UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

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DISTRICT OF DELAWARE

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UNITED STATES OF AMERICA, Plaintiff, vs. DENTSPLY INTERNATIONAL, INC., Defendant.	)	Civil Action No. 99-005 (SLR) **FILED UNDER SEAL**

UNITED STATES' PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

Dated: July 19, 2002

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INTRODUCTION

As set forth in the following Proposed Findings of Fact and Conclusions of Law, Dentsply has unlawfully maintained its monopoly power in the prefabricated artificial tooth market in the United States in violation of Section 2 of the Sherman Act, 15 U.S.C. § 2, and unreasonably restrained competition under Section 1 of the Sherman Act, 15 U.S.C. § 1, and Section 3 of the Clayton Act, 15 U.S.C. § 14.

Since at least 1976, if not before, Dentsply has terminated, or threatened to terminate, dealers selling Dentsply's Trubyte teeth if they add a competing brand. In 1993, this exclusionary policy was memorialized as Dealer Criterion 6, one of the two practices challenged in this case. The other is Dentsply's agreements with new dealers to drop some, or all, competing tooth brands in order to obtain Dentsply's Trubyte line in the first place. Proposed Findings of Fact ("PFF") ¶¶ 37-43.

Through this exclusionary conduct, Dentsply has foreclosed its closest competitors from approximately 80% of the laboratory dealer outlets in the country. PFF ¶¶ 242-48. A network of dental lab dealers is necessary in order to compete effectively in the market. PFF ¶¶ 61-167. Dentsply's conduct has maintained its monopoly power, reduced competition, and increased prices. Indeed, the record shows, and Dentsply concedes, that in the absence of this challenged conduct:

- Dealers would add competing brands of teeth (PFF ¶ 269);
- Dentsply would lose market share, as labs begin buying more of those competing brands (PFF ¶ 266);
- Prices will fall, to both dealers and laboratories (PFF ¶¶ 275-80); and

- Competition will increase, as Dentsply tries to regain its lost market share and its rivals increase their promotional activity (PFF ¶ 282).

Given these conceded effects, Dentsply bears a heavy burden to come forward with a nonpretextual, procompetitive rationale for its conduct. It has not done so here. The theoretical justification offered by Dentsply's expert, Professor Howard Marvel, is a pretext for the real reason that is expressed quite clearly in contemporaneous evidence: to "block competitive distribution points"; "tie-up dealers"; prevent competitors from gaining a "foothold" in the U.S. market; and to posed by dealers selling the teeth of Dentsply's primary competitors. PFF ¶¶ 231-41.

The United States' expert, Dr. David Reitman has spent five years studying this industry and reviewing the extensive evidentiary record from this case and the investigation leading up to it — including over 100 deposition transcripts, 20-25 interviews of market participants, 10 boxes of documents, and various types of market data, as well as visiting facilities of firms at each level of distribution. PFF ¶ 285. He has concluded that the substantial anticompetitive effects of Dentsply's conduct outweigh any possible procompetitive benefits. PFF ¶ 329. The net effect on competition and consumers is clear. Competition has been reduced, and consumers have had fewer choices and paid higher prices. PFF ¶¶ 263-84.

The evidence on five key issues in the case -- monopoly power, foreclosure, agreement, effects, and Dentsply's justifications -- is summarized below.

Monopoly power. Dentsply cannot seriously dispute that its market share in the artificial tooth market is approximately 75%-80%, a share sufficiently high to give rise to a

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presumption of monopoly power. Market share surveys commissioned by Sam Thumim, Dentsply's own Manager of Market Research who testified during the government's case and was not cross examined by Dentsply, show that its share has been roughly 80% for at least the past 10 years. PFF ¶¶ 169-72.

Dentsply has also controlled price in the market. By successfully excluding its closest competitors from the dealers necessary to compete effectively, it has been able to charge monopoly prices. According to William Turner, Senior Product Manager for Trubyte's tooth products for almost 10 years, and Steve Jenson, the current General Manager of the Trubyte Division, Dentsply's high prices have acted as a "price umbrella," under which other companies compete in the marketplace. PFF ¶¶ 173-78.

A particularly telling example of Dentsply's monopoly power occurred during a several-year period in the 1990's, prior to Dentsply's introduction of its Portrait tooth line. Its Bioform premium teeth were a poor match to the popular Vita shade guide and, apart from their shading, these teeth were considered aesthetically inferior in other respects to the teeth made by both Vita and Ivoclar. Dentsply's teeth were also significantly higher priced. Yet, it was still able to maintain its market share during this period. When labs received a prescription for a Vita-shaded tooth, they substituted the higher priced, poorly-matched Dentsply tooth in 72% of the cases. Not surprisingly, several dealers tried to add the Vita tooth line in response to the requests of their lab customers. Yet Dentsply consistently enforced Dealer Criterion 6, and successfully blocked Vita from each of these dealers. PFF ¶¶ 191-211.

At trial, Dentsply touted the introduction of its Portrait teeth as evidence that it is not a monopolist. Yet the evidence shows that Dentsply was receiving complaints, from both dealers and labs, about the poor aesthetics and shading of its teeth for at least a few years. It was late in addressing the problem. During the time in which Dentsply was working to develop its Portrait line, it could have competed on the merits by permitting dealers to decide freely what tooth lines they should carry. Instead, it threatened those dealers with the loss of their Trubyte tooth business, convincing them not to add the aesthetically superior and less expensive teeth requested by their lab customers. PFF ¶¶ 191-211.

Dentsply's monopoly power is protected by the high barrier to successful entry and expansion created by its exclusionary conduct. Dentsply's primary competitors, Vita and Ivoclar, have competed in the market for over 20 years. Despite substantial efforts, their market shares are stuck in the mid-single digits. Dentsply's conduct has completely excluded at least one firm from the market, delayed the entry of another, and significantly limited the success of two firms, Heraeus Kulzer and Davis Schottlander, that have just recently entered. PFF ¶¶ 212-29.

Dentsply has tried to make much of the unimpressive entry of these two firms, probably because it is the only evidence of entry it could find. Yet the entrants' experience confirms that it is virtually impossible for a new entrant to find dealer distribution in the face of Dentsply's exclusive dealing agreements, and that it is difficult to achieve any kind of success without dealer distribution. If actions speak louder than words, then Dentsply's lack of any reaction -- in terms of its pricing or otherwise — to this recent entry speaks volumes.

Dentsply's monopoly power is far from being eroded by either of these entrants. PFF ¶¶ 216-19.[1]

Foreclosure. Dentsply's exclusive dealing agreements have done what they were intended to do — "tie-up" the "key dealers" selling Trubyte teeth. Dr. Reitman's analysis shows that Dentsply has foreclosed its competitors from approximately 80% of the laboratory dealer outlets in the country. PFF ¶¶ 242-48. Dentsply did not offer into evidence their own foreclosure rate analysis. Instead, they argued that because direct sales to labs are possible, Dr. Reitman should not have focused on dealer outlets when measuring foreclosure.

Dr. Reitman's methodology was proper given the abundant evidence that dealer distribution is necessary for a tooth supplier to be an effective competitor in this market. That evidence comes from numerous sources: from the dealers, who described the valuable services they provide; from the labs, in the form of Dr. Jerry Wind's survey of dental laboratories; and from the rival tooth manufacturers, that have tried repeatedly to develop a dealer network. Most significantly, that evidence comes also from Dentsply, which has a diverse dealer network of national, regional and local dealers collectively maintaining Trubyte tooth stocks in over 100 locations throughout the country.

Dealers are important in this industry, to Dentsply and to its

[1] This same evidence of "monopoly power" more than suffices to establish market power in support of the conclusion that Dentsply has violated Section 1 of the Sherman Act and Section 3 of the Clayton Act. Indeed, Dentsply's own expert, Professor Marvel, concedes that Dentsply has "substantial market power." PFF ¶ 230(a).

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Agreement. When Dentsply has recognized new dealers, it has explicitly required the dealer to agree to drop some or all competing tooth brands -- particularly, those sold by its closest competitors, Vita and Ivoclar. Dentsply cannot seriously dispute that these are "agreements" for purposes of Section 1 of the Sherman Act and Section 3 of the Clayton Act. PFF ¶¶ 293.

Dealer Criterion 6 also constitutes an agreement. It is not a unilateral policy that is announced and automatically enforced. Dentsply has engaged in negotiations — at times, lengthy negotiations — with dealers to persuade them not to add competitive brands. It has coerced dealers to agree not only by threatening them with the loss of the Trubyte tooth business, but with the loss of other product lines as well. In the case of Frink Dental, Dentsply sent three high-level executives, including its chief executive officer, to Illinois to try to talk Frink's owner, Tom Cavanaugh out of adding the Ivoclar line. When he did so anyway, Dentsply terminated him not only as a tooth dealer but as a Trubyte merchandise dealer as well. Dentsply then threatened him with the loss of other business, until Mr. Cavanaugh finally relented and dropped the Ivoclar line. Dentsply has done what it takes to make sure its dealers agree not to add competing tooth brands. PFF ¶¶ 287-92.

Effects. Dentsply's monopoly power and the very high foreclosure rate create a powerful presumption of anticompetitive effects. Here, there is also ample direct evidence of harm to competition and consumers. Dentsply's concession that it would lose sales and market share without Dealer Criterion 6 means that consumer preferences in today's market

are being frustrated. Some labs that want to buy the teeth of Vita, Ivoclar, and others, are not buying them because those teeth are not available through the same dealers selling Trubyte teeth. PFF ¶¶ 265-74.

There is no dispute that prices will fall in the absence of Dentsply exclusive dealing. Dentsply and its expert Professor Marvel concede that. The testimony of Dentsply's competitors showed that they price more aggressively in areas in which they have better dealer distribution, and would lower their prices even further if they developed a better dealer network. Dr. Reitman's analysis of the Wind Survey data confirmed and quantified this price effect, concluding that premium tooth prices would fall by approximately 4%-5% in just three months. Additional, long-term decreases are likely as well. PFF ¶¶ 275-80.

Consumers will benefit not only from these lower prices but from the greater competition that will result if Dentsply's conduct is enjoined. On a level-playing field, both Dentsply and its rivals will compete harder. The competitors testified that they will promote their products more vigorously. Likewise, Dentsply will try harder to regain its lost market share, with any number of procompetitive tactics — such as more research and development, more sales and marketing expenditures, or a bigger sales force. PFF ¶¶ 282.

Dentsply's business justifications. Professor Marvel's free riding justification is pretextual and not supported by the facts. As noted above, the real reason Dentsply uses exclusive dealing is to exclude its competitors from competing effectively. Professor Marvel claims that Dentsply uses exclusive dealing, and charges higher prices, so it can advertise its teeth more. Yet the evidence shows that Dentsply will engage in more, not less, promotion if it is no longer able to practice exclusive dealing. PFF ¶¶ 373-77. The evidence also

undermines certain necessary conditions that must apply for Professor Marvel's free riding theory to work. One is that dealers must steer lab orders for Dentsply teeth to other brands through the use of what Professor Marvel calls "bait and switch" tactics. There is no evidence that dealers in this industry do that. PFF ¶¶ 343-49.

Professor Marvel's theory is just that -- a theory of an expert retained in litigation. It is not grounded in, or supported by, the facts of this case. Dr. Reitman, however, who began investigating the issue of procompetitive justifications five years ago, consistently cited the detailed factual support for his conclusions that the procompetitive benefits, if there are any, are negligible and outweighed by the significant anticompetitive harm that has been demonstrated. PFF ¶¶ 328-29.

PROPOSED FINDINGS OF FACT

I. Background on the industry and litigation.

A. Prefabricated artificial teeth and their use in dentures.

1. The relevant product market for purposes of this case is the sale of prefabricated artificial teeth in the United States. GX 445 at 6-8.[2]

2. Artificial teeth today are manufactured in either porcelain or plastic. In order to match the different characteristics of a person's mouth, they are made in thousands of different shades, sizes and shapes. Teeth are made in different grades of quality, commonly known as "premium," "mid-line," "economy," and "sub-economy." Weinstock Tr. 81-84; Reitman Tr. 1479-80.

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[2] The trial transcript will be cited in this memorandum as "Tr.," preceded by the name of the witness providing the testimony and followed by the page number. Government exhibits will be cited as "GX," and defendant exhibits will be cited as "DX."

3. Artificial teeth are manufactured for use in dentures. A denture is a removable prosthetic device comprised of artificial teeth fixed in an acrylic or other base material to replace some or all of a person's natural teeth. D.I. 368, Exh. 1, Stipulation 11.

4. "Removable" appliances are ones that patients can remove from their mouth themselves, clean them and place them back in. Ryan Tr. 1206. This can include either full and partial dentures. Weinstock Tr. 85.

5. "Fixed" appliances, by contrast, include crowns, bridges, and implants. A crown is a single, individual tooth restoration. A bridge is a restoration of at least three units bridging a gap of at least one missing tooth. An implant case is where a device is actually screwed into the bone. Weinstock Tr. 85-86.

6. The term "combination case" refers to the use of both fixed and removable appliances. Ryan Tr. 1208.

7. Dental laboratories purchase almost all of the artificial teeth sold in the United States and use the teeth to make dentures. Labs buy artificial teeth on cards containing six (for anteriors) or eight (for posteriors) teeth. A full denture, *i.e.,* one that replaces all natural teeth, requires 28 teeth from a total of four tooth cards. When fabricating a partial denture, a dental lab may only use a portion of the teeth on a card. The remaining teeth are the tooth cards known as "broken sets." D.I. 368, Exh. 1, Stipulations 13-16.

8. Labs fabricate dentures according to the prescription, impression and any other information provided to the lab by the dentist. Weinstock Tr. 81; Ryan Tr. 1211-17 (describing process by which denture is made). The process of fabricating a new denture

involves "a rather large number of steps," and any given denture case goes back and forth between the lab and the dentist several times. Ryan Tr. 1211.

9. The market demands that this process move quickly as possible. When a patient is waiting for a new denture to be fabricated, or an existing one repaired, they want the work done as quickly as possible. Reitman Tr. 1480-81 ("there is someone sitting there waiting, a patient waiting for their denture to come back, not wanting a lengthy process"); Weinstock Tr. 90 ("they are anticipating something that fits better, chews better, gets rid of pain. They want it as fast as possible"); Ryan Tr. 1225 (denture patients often in pain or undergoing major life event requiring denture work); Armstrong Tr. 2369 (patients value fast service particularly when losing anterior teeth).

10. There are four distinctive characteristics of artificial teeth that bear on how they are distributed: (1) teeth are available in thousands of different mould and shade combinations; (2) they are ordered frequently, generally daily; (3) labs, dentists and patients value quick turnaround times in obtaining teeth; and (4) the handling of restocking and returns of teeth is a very labor-intensive effort. Reitman Tr. 1479-81; GX. 364-A.[3]

B. The distribution of artificial teeth.

1. Manufacturers

a. Dentsply International

11. Dentsply International, Inc. is a Delaware for-profit corporation headquartered in York, Pennsylvania. Dentsply transacts business in, and is found within, the District of

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[3] GX 364-A is identified in the trial transcript as GX 365, however, it was subsequently renumbered.

Delaware within the meaning of 15 U.S.C. § 22. Dentsply's business activities that are the subject of this lawsuit are within the flow of, and substantially affect, interstate trade and commerce. D.I. 368, Exh. 1, Stipulations 1, 4-5.

12. Dentsply's artificial teeth are developed, designed, sold, and marketed by its Trubyte Division, located in York, Pennsylvania. Dentsply manufactures artificial teeth in the premium (under the names "Portrait," "TruBlend," "Bioblend" and "Bioform"), mid-range ("Biotone") and economy ("New Hue" and "Classic") segments. D.I. 368, Exh. 1, Stipulations 8-9; Jenson Tr. 2108, 2116-17. Dentsply does not compete in the sub-economy tooth segment. Jenson Tr. 2250-51.

13. Dentsply sells its artificial teeth exclusively to independent dealers. Dentsply does not own the dealers it has authorized to distribute Trubyte teeth. D.I. 368, Exh. 1, Stipulations 17-18.

14. Dentsply has been the dominant tooth manufacturer in the United States market for a very long time. Its current market share is between 75% and 80%. Reitman Tr. 1471-72;

15. In 2001, Dentsply's gross tooth sales to dealers were Net sales, taking into account broken sets and other tooth returns, totaled DX 1650; Jenson Tr. 2253. Dentsply's Trubyte Division also sells lab merchandise products. Teeth, however, represent approximately of the division's revenue. Jenson Tr. 2255-56.

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b. Ivoclar Vivadent, Inc.

16. Ivoclar Vivadent, Inc., headquartered in Liechtenstein, is a manufacturer and marketer of dental restorative materials, including artificial teeth. Ganley Tr. 982-83. Its U.S. subsidiary, Ivoclar Vivadent, Inc. ("Ivoclar"), is based in Amherst, New York and is responsible for marketing Ivoclar teeth in the United States market. Ganley Tr. 982-83. Its president is Robert Ganley. He has been involved in the sale of Ivoclar teeth in the United States market since 1986. Ganley Tr. 983.

17. Ivoclar sells a number of different lines of artificial teeth. Among its premium plastic teeth are the Antaris and Postaris teeth, which were introduced by Ivoclar in the 1990s and made of a material that is more resistant to wear. Ganley Tr. 984, 1013.

18. Ivoclar is one of Dentsply's two primary competitors in the tooth market. Clark Tr. 2683-84; Miles Tr. 3461, 3494; Jenson Tr. 2249-50. Although it is Dentsply's closest competitor in terms of tooth sales, Ivoclar's market share, at 5%, is 15 times smaller than Dentsply's market share. Reitman Tr. 1472.

c. Vita Zahnfabrik; Vident

19. Vita Zahnfabrik is a German manufacturer of artificial teeth. Whitehill Tr. 221. Vita Zahnfabrik sells teeth in the United States through an affiliated importer and distributor named Vident. Whitehill Tr. 288-89. Vident is a closely held California corporation owned, in part, by the same family that owns Vita Zahnfabrik. Whitehill Tr. 222. Vident's president is Wayne Whitehill, who has been involved in the sale of Vita teeth since they were first imported into the United States market in the 1970's. Whitehill Tr. 221, 223.

20. Vident sells both porcelain and plastic (or "resin") teeth in the United States. The brand name of the resin teeth is "Vitapan." Whitehill Tr. 225.

21. Vident has been the entity responsible for marketing the Vita Classical Shade Guide in the United States market. Whitehill Tr. 231-32. A shade guide is used by dentists to match the shade of an artificial tooth (or crown, bridge, etc.) with the shade of a patient's natural dentition. Whitehill Tr. 230-31. The Vita Classical Shade Guide is the most popular shade guide in the market, used by approximately of the dentists in the United States. Whitehill Tr. 231-32.

22. Vita, through its importer Vident, is the other primary competitor to Dentsply in the United States tooth market. Clark Tr. 2683-84; Miles Tr. 3461, 3494; Jenson Tr. 2249-50. Vita's market share is approximately 2%-3%. Reitman Tr. 1472;

d. Myerson LLC

23. Myerson LLC is a tooth manufacturer based in Chicago, Illinois selling premium (Myerson, Universal, Swissedent), economy (Kenson), and midline teeth. At one time, Myerson was a free-standing division within the Austenal Corporation. In January 2002, Dentsply acquired Austenal, and Myerson became a wholly separate company. Myerson's president and chief operating officer is James Swartout, who has been with the company (and, before that, Austenal) since 1994. Swartout Tr. 1291-95.

24. Myerson teeth have been sold in the United States market since the company was founded in Cambridge, Massachusetts in 1917. Dr. Myerson was a Professor of Dentistry at Harvard Dental School, and hand carved almost all of Myerson's teeth. Myerson was a

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pioneer in cross-linked resin technology and in the move from using porcelain to plastic to manufacture artificial teeth. Swartout Tr. 1293, 1295.

25. Myerson's market share is approximately 3%. Reitman Tr. 1472.

e. Dentsply's other competitors

26. American Tooth Industries ("ATI") sells teeth under the Imperial and Justi brand names. ATI's share is roughly 2%. Reitman Tr. 1472.

27. Universal is a diminishing competitor in the market. Jenson Tr. 2250 (level of activity "certainly trending downward"). In the fall of 2001, it sold some of its tooth lines to Myerson. Swartout Tr. 1295, 1340-42. Its market share is currently between 1% and 2%. Reitman Tr. 1472.

28. Heraeus Kulzer began selling its mid-line teeth, called "Jeldent Basic," in the United States market two years ago. Becker Tr. at 1817-1818. Its market share is about 1%. Reitman Tr. 1472; Marvel Tr. 3726.

29. Davis Schottlander & Davis Ltd. is an English company that sells a premium, Vita-shaded tooth under the brand name "Enigma." It is distributed in the United States by Dillon Company, Inc, which is also referred to as Leach & Dillon. Dillon Tr. at 4079-80, 4086, 4088. The market share of Enigma teeth is negligible. Reitman Tr. 1472

2. Laboratory dealers

30. Dental laboratory dealers, like the ones to which Dentsply sells its teeth, are dealers carrying the full range of products that dental labs use. Weinstock Tr. 101-02; Reitman Tr. 1482-83. These products can include artificial teeth, metals, porcelains, teeth,

acrylics, waxes, and anything else necessary to fabricate fixed or removable restorations. Weinstock Tr. 93.

31. Lab dealers that sell teeth vary in the size and scope of their operations. In general, there are three main types of tooth dealers — national, regional, and local.

(a) National tooth dealers, such as Zahn Dental and Patterson Dental, sell teeth nationwide through a network of tooth stock inventories scattered throughout the country. Whitehill Tr. 244-45.

(b) Regional tooth dealers are those that are particularly strong in certain regions of the country and have multiple tooth stocks scattered throughout the states in which they sell. Whitehill Tr. 245.

(c) Local, specialty tooth dealers typically operate within a single state or single city. They almost always have just one tooth stock. They are much smaller organizations than national or regional dealers, carry a narrower range of products, and have fewer resources such as catalogues and sales representatives. Whitehill Tr. 245-46; Reitman Tr. 1512.

32. Due to the thousands of mould and shade combinations of artificial teeth, most tooth dealers carry large inventories of teeth. Weinstock Tr. 82; Reitman Tr. 1481. A dealer's "tooth counter" is a separate part of a laboratory dealer dedicated almost entirely to handling teeth. Weinstock Tr. 104-05; Reitman 1481-82. Tooth counters are extremely labor-intensive operations, requiring the employment of friendly, detail-oriented customer service personnel. Weinstock Tr. 126-27; Reitman Tr. 1479.

3. Dental laboratories

33. There are approximately 16,000 labs that perform fixed and/or removable work in the United States. Weinstock Tr. 86. Of these, approximately 7,000 fabricate dentures. Weinstock Tr. 86; Jenson Tr. 2247; Reitman Tr. 1484.

34. The 7,000 labs that fabricate dentures are a very heterogeneous group. Reitman Tr. 1484; Jenson Tr. 2247 ("highly fragmented" in size).

(a) The large labs are those employing 25 or more denture technicians. There are only approximately 500 labs of this size (or only 7% of the total) in the country. Weinstock Tr. 88.

(b) The mid-size labs employ between four and 25 technicians. There are approximately 700-800 mid-size labs (or 11% of the total) in the country. Weinstock Tr. 88.

(c) The remaining 82% are small labs, defined as labs employing four or fewer technicians. Weinstock Tr. 88.

See also Jenson Tr. 2247 (approximately 80% of labs employ 1-5 people); Mariacher Tr. 2895 (75% of labs employ 3-5 people);

35. Denture labs compete with each other on the basis of price and service. Weinstock Tr. 89. Patients and dentists value fast service, particularly in the case of lost or damaged dentures. Weinstock Tr. 89; Reitman Tr. 1480-81.

36. Labs are the relevant consumer for prefabricated artificial teeth because they choose the brand of tooth used in a denture in the majority of cases. Pohl Tr. 1911; Reitman Tr. 3931-32. Ryan Tr. 1210, 1215-16, 1220-22 (dentists usually provide only a shade);

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Armstrong Tr. 2332-33 (only 10% of dentist prescriptions specify tooth brand); Jenson Tr. 2141 (same).

II. Dentsply's exclusionary conduct challenged in this case.

37. This case challenges Dentsply's exclusionary conduct that has unlawfully maintained its monopoly and substantially restrained competition in the artificial tooth market. Under scrutiny here are two aspects of Dentsply's exclusionary policies: (i) its agreements with dealers that they will lose their Trubyte tooth business if they add a competing brand of teeth; and (ii) its agreements with new dealers to drop some, or all, competing tooth brands in order to obtain the Trubyte line in the first place. Reitman Tr. 1521-23.

A. Dealer Criterion 6

38. Since at least 1976, if not before, Dentsply has terminated, or threatened to terminate, dealers selling Trubyte teeth if they add a competing tooth brand. Reitman Tr. 1521-22. In 1988, Dentsply terminated Frink Dental of Elk Grove, Illinois as both a tooth and merchandise dealer when it began selling Ivoclar teeth. Cavanaugh Tr. 700-01; Brennan Tr. 1720.

39. In publishing its "Dealer Criteria" in February 1993, Dentsply expressly stated its refusal to deal with dealers that added its rivals' tooth lines. The exclusionary policy that had been applied to Frink Dental was memorialized in Dealer Criterion 6, which reads, "[i]n order to effectively promote Dentsply/York products, dealers that are recognized as authorized distributors may not add further tooth lines to their product offering." GX 31. Dentsply permitted dealers to keep selling any competing brands, commonly called "grandfathered"

brands, they were carrying as of the date Dealer Criterion 6 was formally announced. Weinstock Tr. 41; Reitman Tr. 3942.

40. The express purpose of Dealer Criterion 6 is to "block competitive distribution points" and "[t]ie up dealers." GX 171 at DPLY-A 004360; Clark Tr. 2608 (GX 171 a "reiteration" of Dealer Criterion 6).

41. In at least the past 15 years, no dealer has agreed to walk away from its Trubyte tooth business to take on a competitive line. Reitman Tr. 1514-15; Jenson Tr. 2287; Clark Tr. 2631; Pohl Tr. 1907.

B. Dentsply's agreements with new dealers

42. On several occasions, Dentsply has required dealers to drop some, or all, competing tooth brands in order to obtain the Trubyte tooth line in the first place. For example, in 1992, Dentsply recognized Jan Dental in exchange for its agreement to stop selling Vita, Kenson, Dentorium, and Justi teeth. GX 24, 26; Pohl Tr. 1908-1910. Two years later, Dentsply authorized Darby as a Trubyte tooth dealer upon Darby's agreement not to add the Vita tooth line. GX 82 at DS 015663; Clark Tr. 2636.

43. The agreements have had an anticompetitive purpose as well. *E.g.,* GX 26 at DS 016474 ("[o]pening Jan with teeth will increase our presence within the laboratory market and eliminate several competitors"); GX 86 at DS 015805 (DTS recognized to "fully eliminate the competitive threat they pose by representing Vita and Ivoclar in three of four regions [in which DTS operated]").

C. Through these exclusionary actions, Dentsply has caused numerous dealers to drop, or not add, competing tooth brands.

44. Testimony and documents introduced at trial establish that Dentsply has for at least the past 14 years coerced dealers to agree to drop competing brands from, or not add them to, their product offerings. These incidents began at least as early as 1988 and include at least 8 separate incidents since this case was filed in January 1999. As a result, 12 separate brands of teeth have been excluded, and counting each time a single brand has been excluded from a single dealer, there have been a total of 25 incidents where a rival brand has been excluded from a dealer carrying Trubyte teeth. These incidents involve a total of 11 separate dealers, located throughout the United States from New York to California.

1. Frink Dental (Ivoclar, Myerson) (1988)

45. Frink Dental, already an effective dealer for other Ivoclar products, took on the Ivoclar tooth line in 1988 in response to customer requests for Ivoclar teeth. Ganley Tr. 992-93, Cavanaugh Tr. 724. After Frink began carrying Ivoclar teeth, Mr. Cavanaugh of Frink was told in a letter from Bob Brennan, then Trubyte General Manager, and in a meeting with Mr. Brennan and Mr. Borgelt, then Dentsply's president, that Frink had an agreement with Dentsply to sell its teeth exclusively. Either Frink had to cease selling Ivoclar immediately or Dentsply would stop selling Frink all Trubyte products, including teeth and merchandise. Cavanaugh Tr. 692-99, 727-28. Borgelt explained Dentsply's position by stating "we cannot let Ivoclar get a foothold in the United States. This is our most highly profitable product out of our Dentsply division." Cavanaugh Tr. 695. When Mr. Cavanaugh decided to keep the Ivoclar line, Dentsply terminated Frink for all Trubyte products, both teeth and merchandise,

Cavanaugh Tr. 699-701, because Dentsply "wanted to make a strong point." Brennan Tr. 1720. Other dealers provided teeth and other Trubyte products to Frink at cost, because they felt Dentsply was trying to exercise too much control. Cavanaugh Tr. 701-05. Over time, Dentsply tracked down all but one of the dealers and threatened to cut them off if they continued to supply Frink, and as a result of these threats, these dealers stopped supplying Frink. Cavanaugh Tr. 705-07.[4] After consulting with his sales force, Mr. Cavanaugh gave up the Ivoclar tooth line, and when he told Mr. Brennan he was dropping Ivoclar and returning to Dentsply Mr. Brennan told him he would be re-established as a Trubyte dealer from the day Frink stopped selling Ivoclar. Cavanaugh Tr. 712-14, Ganley Tr. 1105. *See also* Reitman Tr. 1523. Moreover, after Frink was reestablished as a Trubyte dealer, Cavanaugh considered carrying other lines. Although he didn't do so because of what happened after he added Ivoclar, he would have added Myerson if he could have. Cavanaugh Tr. 717-18.

2. Zahn Dental (Ivoclar) (1988)

46. In 1988, Norman Weinstock of Zahn Dental met with Kevin Dillon, then the president of Ivoclar, and discussed the possibility of Zahn taking on the Ivoclar tooth line and becoming Ivoclar's national dealer, with Frink Dental servicing the Midwest. Weinstock initially felt Zahn would take on the line. Weinstock Tr. 149-51. However, Bob Brennan, then head of the Dentsply tooth division, and Gordon Hagler, then Sales Manager, told

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[4] For example, after Frink was cut off by Dentsply, Atlanta Dental sold Dentsply teeth to Frink for around a year. Harris Tr. 589-90, 591-94, GX 1. Atlanta Dental charged Frink the same price that it paid Dentsply and did not make any profit from selling Dentsply teeth to Frink. Harris Tr. 594. Atlanta Dental stopped selling Dentsply teeth to Frink when Dentsply threatened to pull the Dentsply tooth line from Atlanta Dental. Harris Tr. 595-98. The fact that Atlanta Dental and other dealers actively opposed and undermined Dentsply's restrictive policies contradicts Prof. Marvel's theory that these policies are efficient and procompetitive. *See* ¶ PFF ¶¶ 379-81.

Weinstock about the Dentsply policy later embodied in Dealer Criterion 6, and stated that if Zahn took on the line of Ivoclar teeth, Dentsply would not allow Zahn to distribute Dentsply teeth. In several telephone calls and personal meetings over a two-month period, including a very heated discussion with Hagler, Weinstock learned that Dentsply would not tolerate Zahn taking on a competing product line. Dentsply management explained that they felt they had to protect their business and were not going to allow Zahn or anybody else to take on competing premium lines of teeth. Weinstock Tr. 149-52. After these discussions -- and after he saw how unfavorably Ivoclar's $1.2 million in projected U.S. sales compared to Zahn's annual Dentsply tooth sales of around $8 million -- Weinstock decided to keep his Dentsply line rather than replace it with the much smaller amount of Ivoclar sales. Consequently, Weinstock told Mr. Dillon about Dentsply's threat, that Zahn couldn't afford to lose the Dentsply line, and that Zahn therefore would not carry Ivoclar teeth. Weinstock Tr. 152-53; Ganley Tr. 1001; Reitman Tr. 1524.

3. Jan Dental Supply Company (Vita, Kenson, Dentorium, Justi) (1992)

47. In October 1992, Dentsply opened Jan Dental Supply Company as a Trubyte tooth dealer, after Jan agreed to stop selling Vita, Kenson, Dentorium and Justi teeth. GX 24, 26; Reitman Tr. 1525. Dentsply opened Jan, in part, to "eliminate several competitors." GX 26 at DS 016474. Vident believed that before it was cut off Jan Dental had done "a wonderful job" as a Vita tooth dealer. Whitehill Tr. 263-64.

4. Atlanta Dental Supply (Vita) (early 1990's)

48. In the early 1990's Atlanta Dental considered adding Vita teeth to its product offering after Betsy Harris, manager of Atlanta Dental's tooth department, received requests from current and potential customers asking whether she could carry Vita teeth. Harris Tr. 599-600, 615. Ms. Harris understood that these customers were interested in buying Vita teeth from Atlanta Dental rather than from Vident in California because Atlanta Dental sold them locally. Harris Tr. 599-600. Ms. Harris had initial discussions with Vident about taking on the Vita line, and they planned further discussions, after Ms. Harris had a chance to review Vident product information and a sample contract. Harris Tr. 601-03; GX 296. Ms. Harris later met with Vident representatives, and they decided to draw up a contract for Atlanta Dental to acquire a $30,000 stock of Vita teeth. Harris Tr. 603-04. Ms. Harris then talked to Bill Yacola of Dentsply to find out what the consequences would be if Atlanta Dental put in a competitive line -- in particular, because of her experience with Frink, Ms. Harris was concerned that she ran the risk of losing her Dentsply line. Harris Tr. 606-07. After checking with others at Dentsply, Mr. Yacola replied that if Atlanta Dental took on Vita teeth Atlanta Dental would no longer be able to sell Dentsply teeth. Harris Tr. 607-08. Atlanta Dental decided not to put in the Vita line, in order to avoid jeopardizing their Dentsply business. Harris Tr. 608-10. At that time their sales revenue for artificial teeth was a million dollars a year, and Dentsply teeth comprised 90% of that revenue. Harris Tr. 615. "I had no way of knowing what our Vita sales would be at that time, so losing that much business was -- this is my livelihood, this is what I do, and I didn't want to jeopardize my company or myself in that

way." Harris Tr. 616. Atlanta Dental would have added Vita teeth to its product line in 1993 if it could have done so without jeopardizing its Dentsply business. Harris Tr. 617.[5]

5. Pearson Dental Supply Co. (Vita, Myerson) (1993-94)

49. In late 1993 or early 1994, Pearson took on a consignment of Vita teeth at its southern California facility. Kashfian Tr. 1386. The stock consisted of one tooth cabinet and was worth "a few thousand dollars." *Id.* at 1388. Pearson also included the Vita teeth in its catalogue. Kashfian Tr. 1404. After a Dentsply sales representative noticed the Vita consignment stock, the Dentsply Regional Manager, Dave Louda, told Pearson that it was not supposed to carry competing tooth lines and that continuing to carry Vita would jeopardize Pearson's ability to be a Trubyte dealer. Kashfian Tr. 1386-87. Because Pearson was "doing a tremendous amount of business with the Trubyte division," and because Vita teeth were "not as popular as Trubyte," Pearson agreed to return the tooth consignment to Vita. *Id.*; Reitman Tr. 1524. Moreover, at the same time that Pearson took on Vita teeth, it considered adding Meyerson teeth. Kashfian Tr. 1388-89. When Pearson asked its Dentsply sales representative what the consequences would be of taking on Meyerson, it was informed that it would be "the same scenario as Vita," and Pearson did not take on the Meyerson tooth stock. *Id.* at 1389.

6. Dental Laboratory Discount Supply (DLDS) (Universal, Vita) (1994).

50. DLDS sought to add Universal and Vita teeth in 1994 to fulfill customer demand. Vetrano Tr. 1423-24. However, a week after DLDS introduced the teeth to its

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[5] Dentsply chose not to cross-examine Ms. Harris regarding her testimony about Atlanta Dental's effort to take on the Vita tooth line, so her account of these events stands uncontradicted.

customers, Dentsply informed DLDS that if it carried the teeth it would lose the entire Trubyte line of teeth and merchandise. *Id.* at 1426-27. As a result, DLDS did not take on the Universal and Vita teeth. *Id.;* GX 58; GX 66; Reitman Tr. 1524.

7. Darby Dental (Vita, Odipal, Darby's house brands) (1994-95)

51. Darby Dental had lost its Trubyte tooth line when it purchased a company called Nordent, which sold Nordent's house brands of competitive teeth. Nordhauser Tr. 4102-03, 4112-13.[6] Darby Dental wanted to regain the Trubyte tooth line, and Mr. Nordhauser tried several times to negotiate with Dentsply, but Dentsply demanded that Darby give up all its teeth other than Dentsply in order to get the Dentsply line back. Nordhauser Tr. 4117, 4120. At one point Mr. Nordhauser offered to give up selling a number of brands of teeth, including, *inter alia,* Justi, Myerson, and Kenson, but Dentsply still refused to re-open Darby as a Trubyte tooth dealer. Nordhauser Tr. 4119-21, 4125-27, GX 434. When Darby made plans to take on the Vita tooth line, however, Dentsply finally agreed to reinstate Darby. Nordhauser Tr. 4127-32. Dentsply and Darby agreed that Darby would regain the Dentsply tooth line in return for agreeing to the following conditions:

- Darby agreed that it would not carry the Vita line. Nordhauser Tr. 4121, 4159-60. Mr. Nordhauser believes that the fact that Darby was

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[6] When Darby sued Dentsply to get the Dentsply line back, Dentsply settled the dispute by allowing Darby to sell Dentsply teeth through Kent, a dental dealer that Darby had purchased and that sold Dentsply teeth. Nordhauser Tr. 4113, 4115. But even though Darby owned Kent and Kent sold Dentsply teeth, this was ultimately an unsatisfactory arrangement for Darby. Kent was smaller and a separate unit from Darby, and Darby was not permitted to sell Dentsply teeth through its several locations, or advertise or promote them on Kent's behalf in any way. Nordhauser Tr. 4115-16, 4130-31.

being offered the Vita line influenced Dentsply's decision to reinstate Darby. Nordhauser Tr. 4159. *See also* PFF ¶ 238.

- Darby agreed to cancel its plans to sell, and its initial order for, the Odipal line of teeth; GX 82; Nordhauser Tr. 4123, 4132, 4135.

- Darby agreed to discontinue selling all teeth priced higher than $1.75 per card within six months. Nordhauser Tr. 4131-32; GX 82. As a result, Darby stopped carrying and selling Kenson, Justi, Ortholux, and Duratone and every other Darby house brand that was priced above the sub-economy level. Nordhauser Tr. 4106, 4121.

- Darby agreed not to advertise its remaining tooth lines as Dentsply's competitors or promote them in the same printed or telephone specials. Nordhauser Tr. 4124-25, 4133. Dentsply didn't want Darby to compare Dentsply teeth to Darby's in any way, so Darby wouldn't push its teeth in a flyer at the same time it pushed Dentsply's. Nordhauser Tr. 4125.

- Finally, Darby also agreed that it would "conduct business in a manner consistent with" the Trubyte dealer criteria. Nordhauser Tr. 4133; GX 82 ("based on agreement to these criteria, Dentsply is prepared to recognize the Darby group as a Trubyte tooth dealer").

Nordhauser Tr. 4131-33; GX 82. *See also* GX 434; Clark Tr. 2636 (Dentsply did recognize Darby as a tooth dealer, and Darby did not take on the Vita tooth line).

