NON-PRICE EFFECTS IN MERGERS: EXAMPLES FROM FEDERAL TRADE COMMISSION ENFORCEMENT, 1992-2023

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By Bilal Sayyed

Critics of current merger enforcement say it fails to take account of the non-price effects of mergers. This criticism comes from those who believe the courts ask plaintiffs, including the federal antitrust agencies, to prove price effects of a proposed merger, without regard to non-price effects, and those who believe the agencies, and the courts, fail to properly consider the dynamic effects of possible efficiencies from certain combinations. Both complaints are substantially but not fully accurate. Most mergers are not evaluated for non-price effects, largely because such effects are likely to mirror price effects. Similarly, the antitrust agencies too quickly find a reason to dismiss the dynamic, efficiency claims of merging parties. However, non-price effects are significant, and not necessarily contingent on measuring the price effects of mergers, when the agencies address harm to future markets, technology markets, and innovation markets. This paper collects many, but probably not all, Commission merger enforcement actions focused on non-price effects in such markets. It also discusses two significant mergers where the Commission accepted the efficiency effects of the merger.

I. INTRODUCTION

Merger[2] enforcement is criticized as focused largely or solely on the evaluation of potential price effects. This is incorrect. Non-price effects play a more significant role in merger analysis when the competitive impact of a merger is focused on the development or sale of a future product, but it is now (and has been for some time) for antitrust merger complaints to identify harm to non-price dimensions of competition. In merger matters involving future products, price effects are significantly much harder to evaluate and there may be direct evidence of competition to bring new or improved products to market[3], opening up a more fruitful path to evaluating the competitive effects of a merger. Three decades of merger enforcement by the Federal Trade Commission illustrate the scope of potential non-price concerns. This short article takes as its inspiration the 2006 Commentary on Horizontal Mergers[4] and 2020 Commentary on Vertical Merger Enforcement[5] and builds on the discussion of non-price effects in comments by the United States in *Non-Price Effects of Mergers* (OECD, 2018)[6] and *Roundtable on the Role and Measurement of Quality in Competition Analysis* (OECD, 2013).[7]

II. NON-PRICE CONCERNS IN THE MERGER GUIDELINES

The 1992 Horizontal Merger Guidelines were the first merger guidelines to note that competition on non-price factors – "such as product quality, service or innovation" – could be lessened through merger; however, they failed to provide an analytic framework for the evaluation of non-price factors.[8] The 2010 Horizontal Merger Guidelines expanded on the non-price factors, adding product variety to the list. They also recognized that a merger may result in different effects along different dimensions of competition: "A merger may increase prices in the short term but not raise longer-term concerns about innovation, either because rivals will provided sufficient innovation competition or because the merger will generate cognizable research and development efficiencies."[9] Importantly, the guidelines set forth two theories of how a merger may limit non-price competition, with a focus on innovation effects. According to the 2010 Horizontal Merger Guidelines, the Agencies "may consider whether a merger is likely to diminish innovation competition by encouraging the merged firm to curtail its innovative efforts below the level that would prevail in the absence of the merger. That curtailment of innovation could take the form of reduced incentive to continue with an existing product-development effort or reduced incentive to initiate development of new products."[10] The 2020 Vertical Merger Guidelines are replete with references to a merger's possible effect on price, quality, or innovation, but do not advance the analytic framework beyond articulating a general framework on foreclosure of competition through vertical merger.[11]

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2 As used herein, the term "merger" refers to the acquisition of one firm of the assets, stock, or non-corporate interests of another firm, the formation of a new entity where one or more persons or firms contribute assets to the new entity, the combination of the assets (in full or in part) of two or more firms, and the absorption of one firm into another; it does not differentiate between corporate and non-corporate entities.

3 The Commission sometimes alleges that firms are "racing" to innovate and that a proposed merger will slow the pace. See, e.g., Complaint, In the Matter of Sanofi, Genzyme Corporation, and Maze Therapeutics, Docket No. 9422 (Dec. 11, 2023), https://www.ftc.gov/system/files/ftc_gov/pdf/d9422_sanofi_maze_part_3_complaint_public_redacted.pdf; Opinion of the Commission, In the Matter of Illumina/Grail (Mar. 31, 2023), https://www.ftc.gov/system/files/ftc_gov/pdf/d09401commissionfinalopinion.pdf. It is not always clear that the facts support this "race" theory of competition. Whether firms are racing to develop new or improved products should not be assumed from the structure of the market; such a finding should be supported by evidence. In the Genzyme/Novazyme matter, Chairman Muris rejected this "race" theory of competition, on the facts of that matter. Statement of Chairman Timothy J. Muris, Genzyme Corporation/Novazyme Pharmaceuticals, Inc. (2004), https://www.ftc.gov/system/files/attachments/press-releases/ftc-closes-its-investigation-genzyme-corporations-2001-acquisition-novazyme-pharmaceuticals-inc./murisgenzymestmt.pdf. These matters are discussed in Sections X, XI.

4 U.S. Dep't of Justice & Fed. Trade Comm'n, Commentary on the Horizontal Merger Guidelines (2006), https://www.ftc.gov/sites/default/files/attachments/merger-review/commentaryonthehorizontalmergerguidelinesmarch2006.pdf. The Commentary expanded on the role of non-price effects in merger review, recognizing that "mergers between competing firms … are a significant dynamic form in the American economy."

5 9- Fed. Trade Comm'n, Commentary on Vertical Merger Enf't 11 (Dec. 2020) [hereinafter Commentary on Vertical Merger Enf't], https://www.ftc.gov/system/files/documents/reports/federal-trade-commissions-commentary-vertical-merger-enforcement/p180101verticalmergercommentary_1.pdf.

6 United States, Non-Price Effects of Mergers (Jun. 6, 2018) (hereinafter " U.S. OECD 2018") , https://www.ftc.gov/system/files/attachments/us-submissions-oecd-2010-present-other-international-competition-fora/non-price_effects_united_states.pdf.

7 United States, Roundtable on the Role and Measurement of Quality in Competition Analysis (Jun. 17, 2013) (hereinafter "U.S. OECD 2013"), https://www.ftc.gov/sites/default/files/attachments/us-submissions-oecd-and-other-international-competition-fora/1306qualityanalysis.pdf. See also Gregory T. Gundlach and Diana L. Moss, *Non-Price Effects of Mergers: Introduction and Overview* 63 ANTITRUST BULLETIN 155 (2018) and OECD Background Note, Considering Non-Price Effects in Merger Control (Jun. 6, 2018), https://deliverypdf.ssrn.com/delivery.php?ID=592098125026006095114086106067112025031062030036027094096097123077111118023124125022002118044037105004117021018003025117120124026048010030044101002070008094069025103034086015093090075065102080025113116098000116013105126002070111021097024091096031069025&EXT=pdf&INDEX=TRUE.

8 U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines (1992) hereinafter "1992 Horizontal Merger Guidelines") at 2, footnote 6.

9 Id. at §6.0.

10 2010 Horizontal Merger Guidelines at 23.

11 U.S. Dept. of Just. & Fed. Trade Comm'n, Vertical Merger Guidelines at 1 (June 30, 2020) [hereinafter 2020 Vertical Merger Guidelines].

The agencies' analysis of how competition affects quality identifies mixed outcomes:

> The economics literature supports the view that, when analyzing markets in which quality is an important component of competition, competition authorities should consider whether the characteristics of a market and a change in the competitive environment would likely cause firms to provide higher or lower quality. In the theoretical economics literature, models where firms set prices and quality show that the impact on quality of a change in the level of competition, all else held equal (including the cost of producing quality), is indeterminate. That is, quality can either rise or fall as a market becomes more competitive. Reviews of the empirical evidence on this relationship between competition and quality (holding all else fixed) often find an increase in quality with increased competition, but some studies have found the opposite result. *In sum, the results from the theoretical and empirical economic literature support the notion that a competition agency needs to tailor the quality analysis to the particular market under consideration when it believes quality is an important factor in the investigation.* (emphasis added) (citations omitted).[12]

Consistent with this conclusion, the Commission's merger cases appear to have eschewed reliance on theoretical models of harm to non-price competition and pled what appear to be harms grounded in the facts of actual competition on non-price factors between merging firms. One area where this may not be true is in the acceptance, at a general level, of innovation races among firms researching and developing pharmaceutical products.

