

¹⁷⁴ *Id.* at point 15.

¹⁷⁵ *Id.* at point 1031.

¹⁷⁶ *Id.* at point 19.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.* at point 122. For the whole assessment of competitive effects related to the parties’ portfolio of new chemistries, *see id.* at points 119-126.

¹⁷⁹ *Id.* at point 16.

¹⁸⁰ *Id.*

¹⁸¹ “Bayer and Aventis have together introduced 39 new pest control products since 1980, compared to 38 introduced by Syngenta. The parties have currently 13 products under development while Syngenta and BASF have 8 products each. All the other competitors have 3 or less products under development.” (*Id.* at point 151). As regards the analysis of R&D competition, a structural interpretation of the Decision concerned requires including also the estimation of relative financial R&D capabilities of the merging parties (see the introduction to part IV, “Competitive assessment”), and not only relative R&D capabilities in terms of new product launches.

¹⁸² *Id.* at point 153.

¹⁸³ *See id.* at points 157-165.

Finally, in the part dedicated to the market for the Non-Agricultural Crop Protection Agents for Home and Garden (NACPAHG), the Commission points out that the merging parties' R&D facilities are likely to be merged to a very large extent, in order to increase profits and share know-how.¹⁸⁴ *As a consequence*, it examines (1) to what extent the proposed acquisition would make it difficult to distinguish Bayer's new developments from ACS' (thus measure the loss of innovation competition between the merging parties), and (2) whether the two major players would, to some extent, base their future products on the same R&D, which could diminish competition between them.¹⁸⁵ The Commission enigmatically concludes that the concentration in question will not create nor strengthen a dominant position in the market concerned as the R&D agreement between Bayer and Scotts¹⁸⁶ will not create a situation in which future competition would be eliminated.

6. Case No COMP/M.2972-DSM/Roche Vitamins of 23 July 2003

As a result of the transaction concerned, DSM N.V. (hereinafter "DSM") would acquire control of Roche Vitamins and Fine Chemicals Division (hereinafter "RV&FC"), belonging to the Roche group.¹⁸⁷ In this Case, the Commission has delimited two distinct reference markets : the one for NSP degrading enzymes, and the one for phytase. The Decision concerned does not examine any dynamic efficiency gains, nevertheless, the questions of R&D, IPR, and a decrease in innovation allegedly resulting from the concentration concerned play an important role in the competitive analysis of the market for phytase. Therefore, we limit our analysis to the latter.

a. General remarks

At the heart of competitive concerns in the Decision considered, there are two pre-merger alliances : the DSM-BASF Co-operation Alliance and the RV&FC-Novozymes Alliance. The DSM-BASF Agreement (1994), which comes to an end in 2009, stipulates that : 1) DSM is obliged to supply the specified feed enzymes exclusively to BASF while BASF is obliged to purchase the feed enzymes from DSM, 2) the final decision on pricing is taken by BASF ; however, both parties are authorized to inspect each other's accounts and to discuss detailed annual plans, including matters such as pricing, costs, and production volumes with respect to the alliance, 3) the research work constitutes the exclusive property of the party which performs the research (DSM) ; nonetheless, the performing party is *required* to grant a royalty-free license to use, produce, and sell such results at the request of the other party.¹⁸⁸

¹⁸⁴ *Id.* at point 1007.

¹⁸⁵ *Id.*

¹⁸⁶ *See id.* at points 1003-04.

¹⁸⁷ DSM, which is incorporated in the Netherlands, operates worldwide in the development and production of a broad range of chemical and life science products. The Roche group consists of three divisions : pharmaceuticals, diagnostics, vitamins and fine chemicals. RV&FC is mainly active in the production and sale of vitamins and carotenoids, in addition to the distribution of feed enzymes, certain vitamins, and amino acids (*For more details, see Case No COMP/M.2972-DSM/Roche Vitamins of 23 July 2003, at points 7-9*).

¹⁸⁸ *Id.*, at points 52-53.

The Commission reaches the conclusion that BASF depends on DSM for its feed enzyme activities.¹⁸⁹

As regards the (non-exclusive) RV&FC and Novozymes Alliance Agreement (1996, 2001), the Commission indicates the domains in which Novozyme will be dependent on its partner for its feed enzyme activities¹⁹⁰ (without determining, as it should have, in what this dependence consists).¹⁹¹ In accordance with this agreement, prices are exclusively determined by RV&FC,¹⁹² and Novozymes is primarily responsible for process research, product development, and production while RV&FC is responsible for new product application, registration, marketing, and sales.¹⁹³ Data on the cost and benefits sharing are confidential.

b. Effects of the concentration on innovation

The Commission estimates that the concentration between DSM and RV&FC will create a structural link between the DSM/BASF and the RV&FC/Novozymes alliances, leading to overlaps at the level of production and distribution.¹⁹⁴ The transaction will place DSM in a unique position through its presence at the centre of both alliances, and post-merger DSM will have the ability and incentives to exercise unilateral effects on the market for phytase : -by increasing phytase prices, and -by reducing R&D and innovation of both alliances.¹⁹⁵

The Commission identifies two sources of competition concerns that are likely to arise from the notified concentration. First, at the heart of both alliances, DSM will be in a position to weaken one or both of its partners, Novozymes and BASF, by pursuing one of the following strategies : 1) via its link with RV&FC, which determines the prices in the RV&FC/Novozymes alliance, DSM would have access to the prices of this alliance, thus would be able to increase the price of the RV&FC/Novozymes' products in order to promote the DSM/BASF cooperation ; 2) pre-concentration, DSM may influence (but not determine) the prices of the DSM/BASF alliance and performs R&D ; post-concentration, DSM's incentives to innovate for RV&FC's competitor, BASF, would be reduced if DSM decided to concentrate its efforts on the RV&FC/Novozymes alliance.¹⁹⁶ Second, the combination of the two alliances leads to very high market shares and eliminates "historical competition" between both alliances, to which the Commission attributes the decline in prices of phytase since 1994.¹⁹⁷

The Commission concludes that the strong positions held by the four companies, the high degree of interdependence between the parties to the alliances, and the absence of a credible competitive counterweight in the short- to medium-term raise serious concerns as to

¹⁸⁹ *Id.* at point 54.

¹⁹⁰ *See id.* at point 57.

¹⁹¹ The Commission does indicate a source of this dependence : the fact that both agreements cover both phytase and NSP degrading enzymes (*see id.* at point 59). It commits thereby an error *ignotum per ignotum*. Therefore, it must be considered that the Commission does not substantiate this conclusion.

¹⁹² *Id.* at point 56.

¹⁹³ *Id.* at point 55.

¹⁹⁴ *Id.* at point 60.

¹⁹⁵ *Id.* at points 65-66.

¹⁹⁶ *Id.* at point 66.

¹⁹⁷ *Id.* at point 67.

the creation or strengthening of a dominant position on the market for phytase.¹⁹⁸ The transaction in question is authorized subject to commitments.

B. Manufacture of Pharmaceuticals, Medicinal Chemicals, and Botanical Products

Ciba-Geigy AG (hereinafter “Ciba”) and Sandoz AG (hereinafter “Sandoz”) merged in order to form a new enterprise, Novartis AG (hereinafter “Novartis”). Ciba and Sandoz are involved in the research, development, and production of active chemical substances, as well as in the production and marketing of pharmaceutical products. Novartis will be active mainly in the medicinal domain.¹⁹⁹ GTI is Sandoz’ American subsidiary, and performs research work in HS-TK gene therapy. Ciba has a 49,9 % stake in Chiron (California).

The Commission’s analysis encompasses four categories of products : A. “Health-Care Products”, B. “Plant Protection”, C. “Animal Health Products”, and D. “Seeds”. Within the competitive assessment, the Commission examines whether the parties’ R&D projects do not give rise to overlapping on the markets on which one of the parties already has a strong market position.²⁰⁰

The Commission analyzes the role of future markets only in the field of health-care products, and refers more broadly to R&D when examining the other three categories of products. Our review corresponds to the analytical framework adopted by the Commission in the Decision concerned. Abstracting from the assessment of the other factors considered, the Commission’s general conclusions are correct,²⁰¹ however, the analysis of R&D-related concerns is deeply flawed in many aspects.

I. Role of Future Markets in Health-care Products

The Commission takes into account the role of innovations and future markets when defining the reference product *and* geographic markets in the area of health-care products,²⁰² as well as when conducting a competitive analysis.²⁰³ It also presents general characteristics of the markets for pharmaceutical products from a R&D perspective,²⁰⁴ and recognizes the

¹⁹⁸ *Id.* at point 68.

¹⁹⁹ Case No IV/M.737-Ciba-Geigy/Sandoz of 17 July 1996, at point 53. According to the parties, Novartis will be active in the following fields : immunology/inflammation, diseases of the central nervous system, cardiovascular diseases, hormonal and metabolic diseases, cancer, dermatology, and asthma (*Id.*). Ciba is a manufacturer of biological and chemical products in the health, agricultural, and industrial sectors. Sandoz is a producer of biological and chemical products in the health, food, agricultural, and building chemicals sectors.

²⁰⁰ *Id.* at point 68.

²⁰¹ The concentration is authorized subject to commitments. The Commission concludes that the concentration concerned does not create, nor does it reinforce, a dominant position on any of the reference markets, except some of the markets for animal health products, with respect to which commitments were entered into by the merging parties.

²⁰² *Id.* at points 42-46, 51. *See id.* at point 231.

²⁰³ *Id.* at points 95-107.

²⁰⁴ *See id.* at points 54-61. For the treatment of pharmaceutical products in other Decisions, *see* Decision of 10 June 1991, Sanofi/Sterling Drug ; 29 April 1993 Procordia/Herbamond ; 18 April 1994, Rhône-Poulenc/Cooper ; 20 June 1993, La Roche/Syntex ; 19 September 1994, AHP/Cyanamid ; 28 February 1995, Glaxo/Wellcome ; 3

long-term and highly risky nature of innovative activities in these markets²⁰⁵ when describing various development phases of R&D projects.²⁰⁶

In particular, according to the Commission, the length of time necessary for R&D is one of the two main entry barriers into the markets for medicinal products.²⁰⁷ Under patent protection, the development of a parallel product would be both long and expensive (up to 10 years and cost up to ECU 300 million).²⁰⁸ Once patent protection has expired, market entry is less costly for a competitor already active in the pharmaceuticals manufacture.²⁰⁹ In the Commission's appraisal, future market entry is possible for companies which currently have products undergoing R&D.²¹⁰

A. Future markets in market definition

The Commission puts forward some general remarks about future markets in the pharmaceutical industry, and subsequently appraises this question as it emerges *in casu* : in its estimation, future markets should be taken account of in HS-TK gene therapy for the treatment of tumors.²¹¹ It argues that the pharmaceutical products which are not yet on the market, but which are at an advanced stage of development need to be examined so as to fully assess the competitive situation in this industry.²¹² The characteristics and intended therapeutic use of these products constitute the benchmark of evaluation of their competitive potential by the Commission.²¹³ In this respect, the Commission points out that such an assessment must take into account the fact that 1) R&D cannot generally be traded between pharmaceutical companies, but is intended primarily for internal use (the development of a

April 1995, Behringwerke AG/Armour Pharmaceutical Co. ; 22 June 1995, Hoechst/Marion Merrell Dow ; 28 September 1995, Upjohn/Pharmacia (referred to in the Decision concerned, at point 15).

²⁰⁵ Additionally, the nature of innovative activities is referred to within the Commission's analysis concerning future markets (*Id.* at point 42).

²⁰⁶ According to the Commission,

“Phase I marks the start of clinical testing on humans (some 8 to 12 years before the product is marketed). Projects in phase I are claimed to have no more than a 10 % chance of being successful. As a rule, phase I activities are not publicized by the undertakings concerned. Phase II (some 6 to 7 years before the product is marketed) involves working out the proper dose for the patient and defining the areas of application. Here the success rate is said to be 30 %. Phase III (starting 3 to 4 years before the product is marketed) involves establishing the product's effectiveness on larger groups of patients. In phase III, the risks of failure may still amount to over 50 %. Once the clinical testing has been completed, there is the registration phase which as a rule takes at least 1 to 2 years. After registration has been obtained, it takes 6 to 12 months, depending on the Member State, until the price is established and approved and cost reimbursements by social security worked out, whereupon the product can finally be placed on the market.”

Moreover, “The parties point out that, despite GTI's advances, it is still very uncertain whether this form of therapy [the HS-TK gene therapy] will ever be used.” (*Id.* at point 46).

²⁰⁷ *Id.* at point 57. According to the statements made by the pharmaceutical companies questioned.

²⁰⁸ *Id.* at point 59.

²⁰⁹ According to the parties (*Id.*).

²¹⁰ *Id.* at point 58.

²¹¹ *Id.* at points 44-46.

²¹² *Id.* at point 42.

²¹³ *Id.*

company's own active substances and products),²¹⁴ 2) research cooperation takes place between pharmaceutical companies, public and private research institutes, and small biotechnology undertakings, which, despite the relevant know-how, do not have themselves the resources and facilities for the clinical testing, 3) it is indispensable to examine R&D potential in terms of its importance both for existing markets and for future markets, 4) according to some of the parties' competitors, there is a trend towards commissioning firms to carry out R&D.²¹⁵ The Commission reasonably concludes that when evaluating the importance of R&D for future markets, the relevant product market must be defined, by its very nature, in a less clear-cut manner than in the case of existing markets.²¹⁶

In this case, the Commission specifically examines whether HS-TK gene therapy for the treatment of tumors could be regarded as a separate future product market. According to the parties, this therapy is in direct competition with other gene therapies and other processes, such as chemotherapy, immunotherapy, and radiation.²¹⁷ However, the Commission remarks that reference cannot be made solely to a common treatment objective of various therapies, but account must also be taken of different active principles which lead to different degrees of effectiveness and tolerance, which is consistent with the guidelines on the definition of relevant market for the purposes of Community competition law. Concluding, it does not consider it necessary to decide on a precise delimitation of the reference market for the purposes of the Decision concerned,²¹⁸ which is not extraordinary in its decisional practice in the cases in which even the least rigorous definition of the reference market considered would not raise competition concerns.

With respect to the boundaries of the relevant geographic markets in the field of health-care products, the Commission considers the Community as the relevant geographic market for the purposes of the Decision concerned, which implies the necessity of a narrow interpretation of its estimation (*i.e.*, the one that is restrained to the Decision in question). It is also worth noting the Commission's general observations about future markets : (1) future product markets can be considered on the basis of R&D in particular areas, (2) a characteristic of future markets is that no products have yet been registered, (3) as R&D is normally global, future markets should be of Community dimension at least, and possibly worldwide, (4) patents are actually or potentially important, in the sense that : -the geographic coverage of patents may be relevant for the geographic definition of future markets, -in the case of HS-TK gene therapy, patents are separately applied for and granted in the United States and Europe, - patents have considerable influence on the marketing opportunities of the competitors of patent holders, -patent differences may in future lend themselves to different competitive situations inside and outside the Community.²¹⁹ The Commission's specific logic of reasoning behind the assessment of the role of patents in this case, as signaled in the analysis of the geographic reference market, is further developed in its competitive evaluation, as indicated below.

²¹⁴ Some competitors do not consider R&D as a separate market, essentially due to the fact that R&D, at least the one performed by pharmaceutical undertakings, is still carried out predominantly for in-house purposes.

²¹⁵ *Id.* at points 42-43.

²¹⁶ *Id.* at point 44. The Commission specifies that "Market definition can be based on the existing ATC classes only if existing products are to be replaced. Otherwise it must be guided primarily by the indications to which the future products are to be applied. Here, fundamentally different modes of action must be taken into account." (*Id.*).

²¹⁷ For more details, see *id.* at point 44.

²¹⁸ *Id.* at point 45.

²¹⁹ *Id.* at point 51.

B. Future markets in competitive assessment

a. Nature of innovative activities and consequences thereof

Interestingly, the Commission takes into account in the Decision concerned the possibility of the creation or strengthening of a dominant position *on future markets* (and not on the current ones), and concludes that this will not be the case. When conducting an examination in the field of gene therapy for tumors, the Commission is confronted with “classic” innovation concerns. First, the Commission recognizes that “Little can be said with certainty about the time required to achieve results in this area” as “the diseases to be treated are as a rule ones which hitherto could not be adequately treated”.²²⁰ Further, the Commission points out that the R&D market strength of the undertakings is difficult to estimate before the completion of successful R&D, nonetheless, the competitive assessment cannot ignore the undertakings’ existing R&D potential²²¹, since the future competitive strength is based on such potential.²²²

b. Merging parties’ patent strength and consequences thereof

The Commission draws attention to the parties’ R&D competitive strength, notably in biotechnology and genetic engineering, and evaluates it in terms of patents and mostly on the basis of a number of cooperation agreements and stakes in U.S. undertakings and research establishments.²²³ These agreements and holdings ensure the parties exclusive access to a combination of broadly defined patents.²²⁴ As regards HS-TK gene therapy, the Commission points out that, in the case of II/III-phase GTI’s research, patents in the EC have already been applied for whereas Viagen, a subsidiary of Chiron, has research work before phase I.²²⁵

According to the Commission, the combination of patents as a result of the concentration concerned could lead to a partial exclusion of competitors (more precisely, it states that other competitors could be largely excluded from parts of gene therapy for tumors, without specifying, however, what parts of this field it refers to and why it would be the case), and possibly also to market foreclosure, for patent rights may pose considerable entry barriers to competitors on future markets.²²⁶ Not only does the Commission thereby refer to the common negative connotation of the term “entry barrier”, omitting the fact that those in the form of IPR are designed to stimulate innovative activities and reward discoveries and substantial improvements, but also it ignores in this respect high competitive dynamics in the

²²⁰ *Id.* at point 97.

²²¹ *Id.* at point 95.

²²² *Id.*

²²³ *Id.* at point 96. Most notably Sandoz’ stake in GTI and Ciba’s stake in Chiron.

²²⁴ *Id.* at point 96 in conjunction with point 98. The Commission refers to patents covering retroviral HS-TK (herpes simplex thymidine kinase) constructs, retroviral vectors, and methods for the treatment of tumors using such retroviral vectors. “Sandoz in particular seems to be in a strong position in this area through its subsidiary GTI, which is endeavouring to develop gene therapy for brain tumours in the United States. Viagen has patent applications in related areas that could be useful for the development of successful gene therapy for brain tumours.” (*Id.* at point 98).

²²⁵ *Id.* at point 97.

²²⁶ *See id.* at point 99.

industry concerned.²²⁷ Further, as Bill Gates famously said, “IPR has the shelf life of a banana”. Therefore, the Commission’s conclusion is unwarranted.

c. Merging parties’ reply to the competition concerns and Commission’s response

The parties call into question market foreclosure, since the patents granted are highly unlikely to be as broad as the patent applications, and also point out that they have no exclusive access to Chiron’s patents.²²⁸ The Commission replies that *any* combination of the future patent rights of GTI and Viagen could block the development of gene therapies for tumors or other treatment methods by other undertakings,²²⁹ but admits that it is uncertain. While, in accordance with conventional wisdom, the combination of competing IPR is anticompetitive, and this estimation might be not unjustified, research work is sparse in this area. Therefore, it is too early to reach definitive conclusions on this point. Nonetheless, the Commission should have also considered at least financial incentives of the merging parties and their competitors to resign from the development of new technologies.

Moreover, according to the Commission, the merger may place competitors in a substantially worse negotiating position for obtaining a license from GTI or Chiron. If essentially three conditions are fulfilled, this worsening of competitors' negotiating positions *will result* in market dominance, and market foreclosure of the *future* market for HS-TK gene therapies (the parties’ control over competitors' market access through the issue of licenses) *may* also appear.²³⁰ However, instead of unequivocally indicating those conditions, the Commission rather refers to the uncertain market situation : (1) the success of gene therapy as a method of treatment is unsure (which implies, and this may be effectively regarded as a condition, that “the market must be created before any problem can arise”), nevertheless, according to the Commission, phase II/III suggests “sufficient probability to warrant protecting the market in terms of competition”, (2) any obstacle created by the combination of patents may be circumvented by other research results, (3) patents are not yet granted to the parties.²³¹ The Commission examines each “condition” (Decision, points 103-105), and applies the benchmark of “sufficient probability”.²³² In particular, it observes that competitors will, in view of large research expenditure, attempt to find a way of circumventing patents if they cannot obtain any licenses, but the success of it is uncertain.²³³

Lastly, and perhaps most importantly, the Commission estimates that “A key question regarding the creation of any competition problem is whether the parties will obtain patents that may have a blocking effect.”²³⁴ This unfortunate formulation²³⁵ concerns primarily the

²²⁷ By contrast, as regards crop protection products, the Commission recognizes the dynamic character of the markets concerned : “Brand name loyalty is of secondary importance with crop protection products. The selection criterion for a particular product is the effectiveness with which it controls weeds, insects or a given harmful organism. As soon as a more effective product comes onto the market, change quickly occurs, as the market-share fluctuations confirm.” (*Id.* at point 168).

²²⁸ *See id.* at point 100.

²²⁹ *Id.* at point 101. The Commission claims it on the basis of “information deriving from the market”, and does not, although it should have, specify what it understands as such.

²³⁰ *Id.* at points 101-102.

²³¹ *Id.* at point 101, 103.

²³² *Id.* at point 106. *See also* a binding statement on behalf of Novartis, *id.* at point 107.

²³³ *Id.* at point 104.

²³⁴ *Id.* at point 105.

²³⁵ That is, the use of a defining relative clause, which implies that the competition problem concerns (only) patents that have a blocking effect, and not all the patents obtained by the parties, which is manifestly not the case as any patent confers temporary monopoly (a “blocking effect”). Alternatively, the use of this clause may

effects of patent applications attributable to Chiron on GTI's competitors "in their pursuit of a competing product".²³⁶ Note also the Commission's bewildering analysis concerning the market conditions relative to the merging parties' IPR.²³⁷

II. Role of R&D

Unlike part A, dedicated to health-care products (which, contrary to the other parts, refers to future markets), parts B. "Plant Protection", C. "Animal Health products", and D. "Seeds" encompass a section on R&D.

A. Plant Protection (Crop Protection Products)²³⁸

a. Nature of innovative activities and effects of innovations

The Commission points to the R&D activities of suppliers in all the sectors of plant protection (fungicides, herbicides, and insecticides) and their large R&D potential (in terms of R&D intensity : 10% of the annual turnover and more), as well as to the effects of innovations on these markets : "In suitably quick succession, new products come onto the market which supersede their predecessors. A strong market position today is therefore no guarantee at all of a strong position in the future."²³⁹ Moreover, the Commission observes that according to the suppliers of crop protection products, large capacities are no guarantee of the success of R&D projects.²⁴⁰ Nonetheless, firm size is not neutral in the Commission's estimation as it recognizes the necessity of achieving the critical size for effective R&D activity.²⁴¹

Furthermore, the Commission refers to inter-market spillovers. In this respect, market participants present ambiguous claims : on the one hand, they affirm that "market entry into a

imply that the Commission refers to those patents that are likely to result in market foreclosure (then, the latter could constitute a "blocking effect"). Either meaning does not seem to make much economic sense. Of course, the Commission might have committed a formal error by using the defining relative clause instead of a non-defining one.