8. Dental Technicians Supply (DTS) (Ivoclar, Vita) (1995)

52. Dental Technicians Supply ("DTS") was a laboratory dealer with locations in New Hyde Park, NY, Kansas City, MO, and Denver CO, and Orlando, FL. Raths Tr. 1144-45; Underwood Tr. 3377.[7] DTS had been a Trubyte tooth and merchandise dealer since the mid- 1980's, but in 1990 Dentsply terminated DTS as a tooth dealer. Raths Tr. 1147-48; Underwood Tr. 3405. In approximately 1991 DTS began selling Vita and Ivoclar teeth at all

[7] Robert Raths was the owner of the New York DTS location and the co-owner of the Kansas City DTS location with Tom Underwood. Raths Tr. 1146; Underwood Tr. 3377.

its locations, and between 1991 and 1995 sales of Vita and Ivoclar teeth increased at all DTS locations. Raths Tr. at 1149-56; Underwood Tr. 3400; Whitehill Tr. 259-60; Ganley Tr. 1002; GX-19. In subsequent negotiations over those years regarding reinstating DTS as a Trubyte tooth dealer, Dentsply consistently maintained that, as a condition of reinstatement, DTS would be required to stop selling Vita and Ivoclar teeth. Raths Tr. 1157; Underwood Tr. 3407-09. DTS finally reached an agreement with Dentsply at a meeting in York, Pennsylvania in June 1995. Raths Tr. 1157-59. Under that agreement, in return for being reinstated as a Trubyte tooth dealer DTS dropped Vita and Ivoclar teeth from the Kansas City, Denver, and Orlando locations, and in New York, DTS agreed to remove the Ivoclar line and to limit its Vita sales to existing customers in the Northeast. Raths Tr. 1159-65; GX 93 at DPLY-A 18372-79; GX 158 at DS 015783-91; Reitman Tr. 1522-23, 1525. One of Dentsply's "considerations" in recognizing DTS was that it would "fully eliminate the competitive threat that [DTS locations] pose by representing Vita and Ivoclar in three of four regions." GX 86 at DS 015805-06.

9. Marcus Dental (Kenson) (Spring 2000)

53. In the spring of 2000, Marcus Dental, a Trubyte dealer in Minneapolis, had taken on the Kenson tooth line because of an out of stock problem with Trubyte teeth. Jenson Tr. 2291. For several months during 2000, Trubyte was having problems supplying teeth to dealers. Jenson Tr. 2292. The service problems started in the spring but continued into October 2000, and in August 2000 Trubyte's success rate for fulfilling one-day shipments dropped to an all-time low of 80.5% (Dentsply's goal was 97%). Jenson Tr. 2292-93 (level dropped more than three points in one month alone, dropping from 83.7% in July to 80.5% in

August). That rate of order fulfillment by Dentsply caused concern among Trubyte dealers such as Marcus. Jenson Tr. 2292. Due to these problems with Dentsply's service levels, some of Marcus' lab customers had switched to Kenson teeth and Marcus was trying to retain its customers by selling them Kenson teeth. Jenson Tr. 2291-92. Dentsply, however, enforced Dealer Criterion 6 against Marcus, and Marcus returned the Kenson teeth to Myerson. Jenson Tr. 2293; Swartout 1314-15; Reitman Tr. 1525.

10. Zahn Dental (Enigma) (mid-2000)

54. In mid-2000, when Leach & Dillon agreed to take on the Enigma tooth line after Mr. Dillon failed to recruit another dealer,

Jenson Tr. 2295-96

See also Jenson

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Tr. 2296-97 (Dentsply informed Zahn that it viewed this proposal as a violation of Dealer Criterion 6).

11. Thompson Dental (other tooth lines) (Fall 2000)

55. In his November 2000 monthly report to his superior, Mr. Roos, Mr. Jenson reported that Thomson Dental, a Trubyte tooth dealer, was exploring competitive tooth lines. Jenson Tr. 2297. Mr. Uthus, Trubyte's Director of Sales, quickly squelched Thompson's effort, explaining Dentsply's "agreement" with Thompson on competitive teeth and faxing Thompson a copy of the dealer criteria. Jenson Tr. 2297-98.

12. Patterson Dental (other tooth lines) (Fall 2000)

56. Dentsply put a quick stop to another dealer's consideration of adding a rival line in Fall 2000, when Patterson inquired about carrying competitive tooth lines. Jenson Tr. 2298. Mr. Jenson told Mr. Easty of Patterson that the Dentsply dealer criteria would be enforced. Jenson Tr. 2298.

13. Zahn Dental (Heraeus Kulzer) (2001)

57.

[9] Last fall, Horst Becker of Heraeus Kulzer also spoke with Zahn's

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president and its director of marketing about Zahn carrying Heraeus Kulzer teeth. Becker Tr. 1818-20.

14. Patterson Dental (Kenson) (2001)

58. In 2001 Patterson bought a Trubyte tooth dealer in L.A. named Guggenheim which also carried Kenson teeth. Patterson itself did not carry Kenson teeth, and so Trubyte asked Patterson to comply with Dealer Criterion 6 and drop the competing tooth lines from the Guggenheim locations. Jenson Tr. 2289-90; Reitman Tr. 1524-25. Patterson complied and dropped the Kenson teeth that Guggenheim had been selling. Jenson Tr. 2291; Reitman Tr. 1524-25.

15. Darby/DTS (Vita) (1998-2001)

59. When Darby acquired DTS in 1998, the DTS facilities in Kansas City and Denver did not carry Vita teeth; DTS carried Vita teeth only in New York and sold them only to customers in New York. Nordhauser Tr. 4101, 4104-05; Jenson Tr. 2288 (prior to DTS becoming a Trubyte dealer, Dentsply had agreed that DTS could keep its New York Vita stock). *See* GX 158 at DS 015783. When Darby acquired DTS, Dentsply "made it very clear . . . that we cannot promote or give to the rest of our customers Vita teeth. We can only, for a very short period of time, sell it to the customers we have." Nordhauser Tr. 4106, 4135-36; GX 130 at DARBY 001120Y-21Y. As a result, Mr. Nordhauser agreed that Darby would not

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sell Vita teeth to any other Darby or DTS division,[10] and that Darby would sell Vita only through the New York office to the "few" Vita teeth customers that DTS already had. Nordhauser Tr. 4104-07, 4136-37. Dentsply also insisted, "as you can see by the letter," that Darby ultimately "would have to terminate the sale of Vita teeth." Nordhauser Tr. 4107, 4135-37; GX 130 at DARBY 001120Y-21Y; Jenson Tr. 2289 (when Darby bought DTS Trubyte asked Darby to comply with Dealer Criterion 6 and get rid of the Vita line). Although Darby had wanted to keep the Vita tooth line in New York, after this transitional period Darby ultimately complied with Dealer Criterion 6 in 2001, and now DTS and Darby do not sell Vita teeth. Jenson Tr. 2289-91.[11]

16. Zahn Dental (Vita) (1999-2002)

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[10] "Dentsply, as you can see by the numbers, is the major line in this country. . . . I would not jeopardize losing that line to take another line, okay? . . . I am not going to take a chance and lose Dentsply to sell Vita teeth or anything else, so we compromised." Nordhauser Tr. 4107

[11] Mr. Nordhauser had believed Dentsply would not ultimately force Darby to choose between carrying Dentsply and carrying Vita. Nordhauser Tr. 4138-39. Given that Darby had so little Vita business and that Darby was not going after more, he believed this could not hurt Dentsply in any way. Nordhauser Tr. 4138-39. Mr. Nordhauser also felt that because the Vita teeth had always been in DTS's New York branch, this was "not something that I created new." Nordhauser Tr. 4138-39. "Dentsply gave DTS . . . permission to use the Vita teeth . . . while they are handling the Dentsply teeth. . . . [T]here is no threat here. . . . The dealer criteria does not pertain here. It does pertain if I now took on another line that I didn't have before. But this is something different." Nordhauser Tr. 4138-39. But Dentsply did force Darby to choose, and now that DTS/Darby's New York branch has dropped Vita teeth, Darby and DTS no longer sell any Vita teeth at all, from any location. Jenson Tr. 2289-91.

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III. Artificial tooth manufacturers require a network of dental lab dealers to compete effectively in the market.

61. The "general norm in the [artificial tooth] business is distribution of teeth through dental dealers. It's the expectation of the laboratory to purchase and receive products that way and it's also the expectation of the laboratory to receive the level of service provided by a dental dealer." Ganley Tr. 1007. As Kevin Dillon, Ivoclar's former president and the current distributor of Enigma teeth, stated, "[i]f you don't have distribution with the dealer network, you don't have distribution." Dillon Tr. 4081.

A. Dental lab dealers provide numerous benefits to dental labs.

62. While the 7,000 dental labs in this country are quite heterogeneous, and the strength of each lab's preference for any particular dealer service will vary, most labs find at least some benefit from the services offered by dental lab dealers. Reitman Tr. 1484-85.

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Zahn Dental alone sells at least some teeth to 3,000 to 4,000 labs each year. Weinstock Tr. 168-69. Some of these services are unique to local dealers, while others are provided by all dealers regardless of their location. Reitman Tr. 1485. All of the numerous services that dealers provide to dental labs indirectly benefit manufacturers. Weinstock Tr. 135.

1. Local availability of teeth

63. Dealers maintain tooth stocks, which provide labs with a local inventory of teeth. Miles Tr. 3493; Weinstock Tr. 106; Reitman Tr. 1494; GX 364-C. Labs greatly value having this local access to a wide array of teeth. Reitman Tr. 1541 (Wind Survey showed that second-most important attribute of dealer was providing local stock of teeth); Miles Tr. 3493; Weinstock Tr. 106; Dillon Tr. 4094. Small labs, in particular, regard a local dealer inventory as a surrogate for its own, in-house inventory. Reitman Tr. 1495.

64. The record is replete with specific, real-world examples showing that labs value the ability to purchase teeth from local stocks.

(a) When Zahn opened its Indianapolis tooth counter, it dramatically increased its tooth business in that local area. Before it did so, it had only a couple of Indiana tooth customers, and its tooth sales were under $50,000 per year. Weinstock Tr. 108, 166.

(b) Zahn's experience in Florida was the same.

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Prior to that, its sales had been between $300,000 to $400,000. Weinstock Tr. 109, 166.

(c) According to Patterson Dental's president, "[w]e seem to do well only where we had a tooth stock and significant tooth stock. In areas where we did not, we had a difficult time to do business." Wiltz Tr. 3822. When Patterson tried to consolidate five tooth stocks in the Northeast into one location in Lancaster, Pennsylvania, its tooth sales declined in the areas where tooth stocks were removed. A year later, Patterson concluded that this consolidation effort was a failure. Wiltz Tr. 3821-23. After it returned tooth stocks in the Pittsburgh and New York areas to the previous levels, it regained the market share it had lost. Wiltz Tr. 3824-25.

(d) Atlanta Dental's tooth sales in the Birmingham, Alabama area declined considerably after it consolidated most of that stock with its main stock in Atlanta (due to the death of the local tooth counter specialist there). It still maintains a skeleton stock in Birmingham for the convenience of customers who want to pick up their tooth orders themselves. Harris Tr. 586-87, 640-41.

(e) Sidney Nordhauser of Darby Dental testified that his company does not compete with Hendon Dental, another dealer selling Trubyte teeth, "because they are in Texas. We are not." Nordhauser Tr. 4145. "We don't have a tooth counter in Texas or anywhere near there we can get teeth to them." Nordhauser Tr. 4145. Although Darby sells teeth in Texas when asked, Mr. Nordhauser believes Darby "can't compete" with a local tooth counter in selling teeth. Nordhauser Tr. 4145.

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(f) Like many other dealers, Accu Bite Dental has found that a high percentage of its tooth business comes from the area in which it has a tooth stock. Accu Bite's one tooth stock is in Livonia, Michigan, a western suburb of Detroit. Desautel Tr. 2426. In 1999, 80% of Accu Bite's tooth sales were made to labs located in southeast Michigan. Desautel Tr. 2462.

(g) Dentsply's competitors have found that their tooth sales have been higher in the few areas in which they have been able to obtain dealer distribution. Whitehill Tr. 251 (Vident's sales "substantially higher" in limited areas served by small, specialty dealers selling Vita teeth); Swartout Tr. 1317 (Myerson has had sales growth of 20% per year in Connecticut, where it has dealer distribution).

2. Lower delivery costs

65. Proximity to a dealer increases the delivery options available to a lab and decreases shipping charges. Reitman Tr. 1495; Turner Tr. 423-24; Swartout Tr. 1309. Because ground transportation is less expensive than air service delivery, Turner Tr. 424, a lab can lower its shipping charges by buying teeth from a dealer close enough to provide next-day service by UPS ground service. Reitman Tr. 1496; Turner Tr. 423-24. Some dealers have arranged very favorable deals with delivery services, and are able to pass those savings on to their lab customers.

Obst Tr. 2717 (DSG labs receive free overnight delivery from Zahn); Ryan Tr. 1238-39 (DLDS pays entire shipping charge for teeth purchased by Sonshine Dental Lab).

3. Same-day pickup or delivery

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66. The use of a local dealer is perhaps most critical when labs need teeth on the same day they order them. The need for same-day pick or delivery of teeth is fairly common in the industry. Desautel Tr. 2463 (in 1999, "a lot of" walk-up business at Accu Bite's Detroit tooth counter; labs would "call in and about 15 minutes later they will come in and pick it up"); Kashfian Tr. 1379-80 (10%-15% of Pearson Dental's overall tooth orders; 40% at Southern California location); Harris Tr. 662 (at Atlanta Dental, 5-10 customers per day); Nordhauser Tr. 4142-43 (perhaps five customers in New York, "but some of the other facilities have a steady walk-in business"); Coykendall Tr. 3312, 3332 (50% of Hopkins Dental Lab's business is repairs, where lab needs a ready stock of teeth to complete job in same day).

67. Same day service is particularly important for emergency cases, such as in repair cases where a denture cracks (or a tooth chips off) and the lab needs to replace the tooth with one that matches the shade and brand precisely. Reitman Tr. 1496-97; Armstrong Tr. 2369 (patients value fast service particularly when losing anterior teeth). *See also* Becker Tr. 1831 (even non-emergency cases can lead to emergency tooth orders: labs often run out of stock in the middle of a denture case and need a "replacement of materials basically in the next hour or so to finish their case, and so that means a fast delivery and fast service is, to many labs, essential"). One important way in which labs compete against each other is by providing fast and reliable service in such situations. Weinstock Tr. 89-90; Reitman Tr. 1497.

68. Labs prefer to buy tooth brands that would be available on the same day, if necessary, even though the vast majority of their cases do <u>not</u> require same-day delivery or pickup. Weinstock Tr. 133 ("perception is, if you are not local, many people are afraid to deal

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with you . . . The perception in the dental lab business is basically reality"); Reitman Tr. 1500. Repairs usually require a lab to obtain the same brand of tooth originally used in the denture. Because labs want to be able to obtain teeth on the same day for repair work, the availability of a tooth brand through a dealer is a significant factor influencing the lab's initial choice of a tooth brand to use in its business. Reitman Tr. 1499-1500.

69. Dentsply itself recognizes the importance of having tooth counters located in proximity to dental labs to be able to provide same-day service. In a September 15, 1993, letter John Weiland, Senior Vice President of Dentsply's North American Group, explained to Zahn's Norman Weinstock about opening a new Dentsply dealer less than ten miles away from an existing Zahn tooth counter in Dania, Florida:

> The York Division's decision to open J&S Dental Supply is based on a market demand that cannot be fulfilled from Dania, Florida. Namely, we believe certain customers in the Miami area need a local presence to be able to drive over and pick up teeth in rapid turnaround situations.

GX 44; Weinstock Tr. 114-16.

4. Fostering relationships and loyalty

70. "Relationships are very important in this industry." Reitman Tr. 1491. In selling teeth to denture labs, a dealer's relationship is one of the three biggest things. Weinstock Tr. 129. Judd Ryan selected DLDS as his dealer because he has "got a great relationship with them [and] we've been dealing with them for a long time." Ryan Tr. 1237. Similarly, Ralph Langer of Langer Dental Arts likes to buy teeth from DLDS because of the close relationship he has developed with that dealer:

> I go where I feel most comfortable. In other words, where people recognize me and have a genuine interest in me because I'm spending some dollars. Well,

> that's the case with DLDS. They are very, very nice people, people that we've done business with for ten-plus years. People that we know we can relate to and they can relate to us. In fact, it goes so far, our DLDS rep has a picture of my wife and I in Hawaii on her place and we have one in our office.

Langer Tr. 3279-80. *See also* Vetrano Tr. 1418 (relationships between labs and DLDS sales reps are "our lifeline" and "very valuable"); Obst Tr. 2748 (increased purchases from Zahn, in part, due to "exceptional service and relationship that has been built up" with Zahn). Moreover, local tooth counters can help build these customer relationships, because they give dealers places to hold programs and get closer to local dental lab associations. Weinstock Tr. 107.

5. Inventory management

71. Dealer sales representatives visit dental labs and manage their inventory of teeth by determining which tooth cards have been used, placing orders to replace those that have been used, and taking back broken sets. Reitman Tr. 1500; Becker Tr. 1820; Swartout Tr. 1309; Nordhauser 3421-22. As Horst Becker of Heraeus Kulzer testified, dealers can provide a "far higher" level of service than manufacturers because dealer reps regularly call on labs, count teeth and restock inventory. Becker Tr. at 1820.

72. Atlanta Dental has one lab specialist whose primary function is to call on labs and service their tooth stocks. Harris Tr. 644-45. The majority of Atlanta Dental's lab customers that maintain an inventory on site choose to have Atlanta manage it. Harris Tr. 648-49.

73. This inventory management function is particularly valuable when a lab's tooth stock is consigned from a manufacturer or dealer. In that case, dealer sales representatives can

monitor the stock to ensure that the lab pays for the inventory that is being used. Weinstock Tr. 132; Ganley Tr. 1010-11; Reitman Tr. 1492-93. Zahn employs not only its own sales force, but many of the Sullivan-Schein operatory sales persons, to visit dental labs and monitor consignment stocks. Reitman Tr. 1493. *See also* Obst Tr. 2743 ("a lot" of inventory in DSG labs is on consignment).

6. Prompt, accurate and reliable delivery

74. Prompt, accurate, and reliable delivery is the essence of what it means to be a dealer. When labs place an order, they want to get it quickly, they want to make sure what they order is what they receive, and they want to receive that service day in and day out. Reitman Tr. 1486; Weinstock Tr. 129-30. A direct-selling supplier can try to provide that same service, but delivery is far less of a focus for a manufacturer. Dealers, on the other hand, specialize in distribution. Reitman Tr. 1487;

Brennan Tr. 1706 ("distributors did distribution" better than Dentsply).

75. Trubyte General Manager Steven Jenson also acknowledged that Dentsply's dealer network, at least in part, makes Trubyte teeth readily available to labs. Jenson Tr. 2267. Indeed, while at Trubyte, Mr. Jenson directed the Trubyte sales staff to reinforce to dentists and labs the service advantage of a dealer network versus a manufacturer's direct tooth sales. Jenson Tr. 2268.

7. "One-stop" shopping

76. Labs benefit from reducing the number of vendors with which they must deal. Reitman Tr. 1487 (explaining that term "one-stop" shopping does not literally mean buying all

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supplies from one source). These benefits include fewer accounts, fewer invoices to pay, and the savings of time, effort and cost. Weinstock Tr. 102-03; Reitman Tr. 1487-89. As Judd Ryan of the Sonshine Dental Lab in Bear, Delaware testified, the time it takes for his staff to make phone calls or send faxes to different vendors is "important. Time is money." Ryan Tr. 1286. *See also* Weinstock Tr. 102 (Zahn believes labs benefit by reducing number of invoices and statements, which are costly to process); Swartout Tr. 1308-09 (many labs are small businesses and reducing vendors "makes their business simpler, fewer bills to pay"); Nordhauser Tr. 4104 (small labs "don't have a person to do the buying, so if they can get everything from one salesman coming in or one telemarketer or something, it's a great advantage, it is obvious").

77. The large lab dealers selling Trubyte teeth offer these "one-stop" shopping benefits. Zahn Dental offers an incredibly broad array of products for sale — over 25,000 tooth choices and 8,500 merchandise and equipment options. GX 160; Weinstock Tr. 102. Under the direction of Norman Weinstock, Zahn's Chairman, one-stop shopping is "something that we have been selling and selling hard for a number of years." Weinstock Tr. 102. Similarly, Betsy Harris of Atlanta Dental testified that "[a] lot of our customers . . . like to do one-stop shopping. They like to be able to make one phone call and get everything that they need rather than call around to two or three different places. And their time is more well spent doing their job than shopping on the phone." Harris Tr. 617. *See also* Vetrano Tr. 1414.

78. By consolidating purchases with a single dealer, labs can take advantage of volume purchase discounts such as those offered under Zahn's VIP program. Weinstock Tr.

147; Reitman Tr. 1488. For example, Dental Services Group ("DSG") labs increased their purchases from Zahn "a lot" as a result of Zahn's volume purchasing program. Obst Tr. 2747. DSG labs do not have a volume discount arrangement with any other dealer, preferring instead to consolidate more of its purchases through Zahn. Obst Tr. 2749.

8. Handling tooth returns

79.

Weinstock Tr. 81 (30% of the teeth sold by Zahn are returned to it). This percentage is likely to increase in the future because partial dentures are becoming more and more common. Clark Tr. 2498. Taking back returns of broken sets is a service provided by dealers and valued by dental labs. Reitman Tr. 1489; Swartout Tr. 1309; Weinstock Tr. 81. It is also less costly for a lab to return several brands of teeth to a single dealer, rather than to several different locations. Reitman Tr. 1489.

9. Other services

80. Dealers inform labs of new products in the tooth and dental market, as well as other markets. Weinstock Tr. 130-31; Reitman Tr. 1490; Vetrano Tr. 1417-18. Labs are able to make more informed choices about products by receiving information from more than one source. Reitman Tr. 1490-91.

81. Through their tooth counter specialists, dealers also provide advice to labs on tooth and mould selection. Dealers are experienced in handling teeth and are familiar with

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different shades and moulds, and are therefore able to assist labs when they have questions. Reitman Tr. 1491.

B. Dental lab dealers provide numerous benefits to tooth manufacturers.

82. Because dental lab dealers are the preferred tooth distribution channel for great numbers of dental labs, the main benefit that dealers provide to tooth manufacturers is that dealers make their teeth available through the channel that customers prefer. Reitman 1501-02. Moreover, a number of additional benefits accrue directly to tooth suppliers by being able to sell through dealers. Weinstock Tr. 134-37; Reitman Tr. 1502-03; GX 364-D.[12]

1. Additional inventory in the market

83. Dealers carry a substantial amount of a manufacturer's inventory, which reduces the capital costs incurred by the supplier. Reitman Tr. 1503; Becker Tr. 1821-22; Weinstock Tr. 134; Swartout Tr. 1307-08. Dealers carrying Trubyte teeth maintain approximately 100 tooth stocks across the United States. Reitman Tr. 1483-84; GX 364-B; Jenson Tr. 2267. Given that just one tooth stock, Atlanta Dental's, contains $145,000 worth of Trubyte teeth, Harris Tr. 617, the total amount of Trubyte tooth inventory owned and maintained by dealers is in the millions.

2. Handling accounts receivable

84. Manufacturers benefit significantly by having dealers handle the accounts receivable function. Reitman Tr. 1503; Kashfian Tr. 1383; Turner Tr. 450. Direct-selling manufacturers incur the substantial costs of billing, invoicing, and collecting debts from

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[12] GX 364-D is identified in the trial transcript as GX 368, however, it was subsequently renumbered.

thousands of dental labs. Weinstock Tr. 134-35; Reitman Tr. 1503. For example, Dentsply currently sells to only 23 dealers. If it tried to sell directly to the 7,000 labs that fabricate dentures, it would incur a huge increase in billing, invoicing and collections costs. Reitman Tr. 1503; Weinstock Tr. 134 (Zahn "takes a lot of the cost away from the manufacturers, in that we collect the money"). This function is particularly important because the dental laboratory industry has not had the greatest of reputations over the years, of being fast payers or good credit risks. Weinstock Tr. 93. As a result, dealers like Zahn are able to provide extended credit terms to labs that are "way beyond what any manufacturer would really accept." Weinstock Tr. 134. *See also* Vetrano Tr. 1423 (discussing dealers' willingness to extend credit terms for labs "when things are hard").

3. More sales representative coverage

85. Although each manufacturer employs its own sales representatives to promote its tooth products, dealer sales reps add another "voice in the marketplace." Reitman Tr. 1504; Weinstock Tr. 99-100, 139. Often dealer personnel serve a wider array of customers than just those served by a particular tooth supplier's representatives. Reitman Tr. 1504; Desautel Tr. 2469-70 (there aren't enough Dentsply sales reps to canvass all of Accu Bite's accounts, and Accu Bite reps have a greater reach into the labs than Dentsply). *See also* Becker Tr. 1820 (dealers "multiply" the size of a manufacturer's sales force); Swartout Tr. 1307 (dealers are important conduit for supplier's promotional message).

4. Additional advertising channels

86. Similarly, dealers provide additional advertising vehicles such as dealer catalogues and invoice stuffers. Reitman Tr. 1504; Kashfian Tr. 1382; Desautel Tr. 2424-25;

Weinstock Tr. 99-100. Again, having additional advertising channels and more ways of reaching customers, particularly customers that may not be current customers of the supplier, is a benefit to suppliers provided by dealers. Swartout Tr. 1307; Kashfian Tr. 1382; Reitman Tr. 1504.

5. Co-traveling with sales representatives

87. Co-traveling, or "detailing," occurs when sales representatives from both the supplier and dealer travel together to a dental lab. Harris Tr. 635; Reitman Tr. 1505. This benefits the manufacturer because the dealer sales representatives have more frequent access to the dental lab, and probably has a stronger relationship with the lab. Reitman Tr. 1505. Dealers also benefit because the supplier's sales representative is better able to talk about the specific products. Therefore, co-traveling helps to increase sales and benefits both the dealer and the supplier. Reitman Tr. 1505.

6. Referring new lab customers to supplier representatives

88. Dealers refer new lab customers to supplier representatives. Reitman Tr. 1506. When a new lab enters the business, it needs various equipment, benches, lathes, grinders, flasks, trays and other items that are typically purchased from a dental lab dealer. As a result, dealers know about these new customers and can provide valuable leads to its suppliers, leads that the suppliers would not have if they were selling teeth directly. Reitman Tr. 1506.

89. Dealers employ tooth counter specialists who, along with dealer sales reps, have the daily, ongoing contact with the lab customer. Miles Tr. 3489. These relationships

enable dealers to help market teeth, particularly based on their sales representatives' intimate knowledge of dental labs. Weinstock Tr. 113, 135. These established relationships are important to a supplier such as Dentsply because it does not have a close relationship with most of the labs selling Trubyte teeth. Miles Tr. 3489. Indeed, such relationships have enabled Zahn to help grow Dentsply's business. Weinstock Tr. 113, 135.

7. Generating incremental business

90. Dealers can assist suppliers in generating incremental business by promoting the manufacturer's product and providing these other services. Reitman Tr. 1506; Weinstock Tr. 99-100 (Zahn sales force generates new customers for denture products). Mr. Desautel of Accu Bite, one of Dentsply's own witnesses, testified that Accu Bite brings in new customers and new business for Dentsply. Desautel Tr. 2471. Even Dentsply agrees. *See* Reitman 1506, GX 31 (Dealer Criterion 5 anticipates that new dealers can bring incremental business to Dentsply, since it requires that they do so in order to be recognized as a Trubyte dealer).

C. Dentsply greatly values its diverse network of national, regional and local dental lab dealers.

91. Given all of the benefits that dealers provide to both tooth suppliers and dental labs, it is not surprising that Dentsply greatly values its diverse network of dental lab dealers. It benefits from the roughly 100 dealer stocks of Trubyte teeth that are maintained throughout the country. Reitman Tr. 1483-84; GX 364-B; Jenson Tr. 2267. Trubyte tooth stocks are located in essentially all of the major metropolitan areas in the United States, far exceeding

the tooth stock network of any of its competitors. Jenson Tr. 2267-68. And Dentsply would like even more tooth stocks than it has today. Miles Tr. 3493 ("I could sell more teeth").

92. Dentsply has valued not only its large, national dealers such as Zahn, but its smaller, more local dealers as well. As Chris Clark said, "I valued all my dealers, absolutely ... I'm a cash cow business in no growth. I need all of my dealer friends." Clark Tr. 2648-49.

93. One reason why Dentsply values its smaller dealers is that they command a very high share of the Trubyte teeth sold in their local areas. For example, in 1998, Bernie McNickle of Reeve/Burkhardt Dental Supply in Oklahoma City wrote to Dentsply out of a concern that he was losing a substantial amount of business to larger, out-of-state dealers such as Zahn. Clark Tr. 2647-48. In responding to McNickle's concern, Dentsply's Chris Clark wrote that Trubyte tooth dealers with local tooth stocks in Oklahoma accounted for 80% of Trubyte sales in the state in 1997. "While [this percentage] may be down from ten years ago," Clark wrote, "I believe it underscores the value of full-service dealers like Reeve/Burkhardt to the Trubyte tooth business." GX 121 at DPLY-A 023489; Clark Tr. 2647-49.

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94. Another reason Dentsply has valued its local dealers is that they provide important service benefits to lab customers. While larger, more mail-order-oriented dealers might offer a price break, as Dentsply's Robert Brennan wrote in a letter to another dealer, Dentsply "believe[s] that if a local dealer is successful at selling and providing service, a few dollars in savings from mail order will be more than offset. Customers will return for excellent service. Price can never replace service over the long haul." GX 30.

95. Dentsply has recognized that labs often need same-day delivery or pickup of teeth for their emergency cases. In 1993, Dentsply recognized a new dealer in Miami, Florida, J&S Dental Company, that was located no more than 10 miles from an existing Zahn tooth counter. Zahn's Norman Weinstock raised his concerns about this new dealer with Dentsply's senior management. Weinstock Tr. 113-117. In a September 15, 1993 letter, a Senior Vice President of Dentsply stated that:

> The York Division's decision to open J&S Dental Supply is based on a market demand that cannot be fulfilled from Dania, Florida. Namely, we believe certain customers in the Miami area need a local presence to be able to drive over and pick up teeth in rapid turnaround situations.

GX 44; Weinstock Tr. 116-118.

96. Dentsply has encouraged dealers selling Trubyte teeth to open more tooth counters and has tried to slow down any efforts by dealers to consolidate tooth stocks. Dentsply encouraged Zahn to open tooth counters both in North Carolina and Texas when Healthco, another dealer selling Trubyte teeth, was on the brink of insolvency because otherwise "it would have left a tremendous gap in the southeastern United States." Weinstock Tr. 111. In 1996, when Patterson Dental was considering tooth stock consolidation, Dentsply

suggested that Patterson conduct market research before doing so in order to slow down the consolidation process. Clark Tr. 2657-58 ("I was trying to buy time"). *See also* DX 41 at DS 024281 (noting that Patterson "ruined a good thing" and "lost a ton" by consolidating tooth stocks in late 1970's).

97. Dealers and the support they provide have been very important to Dentsply's tooth business. Miles Tr. 3489; Turner Tr. 450 (dealer support "very important"); Brennan Tr. 1706 (dealers, not Dentsply, do distribution well). In refusing to sell directly to its largest lab customers, Dentsply has done more than merely state that it is committed to its current distribution system of selling to dealers -- it has specifically told labs that "Dentsply simply cannot provide adequate service to our lab customers absent our dealer network." DX 653 at DS 005171.

D. The Wind Survey demonstrates that labs prefer to buy teeth from laboratory dealers.

98. Dr. Yoram (Jerry) Wind designed and conducted a survey of dental laboratories in order to produce a representative sample of labs and obtain data from that sample that could be used to establish the relative importance of brand, distribution and pricing in laboratories' purchasing decisions for prefabricated plastic teeth used in dentures.[13]

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[13] Dr. Wind is an expert in the field of market research, including survey design, methodology, and analysis. Wind Tr. 737, 761. Market research includes defining the type of research design best suited for a particular study, designing the data collection procedure, collecting data, analyzing the data, and interpreting the results. Wind Tr. 738. Dr. Wind is the Lauder Professor of Marketing and Director of the SCI Center for Advanced Studies in Management at the University of Pennsylvania, Wharton Business School. Wind Tr. 737; GX 440. He also provides marketing, marketing research, business strategy and product development consulting advice to business clients, primarily to Fortune 500 corporations. Wind Tr. 737, 745, 746-47; GX 440 at 22-24. Dr. Wind has received the three major awards in marketing, and is one of the most-cited authors in the marketing field, having published 19 books and over 250 articles and papers. Wind

Wind Tr. 738, 764, 800-01. Dr. Wind analyzed the survey data in order to estimate what would be the impact of changes in distribution options to the market shares of particular brands. Wind Tr. 739, 801-04. The survey data was also used by Dr. Reitman in his econometric modeling of the market share and price effects resulting from Dentsply's exclusionary policies. Reitman Tr. 1469, 1530-32, 1539, 1692.

99. Dr. Wind concluded that the survey produced an appropriate representative sample, and provided a basis for establishing empirically the relative importance to dental labs of tooth brands, types of distribution, and price. Wind Tr. 801.

1. Conjoint analysis survey design

100. Dr. Wind concluded that the survey design he used here (conjoint analysis or tradeoff) was the most appropriate to address the issue in this case -- where there is a clear tradeoff made by dental technicians between brand, distribution, and price when purchasing artificial teeth. Wind Tr. 739, 762, 764. Dr. Rossi agreed that conjoint analysis is appropriate for assessing dental labs' preferences for different brands of artificial teeth, and he would seriously consider using conjoint analysis if he were asked to conduct a survey in this case. Rossi Tr. 3134.

101. Generally, conjoint analysis is the best approach to assess consumer tradeoffs among any possible combination of variables, including those that do not actually exist in the marketplace, and it provides the ability to then decompose those preferences analytically to

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Tr. 742-43; GX 440. He teaches courses, publishes, and provides consulting advice in the area of marketing research. Wind Tr. 745-46.

determine their relative importance. Wind Tr. 740, 746, 752, 766. Conjoint analysis is the best approach to estimate consumers' price sensitivity, and has been used to determine how consumers value different distribution outlets for other product offerings. Wind Tr. 753-54; *see also* Rossi Tr. 3118, 3132 (Dr. Rossi has used conjoint methodology in the only survey he actually executed himself, for the University of Chicago/ Sandoz, although that survey was vastly simpler than Dr. Wind's survey here[14] (Rossi Tr. 3120)).

102. Conjoint analysis is the most popular, widely-used and widely-accepted market research analytic methodology by both practitioners and academics, and it has been used in thousands of marketing studies. Wind Tr. 741, 755. Dr. Wind concluded that conjoint survey analysis is reliable as indicated by its widespread use in research, publications, and industry. Wind Tr. 765. Another indication of its reliability and validity is the fact that companies use conjoint analysis repeatedly, suggesting that the users of this methodology believe that it is reliable, valid, and provides very valuable insight and input into their business decisions. Wind Tr. 764-65, *see also* Wind Tr. 751-52.

103. Dr. Wind has conducted numerous surveys, including conjoint analysis surveys, in almost all product areas to address various marketing issues. Wind Tr. 748-758. Dr. Wind has used conjoint analysis surveys for many of his business consulting clients, including, for example, in the design of the Courtyard by Marriot hotel chain. Wind Tr. 748-51. Dr. Rossi does not dispute that hundreds of companies rely on surveys Dr. Wind has conducted to make significant business decisions, and that many of these companies are repeat

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[14] The transcript contains a transcription error at 3120: "vastly superior" should read "vastly simpler."

clients. Rossi Tr. 3139-40. Dr. Wind has also used conjoint analysis, as well as other survey methodologies, when he has been retained as a marketing research expert in legal matters.[15] Wind Tr. 755-57.

104. Conjoint analysis is more reliable than simply asking survey respondents to rank the importance of their preferences because of the tendency to indicate that everything is important. Wind Tr. 739, 765, 787. Dr. Rossi agrees. Rossi Tr. 3132-33. Conjoint analysis is also superior to simply asking respondents which alternatives they prefer in a single question (Rossi Tr. 3133, Wind Tr. 790-91). In addition, conjoint analysis is preferable to analyzing historical data because it is not limited to actual marketplace situations. Wind Tr. 766.

105. The conjoint survey design uses constant sum allocation, where a respondent allocated 100 points among the brands on each of the scenario cards. Wind Tr. 785-86. Constant sum allocation is more appropriate for the task in this survey than other types of conjoint design. Wind Tr. 909. Dr. Wind has used a constant sum data collection procedure similar to the one here in most of the conjoint surveys he has conducted both in his consulting and research because it the best method among the various ones available for measuring preferences. Wind Tr. 787, 841. Constant sum allocation is widely used in marketing research and social science research. Wind Tr. 788. It is a very informative way of collecting data and is an easy and natural task for respondents to complete. *Id.* It is quite common for

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[15] Dr. Wind co-wrote the primary book on the topic of conjoint analysis surveys such as the one used in this case, and has written many other publications dealing with the specific areas of marketing research and modeling, including surveys. Wind Tr. 743-44; GX 440 at pp. 13-16.

the hundred points to represent intended purchase shares, such as for example, in the survey conducted for Courtyard by Marriott and in pharmaceutical surveys. Wind Tr. 788-89.

106. Dr. Rossi agreed that it is sometimes appropriate to ask dental lab survey respondents about how they would allocate their purchases among brands in a conjoint survey. Dr. Rossi agreed that the selection and purchase of teeth by dental labs was an example of situations where customers split their choices among products, and that purchases of medical devices and supplies and business to business purchases are other examples. Rossi Tr. 3233-34. Dr. Rossi agreed that in these situations (and others) it may make sense to ask survey respondents to describe the allocation of their last ten or next ten purchases. Rossi Tr. 3235.

107. During the design stage, Dr. Reitman provided input into the objectives of the survey and played a role in formulating the questions that were asked, such as providing information about which brands were of interest and what the prices were for those brands. Reitman Tr. 1539. Dr. Wind typically relies on domain experts to provide information about the products and market in which he is conducting a survey. Wind Tr. 907. The prices used on the conjoint scenario base card were obtained from marketplace sources, such as the Zahn catalogue; the prices on the remaining scenario cards were determined using Dr. Wind's master experimental design. Reitman Tr. 1691; Wind Tr. 780; GX 140 at p. 8 & Ex. 2.

108. The brand variable is a summary measure that incorporates everything the respondent perceives about the specific product, such as tooth quality. Wind Tr. 782-83. Similarly, terms such as "local dealer" were deliberately left undefined so that the specific interpretation was left to the respondent. Wind Tr. 786. A dealer in one location can be local

to one lab and mail order for another under this survey design. Wind Tr. 786-87; Reitman Tr. 1693-94.

109. Professor Wind disagreed with the assertion of Dentsply's counsel in her opening statement that the survey asked labs- - "would you like to buy from a dealer or manufacturer? But it kept prices the same" -- because the survey scenario cards varied prices. Wind Tr. 792; *see* Defendant's Opening Statement Tr. 56. As Dr. Wind explained, "[t]he whole logic of the design is to provide various combinations of brands and prices and distribution options." Wind Tr. 792. He identified several of the scenario cards given to the survey respondents in which the price for Ivoclar teeth was lower when it was available only direct from the manufacturer than it was when available from a dealer. Wind Tr. 793-94.