III. HARM TO NON-PRICE COMPETITION & RELEVANT MARKETS

A merger may lessen competition in four market categories: (i) a market for an existing product (or service); (ii) a market for a future product (or service); (iii) a market for technology; and (iv) a market for research and development or innovation. While the Commission routinely alleges in its merger settlements that a proposed merger may lessen or eliminate non-price competition for an existing product, most complaints do not set forth a theory of how or why this effect will occur. Although it seems intuitive that a merger may have both price and non-price effects, measurement of non-price effects is difficult and there are no simple, broad-based models of non-price competition. Price effects in mergers of differentiated products or services can be estimated and, arguably, measured. Estimation and measurement of price-effects usually are based on an analysis of past-pricing behavior. Non-price effects in mergers involving differentiated products or services – the pace of innovation, the improvement of a product or service – are, at least so far, relatively free from easy quantification.[13]

The current administration, in its initial step to revise the 2010 Horizontal Merger Guidelines and 2020 Vertical Merger Guidelines sought comment on, among other things, "aspects of competition the guidelines may underemphasize or neglect, such as … non-price elements of competition like innovation, quality [and] potential competition."[14] Initiated with significant fanfare, and after significant criticism of the then-existing guidelines, the guidelines revision process substantially failed to identify and advance new theories of non-price effects, or improve the analytic framework for identifying and evaluating non-price effects. No new harms were articulated, and the discussion of efficiencies largely regresses to pre-1990s case law. The new Merger Guidelines break no new ground in the evaluation of the non-price effects of mergers.

IV. NON-PRICE EFFECTS IN EXISTING PRODUCT & SERVICE MARKETS

The agencies frequently allege non-price effects in mergers involving existing products and services; all such mergers I could identify also alleged strong price effects from the merger. The FTC's recent hospital merger challenges allege anticompetitive effect of "reduc[e] health-care investment and improvement" and "reduced benefits" and that firms compete by "improving quality, service offerings and facilities." Other non-price features hospitals compete on, according to the Commission, and that may be eliminated or lessened due to merger include

12 U.S. OECD 2013 at 5. See also Justus Haucap and Joel Stiebale, *Non-Price Effects of Mergers and Acquisitions* (Jul. 2023) (DICE Discussion Paper), https://www.econstor.eu/bitstream/10419/273473/1/1852800623.pdf (literature survey where the authors find "the vast majority of horizontal M&A finds large negative effects on innovation inputs and outputs" but "results are mixed for outcomes related to variety and product quality" (at p. 2) and "vertical integration is likely to have more positive effects on investment and innovation." (at p. 10)).

13 "Because non-price effects tend to be non-quantitative in nature, the Agencies rely less on formal empirical models and more on qualitative evidence to assess the non-price effects of a merger." OECD 2018 at 4 (collecting some studies of merger non-price effects).

14 U.S. Department of Justice and Federal Trade Commission, Request for Information on Merger Enforcement (Jan. 18, 2022), at 6-8, https://www.justice.gov/opa/press-release/file/1463566/download.

"location … access to services and technology, reputation, physicians and faculty members, amenities, conveniences, and patient satisfaction."[15] The Commission has also recently alleged non-price effects in non-health care matters including (but not limited to) *Intercontinental Exchange/Black Knight* (alleging the merger would eliminate "efforts to provide a robust array of features" in mortgage loan origination systems)[16], *Davita/Total Renal Care* (alleging the merger would reduce the combined firms incentive to improve service or quality in renal care facilities)[17], *Tractor Supply Company/Orscheln Farm* (decreases in the quality and selection of products or services sold at farm stores)[18], and *Buckeye Partners/Magellan Midstream* (decrease in the quality or availability of light petroleum product and gasoline terminaling services)[19]. The U.S.OECD 2018 submission identifies two hospital mergers, one physician practice group merger, a merger of two health insurers, a merger of tax software providers and a merger of two firms offering an integrated software system as likely to have negative non-price effects, and also notes that in some instances, a merger of competing hospitals may allow for the capture of meaningful efficiencies, including quality of care improvements (a non-price effect). [20] In all instances referenced above, the agencies also identified likely price effects associated with the merger.

V. NON-PRICE EFFECTS IN FUTURE PRODUCT & SERVICE MARKETS

Mergers may eliminate competition in the development (and the pricing) of a future product. In *Amgen/Horizon*, the Commission recently alleged the proposed merger would eliminate competition for "new treatments for two rare diseases."[21] In *Nielsen/Arbitron*, the Commission alleged that Nielsen's proposed acquisition of Arbitron would result in the loss of future competition between the combining firms, where both parties planned to enter a market for cross-platform audience measurement — a new service, with no existing suppliers — designed to capture audiences on non-traditional platforms like mobile phones.[22] In *BP Amoco/Atlantic Richfield* ("ARCO"), the Commission alleged that BP Amoco's proposed merger with ARCO would "eliminate substantial potential competition" in the market for the development and commercial sale of ANS natural gas, and would reduce the potential for future competition in the sale of North Slope natural gas from three firms to two firms while also "substantially increas[ing] the probability that commercial development of natural gas on the North Slope [would] be delayed, and that the sale of natural gas, when and if the fields [were] commercially developed, [would] be at non-competitive prices."[23] In *Upjohn/Pharmacia*, both Upjohn and Pharmacia were in advanced stages of developing topoisomerase I inhibitors for the treatment of colorectal cancer.

The Commission alleged that their merger would eliminate actual competition in research and development in the market for such topoisomerase I inhibitors as well as the "potential for actual, direct, and substantial price competition" for topoisomerase I inhibitors for the treatment of colorectal cancer. [24] In Roche/Genentech, the Commission alleged that Roche's proposed acquisition of Genentech eliminated actual and potential competition in the U.S. markets for research, development, production, and marketing of, among other products, CD4-based therapeutics for the treatment of AIDS and HIV infection. Neither Genentech nor Roche (nor any other firm) had a CD4-based therapeutic for AIDS/HIV infection on the market. Genentech was the most advanced of a limited number of companies developing such a therapeutic; Roche had engaged in research and development of CD4-based therapeutics and had patent applications pending on its products. Among other concerns, the Commission alleged that the merger eliminated Roche as a potential entrant into the (future) relevant product market for

15 Complaint, John Muir Health & Tenet Healthcare, Docket No. 9421 (Nov. 17, 2023) at ¶¶6, 19, https://www.ftc.gov/system/files/ftc_gov/pdf/d09421jmhtenetpart3administrativecomplaintpublic.pdf; see also Complaint, RWJ Barnabas Health & St. Peter's Healthcare, Docket No. 9409 (Jun 2, 2022) at ¶¶3, 6, 46, 47, 55; Complaint, HCA Healthcare, Docket No. 9410 (Jun. 2, 2022) at ¶¶51-54 (elimination of quality and service competition), https://www.ftc.gov/system/files/ftc_gov/pdf/D9410HCAStewardPart3Complaint-Public.pdf. In each of these instances, the parties abandoned the transaction prior to the preliminary injunction hearing.

16 Complaint, Intercontinental Exchange & Black Knight, Docket No. 9413 (Mar. 9, 2023), https://www.ftc.gov/system/files/ftc_gov/pdf/d09413icebkp3complaintredacted.pdf.

17 Complaint, DaVita Inc. & Total Renal Care (Oct. 25, 2021), https://www.ftc.gov/system/files/documents/cases/complaint_6.pdf.