²³⁶ Case Ciba-Geigy/Sandoz, *supra* note 200, at point 105.

²³⁷ According to the Commission,

"(1) the parties must assert their patent claims on the basis of a specification that includes areas of HS-TK gene therapy for tumours. This precondition is solely in the hands of the parties. To this extent, the proposed merger may pose an **increased structural danger of market foreclosure.**,

(2) the actual granting of such patents, and this is not in the hands of the parties. The patent applications could of course exert some disruptive effect. Undertakings wishing to market a HS-TK gene therapy for tumours would have to bear in mind that patents having a broad specification might possibly be granted. They are therefore confronted with the question of whether they should carry out investment in this area at all and whether they would have seek a way of getting round any patent. Viewed in abstract terms, this could pose an obstacle to competitors wishing to gain market access. However, this alone is **not sufficient to conclude that the parties would have a dominant position on this market.**" (*Id.*) [Highlight added].

²³⁸ The analysis pertains to part B. "Plant Protection, 3. Competitive assessment, (b) Fungicides, herbicides and insecticides, (4) Research and development".

²³⁹ *Id.* at point 170.

²⁴⁰ *Id.* at point 171.

²⁴¹ *Id.*

different field (e.g., fungicides) is hardly any easier for competitors who were hitherto active in one or two fields (e.g. herbicides) than for complete newcomers. At best, there are synergies in sales and marketing, but these scarcely exist in the most important sphere, R & D.”²⁴²; on the other hand, they recognize certain knowledge spillovers : good knowledge of maize herbicides may facilitate entry into, for example, the market for cereals herbicides.²⁴³ The Commission does not settle this question.

b. Merging parties’ R&D position

The Commission examines Novartis’ relative position (in terms of turnover, R&D capacities, probable research output) and R&D effects arising from the concentration concerned.²⁴⁴ These effects are linked to merger-related R&D synergies and economies of scale : according to the Commission, [As a result of these efficiencies] “Novartis will succeed in keeping its research expenditure lower in relative terms than that of its competitors. If the R&D intensity to date is maintained, the economies of scale just described will lead to an additional strengthening of Novartis’s R&D potential.”²⁴⁵

The approach of the Commission to R&D synergies is laconic and unclear *in casu*. Namely, competitors indicate that the parties will obtain synergies by pooling together active substances in certain markets, which will result in bringing quickly new and efficient products onto the market.²⁴⁶ The Commission replies that (1) through *future* R&D cooperation, synergies are already being achieved *today* to some extent ; consequently, the strengthening of the parties’ position will be rather small after the concentration in question,²⁴⁷ (2) synergies may result from Ciba’s strong position in crop protection and Sandoz’ in seed treatment, leading to an overall stronger market position of the parties,²⁴⁸ (3) according to market participants, no competitive advantages have so far resulted from simultaneous activity in seeds and crop protection.²⁴⁹ The Commission attempts to take a position as to the attainment of synergies, however, its analysis of the alleged conflict of interests between the crop protection and seed treatment divisions and the global evaluation of synergies are ambiguous.²⁵⁰

Nonetheless, the Commission clearly concludes that Novartis will maintain, and possibly extend, the position as market leader,²⁵¹ and that all the competitors have the critical size necessary for effective R&D activity. Further, in its estimation, this competitive situation shows that patent rights in the reference markets will not create a dominant position.²⁵² This economically irrational statement implies *a contrario* that in a different competitive situation patent rights (even the same patent rights, which will expire in a very short time horizon -

²⁴² Compare with *id.* at points 58-59.

²⁴³ *Id.* at point 164.

²⁴⁴ See *id.* at points 171-72.

²⁴⁵ *Id.* at point 171.

²⁴⁶ *Id.* at point 172.

²⁴⁷ *Id.*

²⁴⁸ *Id.* at point 173. The Commission specifies a potential source of synergies : “Knowledge of the fungicide and insecticide effects of microorganisms and the genes which trigger such effects, and of the biotechnological methods of introducing genes, can be applied both to seeds and to crop protection.” (*Id.*).

²⁴⁹ *Id.*

²⁵⁰ See *id.* at point 174.

²⁵¹ Novartis will be created as a result of the transaction concerned ; therefore, the Commission must refer in this statement to the notifying parties.

²⁵² Case Ciba-Geigy/Sandoz, *supra* note 200, at point 175.

after 2000 at the latest) may create a dominant position.²⁵³ Finally, the Decision also refers to the role of competition from older products²⁵⁴ in the case of potential price rises.²⁵⁵

The Commission concludes that despite the fact that the parties enjoy very high market shares and leadership in some markets (which is likely to remain so owing to their strong R&D position), the dynamic character of the markets,²⁵⁶ a large number of competitors in all the markets concerned and their significant R&D capacities, the price-disciplining effect of generic products, as well as buyers' countervailing power indicate that the operation does not pose competition problems within the meaning of the Merger Regulation.²⁵⁷

B. Animal Health Products²⁵⁸ : Markets for Stable-fly Control

As regards the nature of innovative activities, the Commission only points to a critical mass required for successful R&D activities in this sector, and to the fact that all the major competitors have developed new active substances in recent years.²⁵⁹

According to the Commission, the assessment of the effects of the parties' R&D potential on future competitive relationships must be placed in a broader framework than the relevant markets considered due to overlaps with other reference markets.²⁶⁰ This estimation reflects the fact that synergies may arise from the activities in health care and plant protection on the one hand and the activities in animal health on the other hand.²⁶¹ The Commission observes in this respect that "such substances are to a large extent obtained from external sources (universities or other companies). In addition, such synergies are in most cases also achieved by the abovementioned competitors."²⁶² Its appraisal of these efficiencies is only restrained to this statement, whose impact on its overall competitive evaluation is unclear.

Moreover, the Commission observes that the parties derive advantages from the size of their R&D divisions [note that they make, nonetheless, R&D investments corresponding to the sector average].²⁶³ However, it does not draw any conclusion therefrom.

As regards specifically the markets for stable-fly control, the Commission concludes that despite the parties' market shares of over 40-50% and market leadership, other factors

²⁵³ The Commission understands that as a dominant position of a kind that is prohibited by the Merger Regulation.

²⁵⁴ More precisely, competitive pressure exercised by older products whose patents have expired on newer and patented products.

²⁵⁵ Case Ciba-Geigy/Sandoz, *supra* note 200, at point 175.

²⁵⁶ We qualify as such the following elements of its appraisal : the significant market share fluctuations over time, the large number of product launches completed and expected in the future, the entries to and exits from all the markets concerned (*Id.* at point 176).

²⁵⁷ *Id.*

²⁵⁸ The analysis pertains to part C. "Animal Health Products, 1. Animal health products except small animal ectoparasiticides, (c) Competitive assessment, (d) Research and development".

²⁵⁹ *Id.* at point 220 in conjunction with point 222.

²⁶⁰ *Id.* at point 219.

²⁶¹ *Id.* at point 221. The Commission specifies a potential source of synergies : "Research in the animal health sector uses substances from plant protection research and, to a lesser extent, from research into health care in order to test their suitability for combating animal diseases or insects." (*Id.*).

²⁶² *Id.*

²⁶³ *Id.* at point 220 in conjunction with point 222.

such as the dynamic character of these markets,²⁶⁴ the relatively small market share additions, actual competition (the presence of at least one strong competitor in all instances, a large number of smaller competitors, and the presence of competitors that are strong in R&D),²⁶⁵ as well as buyers' countervailing power show that the operation does not pose competition problems within the meaning of the Merger Regulation.²⁶⁶

C. Seeds²⁶⁷

In the case of the markets for seeds, the Commission frequently refers to the nature of innovative activities and other innovation-related concerns and effects, such as the necessity to attain a critical size for R&D, notably in view of the emergence of a new sector - molecular biotechnology (*complementary* to the "old sector" - traditional biotechnologies).²⁶⁸ In particular, it notes that the parties devote as much as 10% of their turnover to R&D,²⁶⁹ which is characteristic of highly dynamic markets. According to competitors, additional R&D investments must be made in the new sector, and the costs are easier to bear for large structures.²⁷⁰ The Commission also observes that the introduction of new seeds leads to average return increases by about 1% per year, and that new techniques will probably enable new firms to enter the market.²⁷¹ Interestingly, despite high investments and R&D cooperation between seed suppliers, the Commission claims that the most important innovation was introduced in the twenties.²⁷²

As above-mentioned, the Commission estimates that Sandoz' generally strong position in the field of seed treatment and Ciba's in the field of plant protection will probably engender R&D synergies.²⁷³ However, according to competitors, no competitive advantages have so far resulted from simultaneous activity in seeds and crop protection.²⁷⁴ The Commission does not reach any conclusions in this respect.

Furthermore, the Commission indicates that the R&D potential of competitors is essential to evaluate their market position.²⁷⁵ What is less evident is the Commission's conclusion that the necessity to consider R&D potential results from the fact that enhanced products succeed fast on the market.²⁷⁶ The Commission should have elaborated on this conclusion in order to clearly determine its impact on the global evaluation of the competitive situation in the reference markets considered. It is, nevertheless, safe to conclude that rapid

²⁶⁴ We qualify as such the following elements of its appraisal : the market share fluctuations over time, the further expected product launches, the possibility that strong competitors may enter national markets on which they have not hitherto operated (*Id.* at point 223).

²⁶⁵ In particular, the competitors enjoy the critical mass (*Id.* at point 222).

²⁶⁶ *Id.* at point 223.

²⁶⁷ The analysis pertains to part D. "Seeds, 3. Competitive assessment, b) Seeds markets, 3) Research and development".

²⁶⁸ *Id.* at point 302.

²⁶⁹ *Id.* at point 299.

²⁷⁰ *Id.*

²⁷¹ *Id.* at point 299 in conjunction with point 301.

²⁷² *Id.* at point 299.

²⁷³ *Id.* at point 300. See the analysis of synergies within the part of our paper on plant protection.

²⁷⁴ *Id.* at point 302.

²⁷⁵ *Id.* at point 299.

²⁷⁶ *Id.*

commercial success of innovations leading to high market part fluctuations constitutes a countervailing factor in this Case. This interpretation is based on the Commission's global conclusion, in which it states that in view of the market share fluctuations over time (the only dynamic element considered), the small market share additions, actual competition (the presence of a few competitors, including competitors that are strong in R&D),²⁷⁷ as well as the fact that Ciba is not a potential competitor on the markets where Sandoz is strongly present, the operation does not pose competition problems within the meaning of the Merger Regulation.²⁷⁸

C. Manufacture of Rubber and Plastics Products, and Other Non-metallic Mineral Products

In the industry concerned, the only decision in which innovation concerns are relatively crucial in the Commission's assessment relates to the acquisition of Phoenix AG (hereinafter "Phoenix"), a German undertaking active in the production of technical rubber products, by Continental AG (hereinafter "Continental"), a German producer of tires, brake systems, and technical rubber products. The operation in question poses a number of competitive concerns in the markets for air springs for commercial vehicles (sold to original equipment manufacturers and suppliers—"OEM/OES") and for heavy steel cord conveyor belts.

First, the acquisition combines the leading European players operating in the markets with significant entry barriers. The combined Continental/Phoenix would be by far the strongest supplier, with a market share in both markets of well above 60%, and would face only a few smaller competitors. According to the Commission, the concentration concerned would eliminate the sole actual competitor of Continental, and would clearly deteriorate the market structure, as determined by the configuration of the merging parties' market position relative to those of their closest competitors. As a result of the transaction in question, clients will have almost no competitive alternatives.

Second, one of the main competitive concerns in this Case is the loss of competition between leading innovators. According to customers, technical competence/innovation is the second most important characteristic of manufacturers (followed by prices, and preceded by quality and reliability).²⁷⁹ Phoenix is the closest competitor of Continental in terms of technical competence/innovation, and its products are less expensive than those of the latter.²⁸⁰ In this respect, the Commission explains that "In the area of technical competence, Continental is regarded as No 1 and Phoenix as No 2 Continental and Phoenix are regarded by most of the market participants surveyed as the technologically leading, most innovative manufacturers of air springs in the OEM/OES sector."²⁸¹ The Commission also recognizes that Phoenix, which is ranked as the second-best supplier after Continental, has thus far been best placed to exert competitive pressure on Continental, and that this firm is regarded, owing

²⁷⁷ *Id.* at point 306. *See id.* at point 299.

²⁷⁸ *Id.* at point 223.

²⁷⁹ Case No COMP/M.3436-Continental/Phoenix of 26 October 2004, at point 135.

²⁸⁰ *Id.* at points 134-135.

²⁸¹ *Id.* at point 135.

to its comparable innovative strength and quality, as a low-priced alternative to Continental.²⁸²

In light of the Commission's decisional practice and its logic of economic reasoning, the foregoing (notably the very serious innovation concerns) clearly appears to indicate that this Decision is an ideal candidate for a prohibition decision. This is, however, not the case : the transaction is authorized subject to commitments.²⁸³

IV. TECHNOLOGICAL PROGRESS IN EC MERGER CASES IN THE MANUFACTURE OF WOOD AND PAPER PRODUCTS, AND PRINTING

This part of our paper examines technological progress in EC phase II merger cases in the field of the Manufacture of Wood and Paper Products, and Printing from the establishment of merger control at Community level (21 December 1989) to 21 September 2008 : Case No IV/M.430-Procter & Gamble/VP Schickedanz (II) of 21 June 1994, Case No IV/M.623-Kimberly-Clark/Scott of 16 January 1996, Case No COMP/M.4187-Metso/Aker Kvaerner of 12 December 2006.

1. Case No IV/M.430-Procter&Gamble/VP Schickedanz (II) of 21 June 1994

By means of the operation concerned, Procter & Gamble GmbH (hereinafter "P & G") acquires sole control over Vereinigte Papierwerke Schickedanz AG (hereinafter "VPS"), except the baby diaper business.²⁸⁴ The Commission's analysis of innovation-related issues concerns in this case the market for sanitary towels. In the Commission's estimation, the latter are not commodity products, and benefit from a relatively high degree of brand loyalty and a low elasticity-price.²⁸⁵

a. Innovate or not enter

²⁸² *Id.* at point 140.

²⁸³ The divestures of Phoenix' 50% co-controlling stake in the joint venture Vibraoustic to the only other German shareholder, and of Phoenix' Hungarian production of air springs for commercial vehicles OEM/OES (according to the Commission, these two commitments remove entirely the overlap of the parties' activities in the OEM/OES), as well as the divestiture of Continental's production line for wide steel cord conveyor belts to its competitor, Sempertans (this commitment is supposed to enable the enterprise concerned to compete over the full range of steel cord conveyor belts with the new entity).

²⁸⁴ P & G is a wholly-owned subsidiary of the Procter & Gamble Company. It is active in food and beverages, consumer laundry, cleaning, health and beauty products, paper products, including sanitary protection products (except tampons). VPS, a wholly-owned subsidiary of German partnership Gustav und Grete Schickedanz Holding KG (GGS), produces household paper and sanitary protection products (Case No IV/M.430-Procter&Gamble/VP Schickedanz of 21 June 1994, at points 3-4). As to the transaction itself, *see id.* at point 1.

²⁸⁵ *Id.* at point 180. *See also id.* at points 97, 132, 156, 179.

First of all, the Commission explains that given a high degree of brand and method loyalty in the market for sanitary towels, market entry appears extremely difficult without a product regarded by the consumer as genuinely innovative in a number of ways. In particular, it points out that “The market is already well developed with a number of well-known and well-established brands and a wide range of product variants. (...) Only marginal changes or slight superiority of a new brand may not be sufficient to overcome the attachment consumers have developed to established brands.”²⁸⁶

According to the Commission, in some cases, a market entry requires the development of a new brand, probably the development of an innovative product, as well as market tests of the latter, the distribution of samples, and massive promotion efforts.²⁸⁷ The establishment of a new brand demands heavy investments in advertising and promotion (sunk costs) in order to persuade brand-loyal customers to switch away from their usual brand.²⁸⁸ As an illustration of the high entry barriers, the Commission refers to several failed attempts to enter one of the reference markets in recent years. In its estimation, the costs and risks of such an entry (especially with P & G as an incumbent) would be too high, except for the most committed entrant.²⁸⁹ Further, the ease of entry may be lower in the absence of activities in other geographic markets.²⁹⁰ Moreover, in accordance with the Decision, competition in the branded towel market is based as much on advertising as on price,²⁹¹ however, entry strategy “through prices”, as opposed to entry through promotional foreclosure, would have little chance to be successful.²⁹²

Nonetheless, the Commission also notes spectacular success of P & G’s Always, which owes its success to high innovativeness and to a high level of commitment and investments.²⁹³ The Commission underlines that Always was a substantially innovative package of improvements which was able to penetrate the market rapidly.²⁹⁴ On the other hand, the Commission estimates that Always has set innovative standards high, and

²⁸⁶ *Id.* at point 132.

²⁸⁷ *Id.* at points 95, 179, 180. *Compare with its conclusion : id.* at point 101.

²⁸⁸ *See, in particular, id.* at points 97, 99, 147. Note that

“Competitors of P & G have estimated that the minimum viable market share is between 15 and 20 % if a supplier is to be able to generate the resources to fund the advertising necessary to obtain adequate weighted retail distribution (estimated by competitors for Germany to be at about 70 %) and retain market share once won. A minimum market share is also necessary to begin to be able to reap economies of scale, particularly in advertising.” (*Id.* at point 179).

²⁸⁹ These costs and risks imply that a decision to enter the market concerned would be a long-term and strategic one, based on the estimation that the market offers a profitable business opportunity despite the barriers and difficulties, and that attacking P & G’s dominant position in this market is a corporate priority. In light of this observation, the Commission concludes that entry could not provide an immediate constraint on excessive pricing by P & G (*Id.* at point 180).

²⁹⁰ *Id.*

²⁹¹ *Id.* at point 137.

²⁹² “A low-cost entry strategy based on undercutting the existing brands rather than out-promoting them would be unlikely to succeed, given not only the relatively low level of price sensitivity among consumers but also the need to fund the advertising necessary to persuade brand loyal consumers to switch brands and thus obtain retail distribution and any sales at all.” (*Id.* at point 179). *See also id.* at point 147.

²⁹³ *Id.* at point 100.

²⁹⁴ *Id.* at point 132.

comparable innovations are difficult to predict (the Commission refers to “near future” in this context).

b. Move first or lose

The Commission invokes a considerable “first mover advantage”, in the sense that “the first company to launch a new generation of products can establish a market position which is extremely difficult to attack, even with an improved product”.²⁹⁵ Assuming that the Commission’s reasoning is coherent, a product improvement within this definition of “first mover advantage” does not, nonetheless, encompass substantial innovations, such as those embodied in Always, but rather refers to incremental changes or slight superiority, since otherwise the replication of success analogous to Always’ would be possible²⁹⁶. It is thus clear that the Commission perceives a significant “first mover advantage” in a negative light, as its reasoning is based on the association of this advantage with anticompetitive effects related to brand loyalty or non-responsiveness of clients to innovative offers (“improved products” invoked in the quoted definition). It ignores thereby its own observation that the “challenge Always” has sparked a spiral of competition in innovation and promotion, rather than “intimidating” P & G’s competitors.²⁹⁷ Besides, the Commission admits that a company’s strength in a growth sector,²⁹⁸ as reflected by its value market share, is an important indication of its competitive positioning, which further indirectly undermines some of its conclusions.

c. Elimination of innovation competition

The Commission concludes that in the absence of the commitment undertaken by P & G not to acquire control of the nappy business, the operation would create P & G’s dominant position. It reaches this conclusion on the basis of the following elements : the market shares, financial resources, advanced technologies, and strong position of P & G in relation to those of retailers.²⁹⁹ In its estimation, such dominance would be likely to cause harm to the

²⁹⁵ *Id.* at point 133.

²⁹⁶ The Commission explicitly refers to *similar* innovative products, and not to challenging the existing products by introducing major innovations :

“The first company with something new to offer may be able to persuade women to switch to its new product because it offers improved performance, but it will be more difficult for companies introducing a similar product subsequently to gain custom. Those women who were originally attracted to the new product will already have switched to the first company’s product, while those who have not switched are perhaps less likely in any case to do so. In Denmark, the Netherlands and Sweden, where Moelnlycke was the first to launch an ultra product, Procter & Gamble, even with a superior product, has found it difficult to repeat the gains in market share it has made elsewhere” (*Id.* at point 133).

²⁹⁷ According to the Commission,

“The speed and success of Procter & Gamble’s entry into Europe has been remarkable. It has wrested market share not only from traditional national brands such as Camelia, but also from its global competitors, Johnson & Johnson, Kimberly-Clark and Moelnlycke. P& G’s competitors have developed their own innovative products and, in response to Always’ challenge, have dramatically increased their promotional expenditure in defence of their market shares. However, the combination of the Always product and Procter & Gamble’s other competitive advantages has resulted in extremely fast organic growth.” (*Id.* at point 155).

²⁹⁸ *In casu*, the technically sophisticated ultra type towels (*Id.* at point 114).

²⁹⁹ *Id.* at point 26.

consumer as regards prices, choice, innovation, and quality.³⁰⁰ With respect to innovation, the Commission also observes that “the acquisition will eliminate competition on innovation between VPS and P & G. Both Camelia and Always will use globally developed P & G technology and any innovations which might have been developed by VPS, or by VPS under different ownership, will be lost to the consumer. Once again the only serious competitor on innovation will be Johnson & Johnson.”³⁰¹ Besides, the Commission points out what appears to reflect, in light of its innovation analysis, classic tension between static and dynamic objectives of merger policy : “While there are thus several conceivable potential entrants, the question is whether any of them would be likely to enter the German or Spanish market within the next two to three years or as a timely response to excessive pricing in the market.”³⁰²

2. Case No IV/M.623-Kimberly-Clark/Scott of 16 January 1996

The merging parties are important American paper groups with substantial operations on a global basis. The Kimberly-Clark Corporation (hereinafter “KC”), a leading supplier of a variety of consumer products, is mainly active in the paper business. Scott Paper Company (hereinafter “Scott”) is also a leading manufacturer of tissue products worldwide. In the Decision in question, the Commission is particularly concerned with a loss of innovation competition between leading brands (Scott’s Andrex and KC’s Kleenex), advertising expenditures, and brand strength.

First of all, the Commission notes that the merging parties will be present in all the Member States (eventually with the exception of Finland) and in Norway, and are the only producers that enjoy fully pan-European brands.³⁰³ The importance of brand power must be interpreted in light of the Commission’s observation that advertising expenditures on branded products,³⁰⁴ brand loyalty, and market parts³⁰⁵ are self-reinforcing, and that entry barriers ensue.³⁰⁶ It must be highlighted that these elements constitute the key determinants of the Commission’s analysis in this case.

According to the Commission, innovation is a key competitive instrument on the markets for consumption goods, and market leaders, which promote innovation, are almost always branded producers whereas private-label products are followers.³⁰⁷ The Commission estimates that “There can be little doubt that the merger will suppress this important inter-brand competition as after the merger both Andrex and Double Velvet will belong to the same

³⁰⁰ *Id.* at point 182.