2. Survey methodology and implementation

110. The survey was implemented according to generally accepted principles. Wind Tr. 763. Dr. Wind concluded that the specific data collection methodology used here (telephone-mail-telephone or "TMT") was the most appropriate one for the task here. Wind Tr. 762-63, 797-98. Dr. Rossi testified he would be "happy" to use a TMT approach in this case. Rossi Tr. 3135. Dr. Wind typically uses the TMT approach in the conjoint analysis surveys, as well as other studies where he is dealing with a difficult-to-reach population dispersed around the country. Wind. Tr. 798. It is a very commonly used approach by other researchers, too. *Id.*

111. The survey was conducted in 1998, during the investigation that preceded the decision by the United States to file suit in this matter. Wind Tr. 738; Reitman Tr. 1463-64. Once Dr. Wind decided to use conjoint analysis for this survey, he asked two of his colleagues

at Wharton with whom he had worked on many previous surveys, Dr. Paul Green and Dr. Abba Krieger, to work with him on this project as a research team. Wind Tr. 767. Professional, trained interviewers with experience in marketing research conducted the interviews. Wind Tr. 799-800. The interviewers were trained specifically for this survey, including a dry-run of the questionnaire, and were monitored during both the screening and conjoint analysis phase. Wind Tr. 800.

112. Dr. Wind uses a sampling procedure to screen potential survey respondents to establish membership in the universe of interest, which is the general population to which the survey results are generalized or projected. Wind Tr. 767-69; GX 140 at pp. 4-5 & App. D, G. The universe of interest in this survey was defined as the dental lab technicians or other laboratory personnel who are responsible for the selection of plastic artificial teeth for use in making dentures. Wind Tr. 767-68; GX 140 at p.4. The screening process here was similar to those in other surveys Dr. Wind has conducted. Wind Tr. 775.

113. Once the respondents were identified and agreed to participate in the survey, they were mailed a two part survey -- Part A, which the respondents completed on their own, included a questionnaire regarding lab demographics, preferences for dealer and brand attributes, and brand familiarity, and Part B, which was the conjoint analysis task. Wind Tr. 770, 777-779; GX 140 at p. 11 & App. E; Reitman Tr. 1540. The respondents were then telephoned again several days later and walked through the conjoint task, which required them to respond to eight specific scenario cards selected from 140 different combinations of brand, price and distribution. Wind Tr. 779-82, 789-90; GX 140 at pp. 6-11 & App. C. The

instructions for completing Part B were read to the respondent - they were not provided in writing. Wind Tr. 789-90 & App. E.[16]

114. The survey was a double-blind study, which means that neither the interviewer nor the respondent knew the purpose or the sponsor of the survey. Wind Tr. 796.

115. Out of 2,520 calls made, 667 labs satisfied the screening requirement and qualified for the survey. Wind Tr. 771-73 & GX 140 App. G. The target number of respondents was approximately 200, which is within the range of typical sample sizes in conjoint surveys. Wind Tr. 773-74. Here, 274 of the 667 qualifying labs provided completed questionnaires, for a response rate of slightly less than 40%, which is "spectacular . . . [i]n today's environment." Wind Tr. 772-73, 776. Dr. Wind performed a statistical test of the survey data, and concluded there was no evidence suggesting nonresponse bias here. Wind Tr. 913-14. With the proliferation of telemarketing, public opinion surveys and marketing research, respondents are increasingly reluctant to participate and it is becoming more difficult to obtain representative samples. Wind Tr. 777. Dr. Rossi agreed that response rates obtained in marketing research have been declining. Rossi Tr. 3138. The response rate in most commercial marketing research surveys is between 10 and 20 percent. Wind Tr. 776. Dr. Rossi conceded he has no basis for disagreeing with Dr. Wind that low response rates are typical in marketing research. Rossi Tr. 3141-42.

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[16] The instructions provided, in relevant part: "Considering brand/line differences, price differences, and distribution availability differences, we'd like you to allocate 100 points across the eleven brands in such a way as to reflect the share of your total plastic teeth volume (in units) that you would place with each of these brand/lines over the next three months, given the information shown on the card." GX 140 at App. E.

116. The result of this process resulted in a final random probability sample that included those people who qualified as members of the universe, who agreed to participate, and who completed both Parts A and B. Wind Tr. 770. Because this is a random probability sample, this sample of 274 laboratories can be projected to the larger population of thousands of laboratories. Wind. Tr. 774-75; Rossi Tr. 3184 (because there are approximately 10,000 laboratories in the United States, making it impossible to know the preferences of all those labs, "[t]hat's why a survey has to be done").

117. Dr. Wind concluded that the survey was short, easy, and not complicated compared to others that he has conducted. Wind Tr. 794. He also testified that the survey was not too demanding compared to, for example, the survey he conducted for Courtyard by Marriott. *Id.* Dr. Rossi agreed that the Marriott survey was more complicated than Dr. Wind's survey in this case. Rossi Tr. 3121. The survey he conducted in this case had only three factors (brand, price and distribution), which is fewer than other surveys Dr. Wind has conducted. Wind Tr. 794-95. Also, the survey respondents here were professional buyers -- the people responsible for selecting the brands of artificial teeth the laboratory uses -- not consumers, and the task of allocating 100 points is similar to what they do in real life. Wind Tr. 794-95.

118. Professor Wind did not pretest the survey for two primary reasons. Wind Tr. 795. First, he has used this methodology in "many, many" other surveys, so there was no uncertainty regarding the straightforward instructions and scenario cards that would indicate a need to pretest. Wind Tr. 795-96. In addition, Dr. Wind and his colleagues checked frequently with the research firm conducting the survey fieldwork to check for any problems

with the data collection, and they received no complaints that respondents were having difficulty completing the task. Wind Tr. 797.

119. Typically, Dr. Wind does not pretest surveys such as this one, where the research approach and methodology have been used before and, in effect, already tested: "Basically, it's a methodology which I used and I feel confident that consumers responding in this case would have no difficulty completing the task." Wind Tr. 796-97. The fact that the topic or subject matter changes from one survey to another does not affect the reliability and validity of the survey design and analysis. Wind Tr. 907-08. The same survey method can be applied to any number of subject matters, and Dr. Wind does not typically pretest the format each time the subject matter changes. Wind Tr. 908. Significantly, the fact that many companies use conjoint analysis on a repeated basis suggests that the methodology is reliable, valid, and an accurate input into their business decisions. Wind Tr. 765; *see also* Wind Tr. 751-52.

120. Second, Dr. Wind did not conduct a pretest because of the real concern that Dentsply, given its dominant position in the market and salespeople calling on labs, would discover the existence of the survey during the pretest and potentially bias the results of the survey itself. Wind Tr. 796. The risk of Dentsply biasing the survey results outweighed any benefit from conducting a pretest. *Id.*

3. Dr. Rossi's criticism of the survey and econometric analysis should not be relied upon.

121. Dentsply retained Dr. Peter Rossi to criticize Dr. Wind's survey and both Dr. Reitman's and Dr. Wind's analysis of the survey results. Rossi Tr. 2998, 3114. Dr. Rossi

formed his opinion in this case after only two or three months of work on this matter. Rossi Tr. 3115. He was content simply to criticize the work of Dr. Wind and Dr. Reitman, rather than conducting a survey of his own in this case. Rossi Tr. 3151. The most appropriate method to critique and test a survey, however, is to conduct another survey to demonstrate empirically any problems, as Dr. Wind did when he evaluated the Pepsi Challenge survey. Wind Tr. 758-62. In addition to the numerous surveys he has conducted, Dr. Wind has also been retained on occasion to critique surveys conducted by others. Wind Tr. 758.

122. Dr. Rossi, however, has very limited experience designing and executing (conducting) surveys.[17] Rossi Tr. 3117-3132. In addition, although he has published articles on statistical analysis, he has authored or co-authored only four publications addressing any aspect of survey methodology, and even some of those pertained only to the analysis of survey data rather than designing or executing surveys. Rossi Tr. 3115-17. Accordingly, Dr. Rossi lacks the expertise necessary to evaluate and critique the design and execution of Dr. Wind's survey, two of the "three major areas" of Dr. Rossi's opinion here. Rossi Tr. 3130-32.

(a) Dr. Rossi has had primary responsibility for conducting or executing only one survey. Rossi Tr. 3130-31. That survey was jointly sponsored by the University of Chicago, where Dr. Rossi teaches, and Sandoz Pharmaceuticals as part of the school's New Product Lab to help educate students. Rossi Tr. 3118-20. The students, rather than a survey research firm, did the actual interviewing as part of their course work. *Id.* at 3119. Dr. Rossi did not know whether Sandoz relied on or used in any way the survey results from a report his

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[17] Dr. Rossi testified that his use of term "survey methodology" included not only survey design and execution but also the analysis of survey data. Rossi Tr. 3117.

students prepared and submitted. *Id.* at 3121-22. Similarly, Miller Beer occasionally allows Dr. Rossi and a colleague to add questions to Miller's own surveys, which he is involved in "from an academic point of view" rather than to provide marketing research consulting advice. Rossi Tr. 3124-25.

(b) Dr. Rossi has had a primary role in actually designing one survey — the University of Chicago/Sandoz survey. Rossi Tr. 3131. In the only other three surveys where he contributed at all to the design, he was either "uncertain" whether he had any role in the survey design (credit cards survey), had a "purely advisory" role in the design (Miller Beer survey), or participated "only to some extent" in the design (*Body Time, Social Time* article and survey). Rossi Tr. 3123, 3125, 3131-32.

(c) The remainder of his involvement in the survey area is limited to analyzing data from a handful of surveys, providing advice to students and colleagues at the University of Chicago, or "being exposed" to people with whom he discusses surveys. Rossi Tr. 3132; *see also* Rossi Tr. 3126-30.

(d) In the only legal matter, other than this case, where Dr. Rossi has testified in connection with a survey (Free v. Peters, 12 F.3d 700 (7th Cir. 1993), he was one of three experts who testified regarding the reliability of the data generated by a survey of jury instructions that yet a fourth expert had conducted, much like Dr. Rossi's role in this case. Rossi Tr. 3127. Dr. Rossi did not design or conduct the survey at issue in Free. *Id.* at 3127. Although Dr. Rossi testified in this case that he found the survey in Free "extremely reliable" with a "100 percent response rate," on appeal Judge Posner disagreed, stating that the survey

was "so deficient" it "would not support the conclusion" that the jury instructions were confusing. *Id.* at 3128 (quoting Free, 12 F.3d at 705).

(e) Although Dr. Rossi stated that the 40% response rate obtained in Dr. Wind's survey "raises concern" of response bias, he acknowledged that he could not state with certainty that there actually is any response bias in the survey data used by Drs. Wind and Reitman, and he could not measure the extent of it since he had not conducted any sort of statistical analysis to address the issue, as Dr. Wind had done. Rossi Tr. 3148-51. He testified that there is no way to prove or disprove that the sample used by Dr. Wind is representative, short of doing another survey in this case, which Dr. Rossi failed to do. Rossi Tr. 3150-51.

123. Dr. Rossi is not an expert in antitrust economics, or more specifically the economics of exclusive dealing or free-riding. Rossi Tr. 3162. He has never been involved in an antitrust case other than this one. Rossi Tr. 3163. Dr. Rossi has little or no knowledge regarding the artificial tooth market or the evidentiary record in this case. Rossi Tr. 3164-68, 3171-77, 3179-80, 3182-84. In forming his opinion, he reviewed no business documents and participated in no interviews of any lab, dealer, or artificial tooth supplier, including even Dentsply, and looked at only portions of a few dealer depositions without reviewing them in detail. Rossi Tr. 3164-66. Dr. Rossi also never reviewed any completed questionnaires of survey respondents prior to forming his opinion, and knows few details about the dental laboratory business. Rossi Tr. 3168, 3180, 3182-84.

(a) Because of his near total lack of knowledge regarding the artificial tooth market, and particularly the dental laboratory business, Dr. Rossi is unable to prove that

the survey respondents were confused or unwilling to provide informative answers, as he claims they were. Rossi Tr. 3162, 3169-70, 3179. Belying his assertion that the survey respondents were confused because the term "local dealer" was deliberately undefined in the survey, Dr. Rossi does not know what participants at all levels of the tooth market -- labs, dealers, rival suppliers and even Dentsply -- understand the term to mean. Rossi Tr. 3171-78. Dr. Rossi was unaware that the term local dealer is commonly understood in the dental laboratory supply business; for example, Robert Brennan testified that the term local dealer was "pretty common in the industry." Brennan Tr. 1712-13; Rossi Tr. 3171-72. Dr. Rossi also conceded that Zahn's use of the term "local service for teeth from coast to coast" in its catalogue was not intended to confuse its customers, and that Zahn expects its customers to understand the meaning of "local service dealer for teeth." GX 160; Rossi Tr. 3172-73.

(b) Dr. Rossi's scant knowledge of the artificial tooth market also undercuts another one of his criticisms -- that Dr. Reitman's scenarios are unrelated to the market without Dealer Criterion 6. Rossi Tr. 3178. He admitted he could not identify what a "realistic" scenario would be. Rossi Tr. 3179. Dr. Reitman explained that his model analyzed the effect of Vita and Ivoclar being made available through local dealers, which only can happen if Dealer Criterion 6 is removed and those brands gain access to the dental laboratory dealer network. Reitman Tr. 3903-04. Dr. Reitman modeled one of several effects from removing Dealer Criterion 6 that he found based on the evidence in the record. *Id.*

(c) Similarly, Dr. Rossi's criticism that some respondents were unwilling to take the survey seriously, based on the two indicia that some respondents did not vary their preferences across survey cards and that some have high shares, is nothing more than

speculation. He acknowledged he did not know what respondents, even those who did not vary their preferences, were thinking in completing the survey, and knows little about dental laboratories in general. Rossi Tr. 3179-80, 3182-84. As a result, Dr. Rossi does not know whether these two indicia in fact show the laboratories' strong brand preference, as Dr. Wind believes, rather than confusion or unwillingness. Rossi Tr. 3184-85. In any event, Dr. Rossi agrees with Dr. Wind that these respondents should be included in the data set. Rossi Tr. 3185-86.

(d) Dr. Rossi was unaware of the existence of surveys Dentsply commissioned or conducted in-house, on which it relied to make business decisions, that had response rates lower than the rate in Dr. Wind's survey. Rossi Tr. 3143-47 (1992 Division name survey: 25% and 26% response rates; 1991 Company image survey: 7% and 17% rates; 1994 Vita lab shade survey: 31% rate). Dentsply relied on each of these surveys in the course of its business: to change the name of the York Division to Trubyte (Rossi Tr. 3144-45); by Christopher Clark when he became General Manager to understand the brand equity of Trubyte products (Rossi Tr. 3145; Clark Tr. 2494); and again by Mr. Clark to determine that Dentsply needed Vita-shaded teeth (Rossi Tr. 3146-47; Clark Tr. 2497-2500).

4. Dr. Wind's Analysis of the Survey Results

124. Dr. Wind's analysis of the survey results demonstrated that when Vita and Ivoclar teeth were available to dental laboratories from either a local dealer, or from both a local dealer and mail order dealer, rather than being available only directly from the manufacturer, their relative market shares would increase by as much as 24 to 35 percent for Ivoclar and 10 to 32 percent for Vita. Wind Tr. 763, 803-04; GX 140 at 14-15. Dr. Wind

concluded that a 10 to 35 percent share increase for a brand is "incredibly significant." Wind Tr. 804.

125. Dr. Wind used a PRIDEM/PRIDEL model to analyze the survey data. Wind Tr. 801. The model has been subject to peer review, and has been widely used by a number of companies and professional research houses. Wind Tr. 802-03. Dr. Wind testified that confidence intervals typically are not provided for any conjoint analysis applications, including both the most popular software, Sawtooth, and PRIDEM, the model Dr. Wind used here. Wind Tr. 904-05. It is impossible to calculate confidence intervals for the PRIDEM model. Wind Tr. 904. Dr. Rossi agrees it would require a very complicated fitting strategy and is unlikely that standard errors can be developed for PRIDEM. Rossi 3215-16. Instead, in Dr. Wind's and all other conjoint analysis studies, the survey results are presented to the client company itself to assess if the results are managerially significant. Wind Tr. 905-06. He concluded that the model is reliable based on its wide and repeated use by those companies to make key business decisions worth millions of dollars, its use in teaching marketing research, and the fact that it is widely publicized in the professional literature. Wind Tr. 915-16.

5. Dr. Reitman's econometric analysis of the survey results is more reliable than that conducted by Dr. Rossi.

126. Dr. Reitman used a multinomial Logit model to evaluate the survey data. Reitman Tr. 1541. The multinomial Logit model is appropriate because it was designed for situations, such as the one here, where customers are selecting among a discrete set of choices. Reitman Tr. 1541, 3888, 3890-92, 3894. The logit model has been discussed frequently in

refereed journals. Reitman Tr. 1542. Dr. Reitman himself has authored an article using a logit model similar to the analysis he did in this case, has used logit models in other cases in which he has been involved, and has reviewed the work of outside economists who used logit models. Reitman Tr. 1450, 1461. The logit model also has been applied frequently in disciplines and contexts other than antitrust investigations. Reitman Tr. 1461-62.

127. Although he criticizes the use of a Logit model here, Dr. Rossi states in one of his publications that Logit models perform well with aggregate market share data, and can perform exceptionally well when fit to the aggregated choices of many different consumers. Rossi Tr. 3212-14.

128. Logit models are used for analyzing conjoint survey data in several leading statistical analysis software packages. Reitman Tr. 3893. For example, Sawtooth software, the leading commercial software package for analyzing conjoint data (Rossi Tr. 3231; Wind Tr. 803, 904-05), has an application for using Logit models to analyze conjoint data using exactly the same procedure Dr. Reitman used here. Reitman Tr. 3893.

129. In addition, a paper recommending Dr. Reitman's Logit model over the one Dr. Rossi used, titled "Modeling Constant Sum with Logit: A Comparison of Four Methods," was presented at the 2001 Sawtooth software conference. Reitman Tr. 3893; Rossi Tr. 3231, 3238. Dr. Rossi is familiar with the paper itself and with both authors, one of whom provided data for a recent paper of his. Rossi Tr. 3231-32. The article compared four methods for using Logit models to analyze constant-sum conjoint data from surveys of customers who split their choices among products, such as the one conducted by Dr. Wind in this case. Rossi Tr. 3232-35; Reitman Tr. 3892. Method one ("Winner-take-all" or "WTA") discussed in the paper is

the method Dr. Rossi used to model the survey data here, and Method 3 ("Discretizing the Allocation" or "DA") is the method Dr. Reitman used. Rossi Tr. 3235-36; Reitman Tr. 3892-93. The paper concluded that Dr. Rossi's WTA method "ignores much of the information provided by the respondents about the strength of their preferences" and is less preferred for that reason. Rossi Tr. 3236; Reitman Tr. 3893. In contrast, the article recommended using the method employed by Dr. Reitman because it did not discard information. Reitman Tr. 3893; Rossi Tr. 3238.

130. In addition to the logit model he estimated, Dr. Rossi also estimated a linear model in this case. Reitman Tr. 3892, 3894. Just as he did in his logit model, Dr. Rossi omitted important variables from the linear models he estimated. Rossi Tr. 3225-26. Dr. Rossi teaches his MBA students that the error term in linear regression model is like a "trash can" for any variables that are left out of the model. Rossi Tr. 3226-27. His course notes also advise that if an influential variable is left out of a model, the researcher is throwing away information, which in turn can cause the model not to fit the data well. Rossi Tr. 3227. Dr. Rossi conceded that, here, throwing away these variables possibly explains why his models do not fit the data. Rossi Tr. 3230; *see also* Rossi Tr. 3237.

131. Dr. Reitman's logit model fits the data and marketplace reality better than Dr. Rossi's linear model in several ways. Reitman Tr. 3894, 3896. First, Dr. Reitman's logit model captures the fact that laboratory respondents are making tradeoffs among all relevant tooth brands, rather than evaluating each brand separately. Reitman Tr. 3895. Dr. Rossi's linear model does a separate analysis brand-by-brand. Reitman Tr. 3894. Second, Dr. Reitman's model captures the fact that laboratories usually choose among a subset of all the

available brands, without considering the others. Dr. Rossi's linear model does not. Reitman Tr. 3895.

132. Despite his own lack of knowledge of the facts here (as discussed above), Dr. Rossi did not consult with anyone knowledgeable about the tooth market in constructing the models he estimates in his report. Rossi Tr. 3228-29. In fact, he did not even know how many brands of competing teeth there are in the United States that should be included. Rossi Tr. 3229.

133. Dr. Reitman calculated standard errors which showed that the key parameters of his model -- the effect of local dealer availability and the price sensitivity of other premium brands -- are statistically significant. Reitman Tr. 3897-99, 3908-09. Dr. Rossi purported to calculate estimated standard error ranges of his own for several of Dr. Reitman's price and share effect projections. Reitman Tr. 3910; DX 1623. Dr. Rossi's standard error calculations are not precise or reliable for several reasons. Reitman Tr. 3914. He made unsupported assumptions and used a wrong input. Reitman Tr. 3911-14. Dr. Rossi's estimates are based on 511 simulations, but change dramatically when just two of those simulations are dropped. Reitman Tr. 3913-14.

134. Dr. Reitman testified that in his position as a Justice Department economist he performs the types of price effect projections he did in this case "all the time" in antitrust analysis, and particularly in merger analysis -- "It's bread and butter for us." Reitman Tr. 3914-15. He also reviews the same kind of simulations when done by outside experts retained by the merging parties. Reitman Tr. 3915. Dr. Reitman concluded: "In my time in the Antitrust Division, I have never seen anyone present . . . estimated error ranges for these kind

of price effects" like the calculations Dr. Rossi did here. Reitman Tr. 3915. "In part, that's just because you have to make very dramatic assumptions in order to do this and it's not a reliable thing." Reitman Tr. 3915. Instead, economists typically determine whether the demand parameters are statistically significant, which is what Dr. Reitman does in his other work for the Justice Department and did in this case. Reitman Tr. 3915. Dr. Rossi has never published any articles regarding the differentiated product Bertrand competition model used by Dr. Reitman to calculate the price effects in question in this case. Rossi Tr. 3219-20.

135. Dr. Rossi's ultimate conclusion was that the survey data and analysis is "not very informative." Rossi Tr. 3111. In light of his very limited survey experience, lack of knowledge regarding the artificial tooth market and facts of this case, and unreliable econometric analysis, this lukewarm opinion does not undercut Dr. Reitman's conclusion that the survey verifies and quantifies his conclusion regarding the anticompetitive effects he found based on a thorough review of all the other evidence in the record over the five years he has been working on this matter.

E. The few large labs who testified during Dentsply's case are an unrepresentative sample of the 7,000 labs in the country, and their testimony failed to rebut the statistically significant results of the Wind Survey.

136. Dentsply did not conduct its own scientific survey of dental labs. Rossi Tr. 3151. Instead, it offered the testimony of seven witnesses from labs that it selected on its own. Some of the testimony from these witnesses corroborated other evidence demonstrating the importance of dealers. Langer Tr. 3279-80 (values relationship with DLDS); Obst Tr. 2748 ("exceptional service and relationship that has been built up" with Zahn). None of it

actually sustained Dentsply's argument that dealers are not important. To the extent any of these witnesses were offered to show that their individual, particular purchasing preferences should be generalized across the market, that testimony should not be credited because these labs do not constitute a representative sample of dental labs in the country. They were hand picked to testify by Dentsply. Moreover, the witnesses were selected from some of the largest laboratories in the country. They were not shown to be a representative sample of even that segment of the lab industry; but, even if they were, large labs represent only a small percentage of the dentures fabricated in the United States.

137. Dentsply's "sample" is skewed one because most of its trial witnesses represent very large labs. A large share of the denture fabrication in the United States is done in 2,000 - 3,000 mid-size labs that make 5-15 dentures per day. Jenson Tr. 2247-48. Morever, approximately 80% of the labs in the United States are small, employing four or fewer lab technicians. Weinstock Tr. 88;

Mariacher Tr. 2895 (75% of labs employ 3-5 people);

Small labs are likely more dependent on dealer services. Turner Tr. 422; Reitman Tr. 1500-01. Five of Dentsply's seven lab witnesses came from large labs or lab groups:

(a) National Dentex is the largest publicly traded dental lab company in the United States, with 34 labs across the country and $100 million in sales annually. Mariacher Tr. 2960, 2895-96. One National Dentex lab, Stern Empire, employs 155 people, did over $10 million in sales annually, and employed a full-time person just to manage its tooth stock. Mariacher Tr. 2894, 2961, 2962. Its smallest lab employs over 20 people and does in excess

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of $1 million in sales. Mariacher Tr. 2895-96. National Dentex is so large that the company considered buying a dental supply house through which it could purchase teeth. Mariacher Tr. 2958. National Dentex has less need for next day service, dealer services, or a local stock of teeth because it can afford to employ personnel to handle all of these functions and its in-house inventory allows it to fulfill its inventory requirements by periodic restocking orders that do not need to be delivered the next day. Mariacher Tr. 2962-63.

(b) Dental Service Group ("DSG") owns 26 labs and had revenues in 2001 of $52 million. Obst Tr. 2711-12. DSG employs a total of 800 persons, of which approximately 150-175 are denture technicians. Obst Tr. 2711, 2713. In addition to the 26 labs it owns, DSG has 75 affiliate labs. Obst Tr. 2714-15. These labs are also very large, in that each lab must have $500,000 in sales in order to become an affiliate. This level of sales translates roughly into a lab with 8-10 or more technicians. Obst Tr. 2739.

(c) Lord's Dental Studio is one the top 10 largest dental labs in the country, and has the largest inventory of teeth in its region. Lord's employs over 100 technicians, 25-27 of whom work on dentures. Challoner Tr. 2859-61. Lord's is "one of the larger full-service laboratories in the United States." Challoner Tr. 2861.

(d) Armstrong Laboratory is a large full-service dental lab employing 30 dental technicians. Armstrong Tr. 2330. It makes about 15,000 full and partial dentures in a year, averaging out to about 300 per week. Armstrong Tr. 2332. In 1999, it maintained the largest tooth stock inventory in the entire Commonwealth of Kentucky, not just for Dentsply, but for all other brands of teeth that it stocked. Armstrong Tr. 2369. Armstrong is a member of TEREC, a group of 14 very large laboratories. Armstrong Tr. 2351-52. The other labs in

the TEREC group, however, are even larger than Armstrong Lab. "[T]hey are much larger than I am. As a matter of fact, I am the smallest by sales in TEREC, substantially smaller." Armstrong Tr. 2352.

(e) Jaslow Dental Lab employs 38 persons, including eight denture technicians (not counting Mr. Jaslow himself). Jaslow Tr. 1959. Jaslow is one of the top 100 largest labs in the country, by number of dental technicians. Jaslow Tr. 2016. Jaslow carries a large inventory of Dentsply teeth -- large enough so that it can satisfy its tooth needs from its own inventory in 99% of the cases. Jaslow Tr. 2037.

138. While Hopkins Dental Lab in Minnesota is not large, neither is it representative of most other labs with respect to its need for dealer services when purchasing teeth. It has little need for a dealer for his Ivoclar teeth because of its large in-house stock of Ivoclar teeth, valued at $25,000. Coykendall Tr. 3313. This stock of Ivoclar teeth is sufficiently large that it can obtain between 90%-95% of the teeth it needs for its denture cases from that stock. That convenience is one reason its owner, Mr. Coykendall, uses Ivoclar teeth. Coykendall Tr. 3330, 3333.

139. With 7,000 labs doing dentures in the United States, it is not surprising that labs are very heterogeneous in their preferences. Reitman Tr. 1484. The United States offered the testimony of single lab owner to explain how a dental lab operates and to illustrate how consumer choice and purchasing patterns have been affected by Dentsply's exclusionary conduct. Ryan Tr. 1252, 1255 (would buy more Ivoclar and Vita teeth if DLDS could sell them). But it did not, as Dentsply did, rely exclusively on a small, non-scientific sample of

unrepresentative lab witnesses. Dr. Wind's survey is the best evidence of the preferences of labs and how they would alter their tooth purchases in a world without Dealer Criterion 6.

F. Direct distribution of artificial teeth is not an adequate substitute for a network of dental laboratory dealers.

140. Selling teeth directly to labs is an inferior method of distribution primarily because the benefits to customers and suppliers from buying or selling through tooth dealers are not available to direct sellers or their customers. Reitman Tr. 1508; GX. 364-C, GX 364-D. Even though direct sellers do not have to pay the standard 35% dealer margin, they also have to incur certain costs that Dentsply, selling through dealers, does not. There is also very little, if any, benefit to selling both teeth and crown and bridge products through the same direct sales force. The inferiority of direct sales is also illustrated by the poor track record of Dentsply's competitors and Dentsply's own decision not to "go direct" after years of talking about it and studying the issue.

1. Direct sales are costly and inefficient.

141. Although a direct-selling supplier does not have to pay any dealer margin, it incurs significant additional costs associated with the services that otherwise would be handled by a dealer such as accounting, accounts receivable, billing, returns, and taking orders. Swartout Tr. 1305-07; Reitman Tr. 1510. As a result, it is not at all clear that it is cheaper for a supplier to sell direct rather than through dealers. Desautel Tr. 2466;

Nordhauser Tr. 4111-12. In fact, there is evidence in the record that suggests that selling direct is more expensive. Wiltz Tr. 3835; Swartout Tr. 1305-08; Reitman Tr. 1510.

142. Dentsply concedes that direct sales involve additional costs.

143. Dentsply's competitors, the ones that currently sell directly, believe that direct sales are more costly. Despite the dealer margin, Myerson's president believes that using dealers is more efficient:

> I believe that selling through a network of distributors, both those local, regional and national, is the most efficient way to serve the United States due to its sheer size. And the reason that's an advantage to us is that it helps us reduce our operating expenses and invest more in sales and marketing.
>
> As I said before, with a network of dealers, you are serving a smaller base of customers, makes it easier for collection. You are able to take advantage of them doing cooperative sales and marketing efforts, thereby sharing costs.

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Swartout Tr. 1306-07.

Whitehill Tr. 251-52 (even without dealer margin, direct sales less effective because it results in far lower volume).

144. Dealers believe direct sales are more costly as well. Steve Desautel of Accu Bite Dental Supply, a witness Dentsply called during its case, believes it is a "fallacy" to assume that it is cheaper to sell teeth directly. Desautel Tr. 2466 (not necessarily cheaper to cut out "the middle man"). *See also* Nordhauser Tr. 4111-12 (Darby incurs substantial costs for supplier, and "[t]he tooth manufacturer has a heavier load, if you wanted to go direct"); Wiltz Tr. 3835 (costs of selling teeth directly are high, and doesn't believe Dentsply would go direct).

145. Another one of Dentsply's own lab witnesses, George Obst of DSG, testified that he buys most of his Myerson teeth from Zahn Dental, rather than from Myerson directly, because they are cheaper under Zahn's preferred purchasing program. Obst Tr. 2752-53. Nor does he know whether Dentsply's prices would be cheaper if Dentsply went direct. Obst Tr. 2750-51 (never talked price with Dentsply, and if price were the same, would continue buying from Zahn rather than from Dentsply directly).

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2. There is little, if any, benefit to selling teeth through the same direct sales force selling crown and bridge products.

147. All major crown and bridge manufacturers, including Dentsply, sell these products directly. Clark Tr. 2542; Ganley Tr. 1109-10; Whitehill Tr. 394; Reitman Tr. 1478-79.

Dentsply has taken contradictory positions as to whether a combined sales force is an advantage or disadvantage for selling teeth. At times, Dentsply tried to establish that the lack of a separate sales force focused solely on selling teeth was a disadvantage for its competitors. Whitehill Tr. 297-98. At other times,

Even if there is such a benefit, however, it is outweighed by the substantial benefits of selling teeth through dealers.

148. The tooth business is different from the crown and bridge business, and the two have historically been distributed differently. "Crown and bridge products are bought through several sources, but most of them are direct products. The main people in the marketplace are

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selling direct, ... The tooth business in general, though, is a dealer-purchased product. They buy it from the dealer. They rely on the dealer representative. They understand the dealer service. And they provide a very good service." Ganley Tr. 1109-10.

149. There are significant differences in the service levels required for teeth and crown and bridge products. As Vident's Wayne Whitehill noted, teeth are purchased much more frequently:

> A laboratory who is buying denture teeth directly from us will place orders very, very often, sometimes even — even daily, because they're usually only ordering per case. Whereas with a laboratory that's buying crown and bridge materials, they're buying bottles of porcelain and that's like carrying a small inventory. So they don't order as often.

Whitehill Tr. 394-95.

150. There are differences in the products. Porcelain is sold directly "because of the high cost of the system and also because of the technical complexity of [the] product." Reitman Tr. 1478-79. Precious metals used in the production of crowns and bridges are sold directly because of the high inventory costs associated with them. Reitman Tr. 1478; Becker Tr. 1833 And dealers are sometimes reluctant to sell precious metals such as gold because of the greater credit risk of selling such an expensive product to dental labs. Weinstock Tr. 509.

151. There are also differences in the customers as well. The labs that do crown and bridge work usually do not also do denture work. Only 7,000 of the 16,000 dental labs in the United States even do dentures. Weinstock Tr. 86; Jenson Tr. 2247; Reitman Tr. 1484. The

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remaining 9,000 are exclusively crown and bridge labs. Weinstock Tr. 86 (over 50% of U.S. labs do only fixed work). Even among the 7,000 labs that do dentures, there are some, like Judd Ryan's Sonshine Dental Lab, that do not do any fixed work. Ryan Tr. 1205-08, 1248. And among full-service labs, there are those, like Langer Dental Arts, where the denture department and crown and bridge department are separate and the lab personnel who purchase denture materials are different from those who purchase crown and bridge materials. *See* Langer Tr. 3250, 3293-94.

152. These differences mean that there are few synergies to selling teeth and crown and bridge products through the same sales force.

3. Despite substantial efforts to overcome the disadvantages of selling teeth directly, Dentsply's competitors have failed to become effective competitors to Dentsply.

153. Dentsply has recognized that the key weakness of its competitors is their lack of a dealer network and resulting limited distribution. DX 115 at DS 018478 (listing first two weaknesses of Myerson as "Limited Distribution" and "Few Full Service Dealers"); GX 77 at DS 015927 (Vita is "having a tough time getting teeth out to customers. One of their key weaknesses is their distribution system");

Indeed, Dentsply's Steve Jenson has directed his Trubyte sales staff to reinforce to dentists and labs

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the service advantage of a dealer network versus a manufacturer's direct tooth sales. Jenson Tr. 2268.

154. Each of Dentsply's major competitors have tried, but failed, to overcome the disadvantages of selling teeth directly.

a. Ivoclar

155. Ivoclar's primary difficulty has been its lack of access to dealers. As its president Robert Ganley testified, that lack of dealer distribution is:

> a distinct disadvantage because the market is used to buying dealer. The market is comfortable buying dealer. The dealer does a very good job for the dental laboratory and for the dental school, for the customer in terms of shipping, in terms of insurance and in terms of general service, servicing a tooth stock, servicing an existing account. It's what they're comfortable with. And we don't sell through dealers. We try to accommodate, we try to meet those needs in other different ways, because we're locked out. The market knows we're locked out. I think we do a reasonably good job to meet some of their criteria, but we don't meet all their criteria. And that's ... the largest problem we have in the market.

Ganley Tr. 1120.

156. Ivoclar has tried several different strategies to overcome this difficulty.

(a) In the early 1990's, it tried to replicate the advantages of having a network of local dealer tooth stocks by establishing regional distribution centers for teeth. Ivoclar began with three such centers, located in Atlanta, Sacramento, and in Illinois. Ivoclar's sales of teeth did increase in the areas surrounding these centers, providing additional evidence that labs prefer to buy teeth from local tooth stocks. The centers were not profitable, however, because it was too costly to operate them for just a single product. After approximately two years, Ivoclar closed the centers, to the disappointment of lab customers

who had enjoyed more local access to Ivoclar teeth. Ganley Tr. 1008-10; Reitman Tr. 1509-10.

(b) On a number of occasions in the 1990's, Ivoclar tried consigning teeth to labs. Consignments have not succeeded in increasing tooth sales, however, because tooth inventories require service frequently, such as on a weekly basis, in order to identify the tooth lines that have been used, reorder teeth, restock inventory, and to collect and process teeth that need to be returned to the manufacturer. Ivoclar does not have the sales representatives to accomplish the task. Therefore, while Ivoclar will consider a tooth consignment if requested by a lab, it no longer has a formalized program by which it consigns teeth to labs. Ganley Tr. 1010-11.

(c) Ivoclar has tried to discount the price of its teeth, both to individual labs and to broader-based laboratory chains. In general, this has not been effective in increasing tooth sales. Ganley Tr. 1011-12.

(d) Ivoclar has tried to sell its teeth to dental schools, without much success. The lack of a dealer network is a major reason why:

> The dental school, the dental school tooth stock requires [a] significant amount of service. It can be a high-volume location in terms of a lot of teeth being used, a lot of teeth being withdrawn, a lot of teeth being returned. Therefore, it necessitates [a] reasonably high service level, and that's a level that we, as a company, have not been able to provide. But, on the other hand, dealers have a good reputation for servicing the tooth stock in the [universities].

Ganley Tr. 1017.

(e) Ivoclar tried to increase tooth sales by combining its tooth sales force with the sales force selling its popular crown and bridge products. It did so because it felt it

could be effective with its tooth products based on the existing relationships it already had with existing crown and bridge customers. Yet this initiative was only modestly successful. Ganley Tr. 1017-18, 1111 ("[w]ith some laboratories, it did work on increasing some of the business").

(f) Perhaps most significantly, in the past four years, Ivoclar has tried to mimic the success of Dentsply's sales force that is dedicated solely to selling removable products. Ivoclar even hired one of Dentsply's own tooth salesmen, Herb Baird, who had a good reputation among the labs in his region, to lead that effort. Once he joined Ivoclar, Baird began recruiting people to build his sales force and he began selling teeth himself as well. This effort has failed as well, however, because the small increase in sales has been outweighed by the costs of creating a separate sales force focused on selling only one product. Ganley Tr. 1018-1021.

157. Because it does not believe that direct distribution is the most effective way to sell teeth (Ganley Tr. 1006-07), Ivoclar has tried, unsuccessfully, to obtain distribution through dealers. Ivoclar executives have continually talked to Zahn and Patterson about their interest in selling Ivoclar teeth. Ganley Tr. 1021. Ivoclar has not approached more dealers selling Trubyte dealers than it has because there is no reason to expect, having heard from large dealers that they are not willing to lose their Trubyte tooth business, that smaller dealers would be willing to risk losing that business. Ganley Tr. 1107-08.

b. Vident

158. Like Dentsply's other competitors, Vident has found direct distribution to be an ineffective method of competing in the tooth market. Whitehill Tr. 240, 249-50.

159. Vident has tried several different strategies to overcome the disadvantages of selling directly.

(a) For many years, Vident has shipped teeth to labs on an overnight basis, so that labs can receive teeth the day after they order them. Whitehill Tr. 250. More recently, Vident has even subsidized the cost of next-day delivery, so that now Vident pays most of the overnight shipping charge. Whitehill Tr. 250.

(b) Vident, like Ivoclar, has tried to consign teeth to labs. It has even tried to sell or consign a larger inventory of teeth to dental labs, so that they have less need for more frequent purchases. These efforts have not been successful because these inventories have not been properly managed by the lab customers. Whitehill Tr. 252-53. In addition, Vident has not been able to visit those labs frequently enough to manage the inventory. Whitehill Tr. 252.