18 Complaint, Tractor Supply Company & Orscheln Farm and Home, Docket No. C-4776 (Oct. 11, 2022), https://www.ftc.gov/system/files/ftc_gov/pdf/2110083TractorSupplyComplaint.pdf.

19 Complaint, IFM Global Infrastructure Fund, Buckeye Partners & Magellan Midstream Partners, Docket No. C-4765 (May 31, 2022), https://www.ftc.gov/system/files/ftc_gov/pdf/2110144C4765BuckeyeComplaint_0.pdf.

20 U.S. OECD 2018 at 5-7.

21 Complaint, Amgen & Horizon Therapeutics, Docket No. 9414 (Jun. 22, 2023), https://www.ftc.gov/system/files/ftc_gov/pdf/Amgen-Horizon-Part-III-Complaint-PUBLIC.pdf.

22 Nielsen Holdings N.V., No. C-4439, 2014 WL 869523, at *3 (F.T.C. Feb. 24, 2014).

23 BP Amoco P.L.C., No. C-3938, 2000 WL 422209 at *3-4, *6 (F.T.C. Apr. 13, 2000).

24 The Upjohn Co., 121 F.T.C. 44, 45 (1996).

CD4-based therapeutics.[25] Consolidation in the defense industry often raises concerns about non-price effects, usually in future weapons systems.[26]

VI. NON-PRICE EFFECTS IN TECHNOLOGY MARKETS

A merger may eliminate competition in the innovation and development of technology; in such instances, the agencies has alleged harm to non-price competition – the effect on innovation and development of a technology - in specific technology markets.[27] Competitive harm in a technology market can also affect future competition in a market for an existing or future product, because firms may use developments in technology markets to introduce new commercial products or differentiate existing commercial products to compete with current market participants. Although the Commission rarely alleges harm to technology markets in merger matters anymore, three important cases from the late 1990s and early 2000s are instructive as examples of mergers raising non-price concerns.

In *Dow Chemical/Union Carbide*, the Commission alleged that Dow Chemical's proposed merger with Union Carbide would substantially reduce competition in three related polyethylene markets, including two technology markets: (i) linear low-density polyethylene ("LLDPE"); (ii) metallocene catalyst technology for use in LLDPE production; and (iii) LLDPE reactor process technology. Exxon and Dow had patents on the technology used to make and use metallocene catalysts in the manufacturing of LLDPE and were the only firms in the world that had succeeded in developing commercially viable metallocene catalyst technology for LLDPE.

Dow produced metallocene catalysts in a solution process. Union Carbide, through a 50/50 joint venture with Exxon — Univation Technologies — was working to develop and commercialize metallocene catalysts in a gas-phase polyethylene process. Dow, through a joint development agreement with BP Amoco, was also working to develop a commercially viable implementation of metallocene catalyst technology in gas phase polyethylene processes.[28]

Prior to announcing the merger, Dow terminated its participation in the joint development program with BP Amoco. According to the Commission, "Dow's decision to enter into the merger agreement with Carbide, and its decisions (1) to allow the Dow/BP joint development agreement to expire by its terms and (2) not to license its metallocene technology to BP [were] sufficiently related to consider together in examining the effects of the merger." The Commission's investigation found that the combining firms competed by "among other things, innovating and developing technology (including patents, trade secrets and know-how) for their own use and, in some cases, for license to other LLDPE producers." The Commission recognized that "the reduction or elimination of competition in metallocene catalyst technology, resulting from the merger, in turn reduces competition in LLDPE itself and in LLDPE reactor process technology. The reduction in competition in LLDPE process technology in turn further reduces competition in LLDPE."[29]

The Commission alleged that the proposed merger affected non-price competition in the market for metallocene catalyst technology in two ways. First, pursuant to the merger, Dow would become a participant with Exxon in the Univation joint venture, and two firms — the combined Dow/Union Carbide, and the Univation joint venture — would control all commercialized metallocene technology for LLDPE. Dow, while it had incentives to continue to support Univation's development of metallocene catalyst technology, might develop the Union Carbide/Exxon technology in ways less likely to threaten Dow's existing competing proprietary technology. Dow's post-merger interest in Univation would also allow it to impair Univation's ability to compete in the licensing of metallocene catalyst technology. The Commission alleged that the transaction would eliminate competition between Dow and Union Carbide in the market for metallocene catalyst technology used in the manufacture of LLDPE.[30]

25 Roche Holding Ltd., 113 F.T.C. 1086, 1088-89 (1990).

26 Relevant FTC cases are identified in the Commentary on Vertical Merger Enf't 26-27.

27 "Technology markets consist of the intellectual property that is licensed (the "licensed technology") and its close substitutes — that is, the technologies or goods that are close enough substitutes to constrain significantly the exercise of market power with respect to the intellectual property that is licensed. When rights to intellectual property are marketed separately from the products in which they are used, the Agencies may analyze the competitive effects of a licensing arrangement in a technology market." U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Guidelines for the Licensing of Intellectual Property 9 (2017), https://www.ftc.gov/system/files/documents/public_statements/1049793/ip_guidelines_2017.pdf [hereinafter IP Guidelines].

28 Dow Chemical Co., 131 F.T.C. 600, 603-08 (2001).

29 *Id.* at 603-605, 693-94, 698 n.2.

30 *Id.* at 604, 606-08.

Second, the transaction would also remove competition between Dow and Univation through its impact on Dow's joint development program with BP Amoco. Prior to the proposed merger, Dow and BP Amoco were working to develop a version of Dow's metallocene catalyst to use in a BP Amoco manufacturing process. If successfully commercialized, this technology would have competed directly with Univation. After the merger, Dow had less incentive to continue to partner with BP Amoco (as reflected by its termination of the joint development agreement). The Commission alleged that the merger would eliminate BP Amoco as an actual and potential competitor in the development and licensing of metallocene catalyst technology for LLDPE manufacture, by "permit[ting] Dow to further impair the ability of BP to compete in gas phase licensing and develop new technology and products based on its work with Dow under the [joint development agreement]." The Commission further alleged that the transaction would "reduce innovation competition among developers of the relevant products, including the delay of, or redirection of, research and development projects in metallocene catalyst technology, LLDPE reactor process technology, LLDPE and LLDPE applications."[31]

In *Bayer/Aventis*, Bayer's proposed acquisition of Aventis Crop Science (ACS) raised competitive concerns in four markets, including a market for the "research, development, manufacture, and sale of [New Generation Chemical Insecticide Active Ingredients] and related technologies for specific end use applications." New Generation Chemical Insecticide Active Ingredients technologies included "patented techniques for the commercial synthesis of New Generation Chemical Insecticide Active Ingredients molecules, patented and proprietary process technology used to manufacture such molecules, and patented formulations for chemical insecticide products based on these technologies." At the time of the proposed merger, Syngenta was "the only other firm with significant development and production of New Generation Chemical Insecticide Active Ingredients."[32]

According to the Commission, "Bayer and ACS developed New Generation Chemical Insecticide Active Ingredients and related technologies after years of analytical work and study of molecules suitable for use in pesticide applications. That work led to the identification of important molecules, techniques for commercial synthesis of those molecules, and the development of insecticide product formulations." The Commission recognized that "Bayer and ACS competed by … innovating and developing technology (including patents, trade secrets, and know-how) for use in the production of New Generation Chemical Insecticide Products, [a separate product market]." Bayer and Aventis also "own[ed] significant intellectual property estates relat[ed] to these products." While other firms had discovered new molecules, Bayer and ACS were, according to the Commission, "distinguished by their ability to … take new molecules from the discovery phase to the development of production processes for commercial scale synthesis;" consequently, both firms had been "licensed by competitors to develop New Generation Chemical Insecticide Active Ingredients based on molecules discovered by other firms." The Commission alleged that the proposed acquisition would "eliminate potential competition between Bayer and ACS in the markets for New Generation Chemical Insecticide Active Ingredients and the technology used in their manufacture."[33]