³⁰¹ *Id.* at point 26.

³⁰² *Id.* at point 178.

³⁰³ Case No IV/M.623-Kimberly-Clark/Scott of 16 January 1996, at point 105.

³⁰⁴ *Id.* at point 139.

³⁰⁵ The Commission notes virtuous and vicious circles related to market shares (*Id.* at point 145). For the amount of advertising expenses, *see id.* at point 141. As regards the analysis of advertising expenditure by the Commission, *see most notably id.* at points 144-154.

³⁰⁶ *See id.* at point 211.

³⁰⁷ *Id.* at points 161-162. The Commission states that “Product innovation is a key competitive tool in consumer product markets. It is well established in almost all consumer product markets that product innovation is pioneered by branded producers and that private-label products follow.” (*Id.*).

owner” while “The prime motor for product innovation has been the inter-brand competition between Andrex and Kleenex”.³⁰⁸ The observation that competition between the market leaders is the driving force behind innovation is *prima facie* barely consistent with the Commission’s conclusion that (1) Kleenex is the principal source of innovation while Andrex excels at advertising, and that (2) Kleenex is relatively weak at advertising whereas Andrex suffers from qualitative imperfections. The Commission states explicitly that “given Andrex’ leading position in the toilet tissue market, it is not surprising to find that the main proponent of innovation has been Kleenex and not Andrex. In particular the importance of product quality to the growth of the Kleenex Double Velvet toilet tissue has been described above.”³⁰⁹ Nevertheless, the Commission concludes that effective competition between the market leaders (the merging parties) is a source of innovation and of quality enhancements in the reference market, and that the concentration concerned would eliminate this source.³¹⁰ The reference by the Commission to a loss of innovation competition between the market leaders is rather misleading, since it suggests that both leaders are vigorous innovators while it is manifestly not the case : innovative changes fundamentally result from KC’s R&D activities whereas Scott exercises only indirect pressure on KC, as it operates in a different mode of competition (that is, competition in advertising). It is thus the competition exercised at different levels (corresponding to Scott’s competitive strength in advertising and KC’s competitive strength in innovation), and not competition in innovation, that is the driving force behind innovations. Throughout its analysis, the Commission strongly underlines that one observes an asymmetry between the merging parties’ competitive strengths, and that the parties’ comparative advantages are the market drivers.

Moreover, interestingly, the Commission is concerned with the post-concentration combination of Andrex’ advertising success with Double Velvet’s performance to the detriment of *future competitors* in the branded segment.³¹¹ Although the Commission does not refer to synergies in the Decision concerned, the potential deployment of Andrex’ advertising strength to KC’s assets, and/or Scott’s possibility to benefit from KC’s know-how to eliminate the imperfections of Andrex may potentially give rise to such efficiency gains. The merging parties’ major strengths seem rather complementary than substitute, and in accordance with the classic trade-off between efficiency gains and market power, these potential positive effects would have to be confronted with the effects resulting from the loss of effective competition between the market leaders. In particular, the concentration in question would not combine the advertising forces of the two companies, thereby conferring a significant advertising advantage on the new entity, since Kleenex is relatively much weaker than Andrex in this area. Admittedly, it is, nonetheless, highly debatable whether the deployment of advertising strength to another firm’s assets may be considered as efficiencies, notably given that advertising activities are socially unproductive. On the face of it, the

³⁰⁸ *Id.* at point 165.

³⁰⁹ *Id.* at point 163. Refer also to the Decision concerned for multiple indications supporting this statement. The Commission estimates that product quality was the driving force behind the market success of Kleenex’ Double Velvet and Quilted, as was advertising in the case of Andrex (*Id.* at point 156).

³¹⁰ *Id.* at point 161. “Effective competition in the branded segment is important because branded, and not private-label, products promote innovation and product quality improvement. Consequently, one effect of the merger would be to eliminate this source of innovation and quality improvement.” (*Id.*).

³¹¹ *Id.* at point 157.

beneficiary may dedicate the cost savings thereby gained to socially useful investments, however, this source of efficiencies is highly speculative.³¹²

Instead, a more troubling question arising in the Commission's assessment is that it points to competitive harm of future competitors in the branded segment solely due to the combination of Andrex' advertising success and Double Velvet's performance. Indeed, the Commission does not present any valid reason supporting the hypothesis that the market success of the new entity would be incontestable, and does not demonstrate that future competitors will not be able to make inroads into the new entity's market parts either by innovating (products of higher quality could outdo Kleenex) or by investing heavily in advertising. Neither of these business opportunities seems to constitute an insurmountable barrier *in casu*, nor does the combination of the two complementary competitive strengths indicate in itself any potential competitive harm. It does not mean that any harm of this kind is unlikely as a consequence of the notified operation³¹³; it means that competitive harm must be sufficiently demonstrated. On the other hand, a basic question that arises is the following: what will the consumer gain as a result of the transaction?

3. Case No COMP/M. 4187-Metso/Aker Kvaerner of 12 December 2006

The concentration concerned consists in the acquisition, by the Finnish company Metso Corporation Oy (hereinafter "Metso"), of sole control of parts of the Norwegian undertaking Aker Kvaerner ASA (hereinafter "Aker Kvaerner"), namely Aker Kvaerner's pulping and power business (hereinafter "Kvaerner"). According to the parties, the concentration in question would allow the merged entity to develop better and more environmentally friendly products, to the benefit of the consumer.³¹⁴

As regards R&D efficiency gains, in addition to benefits in terms of enhanced product quality, the merging parties claim that the concentration concerned would create a producer entirely committed to the pulp and paper industry and with the critical mass required to pursue complementary R&D activities. Customers confirm that Kvaerner, part of a larger group of companies focused outside the pulp and paper industry, is less committed to the business, including in terms of R&D, than its main competitors, Metso or Andritz. The Commission also adds that "Indeed, Kvaerner's activities in the pulp mill equipment business today are more limited in scope than Metso's and Andritz'."³¹⁵ Moreover, the majority of customers confirms that the transaction in question will enhance the quality of the products supplied by the merging parties.³¹⁶ The Commission concludes that apart from creating a second full-line

³¹² Note in this context the Commission's estimation in the Case No COMP/M.3687-Johnson & Johnson/Guidant of 25 August 2005, at point 314: "The market inquiry indicated that this good reputation will be an important asset post-merger to entrench customer loyalty towards the merged entity's combined products and in particular to expand their sales to less successful products of the combined entity (Guidant name will remain on the market and thus substitute J&J (Cordis) brand name)."

³¹³ The Commission is heavily concerned with the loss of competition between the market leaders as it means the elimination of the driving force behind innovation.

³¹⁴ Case No COMP/M.4187-Metso/Aker Kvaerner of 12 December 2006, at point 103.

³¹⁵ *Id.* at point 107.

³¹⁶ More precisely, the Commission states that

"customers have explained to the Commission that it is increasingly important that their suppliers have knowledge not only of some parts of the mill, but of as many process stages as possible. This is mainly because changes in any part of a mill may have an impact on the other mill parts (e.g. changes to the chemical processes,

supplier of pulping equipment that would be able to compete on an equal footing with Andritz, the concentration concerned will lead to the emergence of a producer fully committed to the pulp and paper industry and with the necessary critical mass for R&D activities in the market considered.

Interestingly, the Commission's positive evaluation is in stark contrast with that of customers, the majority of whom are concerned that the concentration will increase prices, as they estimate that the consumer-welfare losses "will not be outweighed by potential benefits of the merger (e.g., in terms of increased R&D activities, resulting in better products), not the least because it will reduce the number of suppliers competing for innovating solutions in the pulp equipment markets".³¹⁷ Having compared positive and negative effects likely to arise from the concentration concerned, customers are divided as to the evaluation of its effects, however, many of them expect some negative effects : almost half of the interviewees stated that the concentration would rather have negative effects, and almost half estimated that it would be neutral, or that it would entail positive *and* negative effects (e.g., a price increase, a reduction in choice).³¹⁸ Concluding, customers' concern with negative effects resulting from the concentration is manifest, and even many of those customers who recognize the benefits relating to the operation fear some negative effects. By contrast, the Commission's evaluation is much more optimistic and stresses efficiency gains³¹⁹.

V. TECHNOLOGICAL PROGRESS IN EC MERGER CASES IN THE MANUFACTURE OF TRANSPORT EQUIPMENT

This part of our paper deals with technological progress in EC phase II merger Decisions that have been taken by the European Commission in the field of the Manufacture of Transport Equipment from the establishment of merger control at Community level (21 December 1989) to 21 September 2008 : Case No IV/M.877-Boeing/McDonnell Douglas of 30 July 1997, Case No COMP/M.2220-General Electric/Honeywell of 3 July 2001, and Case No COMP/M.4956-STX/Aker Yards of 5 May 2008.

1. Case No IV/M.877-Boeing/McDonnell Douglas of 30 July 1997

The concentration concerned consists in the acquisition of control of the whole U.S. undertaking McDonnell Douglas Corporation (hereinafter "MDC") by the U.S. Boeing Company (hereinafter "Boeing"). It combines the world's leading company in large commercial jet aircraft, Boeing, with the world's third largest manufacturer of large commercial jet aircraft, MDC. The latter is also the world's leading producer of military aircraft and the second leading defense firm in the world.

to capacity, to water and energy consumption, to pollution etc.). An understanding of all the main mechanical and chemical processes in the respective pulp mill can result in the design of *better and more reliable products*." (*Id.*).

³¹⁷ *Id.* at point 108.

³¹⁸ Second questionnaire to customers, replies to question 34 (*Id.* at note 77).

³¹⁹ However, the analysis of anticompetitive effects and commitments is indispensable to have a full picture of the Commission's assessment.

a. Nature of innovative activities in the aerospace industry

The Commission points to high R&D investments in the aerospace industry,³²⁰ and some innovation benefits in aircraft structures, composites, aerodynamics, flight controls, aerospace electricity, and electronics.³²¹ It also underlines some advantages resulting from R&D in the military segment : a potential transfer of technology to the commercial sector, training of technical personnel of private companies participating in R&D projects, an increase in general know-how, financing basic equipment.³²² In particular, the Commission strongly underscores the transferability of results between military and civil applications. This transferability results from the underlying technology and is fostered by public policy.³²³ The Commission also points to a general increase in know-how even in the case of innovation failures : “And even if a military R&D project does not lead to a specific technological advance (failed programs), it may have commercial utility to the company that carried it out by informing the company of research dead-ends that should be avoided.”³²⁴

Last but not least, the Commission presents a general description of R&D in U.S. aerospace industry,³²⁵ as well as refers to significant learning curve effects, economies of scale, and economies of scope in this industry.³²⁶ The Commission also underlines, in general terms, a relationship between intellectual property and the competitiveness of high-tech firms : “In a high-technology industry such as commercial aircraft manufacturing, intellectual property, whether patented or in the form of unpatented know-how, is extremely important for the competitive potential of the players in the market.”³²⁷

b. Effects of the concentration in terms of R&D, know-how, and financial resources

First of all, the Commission claims that “it has limited the scope of its action to the civil side of the operation as it has not established that a dominant position has been strengthened or created in the defense sector”.³²⁸ As regards the civil aspects of the operation concerned, the Commission points out four categories of immediate effects resulting from the concentration in question : -one competitor would remain after the transaction, -the global market share of Boeing in large jet aircraft would change from 64% to 70%, and its customer base would increase from 60% to 84% of the current fleet in service, -Boeing would increase its capacity in commercial aircraft, particularly in terms of skilled workforce, and -Boeing

³²⁰ According to the Commission, “in the US total R&D (federal and company funding) which is performed by industry amounts on average to 3-4% of net sales of manufacturing companies. By contrast, in the aerospace sector, total US industrial R&D amounts to 12-14% of net sales” (Case No IV/M.877-Boeing/McDonnell Douglas of 30 July 1997, at point 84).

³²¹ *Id.* at point 102.

³²² *Id.* at point 92.

³²³ The Commission quotes the National Space and Technology Council (1995) and Congressional Research Service Report (1995). “The most important impact of transfer from military to civil applications results, however, from effects at the level of underlying technology, which leads to significant increases in productivity and cost savings.” (*Id.* at point 99). *For more details, see id.*

³²⁴ *Id.* at point 92.

³²⁵ *See most notably id.* at points 83-88.

³²⁶ *Id.* at point 49.

³²⁷ *Id.* at point 102.

³²⁸ *Id.* at point 12.

would increase its ability to induce airlines to enter into exclusivity deals, thereby further foreclosing the market.³²⁹

However, MDC's military activities do have a clear impact on the Commission's evaluation, since it examines how these activities change Boeing's competitive position in commercial jet aircraft. Moreover, the Commission admits explicitly that "MDC is no longer a real force in the market for commercial aircraft, and in the absence of another potential buyer of its commercial aircraft business, it is likely that Boeing would have obtained, over time, a monopoly in the 100-120 seats segment and a near monopoly in the freighter segment even without the present concentration."³³⁰ Consequently, MDC's commercial activities could not put much weight on the Commission's merger assessment, and what really matters in this case is the addition of MDC's military activities to the arsenal of Boeing's strengths.

The Commission concludes that the effects resulting from "the take-over of MDC's defense and space business would lead to a strengthening of Boeing's dominant position through : (a) an increase in Boeing's overall financial resources; (b) an increase in Boeing's access to publicly funded R&D and intellectual property portfolio; (c) an increase in Boeing's bargaining power vis-à-vis suppliers; (d) opportunities for offset and bundling deals."³³¹

Indeed, the complementary character of the merging parties is strongly highlighted in the Decision concerned. Sales of large commercial jet aircraft represent 70% of Boeing's revenues while sales of military and space businesses constitute 70% of MDC's turnover.³³² As a consequence of the integration of MDC, Boeing will approximately triple its defense and space activities and double its revenues in military aircraft.³³³ The Commission observes that, consequently, Boeing will become the largest integrated aerospace company in the world and will be significantly more capable of coping with the economic cycles in commercial aircraft due to a much higher stability of revenues in the defense and space sector compared to the commercial sector.³³⁴ Moreover, despite the fact that Boeing does not claim it, which is not surprising in view of the Commission's approach to merger-related competitive advantages, the simultaneous exercise of activities in the civil and military sector in the aerospace industry tends to generate synergies and economies of scope.³³⁵

More specifically, the Commission strongly focuses on the importance of military activities of the merging parties : military aircraft is the second largest segment of Boeing's R&D revenues, and Boeing is involved in the major programs for the development of such aircraft ;³³⁶ MDC is leader in fighter aircraft and one of the leading manufacturers of military transport aircraft.³³⁷ Particularly, the Commission examines in detail the generous R&D funding of military activities by the U.S. public institutions, and draws attention to a high discrepancy in the levels of public aids on both sides of the Atlantic. The Commission's focus on a rise in military R&D funding as a result of the transaction concerned does not conceal its

³²⁹ *Id.* at point 54. *See also id.* at points 43-46, 52, 68-71.

³³⁰ *Id.* at point 57.

³³¹ *Id.* at point 72.

³³² *Id.* at points 22-23, 73.

³³³ *Id.* at point 73 in conjunction with point 89 [confidential data] ; this conclusion does not take account of the recent acquisition of Rockwell Defence and Aerospace, however.

³³⁴ *Id.* at point 73.

³³⁵ *See* Commission's Decision No IV/M.1636-MMS/DASA/Astrium of 21 March 2000.

³³⁶ Case Boeing/McDonnell Douglas, *supra* note 319, at point 89. The Commission adopts a five-year framework.

³³⁷ *Id.* at point 96.

search for potential synergies, though. Rather, it results from the fact that it estimates that Boeing's more extensive financial resources post-concentration will translate into its significant competitive advantages ; these advantages will further increase the gap with Airbus (thus reinforcing the "competitive disadvantage" of the latter), which benefits from much more modest public aids. It seems thus fair to assert that the Commission relies, in its conclusions, on the estimation that the exacerbation of Airbus' relative disadvantages is not compatible with the protection of effective competition in the common market. In contrast, the analysis of the concentration concerned by the Federal Trade Commission underscores technological synergies resulting from the combination of Boeing and MDC.³³⁸

Finally, the concentration in question will also lead to the combination of the two large portfolios of intellectual property. In view of the estimation that intellectual property is "extremely important for the competitive potential of the players in the market",³³⁹ it is legitimate to conclude that the Commission argues implicitly that the merger will enhance the competitiveness of the new entity in this respect. This increased competitiveness is qualified, by the Commission, as one of the elements that would strengthen the new entity's dominant position of a kind that is prohibited within the meaning of the Merger Regulation.

2. Case No COMP/M.2220-General Electric/Honeywell of 3 July 2001

The Commission prohibited the famous concentration whereby the U.S. diversified corporation General Electric Company (hereinafter "GE") would have acquired another U.S. company, Honeywell International Inc. (hereinafter "Honeywell"). The latter is active worldwide mainly in aerospace and automotive products and services, electronic materials, specialty chemicals, transportation, and power systems. Due to the highly dubious legal and economic quality of the Decision concerned, whose thorough analysis and critique definitely exceeds the scope of this paper, our presentation of this Case is, essentially, only limited to an overview of the Commission's argumentation pertaining to the relevant dynamic concerns.

a. Nature of innovative activities

In the Decision concerned, the Commission evaluates innovation competition (competition for future products, "competition for the market") between engine and

³³⁸ According to Katz & Shelansky,

"In 1997, the FTC approved the merger of Boeing and McDonnell Douglas, the two largest commercial aircraft manufacturers in the United States. In that case, analysis of innovation in the aerospace industry supported the merger, not because the transaction was expected to increase R&D but because the analysis showed that McDonnell Douglas had fallen behind technologically and no longer could exert competitive pressure on its rivals. Acquisition by Boeing would therefore not reduce future competition and would allow McDonnell Douglas's assets to be put to better use by a more technologically advanced enterprise" (p. 37).

Source : Michael L. Katz, Howard A. Shelansky, *Merger Policy and Innovation : Must Enforcement Change to Account for Technological Change?*, NBER working paper 10710, 58 pp. (2004).

³³⁹ Case Boeing/McDonnell Douglas, *supra* note 319, at point 102.

component suppliers through the prism of what it qualifies as its characteristics : 1) this competition is exercised on the basis of R&D expenditure, which is financed by current and expected cash flows, 2) it is characterized by large R&D sunk costs (as a consequence of which companies' incentives to engage in R&D activities depend on the volume of their output), long lead times before investment returns materialize (as a result of which firms rely heavily on their own internal cash flow generation to fund R&D rather than raising or borrowing capital), high risk, as well as asymmetric information.³⁴⁰ On this basis, the Commission estimates that any significant reduction in the current profits means lower than expected future profits and would seriously hamper the ability to invest in the future, thereby reducing investment incentives.³⁴¹ In addition, those effects could be exacerbated by pure (technical) bundling, which would reduce the future market available to competitors (thus their output) and consequently lower their expected future profits and incentives to strategically invest in this market.³⁴² Also, substantial entry barriers emerge, among other things, due to the sophistication of engine starters, high R&D requirements, and the need to have a strong technology capability.³⁴³

More specifically, as regards the revenues of engine suppliers, the Commission notes that the profitability of their business stems mostly from earnings achieved in the aftermarket, and that engines placed on aircraft no longer in production constitute a less significant source of aftermarket revenue than those in aircraft still in production and stop generating such revenue when the aircraft are retired from airline fleets.³⁴⁴ The Commission underscores, nevertheless, the necessity to measure the significance (“the intrinsic value”) of the overall installed base of engines on aircraft both in production and out of production³⁴⁵, since this basis determines the ability to fund R&D activities. According to the Commission, aftermarket revenues finance R&D expenses, thereby conditioning the competitiveness of producers.³⁴⁶ The Commission also indicates that “Future revenues are needed to fund

³⁴⁰ Case No COMP/M.2220-General Electric/Honeywell of 3 July 2001, at point 403 in conjunction with point 110.

³⁴¹ *Id.* at point 403. The Commission observes that

“whether a manufacturer can afford to invest in new engine programmes today is heavily influenced by the ongoing success of mature engine programmes and the contribution of the revenue stream they generate year after year. A manufacturer can indeed invest in new programmes only if it has mature programmes that supply sustaining funds for the development phase to the break-even point of the new programmes (which can be well over 20 years)” (*Id.* at point 182).

³⁴² *Id.*

³⁴³ *Id.* at point 423.

³⁴⁴ *Id.* at point 42. According to the Commission, when aircraft no longer in production remain in service, aftermarket revenues steadily decrease. First, as the technology of an engine becomes older, it is more accessible, and maintenance and spare parts tend to become cheaper (the older the engine, the lower the patent protection on spare parts and maintenance procedures). Second, the technology of older engines is much more simple than that of the current generation of engines, which results in less servicing and spare parts, thus less aftermarket revenues (*Id.*).

³⁴⁵ *i.e.*, the *present net* value of the income expected from its installed base (*Id.*).

³⁴⁶ More precisely, “Aftermarket revenue streams are used to finance future engine developments and innovation expenditure that will in turn determine the future competitive position of the respective engine manufacturers.” (*Id.* at point 42). The Commission somewhat bizarrely distinguishes between the financing of future engine developments and innovation expenditure, as well as wrongly uses a defining relative clause, which implies that aftermarket revenues finance (only) future engine developments and innovation expenditure that will determine the future competitive position of the respective engine manufacturers, and do not finance future engine

development expenditure for future products, foster innovation and allow for a potential leapfrogging effect.”³⁴⁷ *In summa*, the profitability of engines (mostly coming from aftermarket revenue) determines R&D expenditure, and the latter conditions the competitive position of manufacturers. Firm size apparently matters as well.³⁴⁸

In light of the foregoing, it is not surprising that the Commission underlines the role of GE's financial strength, which “clearly represents a significant competitive advantage over RR and P & W. In particular this financial strength allows GE to absorb potential product failure and strategic mistakes. The importance of financial strength in this industry can be illustrated by RR's exit from the market in the 1970s when it could not survive the failure of one of its leading R & D projects.”³⁴⁹ The example of RR suggests rather potential R&D financial synergies that might result from the deployment of GE's financial strength to Honeywell's R&D projects. Nevertheless, neither are such claims raised by GE, nor are they examined by the Commission on its own initiative.

b. Effects of the concentration

Many an economist pointed out that the transaction concerned was likely to generate substantial efficiency gains, such as : (a) an efficient allocation of capital, and (b) dynamic synergies resulting from the deployment of GE's intangible assets to Honeywell. Some economists even argued that “If such an approach had been undertaken in GE Honeywell, the investigation of these aspects would have likely weighed in GE's favor.”³⁵⁰ However, it must be underlined that the merging parties did not make any claims about potential efficiencies, and that reproaching the Commission that it did not take them into account means disregarding its constant decisional practice. Indeed, while it was correct to argue that serious enforcement errors had been made in this Case, it had not been legitimate to expect that the Commission would have considered any efficiency gains as a countervailing factor on its own

developments and innovation expenditure, which will determine the future competitive positions of producers. Evidently, this error is a *lapsus calami*. See also *id.* at point 79.