(c) Vident's sales reps call on dental schools, but have not had much success in selling Vita teeth to those schools. Like Ivoclar, Vident has found that dental schools are particularly dependent on dealer services. Quite often, a dental school will have a tooth stock or dealer store located directly on campus. That increases the convenience of the dental school buying teeth, as well as other products, from the dealer. Whitehill Tr. 254-55.

(d) Vident has tried to exploit its key competitive advantage — the tremendous popularity of the Vita Classical Shade Guide. Whitehill Tr. 231-32. "One of the significant things that Vident does is to wrap all of its products around its shade guide."

Whitehill Tr. 228. "[W]e oftentimes market the shade guide with a circle of products around the shade guide because all of these products match the shade guide." Whitehill Tr. 233.

160. Vident's efforts to find dealer distribution have been continuous and exhaustive.

(a) Vident has made ongoing efforts over the years to obtain distribution through a national tooth dealer. Whitehill Tr. 255. In February 2002, Vident's Wayne Whitehill, personally offered the Vita tooth line to Patterson Dental. Patterson rejected that offer, to Mr. Whitehill's understanding, because it did not want to disrupt its relationship with Dentsply. Whitehill Tr. 255, 258. Zahn has similarly rejected Vident's overtures. Whitehill Tr. 259.

(b) Vident has made numerous efforts over the years to obtain distribution through a regional tooth dealer. During the mid-1990's, Vident did sell teeth to Dental Technicians Supply ("DTS") and Jan Dental, two regional dealers that were effective tooth dealers for Vident. Whitehill Tr. 259-64. Both, however, dropped the Vita tooth line when forced to do so as a requirement of obtaining the Trubyte tooth line from Dentsply. Whitehill Tr. 263, 265. Vident has also contacted, and made efforts to sell teeth to, several other regional tooth dealers: Atlanta Dental; Pearson Dental; Darby Dental; Benco; J.B. Dental; and Meer Dental. Whitehill Tr. 265-69.

(c) Vident has made numerous efforts over the years to obtain distribution through more small, local dealers. Dealers that do not already sell Trubyte teeth are smaller and less able to provide services benefitting customers. PFF ¶¶ 258-62. Moreover, there are

not that many other dealers in the market today that sell products to dental labs. Whitehill Tr. 270.

(d) Lincoln Dental, which has never been a Trubyte tooth dealer, was approached twice by Vident. On the first occasion, Vident turned down Lincoln because it had just lost its sales force. Whitehill Tr. 268. On the second occasion, Lincoln turned down Vident because it wanted to earn a higher margin on the sale of Vita teeth. DiBlasi Tr. 2814. Lincoln, however, considered Vident's proposal to be a reasonable one at the time. As Jeff DiBlasi of Lincoln Dental testified, "they [Vident] needed us more than we needed them. ... so they were willing to do anything possible." DiBlasi Tr. 2814. Indeed, Vident offered Lincoln assistance in the way of co-traveling, sales aids, marketing materials, and training. DiBlasi Tr. 2813.

c. Myerson

161. When it was part of the larger Austenal Corporation, Myerson added local tooth stocks to distribution centers that Austenal had for other products in Orlando, New York, and Los Angeles. Swartout Tr. 1299. These centers allowed Myerson to offer local availability of teeth (and many other products) and provided Myerson with additional marketing opportunities for teeth, such as point-of-purchase displays that customers would see when they came into the center to pick up other products. Swartout Tr. 1300. When Dentsply acquired Austenal in early 2002, however, Myerson lost these distribution centers and has lost business as a result. Swartout Tr. 1302. Myerson is unable to establish tooth distribution centers today because it is not economical when teeth are the only product sold through them.

Nor is it feasible for Myerson to ship all orders overnight due to the high cost of services like Fed Ex. Swartout Tr. 1303.

162. Myerson has expended considerable effort to recruit dealers. When Mr. Swartout began with Myerson when it was part of Austenal, he sat down with other managers and tried to identify every laboratory-focused dealer in the country -- those that "were recognized by laboratories" and understood selling teeth. Swartout Tr. 1312-13. Myerson then visited those at the top of the list to convince them to take on the Myerson lines. However, "each time" these dealers, which sold Trubyte teeth, refused to take on the Myerson line. Swartout Tr. 1313-14.

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IV. Dentsply has willfully maintained its monopoly in the artificial tooth market in the United States in violation of Section 2 of the Sherman Act.

A. Dentsply possesses monopoly power in the artificial tooth market.

168. For at least the past 15 years, Dentsply has had monopoly power in the artificial tooth market. Reitman Tr. 1473. As explained below, this is evident from its persistently high market share, between 75% and 80%; its ability to control price and exclude its closest competitors from the dealers necessary to compete effectively; its high margins and profits; its reputation among many labs and dealers in the industry; and its ability, in the early 1990's, to sell aesthetically inferior teeth at higher prices without losing substantial market share. Dentsply's exclusionary conduct has excluded some competing tooth brands entirely, delayed the entry of others, and prevented the ability of those already in the market to expand their sales successfully.

1. Dentsply's market share of between 75% and 80% is sufficient to infer monopoly power.

169. Dentsply has had a persistently high market share, between 75% and 80% on a revenue basis, in the artificial tooth market. Reitman Tr. 1471-72.

170. Dentsply's market share is approximately 15 times larger than its next closest competitor. Ivoclar has the second-highest share at the market, at approximately 5%. Reitman Tr. 1472; Ganley Tr. 984-85 (Ivoclar's president estimating a 8% share of premium segment). The shares of Vita and Myerson are in the 3% range. Reitman Tr. 1472;

The American Tooth Company has a 2% share, Universal's share is between 1% and 2%, Heraeus Kulzer has a share of about 1%, and various other rivals have even smaller shares. Reitman Tr. 1472; *see*

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also Reitman Tr. 1471, 1474 (Dr. Reitman's estimates are based on internal documents and sales data produced by Dentsply and other companies, Dr. Wind's lab survey, and Dentsply's own internal survey data).

171. The market share surveys commissioned by Dentsply demonstrate that it has held a share of approximately 80% for at least the past 10 years.

(a) Since 1989, the Trubyte Division, through Sam Thumim, its Manager of Market Research, has commissioned three surveys of tooth market shares performed by outside firms: the Market Dynamics survey in 1989; the Axxiom Research survey in 1991; and the Polk-Lepson survey in the mid-'90's. Thumim Tr. 928-29, 943-44, 973.[18]

(b) Mr. Thumim was involved in retaining these outside survey firms and believed that the survey results were reliable. Mr. Thumim was involved in both retaining Market Dynamics and in designing the survey. Thumim Tr. 929. He described that survey as "by far, the most comprehensive, sophisticated and complex survey we have ever conducted." GX 17 at DS 053918, Thumim Tr. 933. Similarly, Mr. Thumim was responsible for retaining Axxiom Research and described that firm as having "a proven track record of conducting Dentsply surveys." GX 18 at DS 054027, Thumim Tr. 941-42. He was also involved, along with Chris Clark, then Trubyte's director of sales and marketing, in retaining Polk-Lepson and in designing that survey. Thumim Tr. 973-74.

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[18] Mr. Thumim has been Manager of Market Research for the Trubyte Division since 1969. (Thumim Tr. 918-19) Mr. Thumim takes part in the design and execution of market research surveys for the Trubyte division, retains outside survey vendors and participates in designing outside surveys, analyzes the results of outside surveys, and prepares reports of such surveys and analyses to circulate to others within the Trubyte division. (Thumim Tr. 919-21) In his career at Dentsply, there has never been a time when Mr. Thumim has not had responsibility for market research about tooth products. (Thumim Tr. 924-25)

(c) Mr. Thumim's analysis of the Axxiom survey results showed that Dentsply had a 80% market share. In November 1991, he reported his analysis of the Axxiom survey results in a series of charts dated November 20, 1991. GX 20, Thumim Tr. 952-53. His analysis showed Dentsply's market share (by sales dollars) to be 80%. Vita's share was 2.4%, and Ivoclar's was 2%. GX 20 at DS 053579; Thumim Tr. 958-61. He also concluded that Dentsply's tooth market share by units was 67%, and that Vita's unit share was 1.32%, and Ivoclar's was 1.32%. GX 20 at DS 053583; Thumim Tr. 963-64. Dentsply's dollar market shares are higher than its unit market share because sales of premium teeth, in which Dentsply has an even greater share, have a greater influence than sales of economy teeth, because premium teeth are priced quite a bit higher than economy teeth. Thumim Tr. 962-63.

(d) A year later, Mr. Thumim prepared and distributed another analysis of tooth market shares, in a series of tables dated September 23, 1992 and charts dated September 25, 1992. GX 23A; Thumim Tr. 965-68. He concluded that Dentsply's market share (by sales dollars) was 81%, and that Vita's share was 2.47% and Ivoclar's was 2.0%. GX 23A at DS 054129; Thumim Tr. 971-72.

(e) These surveys also showed that Dentsply's share of the premium tooth segment was at least 80% and, in some cases, close to 90%. In 1989, the Market Dynamics Survey showed that Dentsply share of the premium tooth segment was 85% (for anteriors) and 81% (for posteriors). GX 17 at DS 053928; Thumim Tr. 935-38. It also concluded that "since Dentsply dominates all segments and Dentsply's sales have been flat, this suggests that the overall market is currently relatively stable." GX 17 at DS 053928, Thumim Tr. 938.

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Thumim Tr. 942-44, 946-47, 948-49. The Polk-Lepson survey in the mid 1990's reported "comparable" results. Thumim Tr. 975-77.

(f) Because Dentsply opted not to cross-examine Mr. Thumim and has not offered any evidence to rebut his findings, Mr. Thumim's testimony and conclusions regarding Dentsply's market share stand uncontradicted.

172. Knowledgeable industry executives concur in the view that Dentsply's market share is approximately 80%. Whitehill Tr. 240; Nordhauser Tr. 4145-46. *See also* Cavanaugh Tr. 727-28 (Dentsply CEO told Cavanaugh, when he was adding Ivoclar tooth line, that "Dentsply was the worldwide leader of teeth and, in the United States especially, they owned the tooth market ....");

2. Dentsply has controlled price in the tooth market.

173. Dentsply has been the price leader in the artificial tooth market. Swartout Tr. 1296; Turner Tr. 456. William Turner, who was the Senior Product Manager for Trubyte's tooth products from 1993 until earlier this year, Turner Tr. 401-03, described the process by which Dentsply established prices in the market: "As the price leader, Dentsply usually sets the prices in the marketplace and everyone else contributes or competes under that broad umbrella." Turner Tr. 456. The current General Manager of the Trubyte Division, Steve Jenson, similarly testified that Dentsply's pricing of its premium teeth offers an opportunity for other tooth brands to come in underneath what they would consider the right price — in effect, providing other brands a price umbrella. Jenson Tr. 2217.

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174. In setting the level of this price umbrella, Dentsply consults the consumer price index for medical and dental materials, or possibly other indexes of inflation. Turner Tr. 456-57 (can't recall any other factors taken into account). Since 1997, Dentsply has typically increased its prices by a point, to a point and a half, over inflation. Turner Tr. 457-58; accord Jenson Tr. 2216 (Dentsply has increased its tooth prices slightly above inflation; "[y]es, within that 3- to 4-percent range").

175. Dentsply has not set its own prices by referencing the prices of competitors. Turner Tr. 456 (can't recall any factors used other than inflationary indexes). Competitors' prices have been consulted, "just to be aware what the marketplace was doing." Turner Tr. 456.

176. Dentsply has had the highest prices in both the premium and economy segments. In the premium segment, Dentsply's prices have been about 10-15% higher than the prices of both Vita and Ivoclar (and probably at least that much above Myerson). Turner Tr. 453. In the economy segment, Dentsply's prices have been about 10% higher than Dentorium's, the competitor with the next-highest prices. Turner Tr. 453-54.

177. Dentsply has not reacted with lower prices when others have not followed its price increases. As Myerson's president James Swartout testified, Myerson's prices have remained unchanged in the past two to three years. And yet Dentsply has not "changed [its] behavior because of my failure to raise prices." Swartout Tr. 1296.

178. Dentsply has had a reputation for aggressive price increases in the market. Clark Tr. 2650 (in the early 1990's, some labs and dealers felt so). In his July 1993 monthly report to David Pohl, Regional Sales Manager Edward Jilek stated that, "we need to moderate

our increases — twice a year for the last few years was not good!" GX 42 at DS 024274. This reputation persists today. Certain dealers selling Trubyte teeth, including Dentsply's largest dealer Zahn Dental and its third-largest Darby Dental, perceive that Dentsply's prices create a high-price umbrella. Jenson Tr. 2219-20.

3. Dentsply has excluded its competitors from the dealers necessary to compete effectively in the market.

179. Dentsply's monopoly power is also evident from its ability to exclude its competitors from the dealers necessary to compete effectively. In at least the past 15 years, no dealer has agreed to walk away from its Trubyte tooth business to take on a competitive line. Reitman Tr. 1514-15; Jenson Tr. 2287; Clark Tr. 2631; Pohl Tr. 1907.

180. Dealer Criterion 6 imposes an "all-or-nothing" choice on dealers selling Trubyte teeth: if a dealer wishes to add the teeth of a competitor, it loses all of its Trubyte tooth business. Reitman Tr. 1514. In some instances, Dentsply has also taken away, or threatened to do so, its Trubyte merchandise business from dealers that violated this policy. Brennan Tr. 1720 (terminated Frink Dental as both a tooth and merchandise dealer because Dentsply "wanted to make a strong point"); Vetrano Tr. 1426-27 (DLDS threatened with loss of both teeth and merchandise).

181. Each tooth dealer confronted with this all-or-nothing choice has agreed to comply with Dealer Criterion 6 and not add the teeth of Dentsply's competitors. This is because these dealers concluded that they could not afford to lose the Trubyte tooth line, which is larger than any other competitive line. Reitman Tr. 1476-77. *E.g.*,

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Harris Tr. 615-16 (didn't take on Vita because Dentsply represented 90% of Atlanta Dental's $1 million tooth revenue and "I didn't want to jeopardize my company or myself in that way"); Nordhauser Tr. 4107 (agreed to drop Vita line from New York office because Dentsply "is the major line in this country" and "I would not jeopardize losing that line to take another line, okay?").

4. Dentsply's margins are consistent with a finding of monopoly power.

182. Dentsply's average margin on all of its tooth products is approximately Its margin on its premium anterior teeth is approximately Reitman Tr. 1474-76; *see also* Jenson Tr. 2237 (gross margins for Portrait and Bioform above

183. Dentsply's margins on its tooth products are higher than its margins on other products. Compared to other businesses, Trubyte has "excellent margins." Jenson Tr. 2234. For example, Trubyte's margins for teeth are high relative to its margins for merchandise products. Jenson Tr. 2227. From 1999 through 2001, while Trubyte premium tooth margins were around the gross margin for Trubyte merchandise sales hovered around DX 1625 at 200263-64; Jenson Tr. 2239.

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185. When products earn high margins, there is more profit per unit sold. Reitman Tr. 1477. As a result, even small changes in market share are significant because they have a large impact on overall profits. Reitman Tr. 1477.

186. By comparison, the margins of Dentsply's competitors are lower. *E.g.*, Whitehill Tr. 372-73 (Vident's margins are for some products, for others); Swartout 1320-21 (gross profit margin on teeth sold in the United states is approximately).

5. Dentsply's tooth business is a "cash cow," with high profits that have funded corporate activities outside the tooth market.

187. Dentsply's tooth business has long been a highly profitable, "cash cow" business. Jenson Tr. 2223 (Trubyte makes a lot of money for Dentsply corporation). This profitability has incented Dentsply to use policies, such as its exclusive dealing agreements, that inhibit competition and avoid competition on the merits in order to protect those profits and its monopoly power. Reitman Tr. 1474, 1477.

188. There is no real dispute about the incentives created by these high profits. In 1996, the Trubyte Division's Long Range Plan stated that

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Over the years, the Dentsply corporation has used the profits from the Trubyte "cash cow" to grow through acquisitions of companies outside the artificial tooth business. Jenson Tr. 2221-23 (large acquisition of Degussa did not include any tooth products).

6. Dentsply's reputation in the industry, among many labs and dealers, supports a finding of monopoly power.

190. Dentsply's high market share is not, as Dentsply claimed at trial, solely the result of superior products and marketing. Indeed, the Trubyte tooth business has had a reputation among many labs and dealers in the industry that corroborates the finding that Dentsply is a monopolist that has not responsive to the concerns of dealers or labs.

(a) In 1993, Dentsply was viewed as "dictatorial and arrogant" among most of its lab customers. DX 653 at DS 005170 (feedback "consistent across much of our customer base").

(b) In a June 1995 memorandum, Ronald Zentz, Dentsply's Education Department, wrote that

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(d) Similarly, dealers selling Trubyte teeth testified that Dentsply, in imposing Dealer Criterion 6 upon them, exerts too much control over the products they are able to sell. Harris Tr. 593-94 ("felt that it shouldn't be up to someone else to tell you what you can sell and who you can sell it to"); Weinstock Tr. 156-57 (sold teeth to Frink, a competitor, at cost because Zahn did not want to condone Dentsply's decision to terminate Frink for taking on the Ivoclar tooth line).

7. Dentsply's ability to sustain its market share for many years in the early 1990's, despite selling aesthetically inferior teeth at higher prices, further demonstrates its monopoly power.

a. In the early 1990's, Trubyte teeth were aesthetically inferior to competing tooth brands.

191. The Vita Classical Shade Guide is, by far, the most popular shade guide used by dentists in the United States. As Dentsply's Chris Clark testified, "[t]he Vita shade system is the predominant shade system that dentists use for crown and bridge restorations. The Vita shade system is probably about 90 percent-plus of the crown and bridge restorations. The same dentists are also prescribing shades for removable prosthodontics or dentures as well." Clark Tr. 2497. *See also* Whitehill Tr. 231-32 (80-90% of dentists use Vita Classical Shade Guide).

192. The Vita shade guide has been popular for a very long time. Miles Tr. 3498. Certainly by the early 1990's, it had become a very powerful force in the industry. Turner Tr. 414.

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193.

In a survey of over 500 dentists and labs, only three of Dentsply's 16 Bioform shades were acceptable matches to the Vita shade guide. DX 1572 at DS 022897. When Dentsply "asked laboratories and dentists how satisfied were they with the Bioform extended range cross-match, there was a fair degree of dissatisfaction with that cross-matching capability." Clark Tr. 2499-500. *See also* Armstrong Tr. 2377 (became interested in Vita teeth because was "having a dickens of a time" matching Dentsply's teeth with Vita shade guide).

194. Vita was not the only manufacturer that sold a Vita shaded tooth before Dentsply. In the early 1990's, Myerson was one of the first companies to introduce a line of teeth in Vita shades. Swartout Tr. 1293-94; Miles Tr. 3499-3501.

195. Apart from the shading issue, Dentsply was aware throughout the early 1990s that its premium teeth were rated below both Ivoclar's and Vita's in terms of their overall aesthetics.

(a) In surveys of dentists and labs, Dentsply's premium tooth lines were rated inferior to competing tooth brands. DX 1572 at DS 022897.

(b) Dentsply was receiving feedback that competing tooth brands were more natural-looking, that they had a more "wet look; if you could imagine [a] tooth in the mouth with saliva on it, compared to a dryer-looking tooth." Pohl Tr. 1922.

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(c) In its 1993 Marketing Plan, the Trubyte Division noted that

196. The complaints that Dentsply was receiving related to important attributes of product quality. Dentsply's surveys showed that

GX 71 at DPLY-A 072620, that

and that

DX 1572 at DS 022896. *See also* Miles Tr. 3497 (shade is most important aspect of the aesthetics of a tooth).

b. Trubyte teeth were more expensive than aesthetically superior competitive brands.

197. Before the introduction of Portrait, labs that used Dentsply teeth to fill prescriptions for Vita shades did so with the Bioform IPN tooth. Turner Tr. 420.

198. The suggested lab price of Vita's premium teeth was 5 to 10 percent lower than the Bioform IPN teeth. Turner Tr. 421. Therefore, a lab that used a Bioform IPN tooth to fill a prescription for a Vita shade used a more expensive tooth that did not match the prescribed shade as well. Turner Tr. 421.

199.

c. Despite selling aesthetically inferior teeth at higher prices, Dentsply did not lose market share because it prevented dealers from taking on competing brands by enforcing its exclusive dealing agreements.

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200. Despite the fact that Dentsply's teeth were a poor match to the Vita shade guide, and sold at higher prices, Dentsply was not losing significant market share during this period. Brennan Tr. 1755.

201. When receiving a prescription for Vita-shaded teeth, in 72% of the cases, labs were using Dentsply teeth instead. Brennan Tr. 1752-53; DX 1572 at DS 022896 ("72% of the time a competitive prescription becomes a Trubyte shade via lab controlled cross-matching").

202.

203.

Vita had approached three dealers (Pearson Dental, Atlanta Dental, and DLDS), each of which was in the top ten among dealers selling Trubyte teeth, to take on its tooth line. *Id.*; Clark Tr. 2645.

204. At the same time, these dealers were receiving requests from lab customers that wanted to buy Vita teeth from those dealers. Harris Tr. 599 (Atlanta Dental sought to add

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Vita line due to customer demand); Vetrano Tr. 1423-24 (DLDS sought to add both Vita and Universal because of customer demand).

205. Dentsply consistently enforced Dealer Criterion 6 during this time period and, as a result, kept these dealers from taking on the Vita tooth line. Clark Tr. 2645 ("[w]e've consistently enforced it throughout, yes"); Pearson Tr. 1387 (did not add Vita due to Dentsply intervention); Harris Tr. 608-09 (did not add Vita because didn't want "to jeopardize the amount of business that we did with Dentsply"); Vetrano Tr. 1426-27 (didn't add Vita or Universal because of Dentsply).

206. During this same time period, Dentsply recognized both DTS and Darby Dental as Trubyte tooth dealers in exchange for their agreement to drop, or not add, competing teeth sold in Vita shades. GX 158 at DS 015783 (DTS recognized in exchange for its agreeing to drop both Vita and Ivoclar from several locations); GX 82 at DS 015663; Nordhauser Tr. 4119 (Darby recognized when it agreed not to add Vita, and to discontinue sales of Justi, Myerson, and Kenson teeth). Darby was also required to discontinue, within three months of Portrait's introduction, the sale of Odipal teeth, a "higher priced quality" tooth in Vita shades made by a Spanish company. GX 82 at DS 015663. Darby had been interested in selling Odipal because of the demand for Vita-shaded teeth. Nordhauser Tr. 4141, 4123.

d. Dentsply was late in addressing this problem and, even today, may not have completely fixed it.

207. Dentsply launched its Portrait tooth in the Fall of 1995. Clark Tr. 2513.

208. Prior to that time, labs had been dissatisfied with the shading of Dentsply's teeth for quite a while. Miles Tr. 3498. In an internal document concerning the need to

develop a Vita shaded tooth, Dentsply concluded that it was "late" in addressing the growth in Vita shade prescriptions. DX 1572 at DS 022897.

209. Dentsply was late in addressing this issue, in part, because it failed in its first attempt to fix it. In the early 1990's, Norman Weinstock of Zahn Dental advised Dentsply to introduce a new line of teeth in Vita shades. Mr. Weinstock testified to Dentsply's response:

> At that time, they told me they were working on a new tooth and new materials, so that I would be happy with the results. But, regretfully, they came out with a line of teeth which was a TruBlend line of teeth that were in a different shade guide. And I told them I didn't think that they would be near as successful with those teeth and that material was in Vita shades. And a few years after that, they finally did introduce the Portrait line of teeth, which has proven in Vita shades to be a very successful venture for both them and ourselves.

Weinstock Tr. 99. Had Dentsply responded to Mr. Weinstock's concerns initially, "we could have skipped a few years [and] that would have helped both companies." *Id; see also* Weinstock Tr. 527 (felt "very strongly," and for a long time, that Dentsply should have a tooth in Vita shades).

210. The TruBlend line of teeth were introduced at about the same time Chris Clark joined Dentsply in September 1992. Clark Tr. 2488. This corroborates Mr. Weinstock's testimony that Dentsply did not respond to the concerns raised by him and others "for a few years." Weinstock Tr. 99.

211. Even today, some in the industry believe that Dentsply's Portrait teeth do not completely match the Vita Classical Shade Guide. Vident has conducted a comparison with an electronic shade taking device called a spectrophotometer, and the results demonstrated that most of the shades of the Portrait teeth did not match the Vita Classical Shade Guide.

Whitehill Tr. 235-36. According to Judd Ryan of the Sonshine Dental Lab, the Portrait shades are "not an exact match" to the Vita shade guide. Ryan Tr. 1219, 1251.

8. Dentsply's exclusive dealing agreements constitute significant barriers to entry and expansion.

212. Dentsply's exclusionary policies have deterred entry by new firms and expansion by firms already in the market. Reitman Tr. 1535.

Firms such as Vita and Ivoclar, that have sold teeth in the United States market for 20 or more years, have been unsuccessful in increasing their market share above the mid-single digits. Some firms have been excluded from the market entirely as a direct result of Dentsply's actions, some have delayed their entry, and others have entered but have been unsuccessful because of their inability to obtain adequate dealer distribution. Reitman Tr. 1535-37.

a. Dentsply's exclusionary policies have been a significant barrier to expansion by firms already in the market.

213. Dentsply's primary competitors, Vita and Ivoclar, have competed in the U.S. market since the 1970's. Whitehill Tr. 223; Ganley Tr. 983. Myerson has competed since its founding in 1917. Swartout Tr. 1293. As noted above, despite their substantial efforts to overcome the disadvantages of selling teeth directly, each of these competitors has failed to expand their tooth business due to their lack of a dealer network. *See* PFF ¶ 153, *et. seq.*

b. Dentsply's exclusionary policies have prevented and delayed entry by new firms.

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214. Dentsply's exclusive dealing agreements have completely excluded at least two tooth brands, Odipal and Ortholux, both made by the Spanish firm Unidesa, from the United States tooth market.

(a) When Dentsply recognized Darby Dental as a tooth dealer in 1994, it required Darby to discontinue its plans for selling Odipal teeth. GX 82; Nordhauser Tr. 4132. Odipal was a line of higher-priced, higher-quality teeth sold in Vita shades. As Mr. Nordhauser of Darby testified, "this company in Spain made the Odipal line with the Vita shades and that would have fit in perfectly with our company, but we told them that we wouldn't -- the negotiation was we had to give that up, and we gave that up." Nordhauser Tr. 4122. Darby had placed its initial order for 100,000 sets of teeth and expected its sales of Odipal teeth to generate "at least a million dollars" per year (Nordhauser Tr. 4141), but as a result of its agreement with Dentsply, Darby canceled its initial order and "just never even sold them." Nordhauser Tr. 4123, 4135. Even today, Odipal teeth are not sold in the United States market: "Not in America. They sell all over the world, okay, but not in this country." Nordhauser Tr. 4123.

(b) At the same time, Dentsply also required Darby to drop the Ortholux line. The Ortholux line was a "big thing" for Darby, "because we were selling an awful lot of Ortholux teeth and we had that exclusively in the United States, so that was really a big give-up for us." Nordhauser Tr. 4121. Ortholux teeth are made by Unidesa in Spain, the same company that makes Odipal. When Darby discontinued Ortholux, its annual sales of that brand were at least $500,000. Nordhauser Tr. 4140-41. Darby sold some of its leftovers to a small dealer, but "he wasn't able to follow up, and those lines pretty much disappeared."

Nordhauser Tr. 4124. The Ortholux teeth "are gone" from the U.S. market, even though they sold in other parts of the world. Nordhauser Tr. 4124.

215. Dentsply's exclusionary policies delayed the entry of Heraeus Kulzer into the United States tooth market. During the 1990's, Heraeus considered entering the market at various times but did not because of the dealer restrictions imposed by Dentsply. Reitman Tr. 1536.

c. Dentsply's exclusionary policies have significantly limited the success of those firms that have entered the market.

216. To rebut a finding of monopoly power, it is not enough for Dentsply to show that some firms have decided to start selling teeth in the United States. Even Dentsply's own expert, Professor Marvel, conceded that much. Marvel Tr. 3724-25 (fact that firms have entered does not mean monopoly power has been eroded). Firms can sell teeth profitably on the fringe of the market, under Dentsply's high price umbrella, without eroding Dentsply's market power. Marvel Tr. 3722-25. Therefore, a new firm does not have to achieve large sales in order to be profitable in the tooth market

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217. Although there have been some new firms competing in the market, they have not become successful. As Dr. Reitman explained, "[t]hey are much less effective in the marketplace because they are not selling through their preferred distribution channel ... by not selling through the dealers, they cannot expand and grow and obtain the competitive significance that they would have had absent the dealer [restrictions]." Reitman Tr. 1537.

i. Heraeus Kulzer

218. Despite its earlier decision not to enter, Heraeus Kulzer started selling its mid-line tooth, Jeldent Basic, in the United States in January 2000. Becker Tr. at 1817-1818. Heraeus's North American President Horst Becker views the U.S. market to be an attractive one due to the high prices in the market. Becker Tr. 1828-29. Prior to introducing Jeldent, Heraeus "absolutely" tried to obtain dealer distribution. Becker Tr. 1818. It approached "all major dealers, regional and dealers working throughout the country." Becker Tr. 1819. Many of these dealers — including Zahn, Patterson, and Darby — already sell Heraeus's operatory products, and their relationship with Heraeus is a good one. Becker Tr. 1821.

219. In response to its inquiry about these dealers selling its teeth, Heraeus received only the "cold shoulder," which Heraeus understood to be because they were "not being able to take on our tooth line due to contract situations with Dentsply." Becker Tr. 1818. As a result, Heraeus began selling teeth directly to labs. Becker Tr. 1823.

220. Heraeus has not achieved its sales objectives.

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Heraeus's president, Horst Becker, believes his company would be able to reach its sales and market share objectives if it had access to a dealer network. Becker Tr. 1830.

221. Heraeus's market share is only about 1%. Reitman Tr. 1472; Marvel Tr. 3726. Its entry has had no discernable effect on Dentsply's monopoly power. Reitman Tr. 1688. In fact, one Dentsply sales rep believes that Heraeus's sales have come at the expense of other direct sellers, not Dentsply. Reitman Tr. 1688

Neither has it changed the composition of its teeth, introduced any new tooth lines, or changed its return policy. Jenson Tr. 2308. *See also* Weinstock Tr. 180 (Zahn has not observed any effect that Heraeus's entry has had on Dentsply's conduct).

ii. Davis, Schottlander & Davis Ltd. ("Leach & Dillon")

222. Davis, Schottlander & Davis Ltd. is an English company that sells a premium, Vita-shaded tooth under the brand name Enigma. It is distributed in the United States by Dillon Company, Inc. (sometimes referred to as "Leach and Dillon"). Dillon Tr. at 4079-80, 4086, 4088.

223. In 1998, Schottlander sought a means of distributing Enigma in the United States market. Dillon Tr. at 4080. Dillon's president, Kevin Dillon, advised Schottlander to distribute through laboratory dealers such as Henry Schein, Patterson, Atlanta Dental, and Darby. Dillon Tr. 4080. He gave that advice because "anything else is futile ... Those dealers

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control the tooth industry. If you don't have distribution with the dealer network, you don't have distribution." Dillon Tr. 4081.

224. Mr. Dillon himself tried, but was unable, to persuade a lab dealer to stock and sell Enigma teeth, and he therefore agreed to distribute Enigma himself beginning in 2001. Dillon Tr. 4079-81, 4085-86 ("There was not a satisfactory prospect who would accept competing with Dentsply. No one would accept the challenge").

225. Dillon attempted to convince some dealers to provide very limited services, such as billing, for labs that wanted to buy Enigma teeth.

Indeed, Dentsply did consider this limited billing function to be a violation of Dealer Criterion 6. Jenson Tr. 2297.

226. As a result, Dillon is the primary distributor of Enigma teeth in the U.S. market. Dillon is a small, family business that operates "pretty much like a mom-and-pop operation." Dillon Tr. 4079. It does not have a sales force. Dillon Tr. 4082. Its catalogue is outdated and does not include any reference to Enigma teeth. Dillon Tr. 4082. Its president, Kevin Dillon estimated that Dentsply sells more teeth in ten minutes than his company does in a month, and likened his company to an "aphis" compared to Dentsply. Dillon Tr. 4084. *See also* Jenson Tr. 2301 (Dillon "a very small organization ... it's three people that we generally see out in the marketplace").

227. In 2001, in Enigma's first year in the United States, it achieved only $21,278 in sales. Dillon Tr. at 4083. Dillon has succeeded in placing only one consignment with a

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laboratory. *Id.* at 4081. Contrary to its initial goal of selling 400 sets of teeth per day, Dillon is selling only 600 sets per month (or roughly 20 per day). Dillon Tr. at 4094-95.

228. Dillon was able to convince Lincoln Dental, a lab dealer located in Cherry Hill, New Jersey, to sell, but not stock the Enigma tooth. DiBlasi Tr. 2756-58, 2785-86. Even Lincoln's Jeff DiBlasi acknowledged Dillon's troubles in getting wider dealer distribution:

> [T]he main reason I think that Leech & Dillon has come to us, because their hands have been tied through so many other dealers. So, quite honestly, by default, they've been coming to us. They know we don't have the Dentsply line and it's easy for us to take an order as long as the customer's credit is approved and we'll drop ship it.

DeBlasi Tr. 2820-21. Yet even Lincoln's experience demonstrates that Engima is not achieving success without a broad dealer network. While Lincoln's sales of Enigma teeth have grown, in 2002 they will represent at most only $36,000 of Lincoln's $800,000 tooth revenue. *Id.* at 2794-95. Because there is limited demand for the teeth, Lincoln does not stock the teeth and does not advertise them other than giving them space in its catalog. *Id.* at 2785-87, 2805-07. The low demand for the teeth did not justify the space or overhead required to stock and ship the teeth from Lincoln's facilities. DiBlasi Tr. 2787.

229. These sales of Enigma teeth have had no discernable effect on Dentsply's monopoly power.

It has continued increasing its prices by an average of 3.4 percent. Jenson Tr. 2307. Neither has it changed the composition of its teeth, introduced any new tooth lines, or changed its return policy. Jenson Tr. 2308. Nor has Dentsply approached Lincoln Dental and offered it the Trubyte tooth line in exchange for Lincoln dropping the Enigma line. DiBlasi Tr. 2808.

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See also Weinstock Tr. 176 (Zahn has not observed any effect that Dillon's sales of Enigma teeth have had on Dentsply's conduct).

9. Professor Marvel's testimony should not be relied upon to conclude that Dentsply does not possess monopoly power.

230. After testifying during his deposition that he did not know or consider it important whether Dentsply had monopoly power, Dentsply's expert Professor Marvel testified for the first time at trial that he does not believe that Dentsply has monopoly power. Marvel Tr. 3718 ("I say now the answer is no"). This testimony is completely unreliable given Professor Marvel's admissions during his deposition and his failure to disclose the methodology, if any, that he used to arrive at this conclusion. Moreover, the need to impeach Professor Marvel repeatedly on significant issues further underscores the unreliability of this testimony. *E.g.,* Marvel Tr. 3715-17 (after impeachment, concedes he had not determined at time of his deposition whether Dentsply had monopoly power); Marvel Tr. 3713 (impeachment on whether he had looked at issue in any detail); Marvel Tr. 3710-11 (impeachment on whether he had methodology for determining monopoly power).

(a) Professor Marvel concedes that Dentsply has substantial market power. Marvel Tr. 3714. At his deposition, he testified that he had not considered whether Dentsply had sufficient market power to constitute monopoly power, nor did he consider it to be an important part of his analysis. Marvel Tr. 3713 ("I have not really considered that in any detail"), 3715 (not an "important distinction"), 3716 ("I really haven't done so"), 3717 (same). In fact, he had not even developed a methodology that he would apply if he was trying to determine whether a firm has monopoly power. Marvel Tr. 3711.

(b) Although he testified at trial that entry into the tooth market demonstrates the lack of Dentsply's monopoly power (Marvel Tr. 3646-47), at his deposition the most he could conclude from entry and competition from existing competitors is that "any monopoly power Dentsply might have would be modest, because it does face this ongoing competition." Marvel Tr. 3716. Indeed, Professor Marvel conceded at trial that a firm can have monopoly power even if it faces fringe rivals and entrants, Marvel Tr. 3722, 3725, and that "Dentsply's rivals, particularly Ivoclar and Vident, ... have not been cutting into Dentsply's Trubyte position." Marvel Tr. 3629.

(c) A monopoly power analysis done the way Professor Marvel did his, in the middle of his deposition and without knowing how to do it, is unreliable:

> Q. And so you -- is it your view that in the roughly hundred pages or so in between where you discussed extensively how you hadn't done the work and how you had no opinion, during the deposition you were able to come up with an opinion suddenly that Dentsply lacks monopoly power, even though you had also told us you had no methodology for doing it? Is that your testimony?
>
> A. That's my testimony.

Marvel Tr. 3721-22.

B. Dentsply has unlawfully maintained its monopoly power through its exclusionary conduct.

1. Dentsply's intent has been exclusionary and anticompetitive.

231. The express purpose of Dealer Criterion 6 has been anticompetitive -- to block Mould's competitors from the largest, or key, dealers selling Trubyte teeth by tying up those

dealers. In a document entitled, "Sales/Distribution Principles for Cash Cow Business," Chris Clark identified Dealer Criterion 6 as one of five principles for running the Trubyte tooth business. Clark's "reiteration" of Dealer Criterion 6 stated:

- Block competitive distribution points. Do not allow competition to achieve toeholds in dealers.
    - Tie-up dealers
    - Do not "free up" key players.

GX 171 at DPLY-A 004360; Clark Tr. 2608 ("[t]his is really a reiteration of Dealer Criteria No. 6").

232. GX 171 is an important document entitled to particular weight. It sets forth the sales and distribution principles under which Dentsply's tooth business operated. And it was prepared for an important, full-day, quarterly review meeting with John Weiland, the senior vice president in charge of the Trubyte Division. These quarterly reviews were "absolutely" taken very seriously within the division. Clark Tr. 2630.

233. Dentsply's intent to prevent its competitors from achieving "toeholds" in dealers is apparent not only from GX 171 but also from the admission of its Chief Executive Officer, Burt Borgelt, in his conversation with Tom Cavanaugh of Frink Dental in 1988. Borgelt had traveled to Cavanaugh's office in Illinois in an attempt to persuade Cavanaugh not to take on the Ivoclar tooth line. When asked why Dentsply would terminate him for doing so, Borgelt stated, "we cannot let Ivoclar get a foothold in the United States. This is our most highly profitable product out of our Dentsply division." Cavanaugh Tr. 695. *See also* Cavanaugh Tr. 696-97 ("Bert Borgelt's comment to me is the fact that they had to stop it now

in the bud before we were successful with it and other people would follow suit"). Dentsply did not call Mr. Borgelt as a witness to rebut these admissions.

234. According to Gordon Hagler, Trubyte's Director of Sales and Marketing from 1989-93 (Hagler Tr. 1178-79), the sole purpose of the policy was to exclude Dentsply's competitors from the dealers:

> Solely. You don't want your competition with your distributors, you don't want to give the distributors an opportunity to sell a competitive product. And you don't want to give your end user, the customer, meaning a laboratory and/or a dentist, a choice. He has to buy Dentsply teeth. That's the only thing that's available. The only place you can get it is through the distributor and the only one that the distributor is selling is Dentsply teeth. That's your objective.