The Commission also alleged that the proposed merger would eliminate potential competition between Bayer and ACS in the markets for New Generation Chemical Insecticide Products (and markets for specific crop applications). According to the Commission, the proposed acquisition would reduce innovation competition in both the relevant technology and product markets, and increase barriers to entry, including enhancing patent barriers, in the relevant markets.[34]

In *Ciba-Geigy/Sandoz*, the Commission alleged that the proposed merger of Ciba-Geigy with Sandoz (to create Novartis) would, among other effects, eliminate actual potential and perceived potential competition in a market for "gene therapy technology" and "research and development of gene therapies" related to the development of gene therapies for the treatment of cancer, hemophilia, graft versus host disease, and chemoresistance gene therapy. At the time of the proposed merger, Ciba-Geigy held, not solely for investment, a 46.5% interest in Chiron. Chiron was "engaged in the discovery, development, manufacture and sale of proprietary and generic pharmaceutical products, including gene therapy products." Ciba-Geigy "fund[ed] research at Chiron and guarantee[d] its debt, and ha[d] the right to appoint members of its board of directors and to veto specified actions of [Chiron]." While "no gene therapy [had] been approved by the FDA, gene therapy treatments [then] in clinical trials offer[ed] patients the prospect of significant medical improvements or cures for diseases." Ciba-Geigy, through Chiron, and Sandoz, were either in clinical development or near clinical development for the treatment of certain human diseases using gene therapies.[35]

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31 *Id.* at 604-05, 608.

32 Bayer AG, 134 F.T.C. 184, 186-189 (2002).

33 *Id.* at 189-191, 289.

34 *Id.* at 192, 196.

35 Ciba-Geigy Ltd., 123 F.T.C. 842, 843-47 (1997). "Gene therapy technology" and "research and development of gene therapies" were two separate components of the relevant market. *Id.* at 894 (Statement of Chairman Robert Pitofsky & Comm'rs Janet D. Steiger, Roscoe B Starek, III & Christine A. Varney). The Commission also identified "[s]pecific gene therapy product markets … includ[ing] the research, development, manufacture and sale" of gene therapies for the treatment of cancer, hemophilia, graft versus host disease, and chemoresistance. *Id.* at 844-45.

Ciba-Geigy (with Chiron) and Sandoz "controlled the substantial proprietary rights necessary to commercialize gene therapy products and possess[ed] the technological, manufacturing, clinical, regulatory expertise and manufacturing capability to commercially develop gene therapy products." They were "the two leading commercial developers of gene therapy technologies and control[led] critical gene therapy proprietary portfolios, including patents, patent applications, and know-how." The competitive development of "potentially life-saving therapies … could be hindered by the merged firm's control of substantially all of the proprietary rights necessary to commercialize gene therapy products." Pre-merger, Ciba/Chiron and Sandoz "had the incentive and did act as rival centers from which [developers of potential gene therapies] could obtain needed intellectual property rights." In fact, "Ciba/Chiron and Sandoz would grant limited intellectual property rights to other developers and researchers" in return for compensation. The Commission was concerned that, "[w]hereas before the merger third parties might have had the option of licensing one party's patents or challenging the validity of the other's … the merger created a 'killer' patent portfolio so broad as to eliminate that option."[36]

VII. NON-PRICE EFFECTS IN R&D MARKETS

A merger may eliminate competition in a market for research and development; the competitive concern is the pace (not the price or cost) of R& D (or innovation). The FTC's challenge to the acquisition of Grail, by Illumina, is the most recent instance, but the Commission, in the late 1990s, was very active in challenging mergers likely to affect competition in innovation or R&D markets.[37] Research and development efforts support the improvement and differentiation of existing products and the introduction of future products.[38]

The Commission has identified stand-alone "research and development" markets associated with an existing or future commercial product as a relevant antitrust market. In *Ciba-Geigy/Sandoz*, the Commission alleged that the merger would combine two firms in the "highly concentrated" markets for "research and development" in four gene therapy markets: (i) HSV-tk gene therapy for the treatment of cancer; (ii) HSV-tk gene therapy for the treatment of graft versus host disease; (iii) gene therapy for the treatment of hemophilia; and (iv) chemoresistance gene therapy.[39] In *American Home Products/American Cyanamid*, the Commission identified competitive concerns in the market for "the research and development of a vaccine against Rotavirus infection in humans."[40] In *Sensormatic Electronics/Knogo*, the Commission alleged that the transaction would harm competition in the "highly concentrated" markets for research and development of disposable labels developed or used for source labeling, and for processes to manufacture disposable labels.[41] In *Wright Medical*, the Commission alleged that Wright's proposed acquisition of Orthonet would eliminate actual competition between Wright and Orthonet in the market for the research and development of orthopedic implants used or intended for use in the human hand.[42] In *Glaxo/Wellcome*, the Commission alleged that the merger would eliminate competition in the market for the research and development of non-injectable 5HT1D agonists, a specific class of drugs known to act on the receptors in the human body that cause migraine attacks; the merger would decrease the number of R&D tracks, and post-merger, Glaxo would

36 *Id.* at 846, 895, 897, 897 n.10.

37 "A research and development market consists of the assets comprising research and development *related to the identification of a commercializable product, or directed to particular new or improved goods or processes*, and the close substitutes for that research and development. When research and development is directed to particular new or improved goods or processes, the close substitutes may include research and development efforts, technologies, and goods that significantly constrain the exercise of market power with respect to the relevant research and development, for example by limiting the ability and incentive of a hypothetical monopolist to reduce the pace of research and development. The Agencies will delineate a research and development market only when the capabilities to engage in the relevant research and development can be associated with specialized assets or characteristics of specific firms. IP Guidelines, at 11 (emphasis added). The 1995 IP Guidelines use the term "innovation markets" to describe such markets. U.S. Dep't of Justice & Fed. Trade Comm'n, Antitrust Guidelines for the Licensing of Intellectual Property 10 (Apr. 6, 1995). The concept of research and development markets preceded the 1995 IP Guidelines. See U.S. Dep't of Justice, Antitrust Enf't Guidelines for Int'l Operations, Trade Reg. Rep. ¶13, 109.10 (November 10, 1988) (superseded) (case 5, research and development joint venture, discussing research and development markets). The Department of Justice issued guidelines for research joint ventures in 1980 but did not include the concept of research and development markets. U.S. Dep't. of Justice, Antitrust Guide Concerning Research Joint Ventures (1980).

38 See, e.g. Bayer AG, 134 F.T.C. 184, 188 (2002) ("Competition in research and development of New Generation Chemical Insecticide Active Ingredients has led to innovations including reductions in the cost of insecticides, reduced amounts of chemical insecticides used, development of chemicals with reduced risk of harmful environmental and health impacts due to insecticide exposure, and improved product properties and performance."); Dow Chemical Co., 131 F.T.C. 600, 606 (2001) ("Innovation through competition in research and development in LLDPE reactor process technology leads to reductions in cost, improved product properties, performance, and expansion of uses for polyethylene resin."); ABB AB, 127 F.T.C. 494, 495 496-97 (1999) (Elsag Bailey was engaged in the research and development of Process Mass Spectrometers and planned to begin manufacturing and selling Process Mass Spectrometers within the next year; Elsag Bailey was a potential competitor to ABB).

39 *Ciba-Geigy Limited,* 123 F.T.C. 842, 844-45 (1997).

40 *Am. Home Products Corp.,* 119 F.T.C. 217, 219 (1995).

41 *Sensormatic Elecs. Corp.*, 119 F.T.C 520, 522 (1995).