³⁴⁷ *Id.* at point 347.

³⁴⁸ GE itself underscores the importance of size to its ability to innovate.

“GE explains that size allows it to invest hundreds of millions of dollars in extremely ambitious programmes like the GE90, the world's highest-thrust jet aircraft engine, and the "H" turbine, the world's highest-efficiency turbine generator. Size also allows GE to introduce at least one new product in every segment every year or to continue to invest in a business during a down cycle, or to make over 100 acquisitions a year, year after year. Finally, GE claims that, far from inhibiting innovation, its size actually allows it to ‘take more and bigger swings’. Although GE rightly recognises that it cannot succeed in every project, GE makes the point that ‘size allows GE to miss a few without missing a beat’”. The Commission recognizes that “GE indeed appreciates the competitive advantage size offers.” (*Id.* at note 30).

The Commission has not proceeded to the examination of these statements. However, it must also be underlined that GE has not made any claims about the impact of the concentration concerned on its ability to innovate.

³⁴⁹ *Id.* at point 110.

³⁵⁰ Jeremy Grant, Damien J. Neven, *The Attempted Merger Between General Electric and Honeywell : A Case Study of Transatlantic Conflict*, 1(3) *Journal of Competition Law and Economics*, 595-633 (2005), available at : <http://ec.europa.eu/dgs/competition/economist/honeywell.pdf> (p. 29).

initiative inasmuch as such an approach would have been grossly inconsistent with its decisional practice³⁵¹. Even more importantly, as a corollary, it would have disrupted the decisional continuity in this respect. Therefore, those legal advisors that expressed concern over this negligence simply ignored one of the most basic aspects of the Commission's constant decisional practice.

Another problem that was raised, notably by American commentators, is related to the estimation that the Commission sacrificed important efficiencies in order to prevent speculative future harm to competition. This evaluation requires a few remarks. First of all, as above-mentioned, such a "sacrifice" should have been anything but surprising in light of the Commission's decisional practice. Second, the reasons why the merging parties chose not to invoke efficiency gains - perhaps related to the nature of the concentration concerned (a conglomerate concentration) and the fear of the application of efficiency offense - are certainly quite legally disturbing, however, this complex subject largely exceeds the scope of our paper. Third, the Commission referred incidentally to short-term cost economies, nevertheless, it estimated that the protection of long-term competition was more important than the former ; indeed, in general, the analysis of harm to long-term competition is highly speculative.³⁵² Fourth, one can find pronounced elements of efficiency offense in the Commission's conclusions concerning the extension of GE's financial strength to Honeywell,³⁵³ irrespective of its speculative leveraging theories.³⁵⁴ The Commission also seems to apply efficiency offense in the analysis of bundling³⁵⁵ and commonality benefits.³⁵⁶

One of the main lines of the Commission's reasoning in the Decision concerned is related to the post-concentration deterioration of competitors' position and innovation concerns. The latter are closely linked to GE's great financial strength³⁵⁷ and a financial weakening of competitors as a result of the concentration concerned. The Commission argues that GE would strengthen its dominant position in the market for large commercial aircraft engines due to a weakening of competing engine manufacturers³⁵⁸ and the elimination of Honeywell as a potential innovation *partner* in the development of the More Electrical Engine Aircraft, which is expected to be determinant for future competition in this market.³⁵⁹ Further, in the Commission's estimation, GE would be the only engine manufacturer capable of developing innovation in that project, and would be able to be the first, if not the only one, to obtain the benefits of innovation by depriving its engine competitors of cooperation with Honeywell.³⁶⁰ The Commission thus focuses on GE's ability to follow such a strategy without considering whether or not GE would have an interest (notably financial incentives) in so

³⁵¹ It is extremely rare in phase II merger cases that the Commission invokes efficiency gains as a countervailing factor (as opposed to the efficiency gains attained by the merging parties prior to the notified transaction) when the parties do not make efficiency claims.

³⁵² *See id.*, at points 410, 448-449.

³⁵³ *In particular, see id.*, at points 108-111 and at note 32.

³⁵⁴ It cannot be excluded that the conclusions concerning leveraging theories might be valid under certain circumstances, however, one desperately lacks valid elements of proof in the Decision concerned that would sufficiently demonstrate the probable occurrence of the alleged effects *in casu*, especially that the notified operation constituted a conglomerate concentration.

³⁵⁵ *In particular, see id.*, at points 290, 292, 351, 376, 378, 398-404, 412, 416, 441, 443. *Compare with id.*, at points 448-449.

³⁵⁶ *In particular, see id.*, at points 146-147, 150, 153, 155, 159, 161.

³⁵⁷ GE is the world's largest company in terms of market capitalisation with USD 480 billion as of 1 June 2001 (*Id.* at point 107). *See also id.*, at point 109.

³⁵⁸ *Id.* at point 418.

³⁵⁹ *Id.* at point 417.

³⁶⁰ *Id.*

doing. In sum, the Commission's argumentation shows that the questions of the weakening of competitors' position, innovation concerns, and the new entity's dominant position are closely interwoven in its examination, and they must be interpreted in light of the nature of innovative activities in the relevant markets, as perceived by the Commission *in casu*.

The Commission is particularly concerned with the insufficiency of competitors' revenues to fund R&D as a result of the transaction concerned. First, with respect to the market for small marine gas turbines, the Commission concludes that the new entity's rivals would be deprived of future revenues generated by the sales of the original equipment and spare parts. According to the Commission, the operation would lead to their progressive marginalization (gradual foreclosure from future applications), which would deprive them of a vital source of revenue and make them unable to fund further innovation expenditure and leapfrog the merged entity by any means. This foreclosure would make it rational for the competitors to withdraw from those competitions where, due to the combination of GE and Honeywell products, they would not be able to win.³⁶¹

The Commission dismisses the merging parties' argument that competitors can leapfrog the new entity by introducing technological improvements to their products and win the next competition over the incumbent supplier on the platform.³⁶² The Commission considers that the concentration-related market foreclosure would make it increasingly difficult, if not impossible, for them to win new platforms.³⁶³ Lack of platforms wins would prevent them in turn from generating sufficient revenues to engage in leapfrogging by investing heavily in R&D.³⁶⁴

Further, as to R&D investments and leapfrogging by innovation, the Commission estimates that (1) contrary to the merged entity, the financial ability of GE's competitors to absorb major platform losses (which lead to a loss of significant future cash flows necessary to invest in technological R&D as time lags between competitions are substantial) is significantly more limited, (2) leapfrogging is bound to fail if the leapfrogging company is unable to match the conditions and range of products offered by the merged entity.³⁶⁵

What is more, the Commission also rejects the parties' claim that all potential suppliers, no matter what their current market position is, have an incentive to innovate and thereby exert competitive pressure upon Honeywell, for avionics competitors (except the big three) are niche players with strong innovation skills but limited access to customers, and face increasing pressure from Honeywell's enhanced bundling capacity.³⁶⁶

Another line of the Commission's argumentation, which also shows the underlying logic of the protection of weaker competitors, is revealed in its analysis of the extension of GE's financial and commercial strength to Honeywell after the completion of the merger. The Commission points out that pre-merger GE's financial strength enhances its capacity to innovate. Despite the nature of innovative activities in the reference markets, the Commission is clearly concerned with the fact that "unlike any other company, and in particular other

³⁶¹ *Id.* at point 481. Compare with the effects of the concentration concerned on rival avionics and non-avionics manufacturers (*Id.* at point 347).

³⁶² *Id.* at point 384.

³⁶³ *Id.*

³⁶⁴ *Id.*

³⁶⁵ *Id.* at point 385.

³⁶⁶ *Id.* at point 329.

engine manufacturers, as acknowledged in its own documents, GE is able to take more risk in product development programmes than any of its competitors. This ability to absorb product failures without jeopardising its future ability to compete and develop new products in an industry characterised by long term investments is critical.”³⁶⁷ As a result of the concentration concerned, Honeywell would benefit from GE’s financial solidity, and this should not be *per se* negatively evaluated.

Even more importantly, the Commission constructs a theory of anticompetitive effects that is largely based on GE’s financial strength and the complementarity of the merging parties. In particular, the Commission observes that GE’s position on the MRO market, coupled with Honeywell’s product range,³⁶⁸ is likely to give the merged entity a significant financial and commercial advantage.³⁶⁹ Also, in the Commission’s estimation, GE’s financial strength could be used to (1) boost the merged firm’s R&D efforts in the areas of intense competition, as a result of which rivals would be discouraged to compete and innovate,³⁷⁰ and (2) favor Honeywell’s products, which would, among other things, contribute to positioning the merged entity as a dominant supplier on the markets for small marine gas turbine, where Honeywell already enjoys a leading position.³⁷¹

According to the Commission, Honeywell would immediately benefit from both (1) GE’s leverage power and GE Capital’s willingness and ability to secure exclusive supply positions for its products, and (2) GE’s ability to cross-subsidize its different business segments owing to its strong cash-flow generation.³⁷² We briefly elaborate on these points below.

First, Honeywell would immediately benefit from GE Capital’s ability to secure the exclusive selection of its SFE products on new platforms,³⁷³ and the merged entity would be able to promote the selection of Honeywell’s SFE products by leveraging its financial power and vertical integration on the launch of new platforms. As a consequence, competitors would be denied the possibility to place their products on such new platforms, deprived of the necessary return to fund future investments, and their cash inception would be delayed.³⁷⁴ Also, Honeywell’s engines and related services would benefit from GE’s aircraft leasing and purchasing practices, as well as from its instrumental leverage ability to secure marketing and placement of the GE products.³⁷⁵

³⁶⁷ *Id.* at point 108. *See also id.*, *supra* note 351.

³⁶⁸ Honeywell is the leading supplier of a range of avionics and non-avionics products. In the Commission’s estimation, no competitor is independently able to replicate Honeywell’s extensive range of products (*Id.* at point 330). *Compare with id.* at point 502.

³⁶⁹ *Id.* at point 106.

³⁷⁰ *Id.* at point 479.

³⁷¹ *Id.* at point 480.

³⁷² *Id.* at point 479.

³⁷³ For aircraft systems (avionics and non-avionics products), the Commission makes a distinction between Buyer-Furnished-Equipment (“BFE”) and Supplier-Furnished-Equipment (“SFE”), *id.* at point 236.

³⁷⁴ *Id.* at point 344. *See also id.*, at point 347.

³⁷⁵ *Id.* at point 439. The Commission seems to base its conclusion on the fact that the concentration concerned will combine the leading engine supplier, Honeywell, with GE’s corporate jet aircraft leasing company, GE Capital Corporate Aviation Group.

Second, according to the Commission, the ability of the merged entity to cross-subsidize its various complementary activities and engage in profitable forms of packaged sales would have an adverse effect on the profitability of competitors due to the erosion of their market share, which is likely to lead to (1) market foreclosure and their market exit both in a short term (price is below average variable cost) and in a longer term (the Commission refers to an impact on competitors' ability to invest in R&D so as to compete viably "as soon as the cash flow expected to be generated internally could not support the necessary capital expenditure for product development and innovation"), (2) a change in their future strategic choices due to a substantial reduction in profits and the strong difficulties in attracting new R&D funds as a result.³⁷⁶

3. Case No COMP/M.4956-STX/Aker Yards of 5 May 2008

The concentration concerned consists in the acquisition, by the South Korean company STX Corporation Co., Ltd (hereinafter "STX"), of the Norwegian company Aker Yards A.S.A (hereinafter "Aker Yards"). The former is mainly active in shipbuilding, marine equipment, shipping, logistics, energy, and construction whereas the latter is a shipbuilding group focused on cruise ships, ferries, commercial vessels, offshore production, and specialized vessels.

a. Nature of innovative activities in the cruise ship market

As regards general R&D references in the Decision concerned, the Commission points out, in particular, that STX lacks experience and does not master the know-how necessary to build complicated cruise vessels. The merging party started to exercise R&D activities in the area of cruise ships only in late 2007³⁷⁷ while the acquisition of know-how can take a considerable length of time due to the complexity and specificities of the cruise ship design, compared to that of cargo ships.³⁷⁸ Moreover, no technical cooperation is being undertaken between experienced customers and STX.³⁷⁹

According to the Commission, the crucial factor in the cruise ship market is the know-how of managing complex projects whereas innovation, though crucial, is not of primary importance as "part of such innovation is in hands of subcontractors, and therefore available to certain extent"³⁸⁰; the Commission concludes that a certain lack of innovation can be overcome.

³⁷⁶ *Id.* at points 398-404. *See also id.*, at point 379.

³⁷⁷ The Commission refers to a project initiated by the South Korean government relating to elementary know-how on cruise ships. *For more details, see* Case No COMP/M.4956-STX/Aker Yards of 5 May 2008, at note 24, and at points 95-97.

³⁷⁸ *Id.* at point 52. *See also id.* at point 53 *in fine*.

³⁷⁹ *Id.* at point 53.

³⁸⁰ *Id.* at point 160. The Commission highlights that the evidence supporting this observation lies in the case of Mitsubishi, which was able to deliver in 2004 two cruise ships of very high quality without previous experience in the cruise ship market. This case proves, according to the Commission, that a potential innovation gap between Fincantieri, a competitor of the parties, and the merged entity is of secondary importance (*Id.*).

Finally, the Commission also indicates entry barriers into the cruise ship market (such as know-how, project management, R&D, the development of a local subcontractor network), as well as production inefficiencies along the learning curve.³⁸¹ As a result, a new and inexperienced entrant would have to bear higher production costs if it lacked the above-mentioned assets and due to the learning curve effects. On the other hand, the Commission notes that experienced customers may cooperate with shipbuilders not yet present on the market, thereby helping them to gain know-how on cruise ship design with a view to possible future cooperation.³⁸² The Commission underscores, nevertheless, the fact that “this is also a continuous process and this learning exercise, together with R+D efforts invested in-house can take a long time before they can be capitalised.”³⁸³

b. R&D subsidies

One of the important aspects of the Decision concerned is the question of subsidies for the merged entity’s prospective ship-building projects.³⁸⁴ Among other things, a complainant claimed that South Korea had already granted subsidies to shipbuilders in the past (including advantageous loans and state programs in support of R&D), that such a practice would be likely to continue in the future, and that the Commission has an obligation to make an independent assessment even of potential subsidies in order to fully appreciate the effects of such subsidies on the merged entity’s financial strength, as required by case law.³⁸⁵ The Commission does effectively examine this issue, whose pertinence is highly dubious from the perspective of merger-related (structural) anticompetitive concerns, and concludes that “there is no evidence to suggest that this technology programme partially supported by South Korea, which does not seem to be exceptional in the shipbuilding industry (comparable programmes have been developed in other regions of the world), would be such as to considerably strengthen the financial situation of STX to an extent which would lead to a significant impediment of competition.”³⁸⁶

c. Effects of the concentration on innovation

1. Innovation concerns in the cruise ship market

Fincantieri, one of the competitors of the merging parties, claims that the “monopolization” by the South Korean shipbuilders in the LNG market may be replicated in the cruise ship sector.³⁸⁷ The complainant raises the possibility of predatory pricing and the exclusion of competitors in the cruise ships and ferries segments, *per analogiam* to the alleged foreclosure by the South Korean shipbuilders in the LNG sector. In particular, Fincantieri estimates that “this process has had a negative effect on innovation, since South Korean

³⁸¹ *Id.* at points 63 and 67. Compare also with *id.* at point 143.

³⁸² *Id.*

³⁸³ *Id.*

³⁸⁴ *Id.* at point 72.

³⁸⁵ *Id.* More specifically, the complainant refers to the judgement of the Court of First Instance of the European Communities in Case T-156/98 RJB Mining plc v Commission of the European Communities.

³⁸⁶ Case STX/Aker Yards, *supra* note 376, at point 97. For more details on this project from a financial perspective, see *id.* at point 96.

³⁸⁷ *Id.* at point 163.

shipbuilders currently continue to utilise the containment system patents acquired from European shipbuilders developed in the 1970s.”³⁸⁸

As regards innovation, the Commission rejects the competitor’s claim by indicating that (1) the complainant has not provided any evidence to conclude that the South Korean shipbuilders would reduce innovation in the cruise ship market, and the only evidence provided by this firm is that the technology used by the South Korean shipbuilders is based on patents developed in the 1970s while the described developments in the LNG sector took place at the end of the 1990s, that (2) the LNG sector and the cruise sector are not comparable, notably as regards innovation and economies of scale in both sectors,³⁸⁹ and that (3) “cruise ships’ customers are large, experienced, and sophisticated ones with strong buyer power ; therefore, it is highly unlikely that they would turn completely to alternative suppliers knowing that their innovation capabilities are inappropriate and facilitating at the same time the marginalization of experienced cruise ship producers.”³⁹⁰ The Commission concludes that innovation would not decrease as a result of the transaction considered.³⁹¹

2. Analysis of vertical relationships in ship engines manufacturing

STX is active in the ship engines manufacturing market, in which the current cruise ships operators are absent. Certain competitors, of which only one has provided substantiated arguments, have raised concerns about possible negative effects of the concentration concerned as a result of the vertical relationships created by the notified transaction in the various markets for commercial vessels, particularly in the cruise ship and ferries markets.³⁹²

More specifically, the argument goes that apart from (1) the ability to benefit from its upstream activities due to a significant advantage in terms of cost and time delivery, and from (2) the ability to limit the supply of its ship engines to Aker Yards’ competitors, STX’ supply of engines for cruise ships may allegedly reduce the sales of the competing suppliers below

³⁸⁸ *Id.*

³⁸⁹ As to innovation, for LNG, old technology is still used by the customers ; by contrast, for cruise ships, innovation and differentiation are key features (*Id.* at point 170). As for economies of scale, the Commission also rejects Fincantieri’s claim that “the market for LNG carriers requires a mass production where economies of scales can allow significant savings”. The Commission estimates that economies of scale are not as important for cruise ships as they appear to be for LNG vessels because

“First, the number of ships produced differs largely in both markets, amounting to around 102 cruise ships in the period from 1998-2007 and to 262 LNG vessels in the same period. Second, and more importantly, cruise ships are highly customised products specifically designed to meet the customers requirements, leading to longer periods of negotiation, design and production (between 15-20 months for the production and up to 4 years for the entire process) and for which the advantage of economies of scale is therefore much more limited.” (*Id.* at point 171).

The Commission also notes that “Fincantieri itself submitted that it would not be able to re-enter the LNG segment as it would not be able to reach the critical mass of production necessary to exploit economies of scale.” (*Id.* at note 103).

³⁹⁰ *Id.* at point 167 in conjunction with points 169-70. According to the Commission, these considerations imply that either (i) in the period 1970s-1990s such technologies were no longer developed and, therefore, it cannot be argued that South Korean shipbuilders have negatively affected innovation, or (ii) if innovation between 1970-1990 existed, it is clear that customers have given preference to a well-established older technology if offered at competitive prices.

³⁹¹ *Id.* at point 172.

³⁹² *Id.* at points 190, 202.

the critical mass for R&D investments, thereby harming innovation.³⁹³ The Commission presents subsequently convincing evidence indicating that the competitors' claims are unwarranted.³⁹⁴

VI. TECHNOLOGICAL PROGRESS IN EC MERGER CASES IN OTHER ACTIVITIES

This part of our paper discusses technological progress in EC phase II merger cases in other activities than those that have been discussed above from the establishment of merger control at Community level (21 December 1989) to 21 September 2008. In accordance with the current statistical classification of economic activities in the European Community, we have divided the remaining merger cases as follows : 1) Administrative and Support Service Activities - Case No IV/M.603-Crown Cork & Seal/CarnaudMetalbox of 14 November 1995, Case No COMP/M.2416-Tetra Laval/Sidel of 30 October 2001 ; 2) the Manufacture of Food Products, Beverages, and Tobacco Products - Case No IV/M.1313-Danish Crown/Vestjyske Slagterier of 9 March 1999, 3) the Manufacture of Computer, Electronic, and Optical Products - Case No COMP/M.3083-GE/Instrumentarium of 2 September 2003 ; 4) Mining and Quarrying - Case No IV/M.619-Gencor/Lonrho of 24 April 1996.

A. Administrative and Support Service Activities

1. Case No IV/M.603-Crown Cork & Seal/CarnaudMetalbox of 14 November 1995

The acquisition concerned of exclusive control over the French society CarnaudMetalbox (hereinafter "CMB") by the American society Crown Cork & Seal, Inc. (hereinafter "Crown"), a leading manufacturer of packaging products for consumer marketing companies around the world, entails the concentration of R&D, know-how, and technologies by the two market leaders. According to the Commission, the parties enjoy a position of force in the domains that determine the choice of supplier : technological advance, R&D activities and know-how, production flexibility, and reliability of supplies.³⁹⁵ Interestingly, contrary to many other merger decisions, the Commission recognizes in this Case that technological advance and know-how are one of the reasons why customers get their supplies from large international companies with solid technical resources.³⁹⁶ In addition, in the Commission's estimation, the remaining competitors are small and would not be able to exercise countervailing power.³⁹⁷

³⁹³ *Id.* at point 191.

³⁹⁴ *See id.* at points 192-202.

³⁹⁵ Case No IV/M.603-Crown Cork & Seal/CarnaudMetalbox of 14 November 1995, at point 71 in conjunction with point 77. These elements also constitute an important entry barrier (*Id.* at point 77).

³⁹⁶ *Id.* at point 98. Some clients point out that a dominant position of the entity in the field of know-how, R&D activities, technologies, as well as its investment capacity would make it a privileged partner for important clients for some projects (*see id.* at point 72).

³⁹⁷ *Id.* at point 69.

CMB and Crown are the driving force behind innovation on the market concerned, which is currently undergoing rapid and costly evolution at the level of technologies and know-how.³⁹⁸ Know-how is an important factor of competitiveness on this market in order to satisfy clients' demands. When examining countervailing buyer power, the Commission observes that the most important clients are largely dependent on the technological innovation and evolution of know-how of the merging parties ; that is why they would have no alternative to dealing with the new entity.³⁹⁹

The Commission recognizes that, as a general rule, the concentration in question would have a positive effect on competition in terms of rationalization, and does not find any negative effects other than the ones that would stem from the elimination of technological competition between CMB and Crown, as a result of which prices would significantly increase.⁴⁰⁰ However, the Commission does not present any element of proof to support the conclusion that prices would actually rise. Therefore, it seems safe to conclude that the underlying assumption of its evaluation is that the disappearance of competition implies the elimination of its benefits, such as lower prices. Finally, the Commission's conclusion is in conflict with its confirmation of a significant buyer's opinion that long-term contracts with small suppliers would not be, from its perspective, rational, and that the buyer would rather opt for long-term contracts with the new entity in order to benefit from its capacity to innovate and other advantages, and in order to restrain the evolution of prices.⁴⁰¹

2. Case No COMP/M.2416-Tetra Laval/Sidel of 30 October 2001

The Commission prohibited the operation whereby Tetra Laval S.A., located in France and belonging to the group Tetra Laval B.V. (hereinafter "Tetra"), would have acquired control of another French company, Sidel S.A. (hereinafter "Sidel"). Both companies are active, among other things, in the packaging business.

a. Effects of the concentration from a R&D perspective⁴⁰²

The Commission bases the evaluation of merger-related innovation effects on the analysis of relative R&D capabilities (those of the new entity and those of its closest competitor) in terms of employees, capital, R&D centers, and projects. In particular, it observes that "The merged entity would have at least twice as many employees and at least twice the available capital dedicated to R & D activities as its closest competitor".⁴⁰³ The Commission concludes that the concentration in question would enhance the merged entity's R&D capabilities and would place it in a position that no competitor could match,⁴⁰⁴ and that these capabilities "would ensure the continuation of its clear lead over its competitors and

³⁹⁸ *Id.* at point 98.