Hagler Tr. 1183-84.

235. Dentsply's anticompetitive intent is evident from its termination of Trinity Dental.

(a) In 1993, Trinity Dental, located in Geneva, Illinois, was a dealer selling Trubyte merchandise, but not teeth. It decided to add the Vita tooth line. As a result, it was terminated as a Trubyte merchandise dealer. Pohl Tr. 1903-06; GX 36.

(b) This interpretation of Dealer Criterion 6 -- that it prohibited merchandise-only dealers from adding competing tooth brands -- was in effect for at least the 2 ½ years in which David Pohl was Dentsply's National Sales Manager. Pohl Tr. 1901, 1906.

(c) Dentsply's alleged "free riding" justification for Dealer Criterion 6 cannot justify the termination of Trinity, given that Trinity was not a Trubyte tooth dealer. Reitman Tr. 3976 ("Professor Marvel's theory doesn't apply at all to a dealer [that doesn't] even carry Trubyte teeth"); Morgano Tr. 1888 (because Trinity did not sell Trubyte teeth, had

never been trained by Dentsply in how to sell teeth). Nor is there any reason to believe that preventing Trinity from selling competitive brands of teeth would somehow enhance its ability to sell Trubyte merchandise. Brennan Tr. 1707.

(d) The only explanation for Dentsply's termination of Trinity is the one given by Dr. Reitman: "I think the explanation is Trubyte was trying to foreclose a distribution point for Vita." Reitman Tr. 3976.

236. Dentsply's intent is also apparent from its use of Trubyte merchandise as additional leverage in coercing dealers to agree not to add competing tooth brands.

(a) When terminating Frink Dental for adding the Ivoclar tooth line, Dentsply terminated Frink as a Trubyte merchandise dealer as well. It did so not because Dentsply believed that Frink would not be an effective merchandise dealer after adding the Ivoclar tooth line, but because it "wanted to make a strong point." Brennan Tr. 1720.

(b) Similarly, when DLDS sought to add the Universal and Vita tooth lines, Dentsply threatened it with the loss of not only the Trubyte tooth line but its merchandise business as well. Vetrano Tr. 1426-27.

237. In October 1992, Dentsply recognized Jan Dental as a Trubyte tooth dealer for anticompetitive reasons. In order to obtain the Trubyte tooth line, Jan was required to stop selling Vita, Kenson, Dentorium and Justi teeth. GX 24, 26. As David Pohl wrote in an October 6, 1992 memo to his superiors, Robert Brennan and John Weiland, "[o]pening Jan with teeth will increase our presence within the laboratory market and eliminate several competitors." GX 26 at DS 016474; *see also* Pohl Tr. 1909 ("Yes, you would eliminate several competitors and have an opportunity to gain incremental market share").

238. Darby Dental was recognized as a tooth dealer in the mid-1990's in order to block Vita from a competitive distribution point.

(a) In June 1994, Dentsply turned down Darby's request to sell Trubyte teeth, stating that it had adequate distribution in Darby's area. GX 63. Indeed, at that same time, Dentsply internally concluded that it did "not need additional distribution points." GX 77 at DS 015926.

(b) Shortly after receiving this letter, Darby was visited by its local Vident representative. As a result, Sidney Nordhauser, the General Manager for Darby Dental (Nordhauser Tr. 3419-20), became interested in selling Vita teeth. Nordhauser Tr. 4128.

(c) When Dentsply learned of Darby's interest in selling Vita teeth, its position changed dramatically. Mr. Nordhauser told the local Dentsply sales rep, Holly DeFalco, that he was "seriously considering taking on Vita teeth." Nordhauser Tr. 4129-30. In response, Ms. DeFalco said:

> 'Wait a minute,' and she got on the phone right there and then, and I am not sure who she spoke to, and she said, 'Don't do anything, we will see you next week,' or something like that. So we did nothing, we waited, and their people came to us and it was a different story.

Nordhauser Tr. 4130. Whereas during the earlier discussions, Dentsply "really didn't listen to us too much," Nordhauser Tr. 4118, these negotiations were different because of "the fact that we had Vita thrown in. It made a difference." Nordhauser Tr. 4130.

(d) Dentsply then authorized Darby as a Trubyte tooth dealer upon Darby's agreement not to add the Vita tooth line. GX 82 at DS 015663; Clark Tr. 2636.

(e) A December 12, 1994 memo written by Chris Clark, Director of Sales and Marketing for the Trubyte Division (Clark Tr. 2486), shows that Dentsply's primary motivation for recognizing Darby was to block Vita from a key competitive distribution point. Clark was concerned about Vita gaining "a major distribution point (a third major one after DTS and Lincoln)." GX 77 at DS 015926. Clark was also concerned about the fact that Kent, an affiliate of Darby, was already a Trubyte tooth dealer and that if Darby added Vita teeth, "our dealer criteria becomes a sham for others to poke at." *Id.* However, the "key issue" for Clark was "Vita's potential distribution system. They're having a tough time getting teeth out to customers. One of their key weaknesses is their distribution system." *Id.* at DS 015927.

(f) Robert Brennan, Clark's boss who received this memo, agreed during his testimony that Darby was recognized as a tooth dealer "because it prevented Vita from getting a dealer." Brennan Tr. 1743. Brennan believed that Darby would have increased Vita's market share at Dentsply's expense. Brennan Tr. 1743-44. *See also* Clark Tr. 2645-46 (Clark agreed that Darby's threat to take on Vita teeth was not an idle one; he "certainly expected" Darby to do so if it was not recognized as a Trubyte tooth dealer).

239. In 1995, Dentsply recognized DTS as a tooth dealer to

DX 86 at DS 015805. DTS was a very effective, lab-focused dealer that had taken business away from Dentsply by selling Vita and Ivoclar teeth. Clark Tr. 2639-40. Dentsply's regional manager in the Midwest was concerned that Dentsply would have to compete even harder in that region if DTS was not recognized: "Should our decision be not to open DTS, I will have significant new competition to allocate time and resources against." *Id.*

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240. The recognition of Jan, Darby and DTS in the early-to-mid-1990's is particularly significant in light of the admission by Robert Brennan, Trubyte's General Manager from 1986 to 1996, that he believed that Dentsply had more dealers than needed to properly distribute its teeth. Brennan Tr. 1710.

241. The anticompetitive purpose of Dealer Criterion 6 is also apparent from its overbreadth. It prevents a dealer selling Trubyte teeth at some, but not all, of its locations from adding a competing line at <u>any</u> of its locations. For example, despite the fact that Patterson Dental has 36 branches that do not have a tooth counter, GX 447 at 9, it would violate Dealer Criterion 6 if it added a competing tooth line at those locations. Brennan Tr. 1730-31.

2. Dentsply has foreclosed its closest rivals from between 78%-87% of the laboratory dealer outlets.

a. Dr. Reitman's foreclosure analysis demonstrates that Dentsply has foreclosed approximately 80% of the lab dealer outlets.

242. Dentsply sells its teeth through a network of dental laboratory dealers that operate approximately 100 outlets, or locations. Reitman Tr. 1483-84; GX 364-B; Jenson Tr. 2267. Dealer Criterion 6 applies to each of these dealers and each of these outlets. Under that criterion, a dealer selling Trubyte teeth at some, but not all, of its locations cannot add a competing tooth line at <u>any</u> location. Brennan Tr. 1730-31.

243. A "foreclosure rate" is the percentage of all potential outlets that are foreclosed to a particular competitor. Reitman Tr. 1518. In calculating foreclosure rates for each of Dentsply's rivals, Dr. Reitman used three different definitions of potential "outlets" for the sale of teeth: (1) all outlets currently selling teeth; (2) all outlets of dealers that are currently selling any dental laboratory product; and (3) all outlets of any dealer that is currently selling teeth at any of its locations, whether or not teeth are sold at all those outlets. Reitman Tr. 1518. He then calculated the subset of these potential outlets from which each of the various rivals are excluded by Dentsply's policies. Reitman Tr. 1518.

244. Vita and Ivoclar are foreclosed from between approximately 78%-87% of the available outlets under these three methods. Reitman Tr. 1519.

245. For the remaining brands of teeth — Austenal/Myerson, Universal, ATI/Justi — the foreclosure rate is somewhat lower, but always at least approximately 60%. These percentages are lower because these brands are sold, under the grandfathering provisions of Dealer Criterion 6, by some dealers selling Trubyte teeth. Reitman Tr. 1519.

246. Dr. Reitman's analysis, based upon 1999 data, is a reasonable estimation of the extent to which Dentsply has foreclosed its competitors from the dealers necessary to compete effectively in the tooth market, and it is far more reliable than Dentsply's misleading attempts to cast doubt upon it.

(a) Dentsply's assertion that Patterson had closed 20-some tooth stocks since 1999 was shown to be incorrect. On cross examination of Dr. Reitman, Dentsply's counsel stated, "And you know Patterson has closed something like 20 stocks, tooth stocks. You've got 48 up there for him and they only have about 28?" Reitman Tr. 1678. To prove

up this claim, Dentsply's Steve Jenson, when asked how many tooth stocks Patterson had, testified, "around 25, in that ball park." Jenson Tr. 2180 & DX 1665. Yet the affidavit of Patterson's Curt Schwieso, obtained during trial, establishes that Patterson still operates 48 tooth counters, and has well over 50 branches that maintain a stock of Trubyte teeth. GX 447 at page 9 (list of Patterson branches with tooth counters noted), & Exhibit A (list of Patterson branches with Trubyte tooth stocks).

(b) The fact that Mr. Jenson does not have more accurate information about the number of tooth stocks operated by one of his major dealers is striking, particularly given that Vident's Wayne Whitehill -- who does not sell teeth to Patterson — testified far more accurately. Whitehill Tr. 387 ("Patterson, for example, has 45 tooth stocks").

(c) Mr. Jenson's testimony regarding the number of Zahn's and Darby's tooth stocks is similarly suspect. He claimed that Schein/Zahn had five. Jenson Tr. 2179 & DX 1665. Eleven days earlier, however, Norm Weinstock of Zahn testified, "Zahn Dental has nine facilities around the United States that have large inventories of teeth." Weinstock Tr. 104. *See also* Jenson Tr. 2180 & DX 1665 (Darby has one tooth stock); *compare* Nordhauser Tr. 3420 (as of 1999 deposition, Darby had total of six tooth counters).

247. Dr. Reitman's conclusion that the vast majority of lab dealer outlets are foreclosed to Dentsply's competitors is corroborated by testimony by other knowledgeable persons in the industry. Vident currently sells teeth to 13 dealers, and is "constantly" trying to obtain more. Whitehill Tr. 270; GX 153 (list of Vident dealers, showing that none are national or regional in scope). Vident has found, however, that there are few alternatives to the dealers selling Trubyte teeth. As Mr. Whitehill testified, "there aren't as many as you

would think that there would be. ... [S]maller dealers that actually handle dental laboratory products are not that numerous." Whitehill Tr. 270. *See also* Becker Tr. 1823-24 ("there is no major dealer in America not selling Dentsply [teeth]").

248. The fact that the number of dealers selling Trubyte teeth over the years has declined does not mean that more dealers have become available to Dentsply's competitors. The primary reason why the number has declined is that larger Trubyte dealers are buying smaller Trubyte dealers. Clark Tr. 2577.

b. Dr. Reitman properly excluded "purely operatory" dealers -- dealers that do not sell any lab products -- from his foreclosure analysis.

249. The term "operatory dealer" is used two ways in the industry: (1) dealers that sell to operatories or dentists, whether or not they also sell to dental laboratories; and (2) dealers that serve only the operatory and are not in the dental laboratory business at all. Reitman Tr. 1515-17.

250. Because most of the dealers selling Trubyte teeth, particularly large dealers such as Patterson, Darby, and Atlanta Dental, sell also to dentists, they are "operatory" dealers under the first definition. Reitman Tr. 1515-16. Those dealers were included in Dr. Reitman's foreclosure analysis. He excluded only the "purely operatory" dealers -- dealers that, under the second definition, sell only to dentists. Reitman Tr. 1516.

251. The GX 108 at 110078, and for an operatory-only dealer to start selling teeth would "essentially [be] like a new dealer entering the market." Reitman Tr. 1517. Such de novo entry is unlikely for several reasons.

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(a) A dealer would have to identify and cultivate a "whole different set of customers." Reitman Tr. 1517. As Norm Weinstock explained, "one of the big things in our industry, in the laboratory industry, is relationships. And the other big factor is knowledge of the industry. ... they don't have the relationships, and they would really have to learn the laboratory business to be able to service the customer ...." Weinstock Tr. 160.

(b) Dealers would also have to invest not only in a stock of artificial teeth, but in a stock of other lab products as well because such dealers would want to sell a more complete range of products to labs, not just teeth. Reitman Tr. 1517 ("It's a whole different set of products"); Weinstock Tr. 160-61 (not profitable to sell only teeth).

(c) These investments are substantial. "Getting into the tooth business is a relatively significant investment. It's a significant investment in terms of, obviously, your specific personnel costs in terms of tooth counter specialists, but it's also a large inventory investment." Clark Tr. 2609; *see also* Weinstock Tr. 127 (tooth counters "extremely labor-intensive").

(d) The tooth market as a whole has Reitman 1581; Jenson Tr. 2303-04; DX 1625 at DPLY-A 200254

The dealers that already sell Trubyte teeth are, in general, becoming less interested in it because it is not very profitable.

GX 101 at DPLY-A 037305; *see also* GX 126 at DPLY-A 046401

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(e) The number of dealers selling Trubyte teeth has declined, not increased, and the dealer market has become more concentrated as larger national dealers have acquired smaller dealers. Clark Tr. 2577; DX 460-A at DPLY-A 107396

(f) Dental labs are viewed as notoriously poor credit risks, particularly compared to dentists. Reitman Tr. 1517; Weinstock Tr. 161 (labs pay in about 60 days, compared to 30 days for dentists).

252. Dentsply itself has not viewed operatory-only dealers as likely entrants into the tooth market. During Michael Crane's tenure as a senior vice president at Dentsply, "the operatory dealers, to [his] knowledge, never had an incentive or a reason to get involved in a very costly, very complex, very technology sensitive area more than they may have done just with the superficial supplying of some product lines." Crane Tr. 1139. And when looking for new tooth dealers, Dentsply looked for dealers that already had a strong and dedicated focus on the laboratory, as opposed to operatory, market. Pohl Tr. 1912-13; *see also* GX 26 at DS 016474 (recommending opening Jan Dental because it had "a strong presence in the laboratory business"). During Pohl's tenure, there were very few dealers that had a strong focus on the lab market. Pohl Tr. 1913-14.

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253. Several operatory-only dealers testified to their lack of interest in entering the tooth business.

(a) The testimony of Kevin Ackeret from Sullivan Dental was representative. From 1985 until 1997, when it was merged with Schein, Sullivan was a sizeable operatory-only dealer with approximately 25,000 customers. Ackeret Tr. 1786-1787. Sullivan was a national dealer with approximately 45 locations and a merchandise sales force of about 325 people. Ackeret Tr. 1786. Sullivan did not sell teeth and, despite several requests by Dentsply to do so, Sullivan consistently declined to enter the tooth business. Ackeret Tr. 1792, 1797. It did not want to sell teeth because teeth were too labor intensive, involved too many returns, the gross profit was less than on Sullivan's merchandise products, and its sales force was focused on dentists, not labs. Ackeret Tr. 1792, 1798-99. Moreover, a large number of labs are fairly small operations that buy small amounts, compared to dentists that purchase $20,000 to $30,000 per year. Ackeret Tr. 1796. Sullivan was so committed not to sell teeth that when it acquired a dental distributor that sold teeth, it divested that part of the business. Ackeret Tr. 1796-1797.

(b) Similarly, other dealers testified to their lack of interest in selling teeth due to lack of demand by their customers, the expense involved, their lack of expertise, and the greater credit risk involved in selling to labs. Shernowitz (Island Dental) Tr. 3838-40; Dhuet (Valley Dental Supply) Tr. 3847-48; Buckley (Smith Holding) Tr. 3854-56; Warren (Direct Dental Supply) Tr. 3863.

254. The fact that the Trubyte Division has received frequent requests by various entities to become Trubyte dealers does not prove that there are ample dealers available to sell

the teeth of Dentsply's competitors. Not all of these requests come from dealers; some come from dentists (DX 103 at DS 017398) and some from laboratories (DX 104 at DS 017400; DX 105 at DS 017393); *see also* DX 1607. In fact, during Chris Clark's tenure, he did not keep track of how many requests were coming from dealers versus labs, dentists, or other individuals. Clark Tr. 2652. In many cases of persons submitting written requests, he did not know what sort of entity it was. Clark Tr. 2651-52. Even in the case of persons who telephoned, some persons represented themselves as dealers when in fact they were laboratories. Clark Tr. 2652. Moreover, not everyone wanted Trubyte teeth; some were only interested in the Trubyte merchandise products. DX 1607 at DPLY 022622; Clark Tr. 2653-54; Jenson Tr. 2285-86. Most important, while Dentsply required dealers to submit written business plans to show they could add incremental business, there is no evidence that any dealer submitted such a plan to Dentsply. Jenson Tr. 2286 ("I have not received a plan from a dealer in my tenure"); Pohl Tr. 1947. Therefore, Dentsply cannot show that any of these applicants were creditworthy, Jenson Tr. 2286, or otherwise capable of being an adequate distribution channel for anyone's artificial tooth products.

255. Neither the testimony of Steven Desautel of Accu Bite nor that of Vito Clavelli of Tri-State Dental shows that dealers that operatory-only dealers are likely to enter de novo into the tooth business and succeed.

(a) Accu Bite did not enter the tooth market de novo; it entered by essentially acquiring an existing tooth dealer's business and its critical personnel. Accu Bite was recognized as a Trubyte tooth dealer only after Professional Dental, an existing Trubyte tooth dealer, went out of business in 1992. Desautel Tr. 2449-50, 2457-58. Prior to that time,

Accu Bite was turned down by Dentsply and others because Accu Bite was a very small dealer and was not focused on the lab market. Desautel Tr. 2441-42. When Professional exited the market, however, Accu Bite hired Professional's branch manager, John Thomas, who had more than 10 years of experience in the tooth business and brought a portfolio of existing tooth customers with him to Accu Bite. Desautel Tr. 2450. Professional had obtained a large contract from the State of Michigan through Thomas's efforts, Desautel Tr. 2452, and Accu Bite was able to obtain that same contract by virtue of hiring Thomas. Desautel Tr. 2453, 2456. Mr. Desautel conceded that Accu Bite did not have the expertise to sell teeth until it hired Mr. Thomas, and that without the experience he brought, "I'd have absolutely zero incentive to go and create that experience." Desautel Tr. 2459. With him and the business he brought to Accu Bite, however, Accu Bite gained a "strong foothold" to solicit other labs for business and was able to be recognized as a Trubyte tooth dealer. Desautel Tr. 2457-58.

(b) The testimony of Vito Clavelli of Tri-State Dental was too speculative to establish anything about the interest or ability of operatory-only dealers to enter and become successful in the tooth business. Tri-State is not in the tooth business today, and Mr. Clavelli clearly knows little about it. Clavelli Tr. 3364-67. Of Tri-State's 2,500 customers, only two or three are labs. Clavelli Tr. 3364-65. Mr. Clavelli's speculated that 40 percent of his dentist customers have in-house labs. Clavelli Tr. 3367 ("I don't know -- I don't deal with that any more"). That testimony is not credible. If 40% of the nation's 100,000 dentists had in-house labs, there would be 40,000 denture labs in dentist offices alone — vastly more than the 7,000 figure supported by several witnesses in the case. Weinstock Tr. 91 (at least 100,000 dentists in country); PFF ¶ 33 (7,000 denture labs).

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He is not interested in selling Vita teeth, and does not appear to be very familiar with Ivoclar's tooth business. Clavelli Tr. 3361 (claims that Ivoclar "sell direct to dentists"; not interested in Vita). Despite the fact that he has been turned down by Trubyte because he has no plan to provide the "incremental business" necessary to become a Trubyte dealer, Clavelli Tr. 3370, he is convinced that he will become a Trubyte dealer once he gets a tooth counter. Clavelli Tr. 3354 ("If we have a tooth counter like everybody does, we'll have no problem getting the line"). No one from Dentsply has told him that, however. Clavelli Tr. 3373. Before Dentsply's lawyers called him about this case a few weeks prior to trial, he had not been in contact with anyone at Dentsply for almost a year. Clavelli Tr. 3373-74. His testimony should be viewed in light of his aspirations to obtain the Trubyte tooth line by the end of the year. Clavelli Tr. 3374.

256. In sum, dealers that do not sell any lab products are not potential channels for the sale of teeth. This was aptly summarized by Kevin Dillon of Dillon Company, Inc., who testified:

> They're not in that business. They don't call on laboratories. It would be like me saying do I consider a hardware store a place to distribute my dental products. No different. I wouldn't want to distribute my dental products through a hardware store and I surely wouldn't want to do it through an operatory. They're not in the business.

Dillon Tr. 4083.

c. Dr. Reitman properly excluded distributing labs from his foreclosure analysis.

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257. Distributing labs are dental labs that also sell products to competing labs. Reitman Tr. 1513. There is a clear consensus in the industry that using distributing labs is an ineffective method of selling teeth to other labs, primarily because labs do not like to buy products from their competitors. Reitman Tr. 1513; Weinstock Tr. 161-62; Becker Tr. 1827.

Vident and Ivoclar have tried, but failed, to make distributing labs effective distributors of their teeth. Whitehill Tr. 247; Ganley Tr. 992. *See also* Langer Tr. 3296 (lab in Boise, Idaho which buys very little from lab distributor because it sells teeth at higher prices and because it is a competitor).

d. The 80% foreclosure rate understates the competitive impact of Dentsply's conduct because the remaining dealers are qualitatively inferior.

258. The remaining lab dealers left for Dentsply's competitors are small, "specialty" dealers. Reitman Tr. 1512. They differ from the dealers selling Trubyte teeth in several ways: they often do not carry the full range of dental lab products; they do not have dedicated tooth counters; they serve fewer customers; and they have fewer resources like catalogues and sales representatives. Reitman Tr. 1512. In general, they do not provide the full range of benefits to both customers and suppliers that are provided by the larger, full-service dental lab dealers. Reitman Tr. 1512; GX. 364-C, GX. 364-D. *See also* Becker Tr. 1824 (dealers not selling Trubyte teeth are small, hard to find, have credit problems, and would not help Heraeus Kulzer grow its market share):

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259. Of the lab dealers remaining for Dentsply's competitors, Lincoln Dental Supply is clearly the largest. Even Lincoln, however, is not on par with the dealers selling Trubyte teeth, particularly in the sale of premium teeth. Lincoln's tooth sales have always been disproportionately in the "sub-economy" segment in which Dentsply and its closest competitors do not compete. Jenson Tr. 2250-51. Prior to 2000, it sold only private-label teeth, made in South America, selling for about $1 dollar per card. DiBlasi Tr. 2797. Today, 80% of its tooth revenue comes from private label teeth selling for $1.16 per card. DiBlasi Tr. 2799. As Dentsply's Steve Jenson explained, sub-economy teeth are those selling for about $1 per card, and they do not have the same durability or wear quality of premium teeth. Jenson Tr. 2250-51 ("They don't last very long. You see those teeth, you get what you pay for"). As a result of selling such inexpensive teeth, Lincoln's customers are very different from the customers that would buy the premium teeth sold by Vita, Ivoclar and Myerson. Historically, Lincoln has sold most of its teeth by mail order to one large chain of denture centers producing low-cost dentures for Medicaid and welfare patients. DiBlasi Tr. 2769, 2801-02. Today, that same chain still constitutes 35% of Lincoln's business. DiBlasi Tr. 2802. Lincoln also does not provide some of the services performed by other lab dealers. Lincoln does not accept returns of broken sets because its teeth are too cheap to justify such a service. DiBlasi Tr. 2799, 2803. Lincoln is primarily a mail order dealer relying on its catalogue to generate sales; it has only one outside sales rep who is primarily devoted to visiting lab customers. DiBlasi Tr. 2796.

260. Apart from Lincoln, Dentsply called Jack Silcox to represent the kind of lab dealer that is available to Dentsply's competitors. Silcox is a "very small" dealer selling Justi,

Coral, Dentorium and Universal teeth. Silcox Tr. 2046, 2050. Its tooth sales last year were $88,000. Silcox Tr. 2049. Its total revenues are "perhaps in excess of $400,000 a year now." Silcox Tr. 2046. Mr. Silcox estimated that the larger dealers selling Trubyte teeth do as much business in a day as he does in a month. Silcox Tr. 2068 ("Probably. Maybe more").

Silcox has no employees, no sales force, no customer service department, no catalog, does not advertise in trade journals, and does not have a tooth counter. Silcox Tr. 2069-70.

261. Remarkably, the small specialty dealers currently selling Vita teeth are even smaller than Jack Silcox and, of course, vastly smaller than the dealers selling Trubyte teeth.

Vident's dealers cover very small geographic areas and are too small to be able to sell teeth effectively. Whitehill Tr. 249. For these reasons, despite having 13 small, specialty dealers, approximately 90% of Vident's tooth sales are made directly to labs. Whitehill Tr. 249. *See also* Reitman Tr. 1697-98 (Vident dealers does not have a network of dealers like Dentsply does, given differences in number of outlets, number of tooth counters, and services provided).

262. Dentsply ensures that its competitors have inferior distribution alternatives by offering the Trubyte tooth brand to any dealer that grows large enough to become a competitive threat. For example, although Dentsply had terminated DTS as a tooth dealer in

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1990, it offered DTS the Trubyte tooth line in 1995 in exchange for DTS's agreement to stop selling Vita and Ivoclar teeth. Underwood Tr. 3405-06; GX 86 at DS 015805; Clark Tr. 2639-40. In October 1992, Dentsply recognized Jan Dental as a Trubyte tooth dealer for similar reasons. GX 24, 26; Pohl Tr. 1909.

3. The effects of Dentsply's conduct have been exclusionary and anticompetitive.

263. Far from competing "on the merits," over at least the past 14 years, Dentsply has repeatedly blocked its competitors from the distribution points necessary to compete effectively in the market — the network of dental lab dealers selling Trubyte teeth. Over this time period, Dentsply has frustrated consumer demand by causing at least 11 separate dealers to drop, or not add, a total of at least 12 separate brands of teeth. *See* PFF ¶ 44, *et seq.* In so doing, Dentsply has kept its own sales and market share at an artificially high level. It has also caused substantial harm to competition and consumers. It has reduced consumer choice, frustrated consumer preferences, increased prices, reduced the level of product promotion in the market, deterred effective entry and expansion by rival firms, and reduced the efficiency of dealers. Reitman Tr. 1526-28; GX 364-E.

264. If Dentsply's conduct is enjoined, dealers will add competing brands, Dentsply's market share will go down as labs begin buying more of the competing brands, and prices will decrease. The market will be more competitive, and consumers will benefit. Reitman Tr. 1538-39.

a. Dentsply has kept its market share at an artificially high level.

265. Dentsply's exclusionary conduct has been longstanding and pervasive. On numerous occasions, Dentsply has coerced dealers to agree to drop, or not add, competing brands of teeth. This conduct began in at least 1988 and has resulted in at least 12 separate brands of teeth being excluded from 11 separate dealers. These dealers, located throughout the United States, include national dealers such as Zahn, Patterson, and Darby, and several regional dealers, such as Atlanta, Frink, Jan, Pearson, and DTS.

266. The impact that this exclusionary conduct has had on the sales and market shares of Dentsply and its competitors is not in dispute. Dentsply executives concede that Dealer Criterion 6 has protected its market share and that without it, it would lose market share. Miles Tr. 3513; Clark Tr. 2584; Brennan Tr. 1718. Given the number of dealers it has pressured since 1988, this market share loss likely would be significant. Indeed, in seeking a declaratory judgment against the United States on these same issues in December 1998, Dentsply alleged rival tooth lines could displace an "enormous" amount of Trubyte teeth in its dealerships if it were forced to surrender Dealer Criterion 6. D.I. 244, App. B-1398.

267. The results of the Wind Survey confirms and quantifies this effect. Dr. Reitman's analysis of the survey data shows that when any tooth brand is sold through a local dealer, its market share will increase in the short term by roughly 30%. Reitman Tr. 1530. Dr. Wind concluded that the market shares of both Vita and Ivoclar would increase substantially if their teeth were made available through a local dealer and/or mail order dealer — in just three months, by between 10%-32% for Vita and 24%-35% for Ivoclar. Wind Tr. 803-04; GX 140 at pp. 14-15. Even the analysis performed by Dr. Rossi, Dentsply's survey expert, showed that the combined shares of Vita and Ivoclar would increase by 25%. Reitman

Tr. 1531. The fact that three different people using different models arrived at substantially the same result is a good indication of robustness -- that what the survey is measuring the true effect of local availability. Reitman Tr. 1532.

268. Had Dentsply not intervened and stopped so many dealers from selling competitive teeth, the market shares in the tooth market would be very different than what they are today. The dealers affected were among the largest and most effective in the industry, and those dealers that were forced to drop competing brands were increasing the sales of those brands at Dentsply's expense.

(a) DTS had been an effective dealer for both Ivoclar and Vident, with just over $1 million in annual sales of Ivoclar and Vita teeth combined. GX 61 at DS 015810; Pohl Tr. 1917. DTS greatly increased the sales of Vita teeth in the territories served by DTS, and Vident's sales in those territories declined when it lost DTS as a dealer. Whitehill Tr. 260-61, 263. DTS was also a very effective dealer for Ivoclar teeth, with a good reputation, good personnel, and a manager who had formerly been a salesperson for Ivoclar. Ganley Tr. 1002-03, 1006.

(b) When Frink sold Ivoclar teeth, Dentsply feared that Ivoclar would increase its market share at Dentsply's expense. Brennan Tr. 1747-48. Frink did increase the sale of all of the Ivoclar products it was selling, Cavanaugh Tr. 712, and Ivoclar believed that it was a more effective competitor to Dentsply in the Midwest as a result. Ganley Tr. 999-1000.

(c) Vident's tooth sales "increased quite rapidly" when Jan Dental was selling Vita teeth, and declined in Jan's territory when Jan stopped selling them. Whitehill Tr.

264 ("[t]hey were most effective for us"). Dentsply's David Pohl acknowledged that Jan was an effective dealer focused on the laboratory market, and that gaining market share at the expense of other brands was the point of recognizing Jan as a Trubyte tooth dealer. Pohl Tr. 1909.

(d) Had Darby taken on Vita teeth in 1994, Darby would have pushed the Vita teeth to "every customer we had," and likely been quite successful with it. Nordhauser Tr. 4128-29. *See also* Nordhauser Tr. 4159 (the Vita line was within Dentsply' price range, and Darby "did have a share of the tooth market"). Those sales would have likely come at Dentsply's expense. Nordhauser Tr. 4129. Later, after Darby added the Vita tooth line by virtue of its acquisition of DTS, Dentsply forced Darby to agree not to promote Vita teeth through its other branches besides New York. Had that not occurred, Darby "absolutely" would have sold Vita teeth through its other divisions and by promoting them more vigorously. Nordhauser Tr. 4138.

(e) In addition, competitive brands would be sold today by far more dealers than just those involved in these specific historical episodes. Ivoclar's use of Frink in the late 1980's was what it "hoped to be [its] first step toward dealer distribution." Ganley Tr. 1051. Vident has approached numerous other dealers in an attempt to obtain distribution. Whitehill Tr. 265-69. Myerson has as well. Swartout Tr. 1311-14.

269. The effects from enjoining Dentsply's exclusionary conduct are also clear. In the absence of Dealer Criterion 6, dealers would add competing brands, labs would buy more of those brands, and Dentsply's market share would fall. Miles Tr. 3513; Clark Tr. 2584; Brennan Tr. 1718; Whitehill Tr. 285 (Vident would approach dealers if Dentsply's conduct

enjoined); Ganley Tr. 1022, 1106 (Ivoclar would negotiate with dealers);

Harris Tr. 617-19 (Atlanta Dental would add Vita to meet "customer needs in local availability").

b. Dentsply has frustrated consumer preferences and reduced consumer choice.

270. Dentsply's conduct has reduced consumer choice and prevented labs from buying their preferred brands through their preferred distribution channel. Reitman Tr. 1526. Many of the dealers seeking to add competing brands of teeth were doing so because their lab customers were asking to buy these brands from them. Cavanaugh Tr. 724; Harris Tr. 599-600, 615; Vetrano Tr. 1423-24. By coercing these dealers not to add these competing products, Dentsply prevented these lab customers from getting what they wanted from where they wanted it. Even Dentsply's expert, Professor Marvel, recognized this as a cognizable effect and harm to consumers during his previous work on a case involving augers. Marvel Tr. 3795 (found customers "would be harmed because they couldn't get the product they wanted from the dealers that they wanted to deal with"). In this case, this effect continues today because some of these same dealers still receive requests for these competing tooth lines. Harris Tr. 616-17; Vetrano Tr. 1422.

271. Dentsply has also caused some labs to use less preferred tooth brands. Because they are unable to buy their preferred competing brands from their dealer, they instead settle for a Dentsply Trubyte tooth which, for whatever reason, is a less preferred product for them. Reitman Tr. 1526; Ryan Tr. 1252-56; Swartout Tr. 1303-04. The fact that market shares

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would shift in the absence of Dealer Criterion 6, that consumers would buy more of the competing brands if they were available through dealers, makes it clear that consumers today are using less preferred brands. Reitman Tr. 1690-91.

272. The use of a less preferred tooth in a denture can represent a serious harm to a denture patient. For years before Dentsply introduced its Portrait tooth line, the vast majority of its Bioform tooth shades did not match the shades of the popular Vita shade guide. In fact, the aesthetics of Dentsply's teeth were generally considered inferior to Vita's and Ivoclar's. Dentsply's prices were 10%-15% higher than Vita's. Despite this, when receiving a prescription for Vita-shaded teeth, in 72% of the cases labs were instead using Dentsply teeth, the ones available through the dealer network. *See* PFF ¶ 201. As Dentsply's tooth product manager at the time testified, a lab that used a Bioform IPN tooth to fill a prescription for a Vita shade used a more expensive tooth that did not match the prescribed shade as well. Turner Tr. 421. This was a significant harm because shade is a key component of the overall aesthetics of a tooth. Miles Tr. 3497.

273. This particular example of consumer harm has not necessarily been fixed by the introduction of Dentsply's Portrait line. Even today, many believe that the Portrait teeth do not completely match the Vita shade guide. *See* PFF ¶ 211.

274. This same kind of harm may well recur in the future whenever labs believe that the teeth of Dentsply's competitors are superior in some important product attribute. *E.g.*, Mariacher Tr. 2912 (Ivoclar's newest teeth are superior to others on market in their ease of use). In fact, the pre-Portrait story of labs substituting Dentsply teeth for Vita teeth may well replay itself in the future given the growing popularity of Vita's newest shade guide. In 1998,

Vita introduced the 3D Master Shade Guide, an innovation that improved upon the Classical Shade Guide by increasing the number of shades from 16 to 26. Whitehill Tr. 232-33. The new 3D Master Shade Guide is growing in popularity; approximately of the dentists in the United States have purchased it. Whitehill Tr. 233. When Vita introduced the 3D Shade Guide, it also introduced new teeth in those new shades. Whitehill Tr. 233. Dentsply, however, does not sell teeth in the new 3D shades. Whitehill Tr. 235.

c. Dentsply has increased market-wide prices.

275. Prices will fall in the absence of exclusive dealing because consumers will become more price sensitive once multiple brands become available through the same dealers. This, in turn, will increase the incentive for tooth manufacturers to cut their prices. As Dr. Reitman explained:

> When multiple brands of teeth are being sold through dealers, through the same dealer, the customer going to that dealer can call the same phone number, use the same fax, go to the same tooth counter representative. ... Since all of those things are more similar, customers are going to respond more to price differences between the brands. So, in other words, they become more price sensitive. ... If tooth suppliers know that customers in the marketplace are more price sensitive, then they have more incentive to cut the price, because they know when they cut the price, more customers are going to respond and buy their product, because it now offers a better value in the marketplace.

Reitman Tr. 1528-29.

276. The testimony of Dentsply's competitors supports this intuitive explanation for how Dentsply has affected price in the market. In the past, consumers have not been very price sensitive, and so there has been little incentive for competitors to reduce their price. *E.g.*, Garley Tr. 1011-12 (Ivoclar has tried to discount the price of its teeth, both to individual labs and to broader-based laboratory chains, but this has not been effective in increasing tooth

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sales); PFF ¶¶ 191-206 (even when Vita had an aesthetically superior tooth and 10%-15% lower prices, Vita was not increasing in market share). In the future, however, if given access to dealers, the prices of competing tooth brands will decrease. James Swartout of Myerson testified that his company already charges lower prices in Connecticut and Southern California, areas in which Myerson has better dealer representation. In Connecticut, Mr. Swartout estimated that labs are saving 10% over Myerson's standard list price for teeth. Swartout Tr. 1317-18.

277. Dentsply's Chris Clark agreed that both dealers and labs are likely to receive lower prices in the absence of Dealer Criterion 6:

> If I were in the shoes of the competitive tooth brand and I had a Trubyte dealer that was open now to take my line, I would certainly make it worth their while financially to do so. And what I would do is I'd basically go in and offer the dealer a higher margin on my tooth than what Trubyte does and do that in such a way it's a lower price point to the laboratory competitive tooth rather than Trubyte. And the end result, there is incentive for the lab to switch, and dealer to switch as well. They're making more money.

Clark Tr. 2584-85.

278. Dr. Reitman's analysis of the Wind Survey data confirmed and quantified the price effect that he had earlier concluded would occur in the absence of exclusive dealing. Reitman Tr. 1532, 1692, 3903-04; *see* PFF ¶¶ 126-35. Dr. Reitman found that the price

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sensitivity of customers will, as he suspected, increase as more brands become available through local dealers. Reitman Tr. 1532, 1692. This increase is statistically significant. Reitman Tr. 1692; *see also* Reitman Tr. 3897-98, 3908-09. Using a differentiated product Bertrand competition model, the most commonly-used model for price competition in industrial organization economics, he determined that the prices of all premium teeth in the market will fall by approximately 4%-5% in just three months. Reitman Tr. 1532-33, 1543-44; GX. 442.

279. Even Dentsply's expert, Professor Marvel, conceded that he believed that prices would fall in the absence of Dealer Criterion 6. Marvel Tr. 3648-49 ("both of the theories offered in this case would say that, in the absence of exclusive dealing, prices would fall"). Professor Marvel believes that prices will fall for a different reason — because Dealer Criterion 6 is procompetitive and, in its absence, Dentsply would promote its teeth less and therefore have lower costs. Marvel Tr. 3649; Reitman Tr. 3887. As explained elsewhere, Professor Marvel's prediction of less promotion in the absence of Dealer Criterion 6 is not supported by the evidence. PFF ¶¶ 373-77. In addition, the price effect found by Dr. Reitman stems solely from the anticompetitive effects of Dealer Criterion 6, and cannot be explained by any procompetitive effects of the policy. Reitman Tr. 3887-88. Therefore, even assuming there were procompetitive effects, this would only imply a further price decrease. Reitman Tr. 3887-88.