42 *Wright Medical Technology, Inc.*, 119 F.T.C. 344, 346 (1995).

have the ability to unilaterally reduce research and development of non-injectable 5HT1D agonists.[43] In *Upjohn/Pharmacia*, both Upjohn and Pharmacia were in advanced stages of developing topoisomerase I inhibitors for the treatment of colorectal cancer. The Commission alleged that their merger would eliminate actual competition in research and development in the market for such topoisomerase I inhibitors as well as the "potential for actual, direct, and substantial price competition" for topoisomerase I inhibitors for the treatment of colorectal cancer.[44] In *Baxter/Immuno*, the Commission identified a relevant market for "research, development, manufacture and sale of Fibrin Sealant to be approved by the FDA for sale in the United States" and explained that the merger would eliminate "the significant on-going competition between Baxter and Immuno in the research and development … of fibrin sealant in the United States" and "future competition in the manufacture and sale of fibrin sealant in the United States."[45] An analysis of the success in the parties and buyers of divested assets in bringing the future products to market within a few years of the enforcement actions showed mixed results.[46]

In *Boston Scientific/Guidant* the Commission identified harm in the market for research and development of Implantable Cardioverter Defibrillators ("ICDs"). Guidant, Medtronic, and St. Jude Medical were the only companies with significant sales of Implantable Cardioverter Defibrillators ("ICDs") in the United States. A fourth firm, Cameron Health Inc., was involved in the research and development of ICDs and was poised to receive FDA approval to sell its ICD in the United States within two to three years. Cameron was a potential future competitor in the highly concentrated ICD market, so its entry into the ICD market would likely be competitively significant. The acquisition of Guidant by Boston Scientific (BSC) potentially threatened Cameron's future entry into this market because BSC had a 10 to 15 percent equity stake in Cameron and had an option to acquire Cameron. Pursuant to that option and related agreements, Cameron was obligated to provide BSC with non-public, competitively sensitive information. The agreements also provided BSC a means to exert certain aspects of control over the conduct and business of Cameron. The Commission alleged that the proposed acquisition would eliminate "actual, direct, and substantial competition between Cameron and Guidant in the market for research and development of ICDs through BSC's exercise of its contractual control and receipt of information rights over Cameron, thereby reducing innovation in this market." The Commission also alleged that the effect of the proposed acquisition would "eliminat[e] potential competition between BSC/Cameron and Guidant in the market for the manufacture and sale of ICDs."[47]

VIII. INNOVATION EFFECTS IN EXISTING AND FUTURE PRODUCT MARKETS

The Commission may identify a slowing or elimination of innovation competition in the market for an existing or future product as a possible anticompetitive effect arising from a transaction. The 2010 Horizontal Merger Guidelines and 2023 Merger Guidelines identify two ways an anticompetitive effect may present itself: a merger may encourage the merged firm to curtail its innovative efforts below the level that would prevail in the absence of the merger through a (i) reduced incentive to continue with an existing product-development effort or (ii) reduced incentive to initiate development of new products.[48] "The first of these effects is most likely to occur if at least one of the merging firms is *engaging in efforts* to introduce new products that would capture substantial revenues from the other merging firm."[49] *Thoratec/Heartware*,[50] *Boston Scientific/*

43 *Glaxo* PLC, 119 FTC 815 (1995).

44 *The Upjohn Co.*, 121 F.T.C. 44, 45 (1996).

45 Complaint, Baxter International, No. C-3726 (Mar. 24, 1997, FTC), https://www.ftc.gov/sites/default/files/documents/cases/1997/03/c3726cmp.pdf; Analysis of Proposed Consent Order to Aid Public Comment at 2 (Dec. 1996), https://www.ftc.gov/sites/default/files/documents/cases/1996/12/baxterim.pdf.

46 Ilene Knable Gotts and Richard T. Rapp, *Antitrust Treatment of Mergers Involving Future Goods*, Antitrust Magazine (Fall 2004).

47 *Boston Sci. Corp.*, No. C-4164, 2006 WL 2330115, *3 (F.T.C. July 21, 2006).

48 2010 Horizontal Merger Guidelines at 23; U.S. Dep't of Justice & Fed. Trade Comm'n, Merger Guidelines (2023) (hereinafter "2023 Merger Guidelines") at 39.

49 2010 Horizontal Merger Guidelines at 23. (emphasis added).

50 *Thoratec Corp.*, No. 091-0064, 2009 WL 2402681 (F.T.C. 2009) ("of Thoratec's competitors, only Heartware poses a potential significant threat … [to] rapidly erose Thoratec's monopoly … [and] will quickly take market share from Thoratec. Competition from Heartware has already forced Thoratec to innovate even though [Heartware's product] is still in clinical trials. … Proposed acquisition will … elimina[e] innovation competition.").

Guidant,[51] *Amgen/Immunex*,[52] *Pfizer/Pharmacia*,[53] and *Pfizer/Warner-Lambert*,[54] are examples of Commission challenges to proposed mergers that would, according to the Commission, reduce innovation competition. In each, the Commission raised concerns about the continued incentive of the combined firm to continue to develop, or develop as quickly, differentiated products of the potential entrant that might cannibalize sales of the acquiring firm's existing products.

Glaxo Wellcome/SmithKline Beecham is another such matter. In *Glaxo Wellcome/SmithKline Beecham*, the Commission alleged that the merger would eliminate competition in three markets where one or both firms was a potential entrant. First, the merger would eliminate competition between the two firms likely to be the first two competitors to reach the market with prophylactic herpes vaccines. At the time of the proposed merger, SmithKline had the most advanced development effort towards a herpes vaccine. Glaxo, in conjunction with a partner, had been developing a vaccine for Herpes Simplex Virus infection. Other firms that had undertaken efforts to develop a vaccine had failed in their efforts or were far behind the merging parties and had vaccines only in pre-clinical stages of testing. The Commission alleged that the merger was likely to "chill certain innovations in a very complex area as a combined Glaxo SmithKline would potentially forego the development efforts of one of the firms." The Commission further alleged that if both products were developed, the merger would eliminate future price competition between the two prophylactic vaccines. [55]

The Commission also alleged that the merger would eliminate competition in two other markets where one firm was on the market and the other was a potential entrant: (i) the market for research, development, manufacture, and sale of topoisomerase I inhibitors; and (ii) the market for topical prescription herpes antivirals. With respect to topoisomerase I inhibitors, SmithKline's drug Hycamptin was a leading second-line therapy for ovarian and non–small cell lung cancer. There was only one other topoisomerase I inhibitor on the market; it was indicated for treatment of colorectal cancer. Glaxo maintained rights in a topoisomerase I inhibitor formulation for ovarian, non–small cell lung cancer, and other solid tumor indications. The Commission's investigation did not identify any other topoisomerase I inhibitor in development. According to the Commission, as a result of the merger, the combined entity could unilaterally delay, terminate, or otherwise fail to develop the Glaxo topoisomerase I inhibitor, resulting in less product innovation, fewer choices, and higher prices for consumers.[56]

The merger also combined SmithKline, a monopolist in the market for research, development, manufacture, and sale of topical prescription herpes antivirals with Glaxo, the only potential entrant. Prior to the merger, Glaxo was in the final stages of seeking FDA approval for a cream formulation of its product, Zovirex, for the treatment of oral herpes. (Zovirex was the "dominant prescription cold sore product in … Europe.") After announcement of the merger, Glaxo withdrew the application for FDA approval of Zovirex, without prejudice to its refiling its NDA with the FDA; but for the withdrawal, Glaxo's product could have been on the market in less than one year. The Commission's investigation did not identify any other companies working on a prescription topical treatment for oral herpes.[57] The Commission believed it was "highly unlikely that the merged firm would bring the Zovirex cream to market to compete against [SmithKline's existing product]."

Dow Chemical/Union Carbide is an example of a potential competition merger that raised concerns about the continued incentives of the combined firm to develop *technology*, alone or in combination with third parties, which might cannibalize future sales of products that relied on the relevant technology or revenue from licensing the relevant technology.[58]

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51 *Boston Sci. Corp.*, No. C-4164, 2006 WL 2330115 (F.T.C. July 21, 2006) (transaction will reduce potential competition and research and development in the market for Coronary Drug Eluting Stents).