³⁹⁹ *Id.* at point 71.

⁴⁰⁰ *See id.* at point 98.

⁴⁰¹ *Id.* at point 72.

⁴⁰² *See also* www.elopak.com/innovation/pet/break.shtml (invoked in the Decision concerned).

⁴⁰³ Case No COMP/M.2416-Tetra Laval/Sidel of 30 October 2001, at point 385.

⁴⁰⁴ *Id.*

result in a loss of future competition between Tetra and Sidel in innovation and R&D which would have taken place without the merger.”⁴⁰⁵ The Commission also argues that such a conclusion had already been advanced by Tetra in its 2000 annual report.⁴⁰⁶ The irony is that the Commission does not recognize any difference between the legitimate objective of any enterprise to gain or preserve a leading position on the one hand, and the enforcement agency’s obligation to prove the alleged competitive harm on the other hand. Particularly, the Commission bases its conclusion on the recognition of the causal relationship between the improved R&D capabilities post-concentration and anticompetitive effects. On the basis of the decisional material, it is not evident that the competitors would not be able to exercise competitive pressure on the new entity in the innovation race, and that the enhanced R&D capabilities would not outweigh the benefits arising from innovation competition between the merging parties prior to the transaction.

b. Tetra’s dominant position in aseptic cartons

Among the factors that prove Tetra’s dominant position in aseptic cartons, the Commission enumerates the following : -the absolute and relative market shares,⁴⁰⁷ - technological complexity and entry barriers, especially the aseptic know-how and superiority of Tetra’s technology,⁴⁰⁸ -patents (many expiring but new added every year), and -paramount importance of proven past track record in aseptic packaging and related very high entry barriers.⁴⁰⁹ These factors of a dominant position, coupled with Tetra’s size, R&D capabilities, financial strength, and international presence (service and sales forces around the globe), make Tetra an inevitable business partner for liquid food beverage companies wishing to package their liquids in carton, especially aseptic carton. It is unclear why the Commission distinguishes between the factors indicating Tetra’s dominant position, as above-mentioned, and the firm’s size, R&D capabilities, etc. This formulation suggests that the elements that contribute to a dominant position in the market concerned do not, by themselves, make Tetra an inevitable business partner. Only is it the combination of those elements with Tetra’s size, R&D capabilities, financial strength, and international presence that cumulatively produces that result. The implications of such a distinction are not obvious in light of the Commission’s decisional practice.

The Commission’s analysis is deeply flawed in many aspects. First, if the Commission had intended to prove that Tetra would be de facto a quasi-monopolist, it should have supported its estimation with concrete pieces of evidence, instead of resorting to general statements that can apply to any large company that pursues significant international

⁴⁰⁵ *Id.* at point 386.

⁴⁰⁶ According to this report, “Tetra Pak regards research that focuses on the needs of customers and market, and the continued development of systems for processing, packaging and distribution, as the best way to ensure that it will retain its leading position in the world market.” (*Id.*).

⁴⁰⁷ That is, Tetra’s very high market shares (around 80% over a long period of time) and the weak position of competitors : SIG with [10-20%] and two smaller players, Elopak, International Paper and VarioPak, with no more than [0-10%] (*Id.* at point 218).

⁴⁰⁸ The Commission notes in this respect that SIG cannot match Tetra’s system of continuous reel of aseptic carton.

⁴⁰⁹ *Id.* at point 218. *See also id.* at point 221 *in fine*. The Commission also notes the absence of any significant market changes in the carton packaging sector during the **past five years** of a kind that would alter its assessment of Tetra’s market position in the aseptic carton market. It does not indicate what sort of changes might influence its assessment *in casu*, though.

activities. Second, and most importantly, the Commission should have demonstrated what kind of anticompetitive effects would have resulted from the structural change induced by the concentration in question. As it is not the case, the Decision lacks any substantiation in this respect. Even more interestingly, the Commission notes that new competitors (Elopak and International Paper) appeared on the market in the last ten years, and that some competitors can match some of Tetra's systems (quality of cartons, innovations, printing technology), but they cannot match Tetra's extensive product line.⁴¹⁰ Depending on the nature of innovative activities in the sector concerned and on whether or not Tetra has potentially unique abilities to produce innovative output, such a conclusion may also reveal a tension between static and dynamic analysis in merger control and a mechanical application of the logic of protection of competitors.

c. Sidel's leading position in PET packaging equipment

Sidel has been the pioneer and world leader in producing SBM machines for over 10 years ; it is particularly focused on top-end, high-capacity SBM machines, in which it enjoys a quasi-monopole and its machines have become the industry standard.⁴¹¹ In the Commission's estimation, Sidel's strong position in the high-margin top-end of the market is maintained by its R&D spending, by its global service network and by having set the industry standard.⁴¹²

Despite Sidel's very strong position and multiple competitive advantages, including standard-setting, competition in the high-capacity market seems, however, very vigorous : Sidel has lost as much as 10-20% of its market share since 1998, and no single competitor has consistently gained market parts, as indicated by market fluctuations.⁴¹³ The latter also seem to show that in spite of its strong assets, one of which is its particularly successful innovativeness,⁴¹⁴ Sidel has not had enough market power to maintain its market share at a constant, very high level.⁴¹⁵ In this respect, it is worth noting that Sidel invested heavily in R&D and commercialized many new technologies, as a result of which it gained market parts and opened up new markets in dairy products, fruit juice, and beer.⁴¹⁶ The Commission also refers to Sidel's successful innovations when delimiting the relevant product market.⁴¹⁷

⁴¹⁰ *Id.* at point 221.

⁴¹¹ According to a BNP Paribas analyst. *Id.* at point 234.

⁴¹² Tetra's statement in an annex attached to the notification (*Id.* at point 234).

⁴¹³ *Id.* at point 238.

⁴¹⁴ In the part of the Decision dedicated to the assessment of the commitments, the Commission itself admits that "As regards the introduction of a new range of machines, innovation is an essential element of the business of manufacturing SBM machines and Sidel, given its strength in R&D and successfulness in innovation in the past, is expected at some point in the near future to launch new or significantly improved SBM machines." (*Id.* at point 438).

⁴¹⁵ Of course, this is not to say that we suggest that the opposite (that is, maintaining market share at a constant, very high level should be regarded as a sign of strong market power immune to any competition) is necessarily true.

⁴¹⁶ Case Tetra Laval/Sidel, *supra* note 402, at point 239.

⁴¹⁷ The Commission mentions the Combi machine, which is an innovation introduced in 1999. Even though Tetra argues that Sidel's competitors, Krones and Procomac/Sipa, have also developed similar machines, the Commission underlines that "There are some indications that the Combi may form a distinct product market. From the demand side, the Combi offers certain characteristics and advantages which make it ideal for certain customers." Moreover, "a Combi machine is less expensive than a combination of a separate SBM and filling machine." *See id.* at point 174.

Even so, the focus of the Commission's competitive assessment is different. It highlights that Sidel's margins are relatively high for the industry in question, and that "The difference between Sidel's lower margins in the more competitive low-capacity market and the higher margins in the more concentrated high-capacity market are indicative of some degree of market power on the part of Sidel in the high capacity market."⁴¹⁸ Nonetheless, the Commission admits that the SBM machinery segment generally enjoys high-profit margins. The Commission's appraisal of Sidel's position is inconsistent and unconvincing. First of all, Sidel's relatively high margins in the high margin industry do not prove *per se* any anticompetitive offense, and may indeed reflect, for instance, higher input costs in the case of innovative products, hence the need for higher prices to compensate for higher fixed costs. This question has not been examined by the Commission, though. In this respect, the Commission does not seem to take into account (and does not present any pieces of evidence to refute it) Tetra's declaration that Sidel's margins have decreased in the last four years [confidential data], and that gross margins of this magnitude are not at all unusual, but are necessary to recover risky R&D expenditure and other costs. Also, it is questionable whether the low-capacity market is effectively more competitive than the high-capacity market as Sidel's losses of market parts since 1998 were much more significant in the latter than in the former.⁴¹⁹

Moreover, as a notifying party, Tetra points out at the Oral Hearing that (1) the high-capacity SBM machine market is characterized by cycles of innovation and imitation,⁴²⁰ (2) there are no significant patents in the industry, and competitors have managed to copy Sidel's machinery in the past, much of which within 2-3 years once it became commercially accepted (they benefited thereby rapidly and easily from Sidel's heavy R&D investments), (3) three competitors (SIG, Krones, and SIPA) can effectively compete with Sidel as, generally, they can offer similar machinery operating at all speeds of capacity.

The Commission rejects Tetra's claims simply by stating that its investigation does not support those claims, and does not specify how this investigation undermines them, which implies that the Commission does not properly substantiate its conclusion. The Commission invokes only one of Tetra's arguments that it considers incorrect, and rather engages in a morality play by highlighting that Tetra downplayed Sidel's R&D spending. Therefore, in our opinion, the Commission commits a serious error of economic appraisal by not proving that the merging party's claims concerning the fundamental aspects of its competitive analysis are unwarranted. Moreover, the Commission's referral to R&D expenditures as declared by Sidel's President, Mr. Olivier, who affirmed that R&D spending "places us far ahead of our principal competitors", is not only irrelevant *in itself* to the assessment of anticompetitive effects that are likely to result from the concentration in question, but also sends bad signals to business community, suggesting that making significant R&D efforts may pose serious problems in potential antitrust cases.

⁴¹⁸ *Id.* at point 241.

⁴¹⁹ In accordance with the Decision concerned, "since 1998 Sidel has lost some [10-20%] of its share in the high-capacity market, but only [0-10%] in the low capacity market. This loss of market share has been attributed to competitive pressure from SIG, Krones and Sipa with no single competitor gaining share consistently." (*Id.* at point 238). See also Tetra's statement, *id.* at point 245.

⁴²⁰ The notion of "innovation cycle" is also mentioned in Case No COMP/M.2861-Siemens/Drägerwerk/JV of 30 April 2003. The Commission observes that, according to competitors, a different period of innovation cycle of complementary products makes flexible cooperation between various producers technically indispensable in order to manufacture the optimal combinations of products (at point 150).

Further, within the competitive assessment of this case, the Commission invokes close R&D cooperation between converters and Sidel.⁴²¹ *Nota bene*, the Commission analyzes it in section “3.2.2.1. Converters’ dependency on Sidel”. In view of the Luxemburg Court’s definition of a dominant position (a position of economic force that enables a firm to act independently of its competitors, clients, and customers) on the one hand, and the Commission’s tendency to confuse a dominant position with a dominant position having as a consequence a significant impediment to effective competition on the other hand, the incorporation of the analysis concerning close R&D cooperation in this section indicates that the Commission perceives it as a sign of Sidel’s dominant position of a kind that should be prohibited within the meaning of the Merger Regulation. Also, the formulation itself of this point is one-sided by stressing Sidel’s access to converters’ inside know-how and trade secrets, thereby omitting the fact that contractual R&D cooperation is not undertaken under constraint and benefits both parties.

Last but not least, the Commission also maintains that competitors are likely to be foreclosed, and that they “would not have sufficient incentive to invest and compete in these high technology areas of PET equipment. Competitors, Sipa and SIG, explained at the Oral Hearing that their ability and incentive to conduct R&D and compete in the ‘new era’ PET markets (*i.e.* “sensitive” beverages) would be curtailed as a result of the merger.”⁴²² Only on the basis of these statements made by competitors does the Commission conclude, without proving it, that “Competitors would thus be foreclosed from the so-called “second era” markets of PET.”⁴²³ It commits thereby another manifest error of economic appraisal.

B. Manufacture of Food Products, Beverages, and Tobacco Products

Another Commission’s Decision in which innovation plays a relatively important role can be found in the industry of food products, beverages, and tobacco products. The Decision in question concerns a merger of the Danish cooperatives Slagteriselskabet Danish Crown AmbA (hereinafter “Danish Crown”) and Vestjyske Slagterier A.m.b.A. (hereinafter “Vestjyske Slagterier”). The former is the largest Danish cooperative slaughterhouse and is vertically integrated in slaughtering, meat processing, and meat trading. Vestjyske Slagterier is the second largest Danish cooperative slaughterhouse and is also vertically integrated in the same domains.

One of the major concerns expressed by the Commission in the Decision considered is the control of the new entity over R&D efforts in the reference markets. The Commission points out that “many technological improvements will be shared by the parties and Steff-Houlberg since a major part of the innovation in the Danish meat industry is done by or channelled via Danske Slagterier, which the merged entity will control.”⁴²⁴ According to the Commission, through Danske Slagterier, the parties will achieve control over innovation, and can reduce innovation addressed to the specific national needs in the Danish pig industry due to their control of the Board of this company and the Danish consumers’ preferences for meat

⁴²¹ Case Tetra Laval/Sidel, *supra* note 402, at point 307.

⁴²² *Id.* at point 369.

⁴²³ *Id.*

⁴²⁴ Case No IV/M.1313-Danish Crown/Vestjyske Slagterier of 9 March 1999, at point 176.

of Danish origin.⁴²⁵ The Commission only states in this context that “Pig co-operatives that wish to introduce specific schemes for the production of speciality pigs (organic pigs, free-range pigs, and so forth) need to have the price rules for the payment of such pigs approved by the Board of Danske Slagterier”,⁴²⁶ and on this basis considers the control of the Board as the reason for control over innovation.⁴²⁷ It concludes, nevertheless, that the commitments will remove the parties’ control over innovation in the Danish pig industry.⁴²⁸ The Commission patently fails to articulate a clear theory of anti-innovation effects as it does not demonstrate any potential harm to future innovation (even if it may effectively be the case), thereby committing a manifest error of economic appraisal. In particular, it does not even examine the incentives of the new entity to reduce innovation, and how the concentration concerned changes the incentives of the company concerned to innovate if already pre-merger Danske Slagterier performed or channelled a great part of innovations. The Commission should have also expressed explicitly what it meant by “channelling innovations” and how it influenced the competitors’ incentives and abilities to engage and succeed in R&D efforts.

Moreover, the analysis of the R&D-related structural characteristics of the pork industry is rather ambiguous. On the one hand, the Commission maintains that the industry concerned and the technology used in slaughterhouses are mature, and concludes therefrom that “New technological developments are (...) not sources of competitive advantages such as to provide competitive dynamics to the market”.⁴²⁹ The Commission further explains that, as it is normal in all industries, new technologies are introduced on a continuous basis, however, compared to high-tech industries, the change is only gradual and relatively slow.⁴³⁰ On the other hand, it observes that “In recent years there has been a trend towards more innovation in product development involving breeding the pigs, animal feed etc.”⁴³¹ It also adds that “consumers demand a larger variety of products (for example organic products) than previously”,⁴³² which may entail an increased incentive to innovate. Finally, according to the parties, “they are at the forefront of product innovation in Denmark with products for export as well as for the home market and (...) there is no reason why they should deviate from this strategy.”⁴³³ The Commission rejects the merging parties’ claim without properly examining it, and limits itself to stating that, as above-mentioned, the parties will control innovation due to their control of the Board of Danske Slagterier.

Unlike many other decisions, the Decision in question also contains a distinct part VIII. “Economic and Technological Progress”. The merging parties claim in this respect that owing to the concentration concerned, they would attain important cost savings [confidential data] and volumes that would enable them to (1) move from the present indirect/narrow-assortment sales to the retail sector to a full-assortment, direct supplier status for retailers in some of the major European markets, and (2) maintain the market position on the Japanese market in the face of competition from U.S. producers.⁴³⁴ In view of the general character of these claims and lack of appropriate and clear substantiation, it is debatable whether these claims may encompass dynamic efficiencies. At any rate, the Commission rejects all of them,

⁴²⁵ *Id.* at point 130 in conjunction with point 192.

⁴²⁶ *Id.* at point 130.

⁴²⁷ *Id.*

⁴²⁸ *Id.* at point 235.

⁴²⁹ *Id.* at point 176.

⁴³⁰ *Id.*

⁴³¹ *Id.* at point 129.

⁴³² *Id.*

⁴³³ *Id.*

⁴³⁴ *Id.* at point 198.

for it estimates that the concentration concerned would lead to an obstacle to competition as embodied by the creation of a dominant position in the relevant markets, which excludes in its estimation the consideration of efficiencies under Regulation No 4064/89. In reality, for the Merger Regulation does not impose the interpretation of the term “obstacle to competition” as the creation or reinforcement of a dominant position ; in view of the fact that such a interpretation does not make economic sense, the teleological interpretation of the Regulation considered implies that the Commission’s conclusion must be qualified as unfounded in this respect. Further, the Commission argues that the claimed efficiencies are largely not merger-specific,⁴³⁵ which cannot be excluded *a priori*, but it is not substantiated. However, although the Commission fails to interpret the Merger Regulation in an economically rational fashion, it must also be underlined that the efficiency claims are poorly substantiated by the merging parties, and that such general claims (even if they are likely to materialize) cannot be positively evaluated without further specification and support of satisfactory evidentiary material.

C. Manufacture of Computer, Electronic, and Optical Products

In the operation whereby General Electric acquires Finnish-based Instrumentarium, a leading hospital equipment manufacturer,⁴³⁶ R&D concerns play a relatively important role. The concentration in question combines two out of the four leading players in patient monitors in Europe. The Commission notes, in a press release, that this operation accentuates a significant consolidation that the markets considered have undergone in recent years as the main players have become bigger through the acquisition of smaller manufacturers.⁴³⁷

Innovation is an important parameter of competition in the field of patient monitoring, and the ability of a supplier to develop new products constitutes a crucial factor in the sales of monitors.⁴³⁸ When presenting the general characteristics of the perioperative monitoring market,⁴³⁹ the Commission quotes an external study (provided by the notifying party), which claims that “the perioperative monitoring market has been experiencing several changes in the various European countries in the last few years. The market has become a stable and mature market in which pricing strategy, technological innovation and consolidation have become crucial factors.”⁴⁴⁰ The presentation of the market concerned by the Commission (Decision, points 101-104) is fully based on the analyses provided by the merging parties, and no critical assessment thereof is undertaken. This approach is all the more alarming that in accordance

⁴³⁵ *Id.*

⁴³⁶ GE is active, through GE Medical Systems, in the markets for a wide range of medical devices, such as diagnostic imaging equipment, electromedical systems (*e.g.*, patient monitors), and IT solutions for hospitals. Instrumentarium operates, through the brands Datex-Ohmeda, Ziehm, and Spacelabs, in the field of medical imaging technology, anaesthesia, and critical care. As for the manufacture and sale of medical ventilators, anaesthesia-delivery systems, and patient monitors, *see also* Decision of 30 April 2003-Siemens/Drägerwerk.

⁴³⁷ Press release IP/03/1193, Brussels, 2 September 2003.

⁴³⁸ Case No COMP/M.3083-GE/Instrumentarium of 2 September 2003, at point 197. The Commission also refers therein to the latest important innovative developments and future innovations.

⁴³⁹ Perioperative monitors are devices used by anaesthesiologists to monitor patients during operations.

⁴⁴⁰ Case GE/Instrumentarium, *supra* note 438, at point 101.

with the observations made in the above-mentioned study, technological innovation is crucial in a mature and stable market, which is inconsistent with elementary economics as innovation-driven markets are by nature dynamic (as opposed to more mature, stable, and secure markets). Furthermore, this study argues that the perioperative monitoring market has undergone a strong evolution in recent years, which does not indicate its stable character, either. It is not possible to establish on the basis of the Decision why it might be legitimate to argue that the market concerned has just attained the point of stability more or less at the moment at which the Decision is taken. It is also unclear why the merging parties invoke such a study, which either contains a basic error of economic appraisal or is badly formulated, and goes against their interests. In particular, contrary to dynamic markets, mature and stable markets are more likely to be conducive to anticompetitive behaviors of market participants (especially tacit collusion), and the Commission raised this observation many a time in its decisional practice.

Nonetheless, the Commission recognizes a “sufficient number of actual and potential competitors that are in a position to compete with GE in the digital field” as a countervailing factor (also as regards a potential impediment to innovation) in the reference market.⁴⁴¹ In addition, the Commission takes into account the fact that Instrumentarium is generally not considered as the most important and effective competitor of GE with respect to R&D investments and achievements in the digital field.⁴⁴²

Interestingly, the Commission also observes that “The fact that many companies are currently entering the digital mammography market renders less likely the possibility that the merger between GE and Instrumentarium could reduce to a significant extent the actual or potential competition in this market or limit innovation in the digital field.”⁴⁴³ The use of conjunction “or” indicates the separation of competition problems resulting from the concentration in question and innovation concerns. This formulation may imply that the Commission does not regard innovation as a competitive factor (in the sense that innovation is not considered as a mode or a benefit of competition, etc.). This conclusion would be, nevertheless, in tension with the Commission’s previous statement that innovation constitutes an important parameter of competition in the perioperative monitoring market. Of course, one may argue that the Commission intended to contrast its observations regarding these two markets. However, it seems that, by referring separately to a reduction in competition and a decrease in innovation, the competition authority rather aimed at emphasizing that innovation, which plays a vital role in the markets for medical devices, will not be chilled as a result of the concentration concerned.

D. Mining and Quarrying

The only concentration in the field of mining and quarrying that raises innovation issues is the acquisition of the joint control of Impala Platinum Holdings Limited (hereinafter “Impala”) by Gencor Limited (hereinafter “Gencor”) and Lonrho plc (hereinafter “Lonrho”). Gencor is an international metals and minerals group based in South Africa, and Implats holds

⁴⁴¹ *Id.* at point 284.

⁴⁴² *Id.*

⁴⁴³ *Id.* at point 285.

all of Gencor's metal mining and refining interests. Lonrho is a British company with interests in mining and refining, hotels, agriculture, and general trade.