280. There are long-term price effects as well. Beyond the three-month period measured by the Wind Survey, dental labs will have time to change the brands of teeth they have in stock, communicate to dentists the availability of these other competing brands, and

provide additional training to their technicians in the use of other brands of teeth. Reitman Tr. 1533-34. As the competitive significance of the competing brands grows, "that will lead to increased competition and, in particular, increased price competition, and even lower prices in the marketplace over time." Reitman Tr. 1534. "It's like putting a few more holes in the pricing umbrella that Mr. Turner testified about last week." Reitman Tr. 1534; *see* Turner Tr. 456 (Dentsply sets prices and others compete under that "broad umbrella").

d. Dentsply has reduced competition and the overall amount of promotional activity.

281. Dentsply's exclusive dealing has reduced the overall level of promotional activity in the market. As with pricing, Dentsply's competitors have not had the proper incentives to promote their tooth products aggressively because those products are not available through dealers. "When you are selling products through an inferior distribution channel it is hard to drive sales through that channel." Reitman Tr. 1534-35. Better distribution equates with more aggressive promotional activity. In the areas in which Myerson has better dealer representation, it has been "more aggressive in our sales and marketing ... we have conducted various direct-mail campaigns through our dealers to laboratories, trying to increase awareness." Swartout Tr. 1316-17.

282. If Dentsply's conduct is enjoined, competition will increase in the market because both Dentsply and its competitors will increase their promotional activity.

(a) Dentsply's competitors will increase their promotional activity in the absence of exclusive dealing. If Vident had access to better dealer distribution, it would increase its level of advertising and promotion because it would have an increased possibility

of more sales. Whitehill Tr. 281-82. As it does today in those areas in which it has better dealer distribution, Myerson would invest in a variety of procompetitive activities if it could expand its dealer network: "I would even ... , for example, invest more money in sales and marketing, as I said, whether through dealer specific promotions, national advertising to dentists in dental trade journals as well as to laboratories. All of those things would be tactics I would certainly invest in." Swartout Tr. 1319.

(b) Dentsply will try harder as well. Without Dealer Criterion 6, Dentsply believes it will lose market share. Miles Tr. 3513; Clark Tr. 2584; Brennan Tr. 1718. In response to that, Dentsply will compete even harder to try to get that market share back. Reitman Tr. 1535, 3971-72. As its Chief Executive Officer John Miles testified, "Certainly we would." Miles Tr. 3513. Dentsply's Steve Jenson agreed: "My job is to grow our business, so . . . if this market strategy isn't going to be allowed, then we'll try to find a market strategy that will allow me to grow my business for the future, yes." Jenson Tr. 2309. The ways in which Dentsply might try to do that are all procompetitive: increasing R&D expenditures; increasing sales and marketing expenditures; and expanding the size of its sales force. Miles Tr. 3514.

(c) This is consistent with Dentsply's conduct in the past. On the few occasions when dealers have sold both Trubyte teeth and the teeth of Vita or Ivoclar, Dentsply has increased its competitive efforts in an attempt to convert labs from these competing brands to Trubyte. For example, in 1995, when DTS was recognized as a tooth dealer, DTS was permitted to keep a stock of Vita teeth in its New York branch. It also gave Dentsply a list of its Vita tooth customers so that Dentsply could try to convert them to Trubyte teeth.

Raths Tr. 1159. Dentsply did make those additional efforts, and converted several labs. Clark Tr. 2687-88. Then in 1998, when Darby acquired DTS, Darby was permitted to keep the Vita tooth stock in New York. Once again, Dentsply agreed to make sales calls on the labs using Vita teeth, and Dentsply did that as well. GX 130 at DARBY-001121Y ("We also will work with Darby to spend sales calls converting current Vita users to Dentsply teeth"); Clark Tr. 2689-90.

(d) Dentsply would have competed even harder in the past had dealers been free to sell competing brands. In 1995, when Dentsply recognized DTS as a tooth dealer in exchange for its agreement to drop Vita and Ivoclar teeth from three of its locations, Dentsply's regional manager in the Midwest candidly admitted that Dentsply would have to compete even harder if DTS was not recognized: "Should our decision be not to open DTS, I will have a significant new competition to allocate time and resources against." GX 86 at DS 015805.

e. Dentsply has deterred entry and expansion.

283. As noted above, Dentsply's exclusionary practices has completely excluded at least two tooth brands from the United States market, delayed the entry of another, and substantially limited the success of those firms that have entered the market. In addition, it has made it difficult for firms already in the market to compete effectively and expand their sales. PFF ¶ 212 *et seq.*

f. Dentsply has reduced dealer efficiency.

284. Dealers themselves are less efficient due to Dentsply's exclusionary policies. Reitman Tr. 1537. Allowing dealers to carry more brands of teeth and make more sales through an individual outlet or branch lowers its average costs by spreading the costs of a tooth counter across a larger volume of sales. Conversely, if a dealer is not allowed to carry more brands, its costs increase and its operations become less efficient. In response, dealers have tried to save money by closing tooth counters that lab customers otherwise value. Reitman Tr. 1538.

g. Professor Marvel's testimony should not be relied upon to conclude that Dentsply's conduct has not had anticompetitive effects.

285. Professor Marvel testified that there are no anticompetitive effects in this case. This testimony is not credible, particularly in light of Dr. Reitman's contrary conclusions. Dr. Reitman's opinions are based on over five years of work studying the industry, reviewing the extensive document productions and deposition record in this case, and conducting his own econometric analysis of the Wind Survey data. Reitman Tr. 1464-70 (reviewed over 100 deposition transcripts, 20-25 interviews of various market participants, 10 boxes of documents, and various types of market data; in addition, he visited facilities of firms at each level of distribution). Professor Marvel's opinions about how consumers can be harmed by exclusive dealing kept changing during the litigation, as the United States learned more about his opinions and the facts of the single case (the "augers case") in which Professor Marvel found an exclusive dealing arrangement to be anticompetitive.

(a) In the augers case, Professor Marvel found harm to consumers of augers. Marvel Tr. 3791. He "concluded that the customers would be harmed because they

couldn't get the product they wanted from the dealers that they wanted to deal with." Marvel Tr. 3795.

(b) Yet, in reaching his initial opinion in this case, Professor Marvel applied a very different approach. He claimed that exclusive dealing could have anticompetitive effects only by creating an impenetrable and complete entry barrier. Marvel Tr. 3743; 3742 (under existing theories, exclusive dealing can harm competition only by preventing rivals from entering the market).

(c) During his deposition, Professor Marvel clearly delineated certain "necessary conditions" for exclusive dealing to be anticompetitive, which follow from his claim that exclusive dealing can only be anticompetitive through excluding competitors. These conditions conveniently fit his conclusion that Dentsply's conduct is not anticompetitive: (i) the dealers on which it is imposed must be an "essential facility," the only way in which rivals can get their products to customers (Marvel Tr. 3748, 3753). No alternative dealers or means of distribution can be available, Marvel Tr. 3750 (impeachment with prior deposition testimony), no matter how much less efficient that alternative is. Marvel Tr. 3757, 3754; (ii) exclusive dealing must be imposed prospectively, before any rivals have entered (Marvel Tr. 3748). Professor Marvel claimed that no economic theory existed for finding exclusive dealing anticompetitive against rivals that have already entered. Marvel Tr. 3741-43. Indeed, he identified this "necessary condition" as supplying his biggest objection to finding Dentsply's use of exclusive dealing anticompetitive. Marvel Tr. 3743; and (iii) long-term contracts must be present (Marvel Tr. 3752-53).

(d) During his deposition, Professor Marvel was questioned about his work in the augers case. He portrayed his work there as consistent with his claim here that exclusive dealing can only be anticompetitive when it completely prevents entry. He testified that he found in the augers case that entry barriers existed, that exclusive dealing had made the leading firm's market share impregnable, and that a number of firms tried to enter the market but failed. Marvel Tr. 3775-77. He refused to discuss the facts of the augers case any further, however, claiming confidentiality concerns. Marvel Tr. 3777.

(e) The United States had to move this Court to resume Professor Marvel's deposition so that we could question him about his work in the augers case. Marvel Tr. 3777. Professor Marvel reviewed the brief submitted in support of this motion along with the appendix, which included pages from his deposition. Marvel Tr. 3777-78. He saw that the United States had requested an opportunity to depose him about his testimony that he found entry barriers in the augers case, that exclusive dealing had made the leading firm's share there impregnable, and that a number of firms had tried to enter the market but failed. Marvel Tr. 3778-79. Neither he nor Dentsply notified the United States or this Court of any need to correct his testimony.

(f) During a January 22, 2002 status conference, this Court gave Dentsply the option of either having Professor Marvel answer questions about his work on the augers case or he would not testify in this case. January 22, 2002, Tr. at 4 ("[S]o my feeling is that you either work it out or Dr. Marvel won't be allowed to testify.")

(g) That apparently solved Professor Marvel's confidentiality concerns. At the subsequent deposition, Professor Marvel admitted that he had given incorrect testimony

about his work on the augers case. Exclusive dealing did not make the leading firm's share impregnable, and he had not found firms that attempted to enter but failed. Marvel Tr. 3780-81.

(h) Professor Marvel concedes that he had found exclusive dealing to be anticompetitive in the augers case without several of his "necessary conditions" here being met. In that case, he found competitive harm despite the fact that the exclusive dealing was not applied prospectively, there were alternative means of distribution, and there were no long-term contracts between the defendant and its dealers. Marvel Tr. 3799-800.

(i) In an attempt to reconcile his work in the augers case with his opinions here, Professor Marvel came up with a new theory at trial. Despite his earlier insistence that exclusive dealing can only cause harm by preventing entry, Professor Marvel gave up his conditions that exclusive dealing must be applied prospectively and prevent competitors from entering. Marvel Tr. 3600 ("I would be worried about a barrier to entry that was caused by exclusive dealing. A barrier to entry <u>or expansion of the rivals</u>"), 3601 ("That is one of the things you would look for to see, as I said before, if there is a barrier of some sort that keeps rivals from entering <u>or from expanding</u>. One way to say this is are they foreclosed from the customers to which they wish to sell their tooth products.") And he gave up his condition that exclusive dealing must foreclose the only way to get a product to consumers. Marvel Tr. 3754 (acknowledging that "up to yesterday," theory had required that dealers constitute only way to reach the market); Marvel Tr. 3757-58 ("Q. Let's look at what you've said at your deposition. A. No, I understand I said something different."). Instead, he developed a theory that exclusive dealing is not harmful as long as rivals have access to means of

distribution that are at least "remotely competitive," although he could not say how much less efficient an alternative would have to be to meet that standard. Marvel Tr. 3755-56, 3761-62. Professor Marvel conceded that he changed this condition for the first time at trial:

> Q. Right. Going back to my question, what we've done is we've had years of discovery, expert reports and depositions, and today you are telling me for the first time that you have changed a condition that you have told me repeatedly throughout is essential, a necessary condition. That's correct now; right?
>
> A. Correct.

Marvel Tr. 3758.

(j) Despite this attempt to reconcile his work in augers with his work here, Professor Marvel's new "remotely competitive" standard would not have prevented the harm to augers consumers with which he was concerned - being unable to purchase from dealers from whom they wanted to purchase.

(k) Professor Marvel's opinions on the effects of Dentsply's conduct are unreliable. He reached his opinion by using an approach that was inconsistent with his earlier work in the augers case. Then, when that inconsistency surfaced, he abandoned that approach at trial and substituted a new, untested, and standardless approach.

V. Dentsply's exclusive dealing practices violate Section 1 of the Sherman Act and Section 3 of the Clayton Act.

A. Dentsply has coerced independent tooth dealers to agree not to sell competitive lines of teeth.

286. Dealers selling Trubyte teeth are independent business, selling under their own name and not Dentsply's, and offering thousands of different products that are made by hundreds of different manufacturers. *E.g.*, GX 160 (Zahn's 2001 catalogue); Weinstock Tr.

102 (Zahn carries over 8,000 merchandise and equipment products and 25,000 tooth line items); Vetrano Tr. 1410-11 (DLDS carries 6,000 merchandise products, 35 to 40 "active" brands). They are not Dentsply subsidiaries, nor are they "branded" franchisees as Dentsply's witnesses apparently believe. *See* Clark Tr. 2583 ("when we recognize a tooth dealer, we're really branding that tooth dealer now as a player in this tooth market. We're branding them as that...."). At least one dealer selling Trubyte teeth was founded before Dentsply was in 1899. Harris Tr. 588 (Atlanta Dental founded 130 years ago).

1. Both Dentsply and the dealers selling Trubyte teeth consider Dealer Criterion 6 to be an agreement between them.

287. Dentsply considers Dealer Criterion 6 to be an agreement between Dentsply and dealers selling Trubyte teeth. As acknowledged by Chris Clark, who was Trubyte's General Manager for many years, a dealer must "agree to the Trubyte dealer criteria" in order to be recognized as an authorized tooth dealer. Clark Tr. 2578. *See also* Cavanaugh Tr. 692-93 (Dentsply executives told Tom Cavanaugh of Frink Dental that he "had an agreement with them that [Frink] would only carry their line"); Jenson Tr. 2296 (Trubyte's director of sales, when reporting to Trubyte general manager about Zahn's interest in selling Enigma teeth, referred to dealer criteria as "our current dealer contract"); Jenson Tr. 2297-98 (director of sales, when reporting about Thompson Dental, refers to dealer criteria as "our agreement with [Thompson]").

288. Dealers consider Dealer Criterion 6 to be an agreement as well.

Nordhauser Tr. 3432 ("I have an agreement, I have an

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understanding with Dentsply that I can only sell what I have ... I accept that"); Desautel Tr. 2475-76 (Accu Bite executive wrote "okay" next to Dealer Criterion 6 language on letter formally recognizing Accu Bite as dealer).

2. Dentsply has actively monitored and coerced compliance with Dealer Criterion 6, and has sought and received assurances of future compliance from dealers.

289. In enforcing Dealer Criterion 6, Dentsply has done more than merely announce its intent to terminate a dealer found to be in violation. It has monitored compliance with the criterion. *E.g.,* Jenson Tr. 2290 (Dentsply monitors Patterson; "Yes. We like to keep tabs on that because they are fairly decentralized and they don't always tell their corporate offices what they are doing"). When a violator is found, Dentsply's practice has been to talk to the dealer, give them an opportunity to comply, and try to persuade the dealer to comply. Brennan Tr. 1719.

290. That is perhaps best exemplified by the increasing pressure that Dentsply brought to bear upon Frink Dental and its owner Thomas Cavanaugh, which eventually succeeded in convincing Cavanaugh to drop the Ivoclar tooth line.

(a) In 1988, Frink was a dealer selling Trubyte teeth. Cavanaugh Tr. 673. Cavanaugh decided to start selling Ivoclar's teeth because he saw "advantages with the aesthetics of them, anatomical detailing of them." Cavanaugh Tr. 689.

(b) When Dentsply found out about this, it did more than merely notify Cavanaugh of his impending termination as a dealer. Three of Dentsply's high-level executives, including its President Burt Borgelt, flew out to Cavanaugh's Illinois office to talk him out of taking on the Ivoclar tooth line. Cavanaugh Tr. 694-95.

(c) When Cavanaugh went forward with his plan to sell Ivoclar teeth, he was terminated not only as a tooth dealer but as a dealer of Trubyte merchandise as well. Cavanaugh Tr. 700-01. Dentsply terminated Frink as a merchandise dealer "to make a strong point." Brennan Tr. 1720.

(d) Dentsply then started threatening Cavanaugh with the loss of even more business. Cavanaugh heard from Dentsply's Caulk and Ash Divisions that Dentsply was "very unhappy" with him and that he might be terminated as a dealer from those other divisions as well. Cavanaugh Tr. 708-10. For example, Tim Martin of the Caulk Division, in a conversation with Cavanaugh, "[a]sked how I was doing with the Ivoclar line and suggested that I reweigh the situation because he was hearing from his bosses that they were very unhappy with me and it might affect our relationship." Cavanaugh Tr. 709.

(e) Finally, Cavanaugh relented, dropped the Ivoclar tooth line, and was immediately reinstated as a Trubyte tooth dealer. Cavanaugh Tr. 713-14 (reinstated "from the date we stopped selling Ivoclar").

291. Dentsply also negotiated for over a year with Darby Dental, finally convincing it to drop the Vita tooth stock it acquired as part of its acquisition of DTS.

(a) Darby Dental acquired DTS in 1998. Nordhauser Tr. 4101. As a part of that acquisition, Darby acquired the Vita tooth line that DTS had been selling out of its New York office. Nordhauser Tr. 4104-05.

(b) Dentsply considered Darby's acquisition of this Vita tooth stock to be a violation of Dealer Criterion 6. Jenson Tr. 2289 ("it goes back to the acquiring company, yes"). As Sidney Nordhauser of Darby Dental testified, "[Dentsply] made it very clear, when

we bought DTS, that we cannot promote or give to the rest of our customers Vita teeth. We can only, for a very short period of time, sell it to the customers we have." Nordhauser Tr. 4106, 4135-37, 4150-51 ("We couldn't promote it because they wanted us to get rid of it."). Even though Dentsply had earlier permitted DTS to keep the Vita tooth stock in New York, and Darby agreed not to expand the Vita business beyond the customers already buying Vita teeth, Dentsply still insisted that Darby drop the Vita tooth line. Nordhauser Tr. 4139.

(c) Because Darby did not immediately agree to drop the Vita tooth line, lengthy negotiations ensued. Chris Clark and Steve Jenson of Dentsply both met with Sidney Nordhauser of Darby Dental, then had a separate telephone conversation with Darby's Rita Acquafreeda. GX 130 at DARBY 001120-21. In a November 5, 1998 follow-up letter to Nordhauser, Clark and Jenson stated that Dentsply "want[ed] to work with Darby" and agreed to give Darby a six-month transition period to work the Vita tooth stock out of the New York location. *Id.* This period lasted more than six months, however, because at the time of Mr. Nordhauser's deposition in December 1999 Darby was still selling Vita teeth. Nordhauser Tr. 4106-07 ("[t]hey said six months, but it's been more than a year, okay?").

(d) Eventually, Darby complied with Dealer Criterion 6 and dropped the Vita tooth stock in New York. Jenson Tr. 2289-90.

292. Dentsply has also sought and received assurances of future compliance with Dealer Criterion 6 from dealers. In 1993 or 1994, Pearson Dental Supply of Sylmar, California, displayed Vita teeth at its tooth counter after a visit from the local Vident sales rep. Pearson Tr. 1386. When Dentsply found out, it did more than just inform Pearson that it would lose the Trubyte tooth line if it continued to sell Vita teeth. As Keyhan Kashfian, the

president of Pearson Dental testified, "based on the recommendation [of the] representative of Dentsply, we sent them a letter that, you know, we are not going to carry Vita and, therefore, the episode ended by returning the tooth consignment to Vita Company." Pearson Tr. 1387. *See also* GX 93 at DPLY-A 018372 (Dentsply letter to DTS, basing sale of Trubyte teeth on "DTS's acceptance and . . . continued compliance with DENTSPLY Trubyte Dealer Criteria").

3. When recognizing new tooth dealers, Dentsply has explicitly required them to agree to drop some, or all, competing tooth lines.

293. Dentsply cannot seriously dispute that it has entered into agreements with several dealers when first recognizing them as tooth dealers. On several occasions, Dentsply has required dealers to agree expressly to drop some, or all, of their competing tooth lines in order to obtain the Trubyte tooth line in the first place. For example, when recognizing Jan Dental in October 1993, Dentsply required Jan to agree to stop selling Vita, Kenson, Dentorium and Justi teeth. GX 24 at DPLY-A 006262 ("Jan Dental has agreed to carry only Trubyte and Universal tooth brands"); GX 26 at DS 016474 ("Jan currently carries Vita, Kenson, Dentorium and Justi teeth. Per the terms of our agreement, all except for Universal would be eliminated"). *See also* Clark Tr. 2641 ("agreement" between Dentsply and DTS was for DTS to drop Vita, Ivoclar lines in exchange for obtaining Trubyte tooth line); GX 158 at DS 015783 (terms under which DTS was recognized); GX 77 at DS 015927 (Clark recommendation that Dentsply terminate Darby's affiliate Kent Dental "unless Darby agrees to [certain] conditions," including not adding the Vita tooth line); Clark Tr. 2636 (Dentsply did recognize Darby, and Darby did not take on Vita).

B. Dentsply's agreements with dealers selling Trubyte teeth are, as a practical matter, self-perpetuating.

294. The express purpose of Dealer Criterion 6 has been to "tie-up dealers" and to not "free up" the largest dealers selling Trubyte teeth. GX 171 at DPLY-A 004360; Clark Tr. 2608 (GX 171 a "reiteration" of Dealer Criterion 6).

295. The effect of Dealer Criterion 6 has been just that -- to tie up the dealers selling Trubyte teeth and keep them from adding competing tooth lines. Despite the absence of a formal, written contract of specified duration between Dentsply and these dealers, the practical effect of Dealer Criterion 6 has been equivalent to a contract that runs in perpetuity. Despite numerous examples of dealers being interested in taking on a competitive tooth brand, no dealer has yet been willing to give up its Trubyte tooth business in order to do so. Clark Tr. 2631; Pohl Tr. 1907. As Dr. Reitman noted, formal, long-term contracts would have no effect on the market because even without them, there "simply isn't anybody defecting from the Trubyte dealer network." Reitman Tr. 1515.

296. The reason Dealer Criterion 6 is tantamount to a self-perpetuating agreement is that it imposes an "all-or-nothing" choice on dealers selling Trubyte teeth: if a dealer wishes to add the teeth of a competitor, it loses <u>all</u> of its Trubyte tooth business. Reitman Tr. 1514. Because Dentsply has an share of the market, and is than its next-closest competitor in size, Reitman Tr. 1476-77, this itself is a powerful deterrent to taking on a competitive tooth line.

297. There are other deterrents as well. In some instances, Dentsply has also taken away, or threatened to do so, its Trubyte merchandise business from dealers that violated this

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policy. Brennan Tr. 1720 (terminated Frink Dental as both a tooth and merchandise dealer); Vetrano Tr. 1426-27 (DLDS threatened with loss of both teeth and merchandise). On at least one occasion, Dentsply refused to accept back the tooth inventory of a dealer that was terminated. Pohl Tr. 1918. *See also* Reitman Tr. 3882-85 (other deterrents include the risk of losing long-term customers with whom the dealer had built relationships; risk of losing other sales along with tooth sales because of one-stop-shopping preference; and transition costs during time period in which dealer attempts to build sales of rival tooth lines).

298. It is not surprising, therefore, that each dealer confronted with this choice has agreed to comply with Dealer Criterion 6. For example:

(a) Frink Dental/Ivoclar. In the late 1980's, Tom Cavanaugh of Frink Dental did take on the Ivoclar tooth line, but did not initially face the loss of his Trubyte tooth business. He contacted other dealers around the country, who agreed to supply him with Trubyte teeth. Cavanaugh Tr. 701-05. Dentsply ultimately found out about this, however, and Cavanaugh's sources of Trubyte teeth dried up. Cavanaugh Tr. 706. At that point, he faced the "all-or-nothing" choice and, after consulting with his sales force, Cavanaugh decided to go back to selling Dentsply teeth. Cavanaugh Tr. 708, 712-13. Although he had increased his sales of Ivoclar teeth, he never expected that those sales would equal his Trubyte tooth sales. Cavanaugh Tr. 711-12.

(b) Zahn Dental/Ivoclar. In the late 1980's, Norm Weinstock of Zahn Dental turned down Ivoclar's offer to sell its teeth because "I couldn't afford to lose the Dentsply line." Weinstock Tr. 153. At the time, Zahn's sales of Dentsply teeth were approximately $8 million. Weinstock understood that Ivoclar was projecting its own U.S.

tooth sales to be around $1.2 million. "Obviously, it was an easy decision to say I would rather go and keep my Dentsply line . . . ." Weinstock Tr. 152.

(c) Zahn Dental/Heraeus Kulzer.

(d) Zahn Dental/Vita.

(e) Atlanta Dental/Vita. Although Betsy Harris of Atlanta Dental was receiving requests from her lab customers for Vita teeth, she decided not to add the Vita tooth line because her sales of Dentsply teeth represented about 90% of Atlanta Dental's $1 million tooth revenue. Harris Tr. 615. As Ms. Harris testified, "I had no way of knowing what our Vita sales would be at that time, so losing that much business was — this is my livelihood, this is what I do, and I didn't want to jeopardize my company or myself in that way." Harris Tr. 616.

(f) Pearson Dental/Vita. In 1993 or 1994, Pearson began selling Vita teeth. When Dentsply discovered this, "there was no contest. We were doing a tremendous amount of business with the Trubyte Division . . . ."). Kashfian Tr. 1387.

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(g) Darby Dental/Vita. When it purchased DTS, at Dentsply's insistence Darby agreed not to promote Vita teeth to any new customers because "Dentsply, as you can see by the numbers, is the major line in this country, okay? It is recognized, well known, it is a good product, okay? I would not jeopardize losing that line to take another line, okay? ... I am not going to take a chance and lose Dentsply to sell Vita teeth or anything else, so we compromised." Nordhauser Tr. 4107.

299. Dentsply's expert, Professor Marvel, has not demonstrated that dealers with smaller shares of the Trubyte tooth business in particular states are good candidates to drop the Trubyte brand and take on one or more competitive brands. Professor Marvel's analysis is based on a dealer's sales within the arbitrary boundaries of state lines. In fact, dealers, particularly small ones, have their sales concentrated in a smaller region than an entire state. Reitman Tr. 3882. He also assumes unreasonably that all of Dentsply's competitors would be willing to sell through the same handful of smaller dealers. Because any manufacturer that tried such a scheme could not service the entire country with so few dealers, it would have to distribute in a "hybrid" fashion, through both dealers and by selling directly. Vident is the only manufacturer that seems willing to practice hybrid distribution. Reitman Tr. 3884-85.

300. As Dr. Reitman aptly summarized near the end of trial, on the question of the length of Dentsply's agreements,

> I think the proof is in the pudding. You haven't seen any Dentsply dealers leave Dentsply's business and take on other tooth brands. And the reason is because it doesn't make sense to abandon this. Even if you have a small share of Dentsply teeth, it's a steady share. You know who your customers are and the alternative is the risky prospect of eventually developing a new business with different customers and getting back maybe to where you were before,

maybe not, if we're just talking about Vident, and it's not an attractive proposition to these dealers.

Reitman Tr. 3885.

C. Dentsply's exclusive dealing agreements have foreclosed its closest rivals from approximately 80% of the market.

301. As explained above, Dr. Reitman calculated a foreclosure rate showing that Dentsply has foreclosed its closest competitors from between 78%-87% of the laboratory dealer outlets in the United States. Because a network of lab dealers is necessary to compete effectively in the U.S. market, this is the proper way of measuring a foreclosure rate in this case. PFF ¶¶ 61-167.

D. Dentsply's exclusive dealing agreements have caused substantial anticompetitive effects.

302. There is no dispute that Dentsply possesses at least "substantial market power." Marvel Tr. 3714. *See also* PFF ¶ 168, *et seq.* (proposed findings demonstrating Dentsply's monopoly power).

303. As explained in detail above, Dentsply has exercised its substantial market power in the past 14 years to cause numerous anticompetitive effects in the artificial tooth market. PFF ¶ 263, *et seq.*

VI. Dentsply's alternative explanations for the low market shares of its competitors are not supported by the evidence.

304. To detract attention from the effects of its exclusionary conduct, Dentsply raised a number of other issues allegedly responsible for the failure of its competitors: Vita and Ivoclar sell "European" style teeth not suited to the American market; its competitors have not adequately promoted their teeth, preferring instead to focus their energies on their

more popular crown and bridge products; and the rivals have encountered certain product and service difficulties that have hindered their success. These "other issues" are overstated and do not explain why these competitors have failed to achieve greater success. And Dentsply's own assessment of these competitors, and its continued efforts to exclude them from the dealers, undercuts these arguments. Dentsply still considers Vita and Ivoclar to be its closest competitors, and has worked diligently for at least the past 14 years to block each of its competitors from developing a dealer network. If its competitors were failing because of other, non-dealer-related problems, then Dentsply's exclusionary conduct would be unnecessary.

A. Dentsply overstates the effect of Vita and Ivoclar selling teeth of "European" look and design in the United States market.

305. Dentsply repeatedly pointed to the fact that Vita and Ivoclar sell "European"-style teeth, and attempted to show that was the reason for their failure to do better in the United States market. Dentsply overstates the significance of the differences between Dentsply's teeth and those of Vita and Ivoclar. Indeed, the natural anatomy of its competitors' teeth hold certain advantages.

306. Dentsply overstates the significance of the difficulty Vident and Ivoclar encounter in selling teeth that have a "European" look or design. Despite the differences that do exist, labs convert from using Trubyte to Vita or Ivoclar quite frequently. Miles Tr. 3494. In fact, two of Dentsply's own lab witnesses testified that they increased their use of Vita or Ivoclar teeth very easily, without encountering any resistance from their dentist customers.

(a) Charles Coykendall of the Hopkins Dental Lab in Minnesota began using Ivoclar teeth almost exclusively in his business 17 years ago — long before Ivoclar introduced its more American-style Orthoplane and Ortholingual teeth — because he liked the shading and aesthetics of the teeth better than competing teeth. Coykendall Tr. 3330-31. Prior to switching to Ivoclar, Coykendall was using Trubyte, Swissedent and Kenson teeth. Coykendall Tr. 3317. He was able, "quite easily," to convince his dentist customers to accept Ivoclar teeth in their denture cases. Coykendall Tr. 3319. He lost none of his customers as a result of the switch. Coykendall Tr. 3319.

(b) Ralph Langer of Langer Dental Arts in Idaho dramatically increased his use of Vita teeth when he hired a tooth department manager who preferred Vita teeth. It was "a fairly immediate turnover. We got very fast into Vita teeth." Langer Tr. 3259. Prior to that, Langer was using Dentsply teeth 60% of the time, and Ivoclar teeth for the remaining 40%. Langer Tr. 3290-91. Langer encountered no resistance from his dentist customers when he switched to Vita. Langer Tr. 3261 ("not at all").

307. The natural anatomy of Vita and Ivoclar teeth have certain advantages. Posterior teeth with natural anatomy (i.e., higher cusps) more accurately replicate the way natural teeth chew. Ganley Tr. 1014. Anatomical teeth are also more lifelike and, therefore, more aesthetic. Ganley Tr. 1014, 1111.

308. The use of anatomical teeth is particularly advantageous in partial dentures, where artificial teeth are placed in the mouth next to natural teeth. Ganley Tr. 1015-16; Turner Tr. 406. And this is important because partial dentures are becoming much more

common than full dentures. Clark Tr. 2498 ("we are doing fewer and fewer full dentures ... [and] more and more partial dentures").

309. Because of these advantages, some labs in the United States market prefer natural anatomy teeth. Miles Tr. 3495 ("yes, certainly some laboratories do prefer [a] European tooth"). Dentsply itself acknowledged this when it introduced its own, European-style posterior teeth, called "Euroline," in 1999. The Euroline teeth are highly anatomical posterior teeth that have, like the teeth sold by Vita and Ivoclar teeth, higher cusps and more interdigitation. Miles Tr. 3495.

310. To the extent the differences in their teeth have hindered the success of Vita or Ivoclar in the United States market, it is clear that their lack of dealer access has been a much bigger problem. Ganley Tr. 1119-20 (acknowledging other difficulties, but noting that being "locked out" of dealer network is "the largest problem we have in the market"); Whitehill Tr. 398 (Vident would not "have had as many difficulties if we had a better distribution method").

B. Dentsply's competitors have engaged in the same kind of promotion, marketing and training that Dentsply does and, as a percentage of sales, have promoted even more than Dentsply.

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311. Dentsply attempted to show that its competitors, particularly Vident and Ivoclar, have failed not because of their lack of a dealer network but because they have not spent enough money promoting their teeth. But both Vident and Ivoclar engage in the same kind of promotional and training activities that Dentsply does and, as a percentage of their sales, promote even more than Dentsply. *See* PFF ¶ 350, *et seq.*

312. For example, Ivoclar advertises both in dental trade journals and lab journals, provides brochures and other information to labs so they can promote Ivoclar's teeth to dentists, attends trade shows, engages in direct mail advertising, and promotes its teeth to labs through its sales force. Ganley Tr. 985-87; Coykendall Tr. 3332 (Ivoclar markets itself to Hopkins Dental Lab through marketing materials). It offers training programs for dental lab technicians to teach them the proper method and technique to fabricate a denture using Ivoclar's products. Ganley Tr. 986; Coykendall Tr. 3331-32. It provides technical assistance to labs using Ivoclar teeth, either by telephone or in person. Ganley Tr. 986-87. It employs approximately 25 sales representatives who call on dental laboratories and promote Ivoclar's lab products, including its teeth. Ganley Tr. 987. Although they do not call routinely on dentists, Ivoclar still promotes its teeth to dentists through trade journal advertising, by providing promotional materials to labs, and sponsoring seminars conducted by labs for their dentist customers. Ganley Tr. 1106-07.

313. Ivoclar has an outstanding reputation in the industry for its "pull through" marketing efforts. Ganley Tr. 987-88 ("I know we have a good reputation in the marketplace in terms of our capacity and ability to create product demand and pull through products"). According to Richard Mariacher of National Dentex Corporation, the largest chain of dental

labs in the United States, "Ivoclar as a corporation are probably the best marketers in the dental laboratory industry and to the dental profession." Mariacher Tr. 2911-12.

314. Ivoclar has been an innovator in the dental products industry. It began the "Esthetic Revolution," when it introduced its metal-free Empress product. With the introduction of its new Orthoplane and Ortholingual teeth, it has started the "Removable Revolution," and these teeth are superior to others in the market in their ease of use. Mariacher Tr. 2912.

315. Dentsply executives agreed that Ivoclar has been active in advertising and in supporting its tooth lines. Turner Tr. 404 ("Ivoclar had a very visible trade journal presence overall"). In a June 1995 document, Ronald Zentz of Dentsply's Education Department, wrote that

GX 91 at DPLY-A 053291.

316. Vident, too, engages in the same kind of promotional activities for its teeth as Dentsply.

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Vident's 15-16 sales representatives call on dental labs and, where possible, on dentists. Whitehill Tr. 229. The sales force also calls on dental schools "routinely." Whitehill Tr. 321. Vident also has a telephone sales staff in Brea that sells teeth, particularly in rural areas not covered by the outside sales representatives. Whitehill Tr. 229. It employs certified dental technicians ("CDTs"), as well as a number of other consultants, on staff to provide technical assistance to dental labs using Vita teeth. Whitehill Tr. 228-29.

317. Vident is responsible for the success of the Vita Classical Shade Guide, which is used by approximately of the dentists in the United States. Whitehill Tr. 231-32, 234. It has attempted to leverage the popularity of this shade guide by marketing its teeth in conjunction with it. Whitehill Tr. 228. In 1998, Vita introduced the 3D Master Shade Guide, an innovation that improved upon the Classical Shade Guide by, among other things, increasing the number of shades from 16 to 26. Whitehill Tr. 232-33.

C. Dentsply has encountered more product and service difficulties than have its competitors.

318. Dentsply attempted to elicit evidence about how the teeth of its competitors are less durable, more prone to popping off dentures, and subject to service problems such as backorders. Yet the evidence shows that Dentsply itself has had just as many, if not more, product and service difficulties.

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319. It is undisputed that Vita and Ivoclar, like Dentsply, manufacture high-quality teeth. Clark Tr. 2684; Miles Tr. 3494; Ryan Tr. 1230 (premium teeth of Dentsply, Ivoclar, Vita are all high quality); Challoner Tr. 2879 (same); Armstrong Tr. 2386 (Ivoclar Vivadent tooth most natural- and best-looking tooth on the market).

320. While Dentsply tried to establish that its teeth were more durable and wear resistant than others, it failed to do so. The study conducted by Dr. Douglas at the University of Minnesota, apart from the fact that it is hearsay evidence, did not even test Ivoclar's most wear resistant teeth. Clark Tr. 2682-83; Ganley Tr. 984, 1013. Another study that was received into evidence concluded that "no significant difference in wear" existed among competing tooth brands. DX 506. Other evidence is in accord. Langer Tr. 3299 (all premium teeth wear the same); Armstrong Tr. 2378-79 (Vita and Ivoclar use similar material as Dentsply's IPN and are similar in wear resistance).

321. Dentsply has encountered manufacturing problems with its teeth. In August 1996, Holly DeFalco, Dentsply's regional manager in the Northeast, reported that, "[h]istorically, Trubyte has had a problem with flash and/or roughness on IPN teeth. GX 103. This problem existed even on Dentsply's Portrait teeth. Dentsply's own sales force believed that the finish on Dentsply's premium teeth were inferior to the finish on Austenal's Kenson brand, an economy tooth. GX 103; Clark Tr. 2680.

322. Dentsply's IPN teeth have had a debonding problem that have caused them to pop off a denture. To address this problem, Armstrong Laboratory has ground holes in the IPN teeth and applied a chemical agent to the underside of the tooth to prevent it from

popping off. Armstrong has followed a similar procedure not only with Dentsply's IPN teeth, but with the teeth of Ivoclar and Vita as well. Armstrong Tr. 2379-80.

323. Dentsply does not know how the frequency of the product and service complaints it has received compares with those received by its competitors.

324. Dentsply has encountered far more difficulties with "backorder" problems than its competitors. In the early-to-mid 1990's, Dentsply was having a "big back order problem for quite a few years." Cavanaugh Tr. 719. It could not produce teeth fast enough, and they "were having a real big problem. They were back-ordering a lot of teeth [and] upsetting a lot of [Frink Dental's] clients." Cavanaugh Tr. 719. Dentsply had the same problem in 2000. Jenson Tr. 2291. At that time, Marcus Dental in Minnesota took on the Kenson tooth line because of Trubyte's inability to supply it with the teeth it needed. Jenson Tr. 2291 ("Yes. They were unhappy with the service levels"); *see also* Swartout Tr. 1314-15. These problems began in the spring and continued into the fall. Jenson Tr. 2292. From July to August 2000, Trubyte's success rate for fulfilling one-day shipments reached an all-time low, going down from 83.7% to 80.5%. Jenson Tr. 2292.

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D. Despite these "other problems," Dentsply still views Vita and Ivoclar as its closest competitors and has actively enforced its exclusionary agreements to prevent each of its competitors from developing a dealer network.

325. Despite all of Dentsply's efforts to blame Vita's and Ivoclar's difficulties on other problems, Dentsply still views them as its primary competitors and focuses its competitive efforts against them. Clark Tr. 2683-84; Miles Tr. 3461, 3494; Jenson Tr. 2249-50.

326. Dentsply's concern about Vita, Ivoclar, as well as other competitors such as Myerson, is also demonstrated by its vigorous enforcement of Dealer Criterion 6 and its agreements with new dealers requiring them to drop some, or all, of these competitive brands. *See* PFF ¶ 44, *et seq.*

VII. Dentsply has not established that its alleged business justifications are sufficient to justify its exclusive dealing under Section 2 or under Sections 1 & 3.

327. Dentsply has failed to meet its burden to show that its exclusive dealing practices here are justified by a nonpretextual, procompetitive rationale. Dentsply's own fact and expert witnesses have provided insufficient evidence to support such a finding.

328. Moreover, Dr. Reitman has conducted a detailed examination of the record to determine whether there are any procompetitive efficiencies from Dentsply's exclusive dealing policies, and concluded that any procompetitive benefit is negligible. Reitman Tr.