52 *Amgen Inc.*, 134 F.T.C. 333, 340 (2002) ("effects of the merger, if consummated" include "reducing innovation competition in the research, development and commercialization of (a) neutrophil regeneration, (b) TNF Inhibitor, and (c) IL-1 Inhibitor products").

53 *Pfizer Inc.*, 135 F.T.C. 608 (2003) (merger would eliminate potential competition in the market for prescription drugs to treat erectile dysfunction and actual competition in the market for the research and development of prescription drugs for the treatment of erectile dysfunction).

54 *Pfizer Inc.*, No. C-3957, 2000 WL 1088335 (F.T.C. July 27, 2000). The Commission alleged that Pfizer's acquisition of Warner Lambert increased the likelihood that the combined firm would unilaterally delay, deter or eliminate competing programs to research and develop Epidermal Growth Factor receptor tyrosine kinase (EGFr-tk) inhibitors for the treatment of cancer, potentially reducing the number of drugs reaching the market and thus resulting in higher prices for consumers. The FDA had not approved any EGFr-tk inhibitors for the treatment of cancer. The market for the research, development, manufacture and sale of EGFr-tk inhibitors for the treatment of cancer was highly concentrated; only four companies, including Pfizer (with its development partner OSI Pharmaceuticals) and Warner Lambert, were in human clinical testing.

55 *Glaxo Wellcome PLC*, 131 F.T.C. 56, 62, 64, 147 (2001).

56 *Id.* at 62-65.

57 *Id.* at 61-63, 65, 143-44.

58 *Dow Chem. Co.*, 131 F.T.C. 600 (2001) (merger would eliminate potential competition in the market for metallocene catalyst technology and reduce innovation competition in metallocene catalyst technology).

"The second, longer-run effect is most likely to occur if at least one of the merging firms *has capabilities* that are likely to lead it to develop new products in the future that would capture substantial revenues from the other merging firm."[59] *Nielsen/Arbitron*,[60] *Bayer/Aventis*,[61] and *Ciba-Geigy/Sandoz*[62] are examples of transactions where the merging parties were believed to be the two, or two of only a few, firms that had the capabilities to develop new or future products that if brought to market in the absence of the merger would likely have captured substantial revenues from each other.

Vertical mergers may also diminish the incentive for the combined firm to engage in innovation or to support innovation efforts by competitors.[63]

IX. THE COMMISSION'S RECENT LITIGATED MERGER MATTERS ALLEGING NON-PRICE HARM

Recent Commission litigated merger challenges have alleged harm to innovation and other non-price competition, including harms to employees and workers. Most recently, in *IQVIA/Propel*, the Commission alleged that the merging firms "competed aggressively on non-price terms to win health care programmatic advertising business from each other", "regularly assess[ing] each other's technical innovations" and "increase[ing] their own innovation efforts in response. "[64] The Commission's request to preliminarily enjoin the merger was granted, with the court finding that the merging parties had competed aggressively on product quality and innovation, and that the merger would eliminate that competition.[65]

In its challenge to Facebook's consummated acquisitions of Instagram and WhatsApp, the Commission alleged that Facebook's conduct (including the acquisitions) harmed innovation competition "such as the development and introduction of new attractive features, functionalities, and business models", potential quality improvements "such as improved features, functionalities, integrity measures, and user experiences", and consumer choice, including the ability to "select a personal social networking provider that more closely suits their preferences … regarding the amount and nature of advertising, and the availability, quality, and variety of data protection privacy options." [66] Pre-trial matters are ongoing.

The Commission's request to preliminarily enjoin Meta's proposed acquisition of Within alleged "multiple harmful outcomes, including less innovation, lower quality, higher prices, less incentive to attract and keep employees, and less consumer choice" and "less pressure to compete for the most talented app developers" in the markets for virtual reality dedicated fitness apps and for virtual reality fitness apps.[67] The

59 2010 Horizontal Merger Guidelines at 23 (emphasis added); U.S. Dep't of Justice & Fed. Trade Comm'n, Merger Guidelines (2023) (hereinafter "2023 Merger Guidelines") at 39.

60 *Nielsen Holdings N.V.*, No. C-4439, 2014 WL 869523 (F.T.C. Feb. 24, 2014) (merging parties "are the best-positioned firms to develop (or partner with others to develop) a national syndicated cross-platform audience measurement service because only [the merging parties] maintain large, representative panels capable of measuring television with the required individual-level demographics, the date source preferred by advertisers and media companies.").

61 *Bayer AG*, 134 F.T.C. 184 (2002) (merger would eliminate potential competition in the market for New Generation Chemical Insecticide Active Ingredients and the technology used in their manufacture; Bayer, Aventis, and Syngenta were the only firms with significant development and production of New Generation Chemical Insecticide Active Ingredients, and Bayer and Aventis were distinguished by their ability to take new molecules from the discovery phase to the development and then marketing of such products).

62 *Ciba-Geigy Ltd.*, 123 F.T.C. 842 (1997).

63 See, e.g. Administrative Complaint, Lockheed Martin, No. 9405 (F.T.C., Jan. 25, 2022) (merger of Lockheed Martin, prime contractor for missile development, and Aerojet Rocketdyne Holdings, supplier of critical propulsion technologies, may result in diminished innovation, as post-merger the combined firm would have the incentive and ability to disadvantage rival missile developers by, among other things, failing to provide pre-acquisition levels of research investment, in order to shift future prime missile contracts to Lockheed), https://www.ftc.gov/system/files/documents/cases/d09405lockheedaerojetp3complaintpublic.pdf; Administrative Complaint, Nvidia Corp., No. 9404 (F.T.C., Dec. 2, 2021) (rivals to combined firm would be less likely to share information necessary to innovate because combined firm could misuse this information and combined firm would have less incentive to pursue innovation that would benefit competitors), https://www.ftc.gov/system/files/documents/cases/d09404_part_3_complaint_public_version.pdf.

64 Administrative Complaint, Iqvia Holdings, Doicket No. 9416 (Jul 17, 2023), https://www.ftc.gov/system/files/ftc_gov/pdf/d09416_iqvia-pmi_administrative_part_3_complaint_-_public.pdf.

65 Opinion and Order, FTC v. IQVIA Holdings, 23 Civ. 06188 (S.D.N.Y, Dec. 29, 2023) at pp. 75, 95.

66 Complaint, Federal Trade Commission v. Facebook, Case No. 1:20-cv-03590 (D.D.C. Jan. 2021) at ¶163; see also ¶167 (non-price effects related to advertising), https://www.ftc.gov/system/files/documents/cases/051_2021.01.21_revised_partially_redacted_complaint.pdf. The Commission's initial complaint was dismissed, but its amended complaint withstood a motion to dismiss. See FTC v. Facebook, 560 F. Supp.3d 1 (D.D.C. 2021) (complaint dismissed); FTC v Facebook, 581 F. Supp. 3d 34 (D.D.C. 2022) (motion to dismiss amended complaint denied). The Commission's amended complaint contained similar allegations of harm to non-price competition from the acquisitions.

67 Complaint, FTC v. Meta Platforms, Case No. 3:22-cv-04325 (N.D. Cal., Jul. 27, 2022), https://www.ftc.gov/system/files/ftc_gov/pdf/221%200040%20Meta%20Within%20TRO%20Complaint.pdf.

district court denied the Commission's motion without discussing in any detail these potential harm, finding that Meta was not a likely entrant into the relevant markets, and thus the transaction was not reasonably likely to cause harm.[68]

The Commission's challenge to Microsoft's acquisition of Activision also alleged harm to innovation, by, among other things "decreasing the combined firm's incentive to optimize Activision's content for gameplay on rival hardware, thereby reducing the quality of consumer gaming experiences on competing products."[69] The Commission sought, but was denied, a preliminary injunction by the district court.[70]

X. ELIMINATION OF POTENTIAL ENTRANT, INCLUDING THROUGH FORECLOSURE OR RAISING RIVALS COST

The elimination of a potential entrant into a relevant market is a form of non-price effect of a merger. While the future entrant (if successful), is assumed to have an effect on price competition, the agencies do not quantify the potential price effect; rather, its inquiry is focused on the likelihood and capability of entry. Limiting or affecting future entry, by either one of the merging parties or by a third party, is a non-price effect.