Implats claimed considerable cost-reducing synergies that would allegedly result from merging Implats and the Lonrho Platinum Division (hereinafter “LPD”).⁴⁴⁴ The Commission states in this respect that “Implats believes synergies can be achieved particularly through : (i) the productivity benefits of the parties learning from each other; and, (ii) savings derived from closing some of LPD's processing and refining facilities.”⁴⁴⁵ As a matter of evidence, efficiency claims advanced by the merging parties have to be based upon solid elements of proof, and not on beliefs. *In casu*, the claims are not substantiated by the merging parties, and the rejection thereof by the Commission is not substantiated, either. Hence, these claims are included in our concise analysis only on the basis of a purely formal criterion, as they are presented in a separate part dedicated to economic and technological progress.⁴⁴⁶

The Commission points out that “the overall synergies of the merger could even turn out to be negative due to the very different organizational cultures of the two companies, which will make integration difficult and probably costly.”⁴⁴⁷ This evaluation is not implausible,⁴⁴⁸ nevertheless, it should have been properly substantiated *in casu*. Similarly, the Commission’s conclusion that the only substantial synergies are to be found in the processing and refining facilities is not substantiated, either.⁴⁴⁹ Moreover, the Commission appears to find it problematic that the only significant synergies can be realized in several years, nonetheless, this estimation does not seem to have a major impact on its global assessment of the efficiency gains concerned.⁴⁵⁰ Finally, the Commission draws the conclusion that “even if there were synergies, (...) they would not be to the advantage of the consumers since the operation will create a jointly dominant position in the platinum and rhodium markets and form an obstacle to competition in those markets”.⁴⁵¹

Concluding, the parties did not make any effort to substantiate their efficiency claims, and, despite the above-mentioned errors of appraisal, the Commission correctly observes that the claims about the large synergies that are allegedly to be derived from the concentration of

⁴⁴⁴ Case No IV/M.619-Gencor/Lonrho of 24 April 1996, at point 212.

⁴⁴⁵ *Id.* See also *id.*, at point 189.

⁴⁴⁶ See VIII. “Technological and Economic Progress”, at points 212-214.

⁴⁴⁷ *Id.*, at point 213.

⁴⁴⁸ Indeed, it is not rare that different organizational cultures of the merging parties do pose obstacles to an effective integration of their business units. Moreover, the operation concerned appears to be a hostile bid since the extent of these synergies is disputed by LPD management, who recognized only about one tenth of the synergies identified by Implats, excluding certain negative and positive non-quantifiable effects (*Id.*). Furthermore, on the basis of the differences in organizational cultures between Implats and LPD, the Commission also concludes that the only effect of the merger in terms of cost structure is to create a company with a cost structure similar to Amplats’, but synergies will not give Implats/LPD a cost advantage compared to Amplats (*Id.*, at point 183). It is thus clear that this confusing conclusion is explicitly founded on the unsubstantiated estimation concerning the differences in organizational cultures.

⁴⁴⁹ *Id.*, at point 213. It is, however, important to underline that this is not a case of the application of efficiency offense. On the contrary, the Commission recognized some significant efficiencies without any substantiation.

⁴⁵⁰ *Id.*

⁴⁵¹ *Id.*, at point 214. See our analysis in Case No IV/M.1313-Danish Crown/Vestjyske Slagterier of 9 March 1999.

the precious metal refining operations into one refinery are vague ; it therefore draws the legitimate conclusion that the claimed efficiencies cannot be taken into account.⁴⁵²

VII. CONCLUSION

As a matter of evidence, innovation concerns are conditioned by the interplay between multiple factors : the nature of competitive interactions between innovators, the character of innovative activities in temporal dimension (simultaneous or sequential), the extent of uncertainty involved, the value of innovations considered, to name but a few. In devising adequate policy responses to innovation, in addition to the challenges that are well acknowledged in static analysis, economists face the new ones relating to the very nature of dynamic efficiencies and the difficulty to capture long-term market dynamics.⁴⁵³ Sensitivity towards these claims should obviously be reflected in the analytical framework for merger control if it is accepted that antitrust policy has a role to play in fostering innovation. Manifestly, in the absence of a more appropriate analytical framework (especially as regards its temporal dimension) and of its reasonable and effective application, innovation may be deterred, and obstacles to innovation are likely to be created.

The necessity to bring antitrust enforcement into proper alignment with economic reality is evident and widely acknowledged, at least by economists. High-tech market players often face different constraints and opportunities than more traditional ones. Therefore, it is clear that the analytical framework for merger control should reflect dynamic market changes propelled by technological change in order to optimize the performance of innovating firms. The frequent claims that we should refine our analysis of dynamic efficiencies are nowadays a pleasant fiction, for this analysis is still in its infancy. The examination of the Commission's phase II merger decisions unambiguously shows that dynamic analysis in the Commission's decisional practice is either rudimentary or non-existent. At present, it is essential that, on the one hand, economists continue to work intensively on appropriate basic tools to capture technological change and establish how changes induced by innovation affect competitive process in a longer term, and that, on the other hand, lawyers be more receptive to available economic research results in this area and beyond it. Indeed, the lawyers' failure to interpret and apply current economic theory is in itself an obstacle to enhancing firms' R&D performance and promoting technological progress, and the price therefor is, and will be, paid by consumers and firms alike. Further, more extensive work on post-merger performance would also be welcome and important in order to evaluate the effects of concentrations on innovation. Today's efforts (or rather complacent political declarations) to take innovation seriously in European antitrust enforcement⁴⁵⁴ dramatically fall short of any real substantive

⁴⁵² *Id.*

⁴⁵³ However, as regards the optimal dynamic policy towards horizontal mergers when merger proposals are endogenous and occur over time, it is important to consider the new economic insights from the paper by Nocke and Whinston ("We show that, in many cases, this apparently difficult problem has a simple resolution: an antitrust authority can maximize discounted consumer surplus by using a completely myopic merger review policy that approves a merger today if and only if it does not lower consumer surplus given the current market structure."). See Nocke, Whinston, *supra* note 1.

⁴⁵⁴ In the U.S. sense of the term "antitrust", not the EU one, which encompasses only anticompetitive practices as prohibited by art. 101 and art. 102 of the TFUE.

reforms. The 2004 reform, which replaced Regulation No 4064/89 by Regulation No 139/2004, and was labeled as a great reform, has not made any changes in this area. While it is true that dynamic models are still in embryonic stages, and, in accordance with an ancient Roman adage, *impossibilium nulla obligatio est*, even at this stage the European Commission can respond more appropriately to innovation concerns than it had tended to be the case in its decisional practice within the period examined.

What is more, in spite of the fact that legal predictability is one of the most desirable features of satisfactory law enforcement, we should not expect to predict innovation outcomes and the benefits arising from future innovative activities with absolute certainty and mathematical precision, as we do not even in the case of static analysis. Evidently, the analysis of innovation is intrinsically more unpredictable due to the very nature of R&D activities. However, neither is the optimal legal predictability an absolute value, nor is the predictive accuracy of a more dynamic antitrust analysis (as reflected in the current economic literature) an absolute obstacle to a more innovation-friendly approach.

Indeed, a certain amount of uncertainty may be ineluctable in the antitrust analysis of innovation cases. Even though legal and business predictability may thus suffer to some extent, this price to pay is probably very low compared to stifling R&D efforts and penalizing highly successful innovators as a result of a static approach to technological progress. Desirable precision and mathematical accuracy may long not reign, if ever, in this field. However, debates about specific issues of antitrust enforcement, although important, should never overshadow a larger picture : our welfare as consumers largely hinges upon supporting vigorous innovators and rewarding appropriately research efforts. It is also crucial to take into account the fact that today's research failures may be tomorrow's great research victories, therefore, well-demonstrated innovation efforts should be rewarded as such, independently of immediate tangible outcomes.

Nevertheless, evidently, any legal procedure is based on proofs, and not on speculative evidence. With respect to evidentiary burden, compared to other branches of law, lawyers have already made important concessions in the field of economic law, in order that, at the expense of some dose of unavoidable uncertainty, economic law be more flexible and thus more adapted to economic reality. However, in view of the lack of, or at best largely insufficient, economic education of judges, such concessions have sometimes meant the green light to a permissive policy, leading in the end to perverse results. As regards specifically innovation concerns, as long as we do not have dynamic models that could constitute a solid and reliable basis for integrating the analysis of long-term effects into formal merger control, innovation challenges may effectively, in some cases, be difficult to be dealt with. It is thus vital that, in search of the recognition of dynamic efficiencies, the competition authorities should refrain from substantiating merger decisions with dubious evidence, for such decisions are likely to create pernicious uncertainty, confusion, and lack of predictability. As a corollary, for the time being, the enforcement agencies should not be criticized, as it is often the case, for not taking into account what in fact amounts to unsubstantiated or manifestly poorly substantiated dynamic efficiency claims.

Finally, our analysis also reveals (or rather confirms) the main challenge that we face in the field of dynamic efficiencies and long-term market power-related effects : the necessity to perform intensively independent and original economic research and develop a deeper understanding of the determinants and effects of innovation on market conditions and firm behaviors. The rapid progress of dynamic analysis will imply the rapid progress of antitrust

law. Of course, this will be the case if and only if it does not take, as it is not rare in economic law, decades for courts and lawyers to assimilate new economic theory.

APPENDIX I : REVIEW OF OTHER CASES⁴⁵⁵

Aside from the major innovation cases, we have also identified the decisions in which the Commission briefly refers to R&D-related issues (for a list of all these decisions, see appendix IV). For the sake of transparency, we have divided the relevant extracts from the Decisions into the following subjects : nature of innovative activities, market entry, collective dominance, tacit collusion, innovations as a benefit of competition and other R&D incentives, role and effects of innovations (or lack thereof) on market conditions and behaviors, and other cases.

A. Nature of innovative activities

In Case *Schneider/Legrand of 30 January 2002*, the Commission makes reference to highly expensive and long-term R&D investments. It invokes a manufacturer's opinion on the R&D cost and the period of time needed to match the merged entity's product range, as well as an alternative thereto.⁴⁵⁶

In Case *Johnson & Johnson/Guidant of 25 August 2005*, the Commission refers to R&D in the field of interventional cardiology, in which it distinguishes two leagues of players : the top tier (large companies competing worldwide - Johnson & Johnson, Guidant, Medtronic, and Boston Scientific, in addition to Abbott as a serious candidate for becoming a key player) and the second tier (local players).⁴⁵⁷

As opposed to the second tier players,⁴⁵⁸ the former league is characterized by various strengths, including those in R&D and patents. Interventional cardiology is a highly

⁴⁵⁵ Our review aims at exhaustivity, however, we omit marginal references to innovation. For instance, in Case No COMP/M.3916-T-Mobile Austria/Tele.ring of 26 April 2006, we regard as a marginal reference the following one : "Some operators, such as Mobilkom and T-Mobile, also have an unpaired UMTS frequency spectrum. However, the market investigation found that this is not currently usable for technological reasons; nor is it possible to say when it will be usable (either as a result of technological innovation or changes in the frequency spectrum). This spectrum is therefore irrelevant for the purposes of the present analysis." (*Id.* at point 49).

⁴⁵⁶ The Commission states that "it is almost impossible to imagine developing a range comparable to the new entity in all the countries concerned. It would mean an investment for each country of the order of EUR 5 to 10 million and more than ten years of R& D work. The only partially credible response would be to acquire existing ranges already in the catalogues of accessible companies." (Case No COMP/M.2283-Schneider/Legrand of 30 January 2002, at point 610).

⁴⁵⁷ Case No COMP/M.3687-Johnson & Johnson/Guidant of 25 August 2005, at points 88-89, 113.

⁴⁵⁸ The Commission understands local players as "suppliers that operate mainly only in some regions in Europe, have small R&D budgets and a much smaller size than the leading players, and are less diversified; they exert

innovative area with rapidly evolving products,⁴⁵⁹ and the leading players have many innovation-related strengths. Among other things, they enjoy vast financial capabilities to finance massive R&D programmes (spending from one to several hundred million U.S. dollars), a strong patent portfolio (patent protection is crucial in order to gain access to the U.S. market and, to a lesser extent, to European markets), as well as top-quality devices, supported by good and abundant clinical data. They also rely on a strong and widespread presence in the three most lucrative markets (the U.S., Japan, and Europe), with the strategic role of the U.S. markets as the largest (60% of worldwide revenues) and most profitable ones, with a view to amortizing massive R&D investments and reaching economies of scale.⁴⁶⁰ The Commission concludes that “the ability to properly compete in the US market increases global revenues and profits significantly and thus the attractiveness of R&D projects.”⁴⁶¹

The competitive situation in the lyocell production and processing technology market is assessed in Case *CVC/Lenzing of 17 October 2001*. From a dynamic perspective, it is important to note that the merging parties raise the objections of the alleged danger of free-riding on their substantial investments and underscore a strong interest in protecting their investment and research and development efforts.⁴⁶² The Commission does not examine the validity of the parties’ arguments⁴⁶³ due to its perception of the importance of patents and entry barriers *in casu*. It points out that those arguments do not change the fact that “the parties currently hold the vast majority of all existing patents for lyocell production and treatment, that they are in a position to block or significantly delay the entry of third parties to the lyocell production market and that market entry is improbable in the foreseeable future.”⁴⁶⁴

In Case *Varta/Bosch of 31 July 1991*, as regards R&D in the sector concerned (*i.e.*, automotive starter batteries), the Commission only mentions that, in one of the product reference markets (original equipment), sales are generally linked to R&D cooperation with automobile manufacturers with a view to developing new products while this is not the case in the market for replacement parts.⁴⁶⁵

occasionally some competitive constraints, especially if they manage to develop successful products in the key market for DES, overall, they remain fringe players as they lack the above mentioned assets to worry the market leaders.” (*Id.* at point 90).

⁴⁵⁹ *Id.* at point 77. *See also id.* at point 73 (fundamentally, the Commission recognizes that “Interventional cardiology is a relatively recent, innovation driven business which has registered dramatic growth over the last few years”) and at point 76 (“The interventional cardiology devices are differentiated products, where quality of performance and innovation are key parameters”). According to the Commission, the market for endovascular devices in Europe shows some features resembling those of the market for interventional cardiology, however, there are also notable differences, in particular, innovation appears to play a more modest role in this market (*see id.* at points 201-202, 204-206).

⁴⁶⁰ As regards the specialization and differentiation of stents, it is important to note that the Commission recognizes that those features are “clearly linked to the size of the markets they will serve: the costs associated with the research and development, clinical trials and marketing of a new dedicated stent are very high, and such effort can be undertaken only if the target market is sufficiently large to offer an acceptable return on the investment“, as well as pointing out that “At the same time, the specialisation process increases the financial and human resource investment necessary to offer a complete line of products.” (*Id.* at point 209).

⁴⁶¹ *Id.* at point 88.

⁴⁶² *See* Case No COMP/M.2187-CVC/Lenzig of 17 October 2001, at point 252.

⁴⁶³ Note in this context that Lenzing is currently the company spending the highest amount of money on research and development in the VSF area (*Id.* at note 153).

⁴⁶⁴ *Id.* at point 253.

⁴⁶⁵ Case No IV/M.012-Varta/Bosch of 31 July 1991, at point 12. *See also id.* at points 14-15.

Also, within the analysis of commitments, the Commission invokes the dissolution of the licensing agreement between Varta and Deta/Mareg, whereby the latter was influenced by the former, and which had, according to the Commission, an extraordinary character due to the share of know-how, exchanges of R&D and experts, and the mutual utilization of IPR without referring to a specific domain or application. According to the Commission, the dissolution thereof would not be immediate, but would produce immediate effects.⁴⁶⁶

In Case *Siemens/Italtel of 17 February 1995*, the Commission points out that the public telecommunication equipment industry is characterized by intensive R&D activities : “The public telecommunication equipment industry, and in particular the development and manufacture of public switching, is research intensive. Companies typically spend around 15%-20% of their turnover in R&D”.⁴⁶⁷ It adds that R&D investment costs⁴⁶⁸ “must be regarded as necessary to be able to maintain a competitive position from a technological point of view”, and relates it to the minimal optimal size : “Long term viability in the market requires therefore a certain minimum amount of sales in order to be able to develop a new generation of switches and [sic] maintain the usual ratio in the industry of R&D expense to sales”.⁴⁶⁹ Lastly, the Commission seems to adopt the Schumpeterian hypothesis by concluding that “Technology constitutes therefore another factor leading to a relatively high concentration of supply”.⁴⁷⁰

In Case *Exxon/Mobil of 29 September 1999*, the Commission observes that “Motor fuel retailing is characterised by low technological innovation. Technological development is achieved through gradual and relatively slow incremental changes to processes and products rather than revolutionary fast moving changes.”⁴⁷¹ Similarly, in Case *TotalFina/Elf of 9 February 2000*, it notes that “Fuels are homogeneous products with a low degree of technological innovation. (...) There is little technical innovation on the fuel retail market. Technical progress relies more on fairly gradual changes to processes and products than on radical breakthroughs.”⁴⁷² According to the Commission, low technological innovation (or lack thereof) entails a number of consequences. First, it is typical of a market conducive to

⁴⁶⁶ See *id.* at points 34-36, 53-58, 62.

⁴⁶⁷ Case No COMP/M.468-Siemens/Italtel of 17 February 1995, at point 50. For more details, see *id.*, as well as point 51 : “The major technological developments regarding public switches have been described above, under product market definition. An important effect in this context is that major technological innovations typically give rise to operators considering new suppliers and suppliers considering opportunities to enter into new markets.” See also *id.*, at points 26-28, 42, 50-54 and at note 29.

⁴⁶⁸ “According to information submitted by the parties, the main suppliers of public switches (Alcatel, AT&T, Ericsson, Northern Telecom, Siemens) each invested close to 500 million dollars or more in R&D for public switches in 1992.” (*Id.*).

⁴⁶⁹ *Id.*

⁴⁷⁰ *Id.* See also Case No COMP/M.3653-Siemens/VA Tech of 13 July 2005, at points 250-51 and at note 111 :

“[There follow comments on Siemens’ research and development activities... 108]* This [...] research activity is reflected in a significant number of patents. VA Tech also has a considerable number of copyright-protected developments for electrical metal plant building. [There follow comments on Siemens’ research and development activities]. The significant development costs and the long time it takes to develop products and services were also confirmed in the Commission’s market investigation. One competitor stated that the costs of developing products and solutions for this industry are so high that only major global companies could think about going into this business (anonymised results of the market survey).”

The Commission also makes reference to R & D efforts on the part of competitors (See *id.* at point 374).

⁴⁷¹ Case No IV/M.1383-Exxon/Mobil of 29 September 1999, at point 473.

⁴⁷² Case No COMP/M.1628-TotalFina/Elf of 9 February 2000, at point 191 in conjunction with point 194.

oligopoly and this is directly linked to the homogeneity issue.⁴⁷³ Second, in the absence of innovation, competitors have no other choice than competing on prices.⁴⁷⁴ Third, low technological innovation ensures that the nature of competition (and the homogeneity of products) will not substantially change in the near future.⁴⁷⁵ In Case *Exxon/Mobil*, the Commission also observes that “Exxon and Mobil appear to have nearly insurmountable market leadership which according to some competitors is due to historical market conditions. The aviation lubricants industry has suffered from poor profitability and a high cost base as a result of the continuous need for research and development triggered by technological advances in aircraft manufacturing. As a consequence, many suppliers withdrew from the market”⁴⁷⁶ while “The parties claim that they do not hold any insurmountable technological leadership because the technology required to compete would be mature.”⁴⁷⁷ The Commission replies that “This is probably true but does not change the fact that there are high barriers to entry in the market due to approbation procedures which make unlikely entries even if prices were to be raised.”⁴⁷⁸

Finally, in Case *Nestlé/Perrier of 22 July 1992*, the Commission states that R&D activities in the “water industry”, as measured by R&D expenses, are of minor importance, and the parties’ basic production process is a well-established, mature technology.⁴⁷⁹ The Commission specifies that “The total expenditure of Nestlé in R & D with respect to waters (1,5 % of the annual turnover achieved in the sector) is a clear indication in this respect. This figure is lower than the average expenditure in the food sectors (see p. 33 of the notification). It can also be compared with the 15 to 25 % of turnover devoted by typically innovative industries to R & D.”⁴⁸⁰ Also, contrary to many other decisions, the Commission recognizes in this Decision the uncertainty of market position held by a given firm as one of the fundamental characteristics of dynamic markets : “The water industry cannot be considered as an industry based on research, where new technological developments might quickly erode acquired positions.”⁴⁸¹

For the nature of innovative activities, see also our reference to Case *Areva/Urenco/ETC JV of 6 October 2004* in Appendix I, “Innovations as a benefit of competition and other R&D incentives”.

B. Market entry

In Case *Allied Signal/Honeywell of 1st December 1999*, when analyzing market entry, the Commission refers to [implicitly high] R&D costs and the need for a high output to have many product units to spread the costs over : “in order to enter the market and acquire a

⁴⁷³ Case No IV/M.1383-Exxon/Mobil of 29 September 1999, at point 473.

⁴⁷⁴ *Id.* In Case No COMP/M.1628-TotalFina/Elf of 9 February 2000 (at point 191), the Commission confirms that price competition is vital (although not exclusive as a form of competition), but also adds an estimation that is either inappropriately formulated or materially incorrect. Namely, on the one hand, it observes that firms in the relevant market compete essentially on prices ; on the other hand, it claims that the reference market severely lacks competition : “As explained in the Exxon/Mobil decision, the market for motorway sales of fuel clearly suffers from a competition deficit. First, companies compete essentially by means of prices. There is little room for manoeuvre as regards the other factors of competition.”

⁴⁷⁵ Case No IV/M.1383-Exxon/Mobil of 29 September 1999, at point 473.

⁴⁷⁶ *See id.* at point 799.

⁴⁷⁷ *Id.* at point 473.

⁴⁷⁸ *Id.*

⁴⁷⁹ Case No IV/M.190-Nestlé/Perrier of 22 July 1992, at point 126.

⁴⁸⁰ *Id.*

⁴⁸¹ *Id.*

position on the market, the new entrant could offer the products at lower prices. However, this requires the new entrant to be able to sell at least large quantities of the products in order to amortise R&D costs. Given the presence of the combined entity, the new entrant may, however, be precluded from benefiting from the required economies of scale.”⁴⁸²

The Commission also mentions entry and R&D sunk costs in Case *Omya/Huber PCC of 19 July 2006*. It indicates that GCC/PCC blending technology⁴⁸³ requires a considerable amount of know-how and R&D efforts, presents the reasons therefor, and concludes that most of the R&D costs had already been incurred pre-concentration by Huber, which intended to enter the market for this technology.⁴⁸⁴ It points out that “until takeover talks started with Omya, Huber, one of the merging parties, had clearly pursued its plans to enter the Finnish market for coating calcium carbonates and had incurred considerable sunk costs in R&D and production tests a coating grade calcium carbonate to the market”.⁴⁸⁵ The Commission specifies that Huber had incurred the majority of R&D costs in the product development at the Kuusankoski site, which represents about 20-40% of its overall R&D resources.⁴⁸⁶

According to the notifying party in Case *Tomtom/Tele Atlas of 14 May 2008*, innovation is one of the two reasons for a reduction in entry barriers.⁴⁸⁷ In order to produce navigable digital map databases of a quality comparable to those supplied by Tele Atlas and NAVTEQ, a credible market entrant needs the necessary technological knowledge and to make investments (according to the varying cost estimates) from less than EUR 100 million to EUR 400 million at EEA level.⁴⁸⁸

Finally, in the Commission’s estimation, market entry in interventional cardiology is not impossible, especially if the new entrant does not have the ambition to become a global player with a significant market share, however, entry barriers are significant, notably due to the necessity to make important R&D investments in this highly innovative field (Case *Johnson & Johnson/Guidant of 25 August 2005*).⁴⁸⁹ The Commission specifies that “As an approximate measure, the major medical devices suppliers tend to dedicate 10-15% of their revenues to R&D ; R&D spending can be considerably higher for particularly innovative projects, such as DES.”⁴⁹⁰

C. Collective dominance⁴⁹¹

⁴⁸² Case No COMP/M.1601-Allied Signal/Honeywell of 1st December 1999, at point 75.