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3917-18. In his position as a Justice Department economist, Dr. Reitman typically analyzes the justifications for a firm's conduct in the cases he works on to understand if the conduct has a procompetitive or anticompetitive explanation. Reitman Tr. 3917-18. Here, Dr. Reitman began evaluating Dentsply's claimed justifications when he started working on this case five years ago, three years before receiving Professor Marvel's first report. Reitman Tr. 3918-19. As part of this evaluation, Dr. Reitman reviewed Professor Marvel's justification theory, and concluded that there is no basis for Professor Marvel's opinion that there are procompetitive justifications for Dentsply's policies. Reitman Tr. 3917, 3973; *see also* Reitman Tr. 3880-81. In contrast, Professor Marvel has done no empirical analysis quantifying the effects of removing Dentsply's exclusive dealing policy. Marvel Tr. 3727.

329. When balanced against the demonstrated anticompetitive effects, Dr. Reitman concluded that those anticompetitive effects outweigh any possible procompetitive benefits. Reitman Tr. 1463, 3984-85. Ultimately, Dentsply's exclusive dealing policy results in harm to consumers in the form of higher prices, slower service and frustrated choice in that they do not always get the most suitable artificial tooth brand for a given denture case. Reitman Tr. 1463, 1543, 3917.

A. Dentsply's alleged business justifications are pretextual.

330. As shown above, the contemporaneous evidence is clear that Dentsply's <u>express</u> purpose in enacting and enforcing Dealer Criterion 6 was anticompetitive -- to "block" Dentsply's competitors from the largest, or "key dealers" selling Trubyte teeth by tying up those dealers. PFF ¶ 40.

331. Despite this evidence, Dentsply has put forth a series of purported justifications, both at trial and in its business dealings, that it claims as procompetitive. However, the evidence shows that these alleged justifications are merely post-hoc rationalizations devoid of support in the contemporaneous record. These pretextual assertions cannot satisfy Dentsply's burden to justify its exclusive dealing policies.

332. One rationale Dentsply has relied on is the need to "focus" its dealers on selling Trubyte teeth. This rationale is most explicitly set forth in an interrogatory response provided during the investigation that preceded the filing of this case:

> In Dentsply's experience, the greater the number of competing tooth lines carried, the less likely that a dealer will be able to sustain all of the desired service and promotional elements at a high, competitive level. In short, service and promotional support for a particular line is likely to suffer the greater the number of lines carried. Recognizing the need for dealers to focus their efforts in order to effectively promote the company's teeth and service laboratory customers, the company formalized criteria in February 1993 for dealers to meet in order to be Trubyte teeth dealers. One of these criteria is that dealers that are recognized as authorized distributors of Trubyte teeth cannot add additional lines of teeth after becoming a Trubyte dealer.

GX. 157 at Interrogatory Response No. 13 (p. 12); Reitman Tr. 3923-24.

333. The former Dentsply executive responsible for promulgating the dealer criteria, Robert Brennan, General Manager of the Trubyte Division, also provided this same "focus dealer services" rationale as an explanation for Dealer Criterion 6, stating that it was necessary to ensure that dealers provide an adequate level of service. Brennan Tr. 1719-20. Dentsply recently repeated this rationale in its November 2000 letter to Marcus Dental, in which it threatened Marcus with termination if it did not cease carrying Kenson teeth. Reitman Tr. 3925-27.

334. Dr. Reitman concluded, however, that the "focus dealer services" rationale is not a valid justification for using exclusive dealing in the tooth industry because dealers have every incentive on their own to make sure that their level of service for any given tooth brand does not suffer. Reitman Tr. 3927-28. If a dealer provides inadequate service, it risks losing customers, not only for teeth, but also all the other products the customer may buy from the dealer. Reitman Tr. 3928. In fact, there is much greater risk to the dealer than to Dentsply. If a customer is dissatisfied with the service it receives from one Dentsply dealer, it will simply buy Dentsply teeth from another dealer. Dentsply's sales will stay the same but the dealer will lose that customer's business altogether. Reitman Tr. 3928.

335. Testimony from, and the conduct of, Dentsply's own dealers also corroborates Dr. Reitman's analysis and undermines Dentsply's alleged concern over dealer "focus." Both and Betsy Harris testified that if they added another line of teeth, it would not affect their level of service or the amount of Dentsply teeth they stock. Reitman Tr. 3929. Harris Tr. 605, 664. Dealers selling the "grandfathered" brands have shown no lack of focus on Trubyte teeth despite the fact that they sell these other products. Vetrano Tr. 1427-28 (DLDS's addition of the Universal and Justi lines pursuant to the grandfathering provision in Dealer Criterion 6 did not affect its sales of Dentsply teeth); Harris Tr. 664 (fact that Atlanta Dental carries other lines of teeth besides Dentsply does not affect its ability to effectively sell Dentsply teeth); Weinstock Tr. 142 (sale of non-Dentsply teeth has no effect on Zahn's ability to support Dentsply teeth). Indeed, Dentsply's own Chris Clark acknowledged that Zahn Dental, which sells Universal, Myerson, and other rival brands, is one of the most effective dealers. Clark Tr. 2685.

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336. Moreover, the "focus dealer services" rationale communicated by Dentsply is inconsistent with Professor Marvel's efficiency rationale articulated in this case. Reitman Tr. 3974. Professor Marvel has not endorsed this particular rationale for exclusive dealing. Reitman Tr. 3929. To the contrary, he stated in his 1982 paper that enhancing dealer services cannot be the justification for exclusive dealing. Reitman Tr. 3929; Marvel Tr. 3704-05.

337. Instead of endorsing the contemporaneous rationale for Dealer Criterion 6, Professor Marvel hypothesized a different rationale. But, to the extent that Professor Marvel claimed to know when and why Dentsply began practicing exclusive dealing, his opinion must be disregarded as inconsistent with the evidentiary record. *See* Marvel Tr. 3632-36 (using timeline to allegedly show that "developments in this marketplace predicted when exclusive dealing would come along and why"). Professor Marvel's claim is remarkable, in light of the fact that Dentsply executives themselves -- most of whom were at Dentsply when the Dealer Criteria were first put in writing -- claimed not to know when the policy started, why it was adopted, whose idea it was, or whether it was adopted in response to a particular incident. Miles Tr. 3509; Clark Tr. 2629; Pohl Tr. 1902-03. In fact, Dentsply's counsel failed in her one attempt to elicit testimony from the CEO of her own client about the impetus of the exclusive dealing policy. Miles Tr. 3516-18 ("I'm not sure of it"). Professor Marvel later testified that he did not have an opinion on Dentsply's motive for adopting exclusive dealing and stated, "I don't much care about motive." Marvel Tr. 3686-87.

B. Dentsply has failed to demonstrate that Professor Marvel's free-riding theory applies to the artificial tooth market.

338. At trial, Dentsply nonetheless put forward Professor Marvel's hypothetical, purportedly procompetitive "free riding" theory for exclusive dealing. However, this theory must be rejected for a number of reasons: (1) Professor Marvel's alleged efficiencies from exclusive dealing are either not dependent on exclusive dealing or are mere speculation; (2) none of the four required elements of Professor Marvel's free riding theory are satisfied here; and (3) Professor Marvel's claimed justification is inconsistent with the behavior of Dentsply's dealers, Dentsply's past enforcement of Dealer Criterion 6, and its behavior with respect to other dental products in the marketplace.

1. Professor Marvel's claimed efficiencies are not dependent on exclusive dealing and are unsupported by the underlying record.

339. Professor Marvel identified three consumer benefits from exclusive dealing. Marvel Tr. 3655, 3657-59.[19] However, two do not depend upon Dentsply's use of exclusive dealing and the third is mere theoretical speculation, not adequately investigated or supported.

340. Professor Marvel claimed two benefits that consumers receive from exclusive dealing: (1) market expansion due to the Denture Opportunity Program, and (2) promotion to dental schools that helps them train their students to fit dentures. Marvel Tr. 3657-58. However, by the terms of Professor Marvel's own theory, these two benefits do not depend on Dentsply's use of exclusive dealing.

(a) Professor Marvel's efficiency "theory applies to the customers that you have generated for your brand that can be diverted. So it's primarily a theory about branded

[19] When considering efficiencies, Professor Marvel acknowledged that the focus should be on the benefits consumers receive and not on any benefits Dentsply or other suppliers receive. Marvel Tr. 3656.

promotion of artificial teeth." Marvel Tr. 3554. Branded promotion, according to Professor Marvel, "is promotion that is tied to bring[ing] a customer in to request that particular brand." Marvel Tr. 3553.

(b) By contrast, general promotion -- intended to expand the market or provide training, such as how to fit teeth -- constitutes nonbranded promotion, to which Professor Marvel's efficiency theory does not apply. Marvel Tr. 3553-54.[20] Thus, exclusive dealing does not protect Dentsply's efforts to expand the market through convincing patients to replace dentures, such as the Denture Opportunity Program. Marvel Tr. 3553-54, 3562-63, 3573 (identifying the denture opportunity program as nonbranded). *See also* Reitman Tr. 3962-63.

(c) Dentsply's relevant promotions under Professor Marvel's theory are those at the laboratory level. Reitman Tr. 3964. As Professor Marvel admitted, "you wouldn't expect to see exclusive dealing at the dealer level to explain protection of the promotion at the dentist level or at the final consumer level, so if Dentsply were to be promoting there and saying you've got to give me the right to have exclusive dealing at the dealer level in order to protect that promotion, I would say that is not an answer, that I would find an explanation that I would find credible." Marvel Tr. 3698-99. Dentsply does not "need to have recourse to exclusive dealing to be able to retain those customers that its efforts bring to the laboratories." Marvel Tr. 3699. *See also* Marvel Tr. 3698 (if "free riding" on promotion to dentists and

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[20] Marvel Tr. 3553, line 25, contains a typographical error. The word "branded" should be "nonbranded."

patients were a significant problem, Dentsply would need to adopt exclusive dealing at the lab level rather than at the dealer level).

(d) Dentsply engages in nonbranded promotion even though exclusive dealing does not protect these promotional efforts because, to the extent the market expands, Dentsply gets a substantial share of that growth at considerable margins, notwithstanding "free riding" by rivals. Marvel Tr. 3562-63.

(e) Similarly, Professor Marvel testified that "education and training" programs that familiarize people with denture teeth and "make it easier for them to fit dentures" are generally "nonbranded" and thus not protected by exclusive dealing. Marvel Tr. 3554. These are precisely the types of programs that Dentsply sponsors at dental schools. Marvel Tr. 3658 (describing benefits of Dentsply's promotion to dental schools that "there is somebody out there who is trained in getting you a proper fit" and knows how to select teeth). Thus, these programs are analogous to promotions to dentists and are outside the scope of Professor Marvel's theory.

341. Professor Marvel's third claim was that exclusive dealing has allowed Dentsply to introduce premium teeth such as Portrait teeth. Marvel Tr. 3657 (exclusive dealing makes it "possible for a firm to introduce such products and bring them before the ultimate customers by protecting the promotional efforts that the firm makes"), 3658-59 ("Dealer Criterion 6 allows Dentsply to get a return on its promotion, so that it can profitably introduce such new products").

(a) Professor Marvel's claim that exclusive dealing was necessary for Dentsply to introduce Portrait and other premium teeth hinges on his conclusion that without

exclusive dealing, Dentsply could not do sufficient branded promotion to introduce new products. Marvel Tr. 3657, 3659. Yet, Professor Marvel offers no support for this conclusion, an omission that is particularly telling given that he did not find "free riding" to have significantly affected nonbranded promotion. Professor Marvel admits that nothing but theoretical expectations support his claim that branded promotion would be reduced. Marvel Tr. 3727 (Professor Marvel has "merely theoretical expectations of what might happen if Dentsply abandoned its exclusive dealing"), 3729.

(b) Professor Marvel has "done no empirical analysis of what would happen if Dentsply abandoned its exclusive dealing." Marvel Tr. 3727; *see also* Marvel Tr. 3729. He ignored a number of opportunities to do more than speculate:

(i) When he reached his opinion, 14 of the 30 dealers that carried Dentsply teeth, including the top 6 dealers, carried other lines of teeth as well. Marvel Tr. 3729-30. Professor Marvel could come up with only a single instance of what he claimed to be actual "free riding" on Dentsply's efforts at an authorized Trubyte dealer -- when Dentsply failed to supply teeth to Marcus Dental in 2000 because of manufacturing problems and Marcus sought to buy teeth from Kenson. Marvel Tr. 3733. That incident, however, did not involve free riding. There is no evidence that the rival manufacturer, Myerson, reduced its promotion by offering Marcus a greater margin than Dentsply, or induced Marcus in any way to steer its customers.

(ii) Many of Dentsply's dealers sell economy teeth, on which Dentsply charges a premium substantially higher than its rivals. Marvel Tr. 3734-35. Professor Marvel agreed that the absence of free riding in economy teeth at Trubyte dealers

would have been a good test for his theory, but only if Dentsply and its rivals had economy teeth of comparable quality. Marvel Tr. 3735-37. But, Professor Marvel chose not to determine whether Dentsply and its rivals had economy teeth of comparable quality. Marvel Tr. 3736-37. Thus, Professor Marvel ignored another opportunity to test his theory.

(iii) Both Universal and Meyerson sold premium teeth through dealers at prices lower than Dentsply's. Marvel Tr. 3737. Professor Marvel looked, but could find no evidence of free riding on Dentsply's promotion of premium teeth. Marvel Tr. 3737-38.

(iv) A Dentsply dealer, DTS, carried both Dentsply and Vita teeth in New York. Marvel Tr. 3738. Professor Marvel did not look to see whether Vita offered DTS a margin difference to switch customers as his theory predicts it should. Marvel Tr. 3741. He conceded that if he had, he would have found evidence to support or refute his theory. Marvel Tr. 3741.

2. The necessary elements of Professor Marvel's free riding theory are not satisfied here.

342. There are four essential elements or conditions which must be satisfied in order for Professor Marvel's theory to apply to any given market. Reitman Tr. 3972-73, 3984. If any one of those conditions are not satisfied, his theory fails. Reitman Tr. 3973, 3984. None of the four necessary elements is satisfied in this case: (1) there is no evidence that dealers engage in "bait and switch" steering of lab customers; (2) Dentsply need not charge a price premium because, using the appropriate measure, it spends less on advertising and promotion than its rivals; (3) most of the relevant promotions by Dentsply are not protectible by

exclusive dealing because they are purely brand-specific and not free-ridable; and (4) Dentsply would increase, not decrease, its spending on promotions and marketing absent Dealer Criterion 6. Reitman Tr. 3949, 3973. Each of these failures, in and of itself, is fatal to Professor Marvel's theory here. Reitman Tr. 3973, 3984.

a. Dealers do not actively "bait and switch" laboratory customers to steer them from one tooth brand carried by the dealer to another.

(i). Dealers are more interested in satisfying existing consumer demand and concerned about alienating customers than in actively steering their lab customers from one brand to another.

343. An "essential element" or "linchpin" of Professor Marvel's efficiency theory is that dealers will try to steer orders for Dentsply teeth to another brand by using a "bait and switch"[21] strategy on their lab customers. Reitman Tr. 3930-31, 3935, 3946; Marvel Tr. 3548-49. It is not plausible under the facts of this case, however, that dealers would steer labs from one tooth brand to another for several reasons: (1) labs (or sometimes dentists), not dealers, are the decisionmakers who determine what brand of teeth will be used in a particular denture case; (2) there is a significant downside risk to dealers who try to steer customers because if the dealer recommends an alternative brand and the lab does not like it, the dealer might lose the customer's business not only for teeth but also other products. Reitman Tr. 3933; Crane Tr. 1130-31 (little chance a dealer would try to steer customers because of risk that if customer is unhappy with new line of teeth, dealer could lose all of lab's future business); and

[21] The phrase "bait and switch" was coined by Professor Marvel in describing his theory. DX 1671D; Marvel Tr. 3548.

(3) there is no evidence in the record that, in fact, dealers are steering customers. Reitman Tr. 3931-32.

344. Numerous dealers testified that they do not attempt to steer a lab ordering a particular tooth to order another brand:

(a) DLDS does not attempt to steer customers from one brand of a product to another. Vetrano Tr. 1417, 1419, 1428-29, 1436. The General Manger of DLDS, Regis Vetrano, testified that DLDS could lose customers if it tried to steer a customer to a product that did not work as well as the one the customer preferred. *Id.* at 1417. Moreover, DLDS's sales representatives are not in a position to switch orders from labs because they are not laboratory technicians and do not use the products. *Id.* at 1417, 1437. Mr. Vetrano made clear that his representatives would "have a problem" with him if they tried to substitute teeth. *Id.* at 1428.

(b) At Pearson Dental, the tooth counter specialist responds to "the demand of the customer." Kashfian Tr. at 1384. If a customer calls and orders a particular item, "we don't challenge that. We just process the order." *Id.* Pearson does not "push somebody to buy whatever brand versus [an]other brand" unless "the customer asks for information that . . . he wants to do the change himself." *Id.* at 1391-92. Pearson does not have any influence in determining which brand of teeth will be used in a particular denture -- that decision is made by the lab or the dentist. *Id.* at 1402-03.

(c) Atlanta Dental does not steer its customers to one of the teeth brands that it carries over another. Harris Tr. 663. Ms. Harris sees the decision as the customer's -- she only provides them with her knowledge of different lines, answers questions about the

specific tooth that they are inquiring about and checks on its availability. Harris Tr. 662-63. In any event, "Primarily, [customers] do know what they want when they call in." Harris Tr. 663-64.

(d) Mr. Nordhauser testified that Darby does not have a hand in choosing the teeth that the laboratory will buy and put into a denture: "We don't do that. The laboratory does that. We can just point out that we have economy teeth and we have regular teeth. So that's as far as we go. We don't in any other way have anything to do with what goes into that denture." Nordhauser Tr. 4143-44.

(e) Zahn does not steer labs from one tooth brand to another. Weinstock Tr. 164-65. On a routine basis, Zahn simply takes orders and "whatever the customer is requesting is what we provide." *Id.* at 103; 143 ("Customer asks for something, we give it to them"). To do otherwise might antagonize its relationship with its vendors.

(f) Jack Silcox testified that, when a lab calls and orders a particular brand of tooth, he does not try to steer them to another brand. Silcox Tr. 2067. Rather, they place their orders and he "give[s] them what they want." *Id.*

(g) Accu Bite earns a margin on its Dentsply tooth lines, except for Desautel Tr. 2468. Despite this margin difference, there is no evidence that Accu Bite steers customers away from Portrait and toward other lines that would earn a higher margin.

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345. Dentsply's primary competitors also testified that they do not require or encourage dealers to steer labs.

(a) Vident does not require its dealers, as a condition of selling Vita teeth, to encourage the sale of Vita teeth over a competing brand also carried by that same dealer. Whitehill Tr. 391.

(b) When Frink Dental sold Ivoclar and Trubyte side by side, Ivoclar did not try to induce Frink to switch incoming orders for Trubyte teeth to Ivoclar. Ganley Tr. 1118.

346. Labs agree that dealers do not attempt to determine or influence their choice of brands:

(a) Mr. Obst of DSG testified that his dealer, Zahn, never determines the brand of tooth DSG labs use in their dentures, and that this is true of dealers generally. Obst Tr. 2754. As far as Mr. Obst knows, the dealer isn't even involved in that decision making process in terms of what artificial tooth to use in a particular denture case. Obst Tr. 2754.

(b) Mr. Ryan of Sonshine Dental Lab testified that the dealer is "not involved in picking teeth at all for us." Ryan Tr. 1227. Mr. Ryan testified that DLDS has never tried to persuade him or his lab to switch from the brand of tooth he was planning to buy to another. Ryan Tr. 1227-28. When a dealer is out of stock on something, it calls the lab so the lab can pick a different mould or substitute a different tooth. Ryan Tr. 1227. But in that circumstance, the lab -- and not the dealer -- is the one making the decision about what to substitute to. Ryan Tr. 1227 ("We're the ones that make that decision").

(c) In Dr. Armstrong's 50 years of experience in the dental lab business, he cannot remember a time when a dealer determined what line of teeth would be used by his lab in a denture case. Armstrong Tr. 2387.

(d) Mr. Challoner testified that when his lab orders teeth from the dealer, he already knows which brand he wants and the dealer has no role in determining his choice. Challoner Tr. 2869.

347. During his testimony, Professor Marvel provided several examples of what he claimed were dealers doing the kind of "bait and switch" steering necessary to substantiate his theory. Marvel Tr. 3585-92; DX 1669. However, the record demonstrates that these are not examples of actual steering:

(a) Frink Dental -- First, Mr. Cavanaugh was quite clear in his testimony that what he did was simply give labs a choice to see if they were interested in Ivoclar teeth. Reitman Tr. 3936; Cavanaugh Tr. 683, 690. Professor Marvel concedes that providing a comparison to customers and giving them a choice is not free riding. Marvel Tr. 3693; Reitman Tr. 3936. Second, it is clear that Frink was not trying to steer customers from Trubyte to Ivoclar because Frink's sales data shows that during the time it sold both brands of teeth its sales of Trubyte teeth actually increased over the level of sales when Trubyte was the sole brand Frink carried. Reitman Tr. 3936-37; Cavanaugh Tr. 715 (Frink gained $75,000 in Dentsply sales during six months he sold Ivoclar), 726; Ganley Tr. 1118 (Ivoclar did not try to induce Frink to switch incoming Dentsply orders over to Ivoclar). Instead, Frink gained additional customers because it gave customers more choices and provided them more products. Reitman Tr. 3937. And in any event, Professor Marvel's theory does not apply to

the Frink episode in the first place because Frink had been terminated by Dentsply and knew it would not able to sell Dentsply teeth for much longer, so it was going to lose all of its lab customers unless it could convert them to Ivoclar. Reitman Tr. 3937-38. The Frink episode is not an example of "bait and switch" steering between two brands of teeth it carried on an ongoing basis; instead, Frink was not going to be able to sell one brand of teeth any longer and was simply trying to preserve its customers in order to survive. Reitman Tr. 3938.

(b) Zahn Dental - Zahn, too, is not an example of dealer "bait and switch" steering between two brands carried on an ongoing basis. Reitman Tr. 3938. Instead, Zahn traded-out and returned certain lines of Universal teeth from certain locations, and as a result could no longer supply those Universal teeth to its customers. Reitman Tr. 3938; Weinstock Tr. 532-33. Therefore, Zahn attempted to convert its customers from the Universal teeth that were no longer available to Dentsply teeth that it carried. Reitman Tr. 3938-39, 4022-25, 4031-33. According to Professor Marvel, this is not an example of a manufacturer free riding on another. He claimed that the reason Zahn switched its customers was because Trubyte was offering a better product. "If [Universal] had a good tooth that it was promoting regularly," there would not have been a problem. Marvel Tr. 3803.

(c) DTS (I) - Like Zahn, DTS was no longer able to sell Ivoclar or Vita at all in Denver and Kansas City as a result of its agreement with Dentsply authorizing DTS as a Trubyte dealer. Raths Tr. 1159-61; Reitman Tr. 3939. In order to maintain those customers, DTS had to convert them to Dentsply teeth. *Id.* In New York, DTS was permitted to continue selling both Vita and Trubyte. Raths Tr. 1153. However, as Professor Marvel conceded, if any switching of accounts occurred at DTS New York, it was done by Dentsply sales reps, not

DTS reps. Marvel Tr. 3739. There is no evidence that DTS assisted Dentsply in trying to steer its customers. *Id.* at 3739-40.

(d) DLDS - This example was based on Mr. Langer's testimony that his lab made the choice to convert from Vita to Dentsply teeth. Langer emphasized that DLDS does not recommend one brand over another. Reitman Tr. 3939; Langer Tr. 3297-98. Even assuming that DLDS, not Langer Dental Lab, was the impetus for the conversion, this would not be an example of steering because DLDS does not carry Vita teeth. Reitman Tr. 3939-40. Rather, it would be an example of "push" marketing to obtain new teeth sales from labs who would otherwise buy their teeth from another supplier -- not "bait and switch" steering between two tooth brands sold by DLDS. Reitman Tr. 3939-40.

(e) DTS (II) - This is not even an example from the artificial tooth market; instead, it pertains to Tom Underwood's testimony that Ivoclar allegedly asked him to convert customers from the Argen brand of precious metals to Ivoclar.[22] Reitman Tr. 3940; Underwood Tr. 3391-92. Even if this request were made, DTS refused to do it. *Id.* The relevant consideration is what dealers actually do, not what a manufacturer expects or requests them to do. Reitman Tr. at 3940. As a result, this is not even an example of "bait and switch" steering in the precious metals market. *Id.*

(f) Darby - Professor Marvel referred to Darby's "opportunity to convert" using its tooth counter. Reitman Tr. 3941; Marvel Tr. 3590-91. Again, the relevant consideration is what dealers actually do, not what they could do, so this example is not

[22] And, of course, Mr. Underwood's deposition testimony about what an unidentified Ivoclar representative said to him is inadmissible hearsay.

evidence of steering. Reitman Tr. 3941. To the extent that Darby's sales representatives or telemarketers attempt to obtain new customers for Darby or Dentsply's teeth this is push marketing, not "bait and switch" steering. *Id.*

(ii). There is no evidence indicating that Dentsply's non-exclusive tooth dealers have, in the past, actively steered their lab customers from Dentsply teeth to grandfathered rival brands.

348. If "bait and switch" steering were a valid concern in the artificial tooth market, there should be more examples of it actually occurring, given the presence for at least 25 years of grandfathered brands of rival teeth at dealers carrying Dentspsly teeth. Weinstock Tr. 41; Reitman Tr. 3941-42. As mentioned above, Dentsply and Professor Marvel, the proponents of this theory, failed to investigate whether the grandfathered dealers were engaged in steering. Given the 15 years that have passed since the termination of Frink for adding a competing line, it is reasonable to believe that Dentsply, with its extensive sales force, would have gained some knowledge of such steering and reported that to the Court. To the contrary, there are "zero examples" in the record of these dealers steering customers from one brand to another. Reitman Tr. 3943-44, 3946. The dealers selling grandfathered brands who testified at trial and in the deposition record consistently stated that they do not "bait and switch" or steer customers. *Id.*; Weinstock Tr. 103, 164-65; Harris Tr. 662-64; Kashfian Tr. 1384, 1391-92; Vetrano Tr. 1417, 1419. *See also* Langer Tr. 3296-98, 3306-07 (In addition to Dentsply teeth, DLDS sells Justi teeth, an "identical" lower-priced copy of Dentsply's Bioblend tooth, but DLDS has never tried to convert him between brands).

349. The grandfathered brands provide particularly compelling evidence that dealers do not steer customers because, if anything, dealers should be able to steer customers more easily from Dentsply to those brands than to Vita and Ivoclar. Reitman Tr. 3944, 3946. This is because the grandfathered brands include Universal and Myerson, both of which are available in premium lines with American moulds (in fact, copies of Dentsply moulds) and Dentsply shades, all of which is intended to make it easy for labs to switch from one to the other. Reitman Tr. 3944-45. In contrast, Ivoclar and Vita teeth -- which are not among the grandfathered brands -- use largely European moulds and their own shading systems. Reitman Tr. 3945-46; Jenson Tr. 2120-21. Thus, although one would expect to see more switching to Universal and Myerson for these reasons, in reality there has been no steering of lab customers to these brands. Reitman Tr. 3946.

b. Dentsply has failed to show that it spends proportionately more on advertising and sales promotions than its rivals, and therefore needs to charge a price premium.

(i). Dr. Reitman's analysis shows that Dentsply spends less on advertising and promotion than its rivals.

350. The second essential element of Professor Marvel's theory is that Dentsply must charge a price premium greater than that charged by its rivals because it spends more on promotions. Reitman Tr. 3949, 3961-62. Because of this price premium, dealers receive a smaller margin on Dentsply teeth than on its rivals teeth, which in turn creates an incentive for the dealers to engage in "bait and switch" steering of lab customers. *Id.* Dentsply has failed to sustain its burden to show that it spends proportionately more on sales and advertising than

its rivals -- indeed, the evidence shows that Dentsply does not need to charge a price premium because it in fact spends less than its rivals. *Id.*

351. Although Dentsply spends more on promotions than its rivals in absolute terms, because it is times the size of its nearest competitor, the relevant measure is advertising and promotional spending as a proportion of total sales. Reitman Tr. 3950-51, 3961. Professor Marvel applied this measurement in his empirical analysis of the insurance market to test his theory in his 1982 paper. Reitman Tr. 3951-53, 3962.

352. Dr. Reitman calculated Dentsply's promotional expenses as a fraction of its sales in the tooth market using two different variations of Professor Marvel's method: (1) using advertising and promotion expenditures for teeth where available or, where tooth-only expenditures were not available, using advertising and promotions expenditure for all products of the tooth-selling unit or division of the company (GX. 435, 436); and (2) using the number of sales representatives as a proportion of total sales (GX. 437). Reitman Tr. 3953-60. The first variation captures expenditures for advertising in journals, catalogues, producing promotional materials, etc., while the second variation focuses on simply a company's sales force, which Chris Clark testified was the main element of Dentsply's marketing expenditures. Reitman Tr. 3958-59.

353. Dr. Reitman concluded that Dentsply spends less, and in some cases much less, than its competitors on promotions and marketing, even conservatively allocating all the advertising and promotion expenditures of the entire Trubyte Division (which includes many other products such as Lucitone acrylic and Triad) to teeth. Reitman Tr. 3957-58, 3961-62. Similarly, Dentsply's expenditures on its sales force, as a proportion of sales, do not exceed

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that of its competitors, and thus would not require charging a price premium. As a result, there is no basis for Dentsply charging a higher price premium than its competitors; if anything, Dentsply should charge less than its rivals, resulting in lower margins for Dentsply, and an incentive for dealers to steer customers from rivals to Dentsply, not the other way around. Reitman Tr. 3957-58, 3961-62. Accordingly, promotional spending does not explain Dentsply's application of exclusive dealing in the tooth market. Reitman Tr. 3962.

(ii). Other evidence in the record confirms that Dentsply has consistently overstated its level of promotion, advertising and dealer investment.

354. Evidence from Dentsply's own employees, as well as its tooth dealers, consistently shows that, over the last decade, the level and effectiveness of Dentsply's promotional, advertising, and educational efforts fall far short of what it claimed at trial.

355. In September 1993, the large labs participating in the Dentsply/York Division Laboratory Advisory Group told Dentsply that it needed to "significantly expand [its] current Education and Speaker's programs to set up a top-notch Dentist effort." DX 389 at DS 005174.

356. In June 1995, Ronald Zentz, the head of Dentsply's Education Department responsible for administering the training programs for labs, wrote:

GX 91 at DPLY-A 053290.

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357.

GX 91 at DPLY-A 053290.

358. The Trubyte Division's Long Range Plan in 1996 again identified

GX 101 at DPLY-A 037306, DPLY-A 037308.

359. These were still areas of concern in the Trubyte Division's 1998 strategic plan:

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GX 126 at DPLY-A 046407, 046408. *See also* GX 155 at DPLY-A 107389

360.

361. One of Dentsply's own dealers, Accu Bite, testified that Trubyte's tooth training program is merely "basic." Desautel Tr. 2472. Mr. Desautel believes that his tooth counter manager could probably write the Trubyte tooth training program herself. Desautel Tr. 2473. Accu Bite doesn't use Trubyte's training materials very much. Desautel Tr. 2473. Moreover, there have been occasions where Accu Bite "had some Dentsply representatives call on us, [and] it was obvious they did not know as well their product lines" as Accu Bite did. Desautel Tr. 2474. There have been examples where the local Dentsply tooth rep was not adequately informed or did not have the basic information on some of Trubyte's own promotions. Desautel Tr. 2475. There were even occasions in the past where it got to be "laughable," and got "to the point where it wasn't doing us any good to have that [Trubyte rep] in our tooth counter because they weren't adding any value." Desautel Tr. 2474-75.

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362. Mr. Nordhauser of Darby, another Dentsply dealer, testified that Dentsply does not provide any training to any of Darby's personnel in the administration of the tooth counter. Nordhauser Tr. 4143.

363. Dentsply's own dealers do not see Dentsply's promotional efforts bringing in new customers to them.

(a) In the 27 years Mr. Cavanaugh owned Frink, he doesn't remember Trubyte bringing him a new laboratory customer for Trubyte teeth. Cavanaugh Tr. 722-23.

(b) Mr. Desautel does not see Trubyte bringing him new customers. Desautel Tr. 2469-70. There aren't enough Dentsply sales reps to canvass all of Accu Bite's accounts, so Accu Bite's reach is greater than Dentsply's reach. Desautel Tr. 2469-70. In fact, Mr. Desautel does not expect any vendor to obtain new customers for him, because Accu Bite, the dealer, is the one with the customer expertise and the customer relationships. Desautel Tr. 2470.

(c) In Mr. Nordhauser's estimation, Dentsply's sales and promotion efforts do not play a significant role in labs using Dentsply teeth. Nordhauser Tr. 4150. Mr. Nordhauser believes that the customers who purchase Dentsply teeth from Darby are Darby's customers, and not Dentsply's customers. Nordhauser Tr. 4110-11.

(d) Dentsply has brought "very few" customers to Pearson Dental. Kashfian Tr. 1392.

364. Dentsply has overstated its promotional and marketing efforts. As Mr. Desautel testified, compared to all of his other vendors, Trubyte doesn't offer any special services or special pricing or anything that he regards as special in the industry. Desautel Tr.

2479. Trubyte "is essentially harmless and plain vanilla -- they're almost invisible." Desautel Tr. 2479.

(iii). Dentsply's rivals have provided and would provide training and similar assistance to dealers selling their teeth.

365. The record demonstrates that, when given the opportunity to compete through dealers, Dentsply's competitors do not free ride on existing dealer business, but instead actively promote their products to labs and dentists. Apparently, even Dentsply believes that its competitors would work with dealers to promote their teeth, and not free ride on the dealer's efforts. *See* Miles Tr. 3513 ("labs would have to be converted. But between the manufacturer and the dealer, yes, I believe some sales of those competitive teeth would occur and that would impact on my market position")(emphasis added).

366. When Ivoclar sold teeth to Frink, Ivoclar did not free ride on Frink's pre-existing relationships with labs and dentists. Instead, Ivoclar supported Frink's efforts, and created demand for Ivoclar teeth in Frink's Midwestern territory, in a number of ways.

(a) Ivoclar trained Frink's personnel in how to fabricate dentures using Ivoclar teeth. Ganley Tr. 994. Ivoclar also educated Frink on the product features and benefits of Ivoclar's teeth. Ganley Tr. 994; Cavanaugh Tr. 685-86. Mr. Cavanaugh felt that Ivoclar's training was comparable to Dentsply's but that Ivoclar had better promotional materials and samples. Cavanaugh Tr. 716-17.

(b) Ivoclar conducted a "sales blitz" in Frink's territory, by bringing several sales representatives from around the country to the Midwest to cotravel with Frink's sales

personnel and launch the sale of Ivoclar teeth. DX 9 at IVC 023656; Ganley Tr. 994-95; Cavanaugh Tr. 724-25.

(c) Ivoclar continued to advertise its teeth in Frink's sales area. DX 9; Ganley Tr. 1042-43.

(d) Ivoclar did not compete against Frink in the sale of Ivoclar teeth. It granted Frink the exclusive right to sell Ivoclar teeth in its territory, and credited all sales of teeth in that territory to Frink. Ganley Tr. 996.

(e) At Frink's request, Ivoclar changed its credit and exchange policies to match Dentsply's. GX 174.

(f) There is no evidence even suggesting that Tom Cavanaugh, Frink Dental's owner, decided to drop Ivoclar because he was dissatisfied with Ivoclar's product or the level of its support. Ganley Tr. 1000-01. At most, at trial Dentsply proved that Mr. Cavanaugh had some initial concerns at the outset of his relationship with Ivoclar concerning the departure of Ivoclar's president, Kevin Dillon. Ganley Tr. 1046-47.

367. When Ivoclar sold teeth to DTS of Colorado, it supported DTS's efforts and created demand for Ivoclar teeth in that dealer's territory, in a number of ways.

(a) It granted DTS of Colorado a large territory of exclusivity, encompassing all or parts of nine states, in which DTS was the exclusive representative of Ivoclar North America. GX 19 at IVC 024600.

(b) Ivoclar sponsored several seminars by Lee Culp, a well-known ceramist in the United States, for the purpose of introducing Ivoclar's products to the dental lab technicians in the area. Ganley Tr. 1004-05; GX 19 at IVC 024600.

(c) Ivoclar designed, produced, and mailed a direct mail communication to announce the new arrangement with DTS. GX 19 at IVC 024600.

(d) There is no evidence suggesting that DTS of Colorado dropped the Ivoclar tooth line because it was dissatisfied with Ivoclar's product or the level of its support. Ganley Tr. 1006. *See also* Underwood Tr. 3400-01 (DTS's Kansas City branch was satisfied with the quality of Ivoclar's products and the level of marketing support it received; Ivoclar was "very good" at marketing its products).

368. When Vident sold teeth to DTS, Vident did not rely on DTS to create the demand for Vita teeth. Whitehill Tr. 262. Vident supported DTS by training its sales people, cotraveling with them, providing literature, and attending trade shows in DTS's territories. Whitehill Tr. 261-62. In addition, Vident stopped selling directly to labs in DTS's territories, and referred all lab customers wishing to buy Vita teeth to DTS. Whitehill Tr. 260-61.

369. Similarly, when Vident sold teeth to Jan Dental, Vident supported Jan in the same way it supported DTS. Whitehill Tr. 264. Vident did not rely on Jan to create the demand for Vita teeth; that demand was created through Vident's efforts. Whitehill Tr. 264-65.

c. Much of Dentsply's lab-level promotions are not protected by exclusive dealing because they are purely brand specific.

370. The third problem with Professor Marvel's theory is that a great deal of Dentsply's relevant promotion is not free-ridable because it is "purely brand specific" -- *i.e.,* the customer is convinced by the promotion that it wants to buy a particular brand of teeth and a dealer's recommendation will not dissuade them of their brand preference. Reitman Tr.

3965-66. The term "purely brand specific" is derived from Professor Marvel's 1982 paper describing his theory, where he wrote: "This argument does not apply if the promotional investment is purely brand specific. In such cases, the dealer will not be in a position to switch customers from brand to brand."[23] Reitman Tr. 3965.

371. One of Dentsply's purely brand specific promotions is its "add-a drawer" program. Reitman Tr. 3966. The objective of this program is to convince a customer to add additional teeth to an existing stock of Dentsply teeth. Reitman Tr. 3966; Marvel Tr. 3560. If the promotion successfully convinces the lab to expand its inventory of Dentsply teeth, it does not make sense that the lab would be willing, or the dealer would be able to convince the lab, to do so by buying a rival's brand of teeth instead. Reitman Tr. 3967. Other examples of purely brand specific promotions are Dentsply's cooperative marketing program, Portrait "sticker" program, Portrait Spectacular program, and competitive tooth swaps. Reitman Tr. 3967-69; Marvel Tr. 3560-62 (describing Portrait Spectacular and coop marketing); Jenson Tr. 2143-44 (describing sticker program), 2169-70 (describing tooth swap program).

372. To the extent Dentsply's promotions are purely brand specific, they are not free-ridable, and Professor Marvel's efficiency theory does not apply to them. Reitman Tr. 3969.