Illumina/Grail is a recent example. In *Illumina/Grail*, a vertical transaction, the Commission alleged that the acquisition "would substantially lessen competition in the market for the research, development, and commercialization of [multi-cancer early detection ("MCED")] tests in the United States. According to the Commission's complaint, Illumina, the dominant provider of DNA sequencing platforms, would have the incentive, post-acquisition, to foreclose or disadvantage Grail's rivals. Illumina's next-generation sequencing platform is, according to the Commission, an essential input for the development and commercialization of MCED tests; Grail was "racing against several other firms to develop and commercialize" an MCED test. Post-merger, Illumina would have the incentive, and ability, to discriminate against its post-merger rivals, and would "control the fate of every potential rival to Grail." According to the Commission's complaint, Illumina could "impede the rival's research and development efforts by denying important technical assistance and other proprietary information."[71] The Commission objected to the merger, because, in part, it might slow or prevent the future commercialization of MCED tests by firms that have not yet commercialized an MCED test.

The Commission reversed the administrative law judge's dismissal of the complaint,[72] and found that the merger gave Illumina the incentive (combined with Illumina's pre-merger existing ability) to foreclose access to Illumina's NGS platform by those firms researching, attempting to develop, and attempting to commercialize MCED tests in competition with Grail, and that Illumina, in dealing with Grail's competitors, would have access to competitively sensitive information that it could share with Grail, thus stifling existing and potential competition.[73] The Fifth Circuit vacated the Commission's opinion, finding the Commission failed to evaluate the effects of Illumina's 12-year supply commitment (the "open-offer") for firms engaged in the research, development, and intended commercialization of MCED tests.[74] The court did note that Illumina could "engage in foreclosing behavior" by, for example, "making late deliveries or subtly reducing the level of support services" of its NGS products – two examples of non-price effects.[75]

Non-horizontal merger challenges that focused on the prevention of future entry by one of the parties to the merger include *Cytec/Digene*[76] and *Barnes & Noble/Ingram*.[77] Examples of Commission challenges to mergers where one or both of the parties was identified as

68 FTC v. Meta Platforms, 654 F. Supp.3d 892 (N.D. Cal. 2023).

69 Complaint, Microsoft Corp., No. 9412 (Dec. 8, 2022), at ¶ 61.

70 FTC v. Microsoft, 2023 WL 4443412 (N.D. Cal. Jul. 10, 2023) at *17. The Commission has appealed the district court's denial to the 9th Cir. Court of Appeals.

71 Complaint, Illumina, Inc., No. C-9401 (F.T.C. Mar. 30, 2021), https://www.ftc.gov/system/files/documents/cases/redacted_administrative_part_3_complaint_redacted.pdf.

72 Initial Decision, *In the Matter of Illumina, Inc. & GRAIL, Inc.*, No. 9401 (Sept. 9, 2022).

73 Opinion of the Commission, *In the Matter of Illumina, Inc. & GRAIL, Inc.*, No. 9401 (Mar. 31, 2023)

74 *Illumina, Inc., v. FTC*, 2023 WL 8664628 (5th Cir., Dec. 15, 2023). The opinion is notable for its acceptance of a market for either or both of "research and development" and "commercialization" of a future product. Id. at *6 -7, and footnote 9.

75 *Id.* at *8.

76 *Cytec/Digene* is discussed and summarized in the Federal Trade Commission's Commentary on Vertical Merger Enf't (2020) at 7-8.

77 *Barnes & Noble/Ingram* is discussed and summarized in the Federal Trade Commission's Commentary on Vertical Merger Enf't (2020) at 6.

a potential entrant in a market for an *existing product* (or service) include (but are not limited to) *Bristol-Myers Squibb/Celgene*,[78] *Össur/College Park*,[79] *Novartis/GlaxoSmithKline*,[80] *Medtronic/Covidien*,[81] *Inverness/ACON*,[82] *Polypore*,[83] *Thoratec/Heartware*,[84] *Whole Foods/Wild Oats*[85] (entry into geographic market), *Gencorp/Sequa*,[86] *Amgen/Immunex*,[87] *El Paso Energy/Coastal*,[88] *Staples/Office Depot*,[89] *Hoechst/Rhone-Poulenc*,[90] *Roche/Genentech*,[91] and *Institut Mérieux/Connaught BioSciences*.[92] Other matters include *Boston Scientific/Guidant*[93] and *Johnson & Johnson/Guidant*,[94] *Glaxo Wellcome/SmithKline Beecham, ABB AB/Elsag Bailey Process Automation*[95] and *Boston Scientific/SCIMED Life Systems*.[96]

XI. EFFICIENCY EFFECTS OF PROPOSED MERGERS

A merger may result in efficiencies or other procompetitive effects. The 2023 Merger Guidelines adopt a more hostile view to efficiencies than their recent predecessors. The Commission has, in the past, considered whether a merger has the potential to generate significant efficiencies that may result in lower prices, improved quality, enhanced service, or new products. Merger-generated efficiencies may enhance competition by permitting two ineffective competitors to form a more effective competitor by, for example, combining complementary assets. Efficiencies, to be credited, must be merger specific, verifiable, must prevent a reduction in competition, and must not be associated with anti-competitive behavior.[97]

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78 *Bristol-Myers Squibb Co.*, No. C-4690, 2019 WL 6168274 (F.T.C. Nov. 15, 2019).

79 Complaint, Össur Hf./College Park Industries, No. C-4712 (F.T.C. 2020), https://www.ftc.gov/system/files/documents/cases/191_0177_ossur_college_park_complaint.pdf.

80 Complaint, *Novartis AG/GlaxoSmithKline, PLC.*, No. C-4510 (FTC 2015), https://www.ftc.gov/system/files/documents/cases/complaint_0.pdf.

81 *Medtronic, Inc.*, 159 F.T.C. 200 (2015) (Medtronic and Covidien were the likely second and third firms to enter the market for drug-coated balloon catheters used to treat peripheral arterial disease in the femoropopliteal artery; no other firm, other than the market incumbent, had advanced to the clinical trial stage of the FDA process.)

82 Complaint, *Inverness Medical Innovations*, No. C-4244 (FTC, Jan. 23, 2009), https://www.ftc.gov/sites/default/files/documents/cases/2009/01/090127invernesscmpt.pdf; Analysis to Aid Public Comment, *Inverness Medical Innovations*, No. C-4244 (FTC, Dec. 2009), https://www.ftc.gov/sites/default/files/documents/cases/2008/12/081223invernessanal.pdf.

83 *Polypore Int'l, Inc.*, 150 F.T.C. 586, 613-22 (2010), aff'd. *Polypore International v. F.T.C.*, 686 F.3d 1208, 1214-15 (11th Cir. 2012).

84 *Thoratec Corp.*, No. 091-0064, 2009 WL 2402681 (F.T.C. 2009).

85 Administrative Complaint, *Whole Foods Market/Wild Oats Markets*, No. 9324 (June 2007), https://www.ftc.gov/sites/default/files/documents/cases/2007/06/070628admincmplt.pdf.

86 *Gencorp Inc.*, 136 F.T.C. 1264 (2003) (Sequa, through its subsidiary Atlantic Research Corporation, was the leading supplier of bipropellant attitude control thrusters; Gencorp.'s subsidiary Aeroject was the most likely entrant.)

87 *Amgen Inc.*, 134 F.T.C. 333 (2002) ("proposed merger… would cause significant anticompetiive effects in the U.S. IL-1 inhibitor market by eliminating Amgen's most significant (and likely only) potential competitor, Immunex").