⁴⁸³ See Case No COMP/M.3796-Omya/Huber PCC of 19 July 2006, at point 12.

⁴⁸⁴ See Decision, point 367 in conjunction with point 386 *in fine*.

⁴⁸⁵ *Id.* at point 381.

⁴⁸⁶ As far as the analysis of R&D and innovation is concerned, the Commission’s main observation is presented in our paper. As regards R&D cooperation subject to confidentiality agreements, see *id.* at point 413.

⁴⁸⁷ See Case No COMP/M.4854-Tomtom/Tele Atlas of 14 May 2008, at points 111, 116.

⁴⁸⁸ See *id.* at point 122.

⁴⁸⁹ *Id.* at point 77 in conjunction with point 82.

⁴⁹⁰ Case No COMP/M.3687-Johnson & Johnson/Guidant of 25 August 2005, at points 77 and 88. Aside from R&D financing, other entry barriers include securing property rights for product development (or accepting a high litigation risk), long time-to-market for new products, organization of effective sales force and hospital presence, and building up an acceptable range of products (*Id.* at point 82).

⁴⁹¹ Note that we distinguish between collective dominance and tacit collusion despite the fact that the Commission stated explicitly that “Collective dominance is usually associated with the joint exercise of market power through the tacit co-ordination of market behaviour of a group of firms.” (Case No COMP/M.2498-UPM-Kymmene/Haindl and Case No COMP/M.2499-Norske Skog/Parenco/Walsum of 21 November 2001, at point 74), and despite the fact that this approach is consistent with that adopted in the landmark decisions in which the Commission examined collective dominance, such as Decision 92/553/EEC IV/M.190-Nestlé/Perrier, Decision 97/26/EC IV/M.619-Gencor/Lonrho, Decision 2000/276/EC IV/M.1524-Airtours/First Choice (*Id.* at point 76).

In Case *MAN/Auwärter of 20 June 2001*, when establishing whether or not there would be a sufficient degree of structural similarity between MAN/Auwärter and EvoBus for them to form a lasting duopoly as a result of the notified concentration, the Commission points out that “MAN/Auwärter and EvoBus both wish to employ a two-brand strategy-albeit under the umbrella of a single management - aimed at manufacturing and marketing separately buses of two different makes. Both companies will at the same time manufacture commercial vehicles (trucks); this will produce benefits in the R&D sphere and when it comes to purchasing and producing components.”⁴⁹² The Commission also examines other common features of the companies concerned, and concludes that a sufficient degree of structural similarity cannot be established.⁴⁹³

In Case *SCA/Metsä of 31 January 2001*, the Commission refers to innovation when examining the characteristics of the markets for tissue products that are conducive to collective dominance, such as low market demand elasticity or an advanced stage of market growth (maturity). It observes that the Nordic tissue markets are mature markets with low growth prospects, and that “technical innovation is relatively moderate and takes time to have a strong influence on markets, partly due to the long life of tissue machines.”⁴⁹⁴

The Commission refers to lack of significant innovation on a mature market (*in casu*, the ARG+ market for ethylene) as one of the elements that it takes into account to establish the existence of a collective dominant position in Case *Shell/DEA of 20 December 2001*. The Commission specifies that there have been no major research and development advances over the last 20 years, and that there are no quality differences between the different suppliers due to a common binding specification.⁴⁹⁵

D. Tacit collusion⁴⁹⁶

In Case *Mannesmann/Vallourec/Ilva of 31 janvier 1994*, apart from the analysis of competitive advantages, the Commission mentions innovation when examining the incentives to engage in anticompetitive parallel conduct (tacit collusion). More precisely, it takes into account a low rate of innovation when establishing the effects of market transparency.⁴⁹⁷

The Commission also indicates that innovation in the market for primary float glass is a factor that complicates tacit coordination (Case *Pilkington-Techint/SIV of 21 December 1993*).⁴⁹⁸

As the issue of whether or not the European Commission has considered a collective dominant position and tacit coordination (tacit collusion) as synonyms has been raised in literature, and we have not analyzed the decisional practice in this area, this distinction cannot be *a priori* rejected. Moreover, note that even in the quoted point, the Commission uses the term “usually”.

⁴⁹² Case No COMP/M.2201-MAN/Auwärter of 20 June 2001, at point 55.

⁴⁹³ *Id.* at point 54.

⁴⁹⁴ Case No COMP/M.2097-SCA/Metsä of 31 January 2001, at point 148.

⁴⁹⁵ Case No COMP/M.2389-Shell/DEA of 20 December 2001, at point 78. *See also supra* note 471-472, Cases Exxon/Mobil of 29 September 1999 and TotalFina/Elf of 9 February 2000.

⁴⁹⁶ A more proper term is tacit coordination as the latter does not involve statements of will, nevertheless, the expression “tacit collusion” is commonly and wrongly used as a synonym.

⁴⁹⁷ *See* Case No IV/M.315-Mannesmann/Vallourec/Ilva of 31 January 1994, at point 129.

⁴⁹⁸ Case No IV/M.358-Pilkington-Techint/SIV of 21 December 1993 ; “Research and development is increasingly important as manufacturers have sought to extend the range of value added products. This has led to innovation in on-line coating and the development of new glasses with energy saving and solar control benefits.

In Case *JCI/Fiamm of 10 May 2007*, lack of significant actual and future innovation figures amongst a number of market characteristics (such as stable and predictable demand, homogeneity of products, or mature production technology) that are likely to facilitate an understanding on the terms of coordination in the markets concerned.⁴⁹⁹ The Commission also notes that the products in question are based on technology which is more than 100 years old.⁵⁰⁰

E. Innovations as a benefit of competition and other R&D incentives

In Case *Ryanair/Aer Lingus of 27 June 2007*, innovation is perceived as a benefit resulting from effective competition. According to the Commission, the elimination of actual competition on the overlapping routes between the merging parties would deprive customers of benefits of effective competition, such as low prices, high-quality products, a wide selection of goods and services, and innovation.⁵⁰¹

In Case *Omya/Huber PCC of 19 July 2006*, one of the major anticompetitive effects identified by the Commission is related to the elimination of the acquired party, Huber, as a significant potential competitor and to a reduction in R&D incentives as a result of the concentration concerned. The Commission estimates that, in the absence of the transaction in question, “as an independent supplier to the market, Huber would have incentives to carry out further research and development, while if acquired by Omya, as the dominant supplier of coating calcium carbonates, fewer such incentives to develop and innovate would be left as this would cannibalise its own sales of GCC coating. Even if research and development efforts were to continue, customers would probably not benefit, as the combined entity would have no incentive to pass on the benefits to them. The envisaged concentration would thus reduce the benefits of innovation on the developing market of calcium carbonate coating GCC/PCC blends and additives.”⁵⁰²

According to the Commission's investigation in Case *SEB/Moulinex of 11 November 2003*, the tabletop oven market is characterized by effective competition. The Commission regards constant innovations⁵⁰³ as one of the benefits of effective competition on this market (such as a fall in prices by about 15% over the past five years, lack of entry barriers, the possibility of a significant expansion of market positions).⁵⁰⁴

Product innovation leads to product differentiation thus complicating the emergence of anti-competitive parallel behaviour.” (*Id.* at point 42).

⁴⁹⁹ Case No COMP/M.4381-JCI/Fiamm of 10 May 2007, at point 444 (the markets concerned are the markets for OE starter batteries cars/LCV and trucks/HCV).

⁵⁰⁰ *Id.*

⁵⁰¹ Case No COMP/M.4439-Ryanair/Aer Lingus of 27 June 2007, at point 492. However, the Commission sometimes refers to the term “price increases” as short for various negative effects : lower innovation, a lower decrease of prices than absent the merger, a reduction in output, choice, or quality (*Id.* at notes 544, 829).

⁵⁰² Case No COMP/M.3796-Omya/Huber PCC of 19 July 2006, at point 441. For a better understanding of the Commission’s R&D analysis, *see id.* at points 367, 381, 386, 442.

⁵⁰³ Such as self-cleaning, hot-air cooking, several cooking levels, etc. (Case No COMP/M.2621-SEB/Moulinex of 11 November 2003, at point 134).

⁵⁰⁴ *Id.*

The Commission also invokes innovation benefits resulting from competition in Case *TomTom/Tele Atlas of 14 May 2008*. The Decision concerned refers to various types of navigation devices : Portable Navigation Devices (PND), Personal Digital Assistant (PDA), GPS-enabled mobile telephone, and “in-dash” navigation device. In the Commission’s evaluation, pre-merger, Tele Atlas and NAVTEQ competed on both price and non-price variables, as a result of which map database prices have been substantially declining and map innovations have been important over the last few years.⁵⁰⁵

Third parties fear that confidential information which they pass to Tele Atlas could be shared with TomTom after the merger.⁵⁰⁶ They draw the following conclusions therefrom : (1) access to information about the future behavior of its downstream customers would allow the new entity to pre-empt any of their actions aimed at winning more customers (through better prices, innovative features, new business concepts, increased coverage of map databases), (2) such a pre-emption possibility would reduce the incentive of TomTom’s competitors to cooperate with Tele Atlas on pricing policy, innovation, and new business concepts, for cooperation would require exchange of information, (3) as a consequence, the concentration concerned would strengthen the market power of the only alternative map supplier (NAVTEQ), and could lead to increased prices or less innovation in the market for navigable digital map databases.⁵⁰⁷

Third parties claim that they encourage map database suppliers to invest in a new feature or extend the coverage of their map databases. They express the fear that the concentration in question might increase TomTom's ability to obtain information about innovations proposed by the PND producers upstream.⁵⁰⁸ Particularly, they argue that the information about new add-on features, which they would like Tele Atlas to develop for their use, could be shared with TomTom, and that TomTom's access to the innovations of its competitors could give it a competitive advantage as sales of PNDs are partly innovation-driven.⁵⁰⁹

The Commission rejects the abovementioned claims due to the existence of smaller companies offering innovative add-on features⁵¹⁰ and the pre-merger communication of most ideas related to new content to other customers (including TomTom).⁵¹¹

According to four respondents to the Commission’s investigation in Case *Areva/Urenco/ETC JV of 6 October 2004*, the concentration in question would limit incentives to innovate due to the termination, by Areva, of its independent research or development.⁵¹² It is claimed that “Areva would no longer have an incentive to develop an alternative enrichment technology, as all research and development will take place at ETC”, and that “it would end the competition between the two only enrichment companies in Europe

⁵⁰⁵ *Id.* at point 278.

⁵⁰⁶ *Id.* at point 253.

⁵⁰⁷ *Id.*

⁵⁰⁸ *Id.* at point 266.

⁵⁰⁹ *Id.*

⁵¹⁰ Also, independent PND manufacturers purchase add-on features from external companies (*Id.*).

⁵¹¹ According to the Commission, Tele Atlas’ investment decisions are consulted with the largest customers, and not based on requests from individual companies. Third parties confirm that Tele Atlas consults them regularly about new investment ideas, and that the ideas that they submit to Tele Atlas are usually consulted with other important customers (*Id.*).

⁵¹² Case *Areva/Urenco/ETC JV of 6 October 2004*, at point 47.

to embark on new projects to further develop the technology.”⁵¹³ The merging parties contest the claims, in particular they maintain that Areva is not a competitor in the field of independent research, and argue that, post-concentration, ECT’s incentives to invest in R&D will be even greater than absent the transaction concerned.⁵¹⁴ The Commission partially rejects the parties’ claims, and partially considers them difficult to assess.⁵¹⁵ In this context, it is important to note that the Decision concerned explicitly refers to the long-term timing of R&D process and uncertainty thereof. According to the parties, had Areva decided to re-initiate its own development of centrifuge technology, it would be likely to take 10-15 years to reach the stage of industrial feasibility.⁵¹⁶ The Commission also recognizes R&D uncertainty as regards R&D results and commercial success. First, it points out that CEA, a French government entity which conducted R&D programs in this area, has invested very significant amounts in research into laser enrichment of uranium, which has proved to be unsuccessful and has been abandoned.⁵¹⁷ Second, it observes that “It is not certain that any research undertaken by Areva will result in a commercially viable product.”⁵¹⁸ Globally, the Commission’s evaluation is not unambiguous and largely reflects the problems related to tension between static and dynamic perspectives.

In our opinion, the Decision concerned makes two major contributions in the field of R&D. First, the Commission concludes that “In this situation”⁵¹⁹ it appears that the effect of the operation on innovation may be marginal and speculative.”⁵²⁰ Second, and most surprisingly, the Commission adopts a very clear and laxist stance on merger policy in dynamic markets - it goes as far as to claim that innovation markets often do not require public intervention : “Innovation markets are usually dependent on a large number of uncertain parameters and therefore often do not justify regulatory intervention. This is particularly true in a case such as uranium enrichment technology where the new product cycle is between 10 and 20 years.”⁵²¹ For these reasons, having adopted the short-term analytical framework (as required by the merger guidelines) and a laxist position, the Commission concludes that the operation concerned does not raise serious doubts as regards the market for centrifuge or uranium enrichment equipment.⁵²²

In *Case Telia/Telenor of 13 October 1999*, the Commission estimates that as a result of the concentration concerned, the Scandinavian markets for TV distribution may enter the digital era with a prognosis of reduced consumer choice.⁵²³ In particular, in its evaluation, “it is likely that broadcasters will have reduced incentives to invest in improving quality and/or in innovation of new content” in a situation in which content providers would be faced with a dominant or even monopsonistic purchaser of content in Scandinavia.⁵²⁴

⁵¹³ *Id.* at point 48.

⁵¹⁴ *In particular, see id.* at point 49.

⁵¹⁵ *See id.* at points 51-52.

⁵¹⁶ *Id.* at point 47.

⁵¹⁷ *Id.* at point 50.

⁵¹⁸ *Id.* at point 52.

⁵¹⁹ That is, in view of the fact that (1) Urenco currently faces actual competition from Tenex and JNFL, as well as potential competition from USEC, and that (2) if the research were to be successful, it is very likely that Areva’s product would only be able to offer effective competition in the long term.

⁵²⁰ *Id.* at point 52.

⁵²¹ *Id.*

⁵²² *Id.*

⁵²³ Case No COMP M.1439-Tell4/Telenor of 13 October 1999, at point 368.

⁵²⁴ *Id.*

Lastly, in the Commission's assessment in *Case Astra Zeneca/Novartis of 26 July 2000*, the concentration concerned will diminish innovation competition due to the elimination of one of the three leading market players (*i.e.*, AstraZeneca, Novartis, and BASF) : "Without the merger, competition would have developed between the three companies on the basis of their innovative products. As a consequence of the merger, one of these innovators is removed from the market which may reduce the incentives to further innovate. In any event, the merger will bring together two out of only three strobilurin producers and will reduce the competition that would otherwise have developed with the existing and immediate pipeline products."⁵²⁵

F. Role and effects of innovation (or lack thereof) on market conditions and behaviors

In *Case Schneider/Legrand of 30 January 2002*, the Commission only observes that the choice of different products is determined by significant differences in standards and habits between Member States, and reflected in different weightings in the assessment criteria of products, such as differences in the importance that installers attach to innovation. Legrand itself affirms that innovation "underpins its competitive position in [...]*, it seems to be of little importance in [...]*, where there is [...]*" ⁵²⁶

The Commission also refers to the choice of products on the basis of innovative content in *Case CVC/Lenzig of 17 October 2001*. Nevertheless, it only points out that innovation is one of the important determinants of the choice of the product concerned without proceeding to any analysis of dynamic changes in the reference market : "the choice of VSF by customers does not primarily depend on price considerations but rather on the specific product characteristics of VSF, product innovation and consumer preferences at a given point in time"⁵²⁷.

Further, the Commission affirms that competitors that would challenge the new entity's strategy based on price-discrimination (against customers in individual, easily identifiable market segments or against individual customers) could be deterred by the threat of retaliation (either in specific segments within the commodities market or in higher-margin speciality markets). Engaging in retaliation is possible, since "the new entity would dispose of an unrivalled range of products in the various VSF markets, and because of its higher technological and product innovation potential"⁵²⁸.

In *Case MCI WorldCom/Sprint of 28 June 2000*, the merging parties reproach the Commission that it has failed to consider that innovation plays a fundamental role in keeping pace with ever-increasing demand for high-quality services.⁵²⁹ Moreover, they argue that "both customers and end users have the possibility to bypass degraded peering points through new technologies such as caching and other storing techniques", and object that the merged entity would be able to control technical developments, as no individual ISP would be able to impose standards on the Internet at the network level.⁵³⁰

⁵²⁵ See Case No COMP/M.1806-Astra Zeneca/Novartis of 26 July 2000, at point 219.

⁵²⁶ Case Schneider/Legrand, *supra* note 457, at point 213 (the data between brackets are confidential).

⁵²⁷ Case CVC/Lenzig, *supra* note 462, at point 53.

⁵²⁸ *Id.* at point 181.

⁵²⁹ Case No COMP/M.1741-MCI WorldCom/Sprint of 28 June 2000, at point 176.

⁵³⁰ *Id.* at point 191 in conjunction with point 193.

The Commission recognizes that innovation will play an increasingly important role in the future development of the Internet, however, it considers the parties' claim about bypassing degraded peering points as only partially true.⁵³¹ Even though it admits that these techniques are being increasingly used to combat congestion and latency, the Commission disagrees with the parties as to the general validity of their statement in that, in its estimation, (1) these techniques cannot be used for all types of content, (2) traffic still needs to pass through the top-level connectivity providers to ensure full connectivity, (3) some of these techniques are also used by top-level connectivity providers to ease traffic congestion and bring content closer to their customers.⁵³²

The Commission also calls into question the parties' inability to control technical developments and to impose Internet standards. It affirms that (1) a dominant player with a large customer base will be best placed to set the pace for such innovation *because of* an increasingly important role of innovation in the future development of the Internet, and that (2) the dominant firm's technology would become a *de facto* standard, since all its customers would have adopted the technology chosen by the incumbent.⁵³³

By contrast, in Case *Johnson & Johnson/Guidant of 25 August 2005*, the Commission explicitly recognizes that rapid, ongoing technological innovation and product development are the key drivers of competition, and that, in consequence, market leadership may fluctuate over time.⁵³⁴ Contrary to many other decisions, the Commission does acknowledge in this Case, though in very broad terms, one of the basic features of highly dynamic markets related to the effects of major innovations on competition conditions : "Recent history in coronary stents shows that each breakthrough has changed the competitive landscape, like for instance the introduction of DES."⁵³⁵ Nevertheless, as regards the concentration in question, the Commission estimates that such drastic changes would not occur. It must also be underlined in this context that, having recognized the innovation-driven character of the reference markets, the Commission adopted a very short temporal framework for the analysis of competitive interactions : "to date the market for coronary stents seems to be in a somewhat different, more mature phase, in the sense that there are no short term expectations of revolutionary breakthrough; rather, the general sentiment is that over the next three years there will be improvements at the margin of the current products."⁵³⁶

Case *Alcoa/Reynolds of 3 March 2000* contains a small section dedicated to know-how and technology.⁵³⁷ The Commission points out that many undertakings are concerned about the impact of the merger as regards refinery technology and know-how.⁵³⁸ The great majority of information is confidential ; however, it is clear that, fundamentally, the Commission's appraisal focuses on the importance of innovation in product-market competition, the acquisition of competitive advantages in terms of costs, and entry deterrence. According to the Commission, equipped with the newly-developed technology for impure bauxite, one of the merging parties, Reynolds, "would have been in a position to attack Alcoa's dominance. By merging, Alcoa would not only remove this threat but it would also gain access to the new

⁵³¹ *Id.* at point 192 in conjunction with point 194.

⁵³² *Id.* at point 192.

⁵³³ *Id.* at point 194. As to innovation and IPR in the commitments, *see id.* at point 405.

⁵³⁴ Case No COMP/M.3687-Johnson & Johnson/Guidant of 25 August 2005, at point 75.

⁵³⁵ *Id.* *See also id.* at point 95.

⁵³⁶ *Id.* at point 75. *See also id.* at point 204. *Compare with id.* at point 206.

⁵³⁷ *See* Case No COMP/M.1693-Alcoa/Reynolds of 3 March 2000, at points 49-51.

⁵³⁸ *Id.* at point 49.

technology, thereby further increasing the cost advantage at the []* facilities which would then be controlled []* by Alcoa. It would also increase Alcoa's opportunities for deterring entry."⁵³⁹ In light of the interpretation of the notion of a dominant position within the meaning of the Merger Regulation, as established in the Commission's decisional practice, it is important to highlight the conclusion the Commission draws from this analysis : "Consequently, access to this new technology will strengthen Alcoa's dominance."⁵⁴⁰

In Case *Hoffmann La Roche/Boehringer Mannheim of 4 February 1998*, the Commission recognizes that one of the reference markets considered (namely the market for DNA probes) is a relatively young market with high growth rates, and that, generally, in technology-driven markets, a careful analysis must be made of the likely development of market dynamics. As a result, it considers necessary to determine whether Roche's dominant position is sustainable.⁵⁴¹ The merging parties claim that the relevant market is at the infant stage of development, as a consequence of which market share figures have only a low probative value in assessing a competitive situation. The Commission explicitly rejects the low probative value of markets parts in the dynamic market in question and bases its conclusion on the security of Roche's market share.

The Commission concludes de facto that such a young market with high growth rates will not be dynamic, inasmuch as Roche's market position will continue to be secure, and "although growing at a fast rate, [the relevant market] has left the infant stage, where significant uncertainty remains as to which technology will become the industry standard". The Commission adopts this position for the following reasons : (1) the DNA probe markets have not experienced volatile market share movements in the past, (2) there has not been a change in market leadership since Roche's acquisition of the PCR technology in 1991, and (3) the investigation has not revealed any indication that the market structure will change fundamentally in the future ; rather, on the basis of all the documents submitted by the parties and all the third parties, the Commission considers it legitimate to conclude that the PCR technology will continue to be the dominant technology in the future ; "For example, one of the market studies submitted by the parties estimates that the market share of PCR technology will increase to 75 % by the year 2002 and to 80 % by the year 2005."⁵⁴² It is thus clear that the Commission's analysis is solely based on the structural indicator of market parts, and that it does not adopt any effects-based approach. Also, the Commission starkly contrasts the Case examined with other cases in which it allegedly recognized that high market shares would be eroded in the future through competition.⁵⁴³ *In summa*, having rejected the existence of market dynamics in a young market with high growth rates, the Commission concludes, solely on the basis of the analysis of market parts, that the market position of Roche in DNA probes will not be eroded by market dynamics in the foreseeable future.⁵⁴⁴ Hence, it is manifest that the Commission appraises the dynamic market concerned in a purely static way, and relies on an extremely simplistic structural analysis limited only to the importance of market concentration.

⁵³⁹ *Id.* at point 51.