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[23] In his trial testimony, however, Professor Marvel appeared to reverse course on this issue and testify that exclusive dealing protects branded rather than generic promotion. Marvel Tr. 3554 ("it's primarily a theory about branded promotion of artificial teeth"); Reitman Tr. 3965. Dr. Reitman did not address whether there might be any branded promotion that is susceptible to free-riding and thus protected by exclusive dealing, only that "purely" brand specific promotion is not susceptible. Reitman Tr. 3965

d. Dentsply has not shown that promotion would decrease absent Dealer Criterion 6; indeed, the evidence shows that both Dentsply and its competitors would increase their levels of promotion.

373. Even if the previous three problems with the application of Professor Marvel's theory to the artificial tooth market did not exist, his theory fails because Dentsply has failed to put forth evidence demonstrating that Dentsply would decrease its level of promotions in the absence of exclusive dealing. *See* Marvel Tr. 3727-28 (Marvel has done no empirical analysis of the effect of removing Dealer Criterion 6 on promotion, and has no firm conclusion on what would actually occur). To the contrary, the evidence shows that Dentsply would in fact increase its level of promotion and marketing, as would Dentsply's competitors. Reitman Tr. 1534-35, 3949. As a result, there would not be an inefficient level of promotion in the market. Reitman Tr. 3969-70.

374. Even assuming Professor Marvel's efficiency theory applied to the tooth market and Dentsply would have an incentive to do less promotion because it could not protect its investment in such promotion, Dentsply would also have a countervailing incentive to do more promotion in order to compete with the strengthened price and non-price competition from its rivals once they gain access to dealers. Reitman Tr. 3970-71; *see also* Reitman Tr. 1534-35. These two effects on Dentsply's promotion level from removing Dealer Criterion 6 must be weighed against each other. Reitman Tr. 3971. The testimony of Dentsply's own executives indicates that, if Dealer Criterion 6 is removed and as a result Dentsply loses market share, Dentsply will likely increase its promotions to regain its share. Reitman Tr. 3971-72; Miles Tr. 3513-14; Jenson Tr. 2309; *see also* Clark Tr. 2688 (Dentsply

worked "even harder" to promote teeth to labs after DTS began carrying Trubyte and Vita side by side in New York). *See also* PFF ¶ 282.

375. If marketing expenditures would increase absent Criterion 6, there can be no concern about an inefficient level of marketing by Dentsply and therefore no procompetitive justification for maintaining Dentsply's exclusionary policies. Reitman Tr. 3972.

376. The conclusion that Dentsply would compete aggressively even without exclusive dealing is buttressed by its behavior with respect to other Trubyte products that are not protected by exclusive dealing. For example, Dentsply made a point of eliciting testimony from its own executives and lab customers about Trubyte's new "Eclipse" denture system, which will enable lab technicians to fabricate a denture without using wax. Clark Tr. 2526; Miles Tr. 3458; Jenson Tr. 2131-33; Coykendall Tr. 3324-25. Yet Eclipse is a Trubyte merchandise product, and dealers are not supposed to be terminated as Trubyte merchandise dealers for adding a competitive line of merchandise. Miles Tr. 3509-10. Despite this lack of exclusive dealing protection, Dentsply nonetheless spent the money developing this new product. Miles Tr. 3510.

377. The evidence also shows that Dentsply's rivals would increase their levels of promotion and marketing if Dealer Criterion 6 were no longer in effect. Various Dentsply competitors have testified that when they determine how to allocate resources, they evaluate how effective the promotional resource will be at increasing sales.

Reitman Tr. 1534. When a product is sold through an inferior distribution channel, as here, it is difficult to drive sales through that channel by promoting and marketing. Ganley Tr. 1075; Reitman Tr. 1535. So when a supplier shifts to selling through a preferred distribution

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channel, there is a greater likelihood of marketing having an impact and there is more incentive to devote marketing dollars and promotional effort to those products. *Id.* As a result, Dentsply's rivals would increase their promotional expenditures if their teeth were sold through the dental laboratory dealer network. *Id.*; Reitman Tr. 1629; Whitehill Tr. 281-82 (if Vident were able to sell its teeth to a national or regional dealer, it would increase its advertising and promotion of its teeth); Swartout Tr. 1316-19 (in areas where Myerson has better distribution, it invests more in sales and marketing; if it could obtain better distribution in other areas, it would invest more there too).

C. Dentsply's business justification theory is inconsistent with the facts in the marketplace.

378. In addition to the specific areas where Professor Marvel's theory does not apply to the artificial tooth market, Dentsply's asserted justifications for its exclusionary policies are inconsistent with its own announced reason for its exclusionary policies, its conduct enforcing the policy, its rival suppliers' actions, and dealers' behavior in the marketplace. Reitman Tr. 3973-74.

1. Dentsply's justification theory is inconsistent with its dealers' own vehement opposition to exclusive dealing.

379. The rationale for Dentsply's claimed procompetitive justification is that it makes distribution more efficient, resulting in increased profits. But in order to get dealers to cooperate with this distribution restraint, Marvel's theory requires that Dentsply must share its increased profits with the dealers. Reitman Tr. 3974. Thus, in theory exclusive dealing should make dealers "better off" because they get a "share of the pie." Reitman Tr. 3974.

380. Instead of showing support for Dentsply's exclusionary policies in order to receive the benefit of this arrangement, however, dealers vigorously oppose the policy. Reitman Tr. 3975. Both Ms. Harris of Atlanta Dental and Mr. Weinstock of Zahn Dental voiced the opinion at trial that Dentsply's policies exert too much control over the products they are able to sell. Harris Tr. 593-94 ("I felt that it shouldn't be up to someone else to tell you what you can sell and who you can sell it to"); Weinstock Tr. 157.

381. More strikingly, these dealers have gone so far as to take affirmative action to undermine Dentsply's enforcement of its policy against other dealers. For example, Zahn Dental, Atlanta Dental and many others supported Frink, and put their own relationships with Dentsply at risk, by supplying Frink with Dentsply teeth after it had been terminated as a Trubyte dealer. Reitman Tr. 3975; Cavanaugh Tr. 701-05; Weinstock Tr. 155-57; Harris Tr. 588-94. These dealers sold Trubyte teeth, *at cost*, to Frink in order to show their support for Frink's stand against Dentsply. Weinstock Tr. 156-57 (sold teeth to Frink, a competitor, at cost because Zahn did not want to condone Dentsply's decision to terminate Frink for taking on the Ivoclar tooth line); Harris Tr. 593 (no profit on sales to Frink). If dealers obtained some benefit from the policies because they were in fact procompetitive, there is no reason they would undermine its enforcement. Reitman Tr. 3975.

2. Dentsply's justification theory is inconsistent with its application and enforcement of Dealer Criterion 6.

382. Dr. Reitman provided two examples of Dealer Criterion 6 enforcement that have nothing to do with the purported justifications put forward by Dentsply at trial: Trinity and Leach & Dillon. Reitman Tr. 3975-78.

(a) First, Trinity was a dealer that sold Dentsply merchandise but not teeth, and then added Vita teeth. Reitman Tr. 3975-76; Morgano Tr. 1886. Dentsply had never expressed any dissatisfaction with Trinity as a Trubyte dealer. Morgano Tr. 1887-88. Because Trinity did not carry Dentsply's Trubyte teeth, Dentsply had made no investments in Trinity's tooth sales. *Id.* at 1887-88. Nevertheless, Dentsply terminated Trinity for adding Vita teeth. Professor Marvel's theory does not apply to dealers who do not carry Dentsply teeth, since there are no tooth promotions on which a competitor can free ride in the first place under this scenario. Reitman Tr. 3975-76. Nor is there any reason to believe that preventing Trinity from selling competitive brands of teeth would somehow enhance its ability to sell Trubyte merchandise. Brennan Tr. 1707. Instead, the reason Dentsply terminated Trinity was to try to foreclose a distribution point for Vita. Reitman Tr. 3976.

(b) Second, Leach & Dillon proposed to dealers that they handle only the accounts receivable function for the Davis Schottlander Enigma teeth it was selling.

Jenson Tr. 2296-97; Reitman Tr. 3976-77 The dealers' tooth counters and sales representatives would not be involved in selling the Enigma teeth. *Id.* As a result, Professor Marvel's efficiency story does not apply here because the dealer is not doing any stocking or selling and there is no opportunity to steer customers. Reitman Tr. 3978. Nonetheless, Dentsply considers such an arrangement a violation of the dealer criteria and took steps to put a stop to it. *Id.*; Jenson Tr. 2295-97.

3. Dentsply's justification theory is inconsistent with its own and other suppliers' conduct in the marketplace.

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383. Dr. Reitman identified three areas where Dentsply's justification theory is inconsistent with its own or other suppliers' conduct in the dental laboratory products market: (1) no other artificial tooth supplier has imposed exclusive dealing on dealers; (2) neither Dentsply nor any other supplier applies exclusive dealing to any other laboratory products; and (3) Dentsply does not treat its wholly exclusive dealers any differently than its dealers carrying rival brands of teeth under Dealer Criterion 6's grandfathering provision in a way that is consistent with Professor Marvel's theory. Reitman Tr. 3978-79.

a. No other artificial tooth supplier has ever used exclusive dealing.

384. If Professor Marvel's efficiency theory applies to Dentsply, then it should apply to Dentsply's rivals as well. Reitman Tr. 3979. In fact, given that Dentsply's rivals spend more on promotions relative to their sales than Dentsply does, his theory ought to be more applicable to those other tooth suppliers than to Dentsply. *Id.* The evidence in the record, however, demonstrates that no other tooth suppliers use exclusive dealing. *Id.*; Weinstock Tr. 155; Silcox 2066-67. For example, when DTS carried both Vita and Ivoclar teeth in the early to mid-1990s, neither of those firms imposed exclusive dealing to exclude the other. Reitman Tr. 3979.

b. Neither Dentsply nor any other supplier applies exclusive dealing to any other laboratory products.

385. There is no evidence that either Dentsply nor any other supplier has applied exclusive dealing to dental laboratory products other than teeth, such as acrylics, waxes, and related products. Reitman Tr. 3980; Weinstock Tr. 153 (Dentsply does not require exclusive dealing outside of teeth); DiBlasi Tr. 2815-16 (Lincoln has 35,000 products in its catalog,

none of which require exclusivity); Harris Tr. 611-12 (Dentsply does not use exclusive dealing for products other than teeth; no other Atlanta Dental supplier imposes exclusivity); Clavelli Tr. 3335, 3374 (Tri-State sells 150,000 products but none of its suppliers require exclusivity). This is despite the fact that Professor Marvel's theory is more applicable to some of these other products than it is to teeth. Reitman Tr. 3980. For example, Dentsply's Lucitone acrylic is a market leader and flagship product for Dentsply, and Dentsply markets and promotes that product. Jenson Tr. 2129-30. Acrylic is different from teeth in that it is bought in quantity rather than for a particular case and is almost never specified by the dentist in the denture prescription. Reitman Tr. 3980-81. As a result, it would be much easier for a dealer to steer a lab to a rival acrylic because it is not necessary to match moulds and shades from one brand to another. Reitman Tr. 3981. Nonetheless, Dentsply does not use exclusive dealing for acrylic or any other dental laboratory product except for teeth, and neither does any other supplier. *Id.*

c. Dentsply does not treat its wholly exclusive dealers any differently than the nonexclusive dealers carrying grandfathered brands of teeth.

386. Finally, the dealers that sell grandfathered brands of rival teeth in addition to Dentsply teeth are a significant test of Professor Marvel's theory in several ways. Reitman Tr. 3981-82. As noted above, those dealers are where one would expect to see the type of "bait and switch" steering necessary to Professor Marvel's theory if such steering was occurring in the market; however, there are "zero examples" in the record. Reitman Tr. 3982; *see* PFF ¶¶ 348-49. Moreover, there are two other important ways in which these dealers contradict Professor Marvel's theory:

(i) Under Professor Marvel's theory, Dentsply should structure its various marketing programs to devote more resources to its exclusive dealers than to the nonexclusive dealers because Dentsply cannot protect its promotional investments in those dealers carrying grandfathered brands of teeth. Reitman Tr. 2982. There is no evidence in the record, however, that Dentsply devotes more promotional resources to its wholly-exclusive dealers, and in fact, Dentsply executives are very clear that they treat all dealers selling their teeth the same in this respect. *Id.*

(ii) There is no evidence that the nonexclusive dealers carrying grandfathered brands of rival teeth are less efficient than the exclusive Dentsply dealers. Reitman Tr. 3982-83. Again, Dentsply executives could not identify any examples of ways in which non-exclusive dealers were less efficient or less effective than exclusive Dentsply dealers. *Id.*

(i) There is no evidence Dentsply devotes more promotional resources to wholly exclusive Dentsply dealers.

387. Dentsply executives testified that the company does not treat exclusive dealers any differently than grandfathered dealers in the area of promotional support. Miles Tr. 3511-12 (Dentsply treats non-exclusive dealers, such as Zahn, the same as it does exclusive dealers, despite free riding concerns); Clark Tr. 2686-87 ("level playing field" among all Trubyte dealers); Jenson Tr. 2288-89 (when DTS was carrying both Trubyte and Vita, "[w]e were active with DTS and tried to support them like we would any other dealer"); *see also* Marvel Tr. 3597.

388. When Dentsply has converted a lab from using a competitive tooth to a Trubyte tooth, it has not tried to steer that lab away from buying Trubyte teeth from a non-exclusive dealer such as Zahn, despite Dentsply's perceived risk that the non-exclusive dealer could sell a competing brand to the lab. Clark Tr. 2686-87. Dentsply's commitment not to steer business to one dealer over another is taken very seriously: Chris Clark described it as a "cardinal rule in terms of how we conducted ourselves with dealers that we would not cross." Clark Tr. 2687.

389. Evidence from dealers corroborates Dentsply's behavior: for instance, Dentsply did not alter its level of training, marketing assistance or advertising to DLDS when it started carrying the Universal and Justi lines pursuant to the grandfathering provision in Dealer Criterion 6. Vetrano Tr. 1429.

(ii) There is no evidence dealers currently carrying grandfathered brands of rival teeth are less efficient, and in fact the most effective dealers selling Trubyte teeth are dealers such as Zahn and Darby.

390.

391. Mr. Brennan testified that he knew of no instance in which a grandfathered tooth dealer failed to provide the level of service Dentsply was looking for because they carried a rival manufacturer's teeth. Brennan Tr. 1735.

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392. Mr. Clark believed that Zahn was a more effective and "more active" tooth dealer than Patterson, despite the fact that Zahn carries more competitive lines of teeth than Patterson does. Clark Tr. 2685.

393. In a September 15, 1993 letter from Dentsply's Senior Vice President to Norman Weinstock, Dentsply wrote: "Zahn has been the most aggressive dealer in the U.S. in the tooth marketplace without a doubt." GX 44 at DS 030646-47.

PROPOSED CONCLUSIONS OF LAW

1. The United States's Complaint (D.I. 1) in this action seeks to prevent and restrain Dentsply's continuing violation of Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1 and 2, and Section 3 of the Clayton Act, 15 U.S.C. § 14. The United States alleges that Dentsply's actions, including its issuance and enforcement of its Dealer Criterion 6, have denied rival tooth manufacturers access to independent tooth dealers and maintained Dentsply's monopoly in the market for prefabricated artificial teeth sold in the United States.

2. The Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1337, as amended, and under Section 4 of the Sherman Act, 15 U.S.C. § 4, as amended, and Section 15 of the Clayton Act, 15 U.S.C. § 25. Dentsply transacts business in, and is found within, the District of Delaware within the meaning of 15 U.S.C. § 22. Dentsply's business activities that are the subject of this lawsuit are within the flow of, and substantially affect, interstate trade and commerce.

3. The relevant market for purposes of this case is the sale of prefabricated artificial teeth in the United States. GX 445 at 6-8.

I. The Sherman Act Section 2 Claim

4. Section 2 of the Sherman Act makes illegal the actions of any person "who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States . . . ." 15 U.S.C. Sec. 2. Section 2 of the Sherman Act prohibits a firm with monopoly power from maintaining that monopoly power through means that go beyond competition on the merits:

> "The offense of monopoly under § 2 of the Sherman Act has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident."

Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 480 (1992) (quoting United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966)); United States v. Microsoft Corp., 253 F.3d 34, 50 (D.C. Cir. 2001); Weiss v. York Hosp., 745 F.2d 786, 825 (3d Cir. 1984).

A. Dentsply has monopoly power in the market for prefabricated artificial teeth.

5. To prevail on its Section 2 claim the United States must first establish that Dentsply possesses monopoly power in the relevant market. Monopoly power is "'the ability to control price . . . or to exclude or restrict competition.'" Weiss, 745 F.2d at 827 n.72 (quoting Grinnell, 384 U.S. at 571). Monopoly power can be established by direct evidence of its control over prices and exclusion of competitors. See Kodak, 504 U.S. at 477. In the Third Circuit, "the size of market share is a primary determinant of whether monopoly power exists." Pennsylvania Dental Ass'n v. Medical Serv. Ass'n of Pa., 745 F.2d 248, 260 (3d Cir.1984). Monopoly power "'may ordinarily be inferred from a predominant share of a

relevant market'." Weiss, 745 F.2d at 827 n.72 (quoting Grinnell, 384 U.S. at 571). Such a high market share "may obviate the need to analyze other pertinent factors." Fineman v. Armstrong World Indus., Inc., 980 F.2d 171, 201 (3d Cir. 1992). Moreover, where it is difficult for other firms to expand or to enter a market, such evidence bolsters the conclusion that a firm possesses monopoly power. See Microsoft, 253 F.2d at 54-55; Fineman, 980 F.2d at 202.

6. Dentsply's market share has consistently remained in the range of 75% to 80% for at least the past 13 years, and such a share has routinely been deemed sufficient to establish monopoly power. See, e.g., Kodak, 504 U.S. at 481 (80%); United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377, 379 (75%) (1956); Int'l Boxing Club v. United States, 358 U.S. 242 (1959) (81%); Am. Tobacco Co. v. United States, 328 U.S. 781, 797 (1946) ("over two-thirds of the entire domestic field of cigarettes"); Houser v. Fox Theatres Management Corp., 845 F.2d 1225, 1229-30 (66%-71%) (3d Cir. 1988).

7. Moreover, Dentsply's foreclosure of rivals from 78%-87% of the dental laboratory dealers in the United States is a significant entry barrier of the kind the antitrust laws condemn. See, e.g., Kodak, 504 U.S. at 485 ("one of the evils prescribed by the antitrust laws is the *creation* of entry barriers to potential competitors") (emphasis added). The lack of effective entry or expansion by any of Dentsply's competitors (or would-be competitors) confirms that Dentsply's exclusionary conduct has been effective and directly reflects

Dentsply's monopoly power.[24] See, e.g., Microsoft, 253 F.3d at 51, 58; Fineman, 980 F.2d at 202.

8. In addition, the overwhelming direct evidence of Dentsply's monopoly power, including its ability to thwart consumer choices, control prices and exclude competition, is sufficient by itself to establish Dentsply's monopoly power. See, e.g., Kodak, 504 U.S. at 469; Microsoft, 253 F.3d at 51 (where such evidence exists, "the existence of monopoly power is clear") (citing FTC v. Ind. Fed. of Dentists ("IFD"), 476 U.S. 447, 460-61 (1986)). See also Orson, Inc. v. Miramax Film Corp., 79 F.3d 1358, 1367 (3d Cir.1996) ("Market power — the ability to raise prices above those that would prevail in a competitive market — is essentially a surrogate for detrimental effects.").

B. Dentsply has willfully maintained its monopoly power through anticompetitive conduct.

9. The United States must also prove "the willful acquisition, maintenance, or use of monopoly power by anticompetitive or exclusionary means or for anticompetitive or exclusionary purposes." Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 595-56 (1985); see also Fineman, 980 F.2d at 197; Houser, 845 F.2d at 1230. In determining whether Dentsply's conduct is exclusionary, the effect of its conduct on consumers and competition should be considered. See Aspen, 472 U.S. at 605. A monopolist's conduct is unlawful where, as here, it "'tends to impair the opportunities of rivals [and] either does not

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[24]No evidence establishes that any entry or expansion is likely to be meaningful. For entry or expansion to be meaningful, it must occur on a scale sufficient to curb Dentsply's monopoly power. See, e.g., Rebel Oil Co. v. Atlantic Richfield Co., 51 F.3d 1421, 1440 (9th Cir. 1995). Such entry must also be timely. See Microsoft, 253 F.3d at 57. Neither expansion by existing firms nor any recent entry has undermined Dentsply's price leadership.

further competition on the merits or does so in an unnecessarily restrictive way.'" Id. at 605 n.32.

10. "In Section 2 cases, the wrongful act is usually one designed to exclude competitors from the market (e.g., . . . exclusive dealing)." Fraser v. Major League Soccer, L.L.C., 284 F.3d 47, 61 (1st Cir. 2002).[25] A monopolist violates Section 2 if it "maintain[s] monopoly [power] by means of those restraints of trade which are cognizable under [Sherman Act] § 1." Griffith, 334 U.S. at 106; Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d. 227, 239 (1st Cir. 1983). Accordingly, the analysis under Section 2 is similar to the rule of reason analysis under Section 1 (Microsoft, 253 F.3d at 59), with the important caveat that "[w]here a defendant maintains substantial market power, his activities are examined through a special lens: Behavior that might otherwise not be of concern to the antitrust laws — or that might even be viewed as procompetitive — can take on exclusionary connotations when practiced by a monopolist." Kodak, 504 U.S. at 488 (Scalia, J., dissenting) (citing 3 P. Areeda & D. Turner, Antitrust Law ¶ 813, at 300-02 (1978)); see also Ocean State Physicians Health Plan, Inc. v. Blue Cross & Blue Shield of Rhode Island, 883 F.2d 1101, 1112 (1st Cir. 1989). A monopolist's conduct will be condemned as exclusionary where it has an anticompetitive effect. See Kodak, 504 U.S. at 469, 483; Microsoft, 253 F.3d at 58.

11. Here, foreclosure is substantial and reflects Dentsply's monopoly power. Complete 100% foreclosure is not required for exclusionary conduct to be anticompetitive. See Tampa Electric Co. v. Nashville Coal Co., 365 U.S. 320 (1961) ("substantial share");

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[25]See also Microsoft, 253 F.3d at 58, 60; Lorain Journal Co. v. United States, 342 U.S. 143, 155 (1951); 3M v. Appleton Papers, Inc., 35 F. Supp.2d 1138, 1145-46 (D. Minn. 1999).

Lorain Journal, 342 U.S. at 152-53 (no need to prove monopolist "completely eliminated" rival). See also Microsoft, 253 F.3d at 70-71, 73-74 (explicitly rejecting a requirement of complete foreclosure and finding Section 2 violation based on 15% foreclosure of one important distribution channel for Internet browsers). Foreclosure of a significant share of a distribution channel can be anticompetitive if the channel is important for effective competition. See, e.g., Microsoft, 253 F.3d at 70-71; Conwood Co. L.P. v. United States Tobacco Co., 290 F.3d 768, 787-88 (6th Cir. 2002) (upholding monopolization claim where defendant excluded competition in the moist snuff market through elimination of substantial number of rival sales racks and point of sale advertising, important distribution and advertising avenues).

12. The technically "at-will" nature of Dentsply's dealer criterion does not make mitigate the substantial level of foreclosure present here. Whether Dentsply's Dealer Criterion 6 violates Section 2 turns on its competitive effect, because "the Sherman Act . . . is aimed at substance rather than form." Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 760 (1984); see also Kodak, 504 U.S. 478-79 (rejecting suggested "legal presumption" inconsistent with the facts). An assessment of competitive effects of exclusive dealing must consider the "competitive context of the industry" and "the relative strength of the parties." American Motor Inns, Inc. v. Holiday Inns, Inc., 521 F.2d 1230, 1252 (3d cir. 1975) (quoting Tampa Electric, 365 U.S. at 329). Moreover, direct evidence of adverse effects confirms that Dentsply's conduct is anticompetitive, see supra, and that its conduct is exclusionary. See Brown Univ. v. United States, 5 F.3d 658, 668 (3d Cir. 1993) (citing IFD, 476 U.S. at 460-61).

13. Finally, Dentsply's exclusionary intent is both abundantly clear and directly "relevant to the question whether the challenged conduct is fairly characterized as 'exclusionary' or 'anticompetitive.'" Aspen Skiing, 472 U.S. at 602; Chicago Bd. of Trade v. United States, 246 U.S. 231, 238 (1918). While it is not necessary to prove intent, "knowledge of intent may help the court to interpret facts and to predict consequences." Microsoft, 253 F.3d at 59. The *express purpose* of Dealer Criterion 6 was anticompetitive. Thus, Dentsply's conduct violates Section 2.

II. The Sherman Act Section 1 and Clayton Act Section 3 Claims

14. Section 1 of the Sherman Act makes illegal "[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States . . ." 15 U.S.C. Sec. 1. Clayton Act Section 3 provides, in relevant part, as follows:

> It shall be unlawful for any person engaged in commerce, in the course of such commerce, to . . . make a sale or contract for sale of goods . . . for use, consumption or resale within the United States . . . on the condition, agreement, or understanding that the lessee or purchaser thereof shall not use or deal in the goods . . . of a competitor or competitors of the lessor or seller, where the effect of such . . . sale, or contract for sale or such condition, agreement, or understanding may be to substantially lessen competition or tend to create a monopoly in any line of commerce.

15 U.S.C. Sec. 15.

15. The agreement elements of Sections 1 and 3 are easily satisfied here. In all other respects, the evidence establishing Dentsply's violation of Section 2 also establishes Dentsply's violation of Sections 1 and 3. Indeed, because "significant market power is enough to trigger Section 1's rule of reason approach" and "something less than monopoly power is required . . .

under . . . [the] 'substantially lessen competition' test" of the Clayton Act (Fraser, 284 F.3d at 60), the existence of monopoly power here makes plain that Dentsply's conduct is anticompetitive under either provision. See Brown Univ., 5 F.3d at 668 ("courts typically allow proof of the defendant's 'market power' instead" of proof of actual "market effects"). Even absent the compelling evidence of Dentsply's monopoly power here, the very high degree of foreclosure and the direct evidence of resulting anticompetitive effects establish that Dentsply's exclusive agreements violate Sections 1 and 3. See id. at 668-69 (because "[m]arket power . . . is essentially a 'surrogate for detrimental effects,' . . . plaintiff may satisfy [its] burden by showing actual anticompetitive effects") (quoting IFD, 476 U.S. at 460- 61 (quoting Areeda ¶ 1511 at 429)); see also Microsoft, 253 F.3d at 70.

A. Dentsply's exclusionary agreements with artificial tooth dealers are agreements within the meaning of Sections 1 and 3.

16. The United States has demonstrated that the restrictive conditions under which Dentsply sells teeth to its dealers constitute agreements under the antitrust laws. Such an agreement can be either express or implied, and can be established by direct or circumstantial evidence, including evidence of a course of conduct. See United States v. General Motors Corp., 384 U.S. 127, 142-43 (1966) ("it has long been settled that explicit agreement is not a necessary part of a Sherman Act conspiracy"); United States v. Parke-Davis & Co., 362 U.S. 29, 44 (1960); Alvord-Polk, Inc. v. F. Schumacher & Co., 37 F.3d 996, 1000 (1010-13 (3d Cir. 1994). It is not necessary that each of parties share the same motive, so long as the agreement produces an anticompetitive effect. See Parke-Davis, 362 U.S. at 45; Fineman, 980 F.2d at 213. An agreement exists "[w]hen [a] manufacturer's actions . . . go beyond mere announcement of his

policy and the simple refusal to deal, and he employs other means which effect adherence . . . ." Parke-Davis, 362 U.S. at 44; see also Monsanto Co. v. Spray-Rite Service Corp., 465 U.S. 752, 765-66 (1984). An announced policy, accompanied by threats of termination, active surveillance, and reinstatement conditioned on assurances of future compliance, is sufficient to establish an agreement. See Parke-Davis, 362 U.S. at 44; see also Monsanto, 465 U.S. at 765-66.

17. Dentsply has gone beyond a mere announcement of its dealer criteria and its intent to terminate violators. It actively monitored compliance and, when it detected a violation, it engaged in individualized negotiations with the dealer to obtain compliance. The extensive evidence of individualized negotiations, threats of termination, and assurances of compliance easily satisfies the agreement element.

B. Dentsply's exclusive dealing agreements have unreasonably restrained competition.

18. Under Section 1, a "rule of reason" analysis applies to those restraints that are not per se illegal. See Angelico v. Lehigh Valley Hosp., Inc., 184 F.3d 268, 275 n.3 (3d Cir. 1999). "Proof of anticompetitive effect is the hallmark of a rule of reason test." See Big Apple BMW, Inc. v. BMW of N. Am., Inc., 974 F.2d 1358, 1376 n.13 (3d Cir. 1992) (citing Tunis Bros. Co., Inc. v. Ford Motor Co., 952 F.2d 715 (3d Cir. 1991)).[26] The rule of reason requires the fact-finder to "'weigh [ ] all of the circumstances of a case in deciding whether a restrictive practice should be prohibited as imposing an unreasonable restraint on competition.'" Brown, 5 F.3d at 668 (quoting Continental T.V., Inc. v. GTE Sylvania Inc., 433 U.S. 36, 49 (1977)). "The

[26]Because, if anything, Section 3 of the Clayton Act requires a lesser showing of anticompetitive effects than Section 1 (Town Sound & Custom Tops, Inc. v. Chrysler Motors Corp., 959 F.2d 468, 487 (3d Cir. 1992); Barr Laboratories, Inc. v. Abbott Laboratories, 978 F.2d 98, 110 (3d Cir. 1992)), anticompetitive conduct that violates Section 1 also violates Section 3.

plaintiff bears an initial burden under the rule of reason of showing that the alleged combination or agreement produced adverse, anti-competitive effects within the relevant product and geographic markets." Id. (citing Tunis Bros., 952 F.2d at 722). "The plaintiff may satisfy this burden by proving the existence of actual anticompetitive effects, such as reduction of output, . . . increase in price, or deterioration in quality of goods or services." Id. (citing IFD, 476 U.S. at 460-61; Tunis Bros., 952 F.2d at 728). Alternatively, a plaintiff may satisfy its burden by proving market power as a "surrogate" for effects. Id. Accordingly, proof of either market power *or* actual anticompetitive effects can, independently, establish a violation of Section 1. See id.

19. As discussed above, where challenged conduct involves exclusive dealing the foreclosure rate is also relevant to whether there are "likely" or "probable" adverse effects. Courts have "routinely condemned" foreclosure of 40%-50% of the market to rival firms, and where there is substantial market power, the foreclosure showing can be far less for conduct to be deemed anticompetitive. See supra. Dentsply's conduct has foreclosed a far-higher percentage of the market than 50%. Dentsply's monopoly power and substantial foreclosure of competition point to "likely" and "probable" serious competitive harm. In many cases, that evidence alone would suffice as a "surrogate" for actual adverse effects. See Brown, 5 F.3d at 668-69. As discussed, however, here there is *direct* evidence of anticompetitive effects. Accordingly, Dentsply has violated Section 1 and Section 3. See id.

III. Dentsply's Alleged Business Justifications

20. Given the evidence of substantial anticompetitive effects resulting from Dentsply's exclusionary conduct, Dentsply has the burden under both the Sherman Act and the

Clayton Act to show that its conduct "promotes a sufficiently procompetitive objective." Brown Univ., 5 F.3d at 669; see also Tampa Electric, 365 U.S. at 329; Microsoft, 253 F.3d at 59. Even if Dentsply can meet its burden of showing both that its claimed justification is non-pretextual and sufficiently procompetitive, such a showing is rebutted by the evidence "that the restraint is not reasonably necessary to achieve the stated objective." Brown, 5 F.3d at 669.

A. Dentsply has the burden of showing that its exclusionary conduct promotes a sufficiently procompetitive objective.

21. Dentsply must show not only that its exclusionary policies have procompetitive benefits, but also that those benefits are valid and sufficient. Kodak, 504 U.S. at 483. Under a rule of reason analysis, the evidence of Dentsply's supra-competitive prices and exclusion of competition places upon Dentsply "a heavy burden of establishing an affirmative defense which competitively justifies this apparent deviation from the operations of a free market."[27] NCAA v. Bd. of Regents, 468 U.S. 85, 113 (1984). Dentsply's justification must be a "non-pretextual claim that its conduct is indeed a form of competition on the merits because it involves, for example, greater efficiency or enhanced consumer appeal." Microsoft, 253 F.3d at 59.

1. Dentsply has failed to demonstrate that its alleged business justifications are non-pretextual.

22. Dentsply has failed to demonstrate that its claimed business justification is non-pretextual. See Microsoft, 253 F.3d at 59. Inconsistencies and contrasts between internal and public explanations of a policy support the conclusion that claimed justifications are pretextual. Alvord-Polk, 37 F.3d at 1010-13. That is the case here, where the evidence "makes it less likely

[27]The defendant bears the burden of persuasion for an affirmative defense. See, e.g., Hughes v. United States, 263 F.3d 272, 278 (3d Cir. 2001).

that the free rider problem was really uppermost in the minds of defendants' executives." Brokers' Assistant, Inc. v. Williams Real Estate Co., 646 F. Supp. 1110, 1120 n.38 (S.D.N.Y. 1986). Dentsply's claim that it maintains these exclusionary policies in order to "focus [dealer] efforts in order to effectively promote the company's teeth and service laboratory customers" is inconsistent both with the contemporaneous evidence that what was "uppermost" in the minds of Dentsply's executives was an intent to "block competitive distribution points" and with Professor Marvel's efficiency theory. Moreover, Dentsply's enforcement of its exclusive dealing policies and its conduct in the marketplace for teeth and other products also is inconsistent with Dr. Marvel's theory. The evidence thus demonstrates that Dentsply's claimed business justification is pretextual, and Dentsply accordingly has failed to meet its threshold burden. See Alvord-Polk, 37 F.3d at 1012; United States v. VISA U.S.A., Inc., 163 F. Supp. 2d 322, 400-02 (S.D.N.Y. 2001).

2. Dentsply has failed to demonstrate that its alleged business justifications are procompetitive.

23. Dentsply also has failed to demonstrate that it has a "valid business reasons" for its exclusionary policies. Kodak, 504 U.S. at 483 (citing Aspen, 472 U.S. at 605). Dentsply must prove that "it was in fact pursuing its goals as a rational economic actor and [can] justify its conduct by reference to rational, procompetitive economic principles." Flegal v. Christian Hosp., 4 F.3d 682, 688 n.4 (8th Cir. 1993). Such a showing must consist of more than unsupported assertions, id., and the asserted justifications must be more than theoretical or speculative. "Merely offering a rationale for a restraint will not suffice; the record must support a finding that

the restraint in fact is necessary to enhance competition and does indeed have a procompetitive effect." Graphic Prods. Distribs., Inc. v. ITEK Corp., 717 F.2d 1560, 1576 (11th Cir. 1983).

24. The evidence from Dentsply's own fact and expert witnesses establishes that any procompetitive benefit from Dentsply's exclusive dealing policies is negligible. Professor Marvel's theory does not apply to promotion to dentists and consumers, and Dentsply does not need exclusive dealing at the dealer level to protect this type of promotion. See VISA, 163 F. Supp. 2d at 404 (where there is "no asset on which free-riding could occur" exclusionary policies are unnecessary). Professor Marvel's remaining efficiency claim is based merely on theoretical expectations, not empirical analysis, and it is not supported by the facts.[28] Where there is no evidence of the harm the exclusionary policies are alleged to protect against -- here, dealer steering -- defendant's procompetitive justifications are not persuasive. See VISA, 163 F. Supp. 2d at 403-04. And where, as here, defendant's economic expert offers no empirical analysis to support his position, his opinion is "based on a cursory examination of the facts," and his testimony is "belied by the uncontradicted record evidence," his justifications do not withstand scrutiny. See VISA, 163 F. Supp. 2d at 402.

25. Moreover, to meet its burden of demonstrating procompetitive effects, Dentsply must show that from the "totality of circumstances, [its] articulated procompetitive rationale is consistent with [its] overall conduct." Flegal, 4 F.3d at 688 n.4. Dentsply, however, has not applied exclusive dealing to dental laboratory products other than teeth, such as acrylics, waxes,

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[28]The evidence does not establish that (1) dealers will actively "bait and switch" laboratory customers to steer them from one tooth brand carried by the dealer to another; (2) that Dentsply spends more on promotions than its rivals; or (3) that Dentsply's promotions are general in nature and not mostly brand specific (brand specific promotions not being susceptible to steering and free riding).

and related products, despite the fact that Professor Marvel's theory is more applicable to some of these other products, such as Dentsply's Lucitone acrylic.[29] In addition, Dentsply's claimed justification is flatly inconsistent with its policy to treat its non-exclusive dealers carrying grandfathered brands of teeth the same as its wholly exclusive dealers.

B. The evidence establishes that Dentsply's exclusionary arrangements are overbroad and not reasonably necessary to achieve the stated objective of protecting its promotions.

26. Even if Dentsply showed that its justifications are non-pretextual and procompetitive, such proof would be rebutted by the evidence showing that the restraint is overbroad and "not reasonably necessary to achieve the stated objective." Brown Univ., 5 F.3d at 669. Even setting aside the numerous problems discussed above with applying Professor Marvel's theory to the artificial tooth market, his theory fails because Dentsply has failed to put forth evidence demonstrating that it would decrease its level of promotions in the absence of exclusive dealing. To the contrary, Dentsply's own executives testified that, if Dealer Criterion 6 is removed and as a result Dentsply loses market share, Dentsply will likely increase its promotions to regain its share. Moreover, Dentsply's rivals would increase their own levels of promotion and marketing if Dealer Criterion 6 were no longer in effect. As a result, the overall level of interbrand promotional efforts market wide -- the relevant consideration under Professor Marvel's theory -- would increase, and thus Dentsply's restrictive agreements are overbroad and not reasonably necessary to achieve the stated objective. See Brown, 5 F.3d at 669.

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[29]No other supplier has applied exclusive dealing in either the dental laboratory products market or more specifically in the artificial tooth market. If, according to Dr. Marvel's theory, it is efficient for Dentsply to apply exclusive dealing to teeth, it should be efficient for Dentsply's rivals as well.

C. The substantial evidence of anticompetitive effects outweighs any procompetitive benefit.

27. Even if the Dentsply's claimed business justification were not pretextual and were sufficiently procompetitive, any benefit from that justification is negligible and is far outweighed by the substantial anticompetitive harm resulting from Dentsply's exclusionary policies. Brown Univ., 5 F.3d at 669; Law v. NCAA, 134 F.3d 1010, 1019 (10th Cir. 1998) (citing Brown Univ.) ("ultimately, if these steps are met, the harms and benefits must be weighed against each other in order to judge whether the challenged behavior is, on balance, reasonable"); Microsoft, 253 F.3d at 59. Courts routinely apply a similar "rule of reason" balancing approach under both Section 1 and Section 2. Id. (citing Standard Oil Co. v. United States, 221 U.S. 1, 61-62 (1911)).

28. For all of the reasons discussed, Dentsply's conduct has caused significant anticompetitive harm in the market: frustrated consumer choice, higher prices, and inferior quality and service. On the other side of the balance, any procompetitive benefits of Dentsply's conduct are negligible. Accordingly, the anticompetitive harm far outweighs any procompetitive benefits, and Dentsply's conduct is thus a violation of Section 2 and of Sections 1 and 3.

Respectfully submitted,

COUNSEL FOR PLAINTIFF
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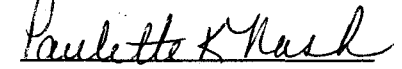

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