88 *El Paso Energy Corp.*, 131 F.T.C. 704 (2001) (El Paso was a 50 percent owner of the only interstate natural gas pipeline transporting natural gas to Central Florida and Coastal had proposed building a natural gas system to transport natural gas to Central Florida; no other pipeline was expected to come into service soon.)

89 Complaint for Temp. Restraining Order & Preliminary Injunction Pursuant to Section 13(b) of the Fed. Trade Comm'n Act, *FTC v. Staples, Inc.*, 970 F. Supp. 1066 (D.D.C. 1997) (No. 1:97CV00701), https://www.ftc.gov/sites/default/files/documents/cases/1997/04/staples2.pdf.

90 *Hoechst AG,* No. C-3919, 2000 WL 254668 (F.T.C. Jan. 18, 2000).

91 *Roche Holding Ltd.*, 113 F.T.C. 1086 (1990) (elimination of potential competition in the market for Vitamin C, where Roche was the market leader and Genetech was a potential entrant, and in the market for therapeutics for treatment of human growth hormone deficiency, where Genetech was a near-monopolist and Roche was a potential entrant).

92 *Institut Mérieux S.A.*, 113 F.T.C. 742 (1990) (elimination of potential competition in the market for rabies vaccine, where Mérieux was the only firm selling the rabies vaccine nationwide, and Connaught was one of two potential entrants, and in the market for inactivated polio vaccine, where Connaught was a monopolist and Mérieux was one of two potential entrants).

93 *Boston Sci. Corp.*, No. C-4164, 2006 WL 2330115, at *3 (F.T.C. July 21, 2006).

94 *Johnson & Johnson*, 140 F.T.C. 1062, 1067.

95 *ABB AB*, 127 F.T.C. 494 (1999).

96 *Boston Scientific Corp.*, 119 F.T.C. 549 (1995).

97 U.S. Dep't of Justice & Fed. Trade Comm'n, Merger Guidelines (2023) at 32-33.

The Commission's review in *Genzyme/Novazyme* may remain instructive. Genzyme was a "large biotech company with substantial experience in developing therapies for lysosomal storage disorders," a group of disorders including Pompe disease, a life-threatening medical condition affecting infants and young children. Novazyme, a small research company, was founded in 1999, two years prior to its acquisition in 2001 by Genzyme. No treatment for Pompe disease existed prior to Genzyme's acquisition of Novazyme.[98]

At the time of its acquisition, Novazyme's Pompe disease program was at an early pre-clinical stage. Genzyme did not have a product on the market, but had previously entered into joint ventures with two other firms, Pharming and Synpac, to develop treatments. By the time of its acquisition of Novazyme, Pharming had abandoned efforts to commercialize its product. The Synpac treatment enzyme was in clinical trials, "but manufacturing problems were preventing production on a scale sufficient for commercialization."[99]

Prior to its acquisition of Novazyme, Genzyme had begun to ramp up its own internal research program. At the time of the merger (and continuing through the time of the Commission's investigation), neither company had a product on the market or approved for marketing by the Food and Drug Administration. Genzyme's treatment was further along than Novazyme's, but Novazyme's treatment was potentially superior.[100]

The Commission's investigation focused on how the transaction affected, and would continue to affect, the "pace and scope of research" into development of enzyme replacement therapies for Pompe disease.[101] The Commission ultimately closed the investigation.[102] Chairman Timothy J. Muris, writing for himself, issued a statement indicating that the evidence was sufficient for him to conclude that the transaction had not and was not likely to slow the development of the internal Genzyme product and had resulted in benefits that accelerated the development of the Novazyme product. According to the Chairman, the merger "made possible comparative experiments" — "'comprehensive, blinded pre-clinical analysis comparing all four Pompe enzymes,' and the results of that analysis" — that "provided information that enabled the Novazyme program to avoid drilling dry holes" and created other possible synergies.[103]

The Commission also identified significant efficiencies in the *United Launch Alliance* joint venture of Boeing Corp. and Lockheed Martin. There, the Commission alleged harm to competition in the markets for the research, development and sale of Medium-to-Heavy launch services, and the research, development, and sale of Space Vehicles. The Commission alleged that the joint venture participants had the means and incentive to raise the costs of entry to potential Medium-to-Heavy launch service suppliers, by withholding support and information relevant to making a Space Vehicle compatible with a Launch Vehicle.[104] The Commission accepted the potential for efficiencies in the formation of the United Launch Alliance, stating that "[t]he compelling justification for permitting the ULA transaction to proceed, subject to conditions, is its capacity to improve quality in the performance of design, production, and launch preparation tasks in a discipline in which operational reliability is a paramount objective."[105]

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98 Statement of Chairman Timothy J. Muris, Genzyme Corporation/Novazyme Pharmaceuticals, Inc., at 6, 8 (2004), https://www.ftc.gov/system/files/attachments/press-releases/ftc-closes-its-investigation-genzyme-corporations-2001-acquisition-novazyme-pharmaceuticals-inc./murisgenzymestmt.pdf.

99 *Id.* at 8-9.

100 *Id.* at 8-10.

101 *Id.* at 1.

102 *FTC Closes its Investigation of Genzyme Corporation's 2001 Acquisition of Novazyme Pharmaceuticals, Inc.*, Fed. Trade Comm'n. (Jan. 13, 2004), https://www.ftc.gov/news-events/press-releases/2004/01/ftc-closes-its-investigation-genzyme-corporations-2001.

103 Statement of Chairman Timothy J. Muris, Genzyme Corporation/Novazyme Pharmaceuticals, Inc., at 15, 17. Recently, the Commission voted to challenge a similar transaction: the acquisition of an exclusive license by Sanofi (the current parent of Genzyme) of a drug in development by Maze Therapeutics for treatment of Pompe Disease. The Commission alleged harm to the development of new treatments for Pompe Disease. The Commission also alleged that any "purported benefits" of the transaction could be accomplished without eliminating competition between Sanofi and Maze. Complaint, In the Matter of Sanofi, Genzyme Corporation, and Maze Therapeutics, Docket No. 9422 (Dec. 11, 2023).

104 Complaint, *Boeing/Lockheed Martin*, Docket No. C-4188 (F.T.C., May 1, 2007), https://www.ftc.gov/sites/default/files/documents/cases/2007/05/0510165complaint.pdf. This matter is discussed and summarized in the Federal Trade Commission's Commentary on Vertical Merger Enf't (2020) at 25-26.

105 See *Statement of Commissioner William E. Kovacic, with whom Chairman Deborah Platt Majoras and Commissioner J. Thomas Rosch Join, In the Matter of Lockheed Martin Corporation, The Boeing Company and United Launch Alliance, L.L.C.*, (May 1, 2007) at 2, https://www.ftc.gov/sites/default/files/documents/cases/2007/05/0510165kovacicmajorasrosch.pdf. See also William E. Kovacic, Competition Policy Retrospective: The Formation of the United Launch Alliance and the Ascent of Space, 27 Geo. Mason. L. Rev. 863 (2020), https://scholarship.law.gwu.edu/cgi/viewcontent.cgi?article=2757&context=faculty_publications.

X. CONCLUSION

That mergers may affect non-price, as well as price competition, has long been accepted by the Commission; recent litigated merger cases show that the courts accept that non-price competition is as or more valuable than price competition. Unfortunately, the 2023 Merger Guidelines do not advance the analytic framework for evaluating the non-price effects of mergers. Parties looking for guidance on how the agencies may evaluate non-price competition should look to the earlier iteration of merger guidelines (including the relevant examples) and the enforcement record of the Commission (and DOJ) subsequent to the 1992 Horizontal Merger Guidelines. By suggesting a greater skepticism of efficiency claims than seems appropriate, the 2023 Merger Guidelines set back the evaluation of non-price effects of mergers.

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