⁵⁴⁰ *Id.*

⁵⁴¹ Case No IV/M.950-Hoffmann La Roche/Boehringer Mannheim of 4 February 1998, at point 135.

⁵⁴² *Id.*

⁵⁴³ *See id.* at note 11.

⁵⁴⁴ *Id.*

In Case *Mannesmann/Vallourec/Ilva of 31 January 1994*, aside from a reference to tacit coordination, the Commission mentions innovation when analyzing a producer's ability to gain a competitive advantage over its competitors. It states first in abstract terms that innovation is a means to acquire a competitive advantage, and then, that this is not true *in casu*, since innovation plays only a relatively minor role in the industry concerned : 80-90% of the seamless stainless steel tubes (SST) are commodity products subject to widely-accepted international specifications, and the amount of resources allocated to R&D is rather low.⁵⁴⁵ The Commission concludes that neither of the two market leaders would be able to gain any significant competitive advantage, even if resources currently invested in R&D were to be increased.⁵⁴⁶

In Case *Saint-Gobain/Wacker-Chemie/NOM of 4 December 1996*, the Commission considers that R&D is generally of minor significance in the production and processing of SiC for abrasive applications, however, in certain market segments, the proportion of turnover invested in R&D is higher.⁵⁴⁷ In particular, R&D plays an important role in the downstream production of abrasive end-products. In this respect, the Commission specifies that "A supplier of SiC abrasive grains can profit from the knowledge he acquires on the market for abrasive end-products, because it enables him to adapt his production of abrasive minerals more easily to the developments on the downstream market."⁵⁴⁸

As to the concentration concerned, the Commission observes that "considering the size of the competitors remaining after the operation, it seems clear that the parties will be the technological leader in the production of SiC grains for abrasive applications. Norton already considers itself to be the acknowledged technological leader".⁵⁴⁹ Further, it points out that "Saint-Gobain is a leading player on the downstream market for abrasive end-products. Its vertical integration therefore gives Saint-Gobain an advantage vis-à-vis its non-integrated competitors in the market for SiC grains for abrasive applications. Saint-Gobain is the only vertically integrated producer of SiC abrasive grains in Western Europe."⁵⁵⁰

Last but not least, in Case *SEB/Moulinex of 11 November 2003*, the Commission estimates that the protracted lack of innovation is one of the three reasons (the others being the withdrawal of product lines and the interruption of supplies to distributors) whose combination led to a substantial fall in Moulinex' sales between 2000-2002 in all the markets (at least by 20%, 30%, 50% in various markets).⁵⁵¹ The Commission also notes the role of innovation in product support by suppliers in Case *SCA/Metsä of 31 January 2001*.⁵⁵²

G. Other cases

⁵⁴⁵ Case No IV/M.315-Mannesmann/Vallourec/Ilva of 31 January 1994, at point 78. The Commission does not specify this amount. Interestingly, this point is preceded by the title "Cost savings through innovation", but no economies are examined therein.

⁵⁴⁶ *Id.*

⁵⁴⁷ *Id.* at point 173 [the parties' part of turnover invested in R&D : confidential]. As regards market entry, investment, and know-how, *see also id.* at point 187.

⁵⁴⁸ *Id.* at point 174.

⁵⁴⁹ *Id.* at point 173.

⁵⁵⁰ *Id.* at point 174.

⁵⁵¹ *See id.* at points 89, 183, 265, 379.

⁵⁵² *Id.* at point 199.

1. Essence of innovation and benefits thereof

In Cases *UPM-Kymmene/Haindl* and *Norske Skog/Parenco/Walsum* of 21 November 2001, the Commission explains the character of innovation (largely production process innovation) in the paper-making industry, and points to the role of R&D cooperation between producers.⁵⁵³ Even though technological progress normally takes place in production processes in this industry, product innovations also occur and take the form of enhancements of existing qualities. The Commission notes, interestingly, that “These improvements also have been brought about by process developments”, and that “The aim is principally to enable products to be used in higher priced end-uses, therefore repositioning the paper higher in the market.”⁵⁵⁴ It also indicates the benefits derived from innovations : easily available up-to-date technology, lower costs, a reduced use of natural resources, etc.⁵⁵⁵

2. Definition of relevant product markets

As above-mentioned, the Decision in Case *Tomtom/Tele Atlas* of 14 May 2008 refers to various types of navigation devices : Portable Navigation Devices (PND), Personal Digital Assistant (PDA), GPS-enabled mobile telephone, and “in-dash” navigation device. The Commission takes into account the potential effects of future innovations on the current product-market definitions in the field of navigation devices. At present, mobile telephones with navigation functionality represent a very small share of all navigation devices, and PDAs constitute a declining market. Even though respondents to the market investigation consider that PNDs, mobile telephones with navigation functionality, and in-dash device will continue to co-exist as separate markets in the foreseeable future, the Commission states that it is likely that “innovation will, to a certain extent, blur the boundaries between the different types of navigation devices in coming years”.⁵⁵⁶

3. Market dynamics

⁵⁵³ See Cases *UPM-Kymmene/Haindl* and *Norske Skog/Parenco/Walsum* of 21 November 2001, at point 106 :

“Technological development: paper making is a process industry. Innovation normally takes place more in the paper production process and less in the products itself. Indeed, most of the research and development spending is targeted to improve the production process through improvement in process technology and process control. This kind of research and development is to a large extent undertaken by and in cooperation with the manufacturers of paper machines (Case No COMP/M.2498-UPM-Kymmene/Haindl and Case No COMP/M.2499-Norske Skog/Parenco/Walsum of 21 November 2001, point 40) and benefit all clients (that is to say, the paper suppliers).”

⁵⁵⁴ *Id.* at point 107.

⁵⁵⁵ *Id.* Moreover, according to the Commission,

“During the nineties there have been a number of changes in the production process of the pulp and paper industry. These have come about through rationalisation of production, changes in national or European environmental policy, as well as new technological advances in the production processes. One result has been a dramatic reduction in the use of water and energy. Other changes to the production process have included the replacement of chlorine bleaching by elemental or totally chlorine-free processes (bleaching is necessary to increase the brightness of the paper). Another important evolution relates to the increasing importance of recovered paper as a raw material.” (*Id.* at point 38).

⁵⁵⁶ Case *Tomtom/Tele Atlas*, *supra* note 487, at point 71. “In the future the relevant product market for PNDs may have to be extended to include mobile telephones with navigation functionality and other consumer electronic products with navigation functionality that may appear on the market” (*Id.*).

In Case *Dow Chemical/Union Carbide of 3 May 2000*, the dynamic aspects of the reference markets related to R&D activities and intellectual property rights play a crucial role in the Commission's competitive analysis.⁵⁵⁷ In particular, the Commission examines the relative competitive strength of the new entity. Similarly, market dynamics is of interest in the high profile Case *Aerospatiale-Alenia/de Havilland of 2 October 1991* : according to the Commission, "The evaluation of market power must reflect this dynamic of the market and take into account the fact that a competitor is particularly strong in the strategic parts of the overall market."⁵⁵⁸ However, market dynamics is not analyzed from the perspective of dynamic efficiencies, therefore, our paper only mentions the explicit use of this notion in the Decision concerned. Rather, the Commission examines whether or not, as a result of the concentration concerned, there exists a high risk that, in the foreseeable future, the dominant position of ATR/de Havilland would transform into a monopoly.

Finally, contrary to the constant practice, in Case *AOL/Time Warner of 11 October 2000*, the Commission objects that the merging parties' reasoning does not take into account market dynamics : "AOL's analysis is based on a static view of the music distribution market, which does not factor in the synergies and changes which will be brought about by the merger",⁵⁵⁹ and indicates examples thereof.⁵⁶⁰ This reference is only to signal the issue, since our paper does not encompass the analysis of market dynamics in all its aspects. Moreover, the Comm. CE is concerned with the new entity's control over the technology in question and its capacity to dictate the technical standards for delivering music over the Internet.⁵⁶¹

APPENDIX II : LIST OF ALL THE PHASE II DECISIONS TAKEN BY THE EUROPEAN COMMISSION IN MERGER CONTROL (21 SEPTEMBER 1989-21 SEPTEMBER 2008)

A. Merger case by Decision Type - Art. 8(1)

M.4956-STX/AKER YARDS
M.4942-NOKIA/NAVTEQ
M.4874-ITEMA HOLDING/BARCOVISION DIVISION
M.4854-TOMTOM/TELE ATLAS
M.4781-NORDDEUTSCHE AFFINERIE/CUMERIO
M.4747-IBM/TELELOGIC
M.4734-INEOS/KERLING
M.4731-GOOGLE/DOUBLECLICK
M.4662-SYNIVERSE/BSG

⁵⁵⁷ See notably Case COMP/M.1671-Dow Chemical/Union Carbide of 3 May 2000, at points 75, 104-114, 119-123, 131-138, 147-148, 194. We have not proceeded to the examination of the Decision concerned in the main part of our paper, since the great majority of references to the dynamic aspects of the relevant markets relate to intellectual property rights.

⁵⁵⁸ Case No IV/M.053-Aerospatiale-Alenia/de Havilland of 2 October 1991, at point 52.

⁵⁵⁹ Case No COMP/M.1845-AOL/Time Warner of 11 October 2000, at point 85.

⁵⁶⁰ In particular, the Commission estimates that "it is to be borne in mind that the development of new proprietary technologies or formats for music delivery via the Internet would by itself suffice to change AOL's business model." (*id.*). The Commission also mentions a policy of strategic acquisitions (*see id.* at point 55).

⁵⁶¹ *See id.* at points 55-56.

M.4647-AEE/LENTJES
M.4523-TRAVELPORT/WORLDSpan
M.4403-THALES/FINMECCANICA/AAS/TELESPAZIO
M.4215-GLATFELTER/CROMPTON ASSETS
M.4094-INEOS/BP DORMAGEN
M.3975-CARGILL/DEGUSSA FOOD INGREDIENTS
M.3848-SEA-INVEST/EMO-EKOM
M.3625-BLACKSTONE/ACETEX
M.3178-BERTELSMANN/SPRINGER/JV

B. Merger case by Decision Type - Art. 8(2)

M.3333-SONY/BMG (4064)
M.3216-ORACLE/PEOPLESOFT
M.3056-CELANESE/DEGUSSA/EUROPEAN OXO CHEMICALS
M.2706-CARNIVAL CORPORATION/P&O PRINCESS
M.2499-NORSKE SKOG/PARENCO/WALSUM
M.2498-UPM-KYMMENE/HAINDL
M.2495-HANIEL/FELS
M.2333-DE BEERS/LVMH
M.2314-BASF/PANTOCHIM/EURODIOL
M.2201-MAN/AUWÄRTER
M.1940-FRAMATOME/SIEMENS/COGEMA/JV
M.1882-PIRELLI/BICC
M.1879-BOEING/HUGHES
M.1225-ENSO/STORA
M.1016-PRICE WATERHOUSE/COOPERS & LYBRAND
M.970-TKS/ITW SIGNODE/TITAN
M.794-COCA-COLA ENTERPRISES/AMALGAMATED BEVERAGES GREAT
BRITAIN
M.484-THYSSEN STAHL/KRUPP/RIVA/FALCK/ACCIAITER
M.477-MERCEDES-BENZ/KÄSSBOHRER
M.468-SIEMENS/ITALTEL
M.358-PILKINGTON/SIV
M.315-MANNESMANN/VALOUREC/ILVA
M.269-SHELL/MONTECATINI
M.222-MANNESMANN/HOESCH
M.68-TETRAPAK/ALFA-LAVAL

C. Merger case by Decision Type - Art. 8(2) with (conditions and obligations)

M.4980-ABF/GBI BUSINESS
M.4919-STATOIL/CONOCOPHILLIPS
M.4726-THOMSON CORPORATION/REUTERS GROUP
M.4525-KRONOSPAN/CONSTANTIA
M.4513-ARJOWIGGINS/M-REAL ZANDERS REFLEX
M.4504-SFR/TELE 2
M.4404-UNIVERSAL MUSIC GROUP/BMG MUSIC PUBLISHING
M.4381-JCI/FIAMM

M.4187-METSO/AKER KVAERNER
M.4180-GAZ DE FRANCE/SUEZ
M.4000-INCO/FALCONBRIDGE
M.3916-T-MOBILE AUSTRIA/TELE.RING
M.3868-DONG/ELSAM/ENERGI E2
M.3796-OMYA/J.M. HUBER PCC
M.3696-E.ON/MOL
M.3687-JOHNSON & JOHNSON/GUIDANT
M.3653-SIEMENS/VA TECH
M.3436-CONTINENTAL/PHOENIX
M.3431-SONOCO/AHLSTROM/JV
M.3099-AREVA/URENCO/ETC JV
M.3083-GE/INSTRUMENTARIUM
M.2978-LAGARDERE/NATEXIS/VUP
M.2972-DSM/ROCHE VITAMINS
M.2947-VERBUND/ENERGIE ALLIANZ
M.2903-DAIMLER CHRYSLER/DEUTSCHE TELEKOM / JV
M.2876-NEWSCORP/TELEPIU
M.2861-SIEMENS/DRÄGERWERK/JV
M.2822-ENBW/ENI/GVS
M.2698-PROMATECH/SULZER TEXTIL
M.2650-HANIEL/CEMENTBOUW/JV (CVK)
M.2568-HANIEL/YTONG
M.2547-BAYER/AVENTIS CROP SCIENCE
M.2533-BP/E.ON
M.2530-SÜDZUCKER/SAINT LOUIS
M.2434-GRUPO VILLAR MIR/ENBW/HIDROELECTRICA DEL CANTABRICO
M.2420-MITSUI/CVRD/CAEMI
M.2389-SHELL/DEA
M.2139-BOMBARDIER/ADTRANZ
M.2060-BOSCH/REXROTH
M.2033-METSO/SVEDALA
M.1915-THE POST OFFICE/TPG/SPPL
M.1853-EDF/ENBW
M.1845-AOL/TIME WARNER
M.1813-INDUSTRI KAPITAL (NORDKEM)/DYNO
M.1806-ASTRA ZENECA/NOVARTIS
M.1693-ALCOA/REYNOLDS
M.1673-VEBA/VIAG
M.1671-DOW CHEMICAL/UNION CARBIDE
M.1663-ALCAN/ALUSUISSE
M.1641-LINDE/AGA
M.1636-MMS/DASA/ASTRIUM
M.1630-AIR LIQUIDE/BOC
M.1628-TOTALFINA/ELF AQUITAINE
M.1601-ALLIED SIGNAL/HONEYWELL
M.1578-SANITEC/SPHINX
M.1532-BP AMOCO/ATLANTIC RICHFIELD
M.1439-TELIA/TELENOR
M.1383-EXXON/MOBIL

M.1313-DANISH CROWN/VESTJYSKE SLAGTERIER
M.1221-REWE/MEINL
M.1157-SKANSKA/SCANCEM
M.1069-WORLDCOM/MCI (II)
M.986-AGFA-GEVAERT/DU PONT
M.950-HOFFMANN-LA ROCHE /BOEHRINGER MANNHEIM
M.942-VEBA/DEGUSSA
M.938-GUINNESS/GRAND METROPOLITAN
M.913-SIEMENS/ELEKTROWATT
M.877-BOEING/McDONNELL DOUGLAS
M.856-BRITISH TELECOM/MCI (II)
M.833-THE COCA-COLA COMPANY/CARLSBERG A/S
M.754-ANGLO AMERICAN CORPORATION/LONRHO
M.737-CIBA-GEIGY/SANDOZ
M.623-KIMBERLY-CLARK/SCOTT PAPER
M.603-CROWN CORK & SEAL/CARNAUDMETALBOX
M.582-ORKLA/VOLVO
M.580-ABB/DAIMLER BENZ
M.553-RTL/VERONICA/ENDEMOL (“HMG”)
M.430-PROCTER & GAMBLE/VP SCHICKEDANZ (II)
M.308-KALI + SALZ/MDK/TREUHAND
M.291-KNP/BÜHRMANN TETTERODE/VRG
M.269-SHELL/MONTECATINI
M.214-DU PONT/ICI
M.190-NESTLE/PERRIER
M.126-ACCOR/WAGONS-LITS
M.43-CEAC/MAGNETI MARELLI
M.42-ALCATEL/TELETTRA
M.12-VARTA/BOSCH

D. Merger case by Decision Type - Art. 8(3)

M.4439-RYANAIR/AER LINGUS
M.3440-ENI/EDP/GDP
M.2416-TETRA LAVAL/SIDEL
M.2283-SCHNEIDER/LEGRAND
M.2220-GENERAL ELECTRIC/HONEYWELL
M.2187-CVC/LENZING
M.2097-SCA/METSÄ TISSUE
M.1741-MCI WORLDCOM/SPRINT
M.1672-VOLVO/SCANIA
M.1524-AIRTOURS/FIRST CHOICE : 2
M.1027-DEUTSCHE TELEKOM/BETARESEARCH
M.993-BERTELSMANN/KIRCH/PREMIERE
M.890-BLOKKER/TOYS “R” Us (II)
M.784-KESKO/TUKO
M.774-SAINT GOBAIN /WACKER CHEMIE/NOM
M.619-GENCOR/LONRHO
M.553-RTL/VERONICA/ENDEMOL (“HMG”)
M.490-NORDIC SATELLITE DISTRIBUTION

M.469-MSG MEDIA SERVICE
M.53-AEROSPATIALE/ALENIA/DE HAVILLAND

E. Merger case by Decision Type - Art. 8(4)

M.2416-TETRA LAVAL/SIDEL
M.2283-SCHNEIDER/LEGRAND
M.890-BLOKKER/TOYS “R” Us (II)
M.784-KESKO/TUKO

APPENDIX III : LIST OF THE MAJOR INNOVATION CASES

1. Case No IV/M.490-Nordic Satellite Distribution du 19 July 1995⁵⁶²
2. Case No IV/M.877-Boeing/McDonnell Douglas of 30 July 1997
3. Case No IV/M.737-Ciba-Geigy/Sandoz of 17 July 1996
4. Case No IV/M.269-Shell/Montecatini of 8 June 1994
5. Case No COMP/M.4747-IBM/Teleologic of 5 March 2008
4. Case No COMP/M.2416-Tetra Laval/Sidel of 30 October 2001
5. Case No COMP/M.2547-Bayer/Aventis Crop Science of 17 April 2002
6. Case No COMP/M.3436-Continental/Phoenix of 26 October 2004
7. Case No COMP/M.3083-GE/Instrumentarium of 2 September 2003
8. Case No COMP/M.2220-General Electric/Honeywell of 3 July 2001
9. Case No COMP/M.4956-STX/Aker Yards of 5 May 2008
11. Case No IV./M.623-Kimberly-Clark/Scott of 16 January 1996
12. Case No IV/M.214-Du Pont/ICI of 30 September 1992
13. Case No IV/M.430-Procter & Gamble/VP Schickedanz (II) of 21 June 1994
14. Case No COMP/M.4187-Metso/Aker Kvaerner of 12 December 2006
15. Case No COMP/M.1630-Air Liquide/BOC of 18 January 2000
16. Case No IV/M.603-Crown Cork & Seal/CarnaudMetalbox of 14 November 1995
17. Case No COMP/M.2972-DSM/Roche Vitamins of 23 July 2003
18. Case No COMP/M.4403-Thales/Finmeccanica/Alcatel Alenia Space & Telespazio of 4 April 2007
19. Case No IV/M.1313-Danish Crown/Vestjyske Slagterier of 9 March 1999
20. Case No IV/M.469-MSG Media Service of 9 November 1994
21. Case No IV/M.993-Bertelsmann/Kirch/Premiere of 27 May 1998
22. Case No IV/M.774-Saint-Gobain/Wacker-Chemie/NOM of 4 December 1996
23. Case No IV/M.619-Gencor/Lonrho of 24 April 1996
24. Case No IV/M.890 - Blokker/Toys “R” Us of 26 June 1997⁵⁶³

⁵⁶² This Decision should be compared with Case No IV/M.1439-Telia/Telenor of 13 October 1999.

⁵⁶³ We have not analyzed the Decision concerned, since the Commission makes only general observations about the merging parties’ advantages and disadvantages, and does not refer explicitly to dynamic efficiencies or innovation. Rather, it focuses on the strengthening of the already strong position of Blokker and the concentration of supply. However, the Decision in question certainly merits a closer investigation from this perspective.

See “Strategic value and complementarity of Toys R Us to Blokker”, at points 89-94, and “The potential of Toys R Us in the Blokker Group”, at points 95-98, as well as “Comments of suppliers”, at points 99-102.

APPENDIX IV : LIST OF OTHER CASES

1. Case No COMP/M.2201-MAN/Auwärter of 20 June 2001
2. Case No COMP/M.1601-Allied Signal/Honeywell of 1 December 1999
3. Case No COMP/M.3796-Omya/Huber PCC of 19 July 2006
4. Case No COMP/M.2283-Schneider/Legrand of 30 January 2002
5. Case No COMP/M.2187-CVC/Lenzig of 17 October 2001
- 6-7. Case No COMP/M.2498-UPM-Kymmene/Haindl and Case No COMP/M.2499-Norske Skog/Parenco/Walsum of 21 November 2001
8. Case No COMP/M.4439-Ryanair/Aer Lingus of 27 June 2007
9. Case No COMP/M.1741-MCI WorldCom/Sprint of 28 June 2000
10. Case No IV/M.315-Mannesmann/Vallourec/Ilva of 31 January 1994
11. Case No IV/M.774-Saint-Gobain/Wacker-Chemie/NOM of 4 December 1996
12. Case No COMP/M.2097-SCA/Metsä of 31 January 2001
13. Case No COMP/M.4854-Tomtom/Tele Atlas of 14 May 2008
14. Case No COMP/M.468-Siemens/Italtel of 17 February 1995
15. Case No COMP/M.1806-Astra Zeneca/Novartis of 26 July 2000
16. Case No COMP/M.3687-Johnson & Johnson/Guidant of 25 August 2005
17. Case No IV/M.358-Pilkington-Techint/SIV of 21 December 1993
18. Case No COMP/M.4381-JCI/Fiamm of 10 May 2007
19. Case No COMP/M.2621-SEB/Moulinex of 11 November 2003
20. Case No COMP/M.2389-Shell/DEA of 20 December 2001
21. Case No IV/M.012-Varta/Bosch of 31 July 1991
22. Case No COMP M.1439-Telia/Telenor of 13 October 1999
23. Case No IV/M.190-Nestlé/Perrier of 22 July 1992
24. Case No IV/M.1383-Exxon/Mobil of 29 September 1999
25. Case No COMP/M.1628-TotalFina/Elf of 9 February 2000
26. Case No COMP/M.1693-Alcoa/Reynolds of 3 March 2000
27. Case No IV/M.950-Hoffmann La Roche/Boehringer Mannheim of 4 February 1998
28. Case No COMP/M.3099-Areva/Urenco/ETC JV of 6 October 2004
29. Case No COMP/M.3653-Siemens/VA Tech of 13 July 2005
30. Case No COMP/M.1671-Dow Chemical/Union Carbide of 3 May 2000
31. Case No COMP/M.1845-AOL/Time Warner of 11 October 2000