

Complaint

104 F.T.C.

IN THE MATTER OF

B.A.T INDUSTRIES, LTD., ET AL.

DISMISSAL ORDER, ETC., IN REGARD TO ALLEGED VIOLATIONS OF
SEC. 5 OF THE FEDERAL TRADE COMMISSION ACT AND
SEC. 7 OF THE CLAYTON ACT

Docket 9135. Complaint, May 13, 1980—Final Order, Dec. 17, 1984

This Order affirms the Initial Decision of the Administrative Law Judge and dismisses the FTC complaint alleging that acquisition of Appleton Papers, Inc., the leading U.S. producer of chemical carbonless paper (CCP) by B.A.T Industries, Ltd. ("B.A.T") had violated Sec. 7 of the Clayton Act and Sec. 5 of the FTCA, by eliminating the potential for competition between the two companies in the U.S. CCP market. For reasons set forth in its Opinion, the Commission held that the record showed no "clear proof" that B.A.T would have entered the U.S. CCP market independently had it not acquired Appleton.

Appearances

For the Commission: *Steven A. Newborn, John V. Lacci, Sandra G. Wilkof* and *Daniel J. Yakoubian*.

For the respondents: *David Schechter*, in-house counsel, *Jay Topkis, Daniel J. Beller, Eric M. Freedman, and Daniel Victor, Paul, Weiss, Rifkin, Wharton & Garrison*, New York City.

COMPLAINT

The Federal Trade Commission, having reason to believe that B.A.T Industries, Ltd. ("BAT"), and Appleton Papers, Inc. ("Appleton"), respondents herein, have violated Section 7 of the Clayton Act, as amended (15 U.S.C. 18) and Section 5 of the Federal Trade Commission Act, as amended (15 U.S.C. 45) through the acquisition by BAT of the assets of the Appleton Papers Division of NCR Corporation ("NCR"), and that a proceeding in respect thereof would be in the public interest, hereby issues its Complaint, pursuant to Section 11 of the Clayton Act (15 U.S.C. 21) and Section 5(b) of the Federal Trade Commission Act (15 U.S.C. 45)), stating its charges as follows:

I. DEFINITIONS

1. For purposes of this Complaint, the following definition will apply:

Chemical carbonless paper ("CCP") is any product which uses a

chemical imaging system to transfer an image from one sheet of a multipart business form to another when pressure is applied to the top sheet.

II. BAT

2. BAT is a United Kingdom company having its registered office in London, England.

3. BAT is a multinational holding company with interests in paper, tobacco, cosmetics and retailing. BAT's holdings in the United States include Brown and Williamson Tobacco Company, Gimbel Brothers, Saks Fifth Avenue and Germaine Monteil.

4. In 1978, BAT had sales in excess of 6,676,000,000 pounds sterling (or approximately \$13.0 billion) and had total assets of approximately \$7 billion. In 1977, BAT ranked as the 43rd largest industrial company in the world and the 11th largest industrial company outside the United States.

5. The Wiggins Teape Group, Ltd. ("Wiggins Teape"), a wholly-owned subsidiary of BAT, is the largest manufacturer of fine and specialty papers in the United Kingdom and is the largest exporter, in value, of paper products from the United Kingdom. It operates mills in the United Kingdom and several other countries. In 1978, [2] Wiggins Teape had sales of approximately 461,000,000 pounds sterling (or approximately \$920 million.)

6. "Idem" brand CCP is Wiggins Teape's most important paper product and its highest profit generator. Wiggins Teape is the second largest producer of CCP (in terms of tonnage) in the world. In 1977, Wiggins Teape accounted for approximately 45% of CCP production in the United Kingdom and Europe with over \$200 million in sales. Prior to BAT's acquisition of Appleton, Wiggins Teape did not produce or sell CCP in the United States.

7. At all times relevant herein, BAT sold and shipped its products throughout the United States and was a corporation engaged in commerce as commerce is defined in the Clayton Act, as amended, and was a corporation whose business was in or affecting commerce within the meaning of the Federal Trade Commission Act, as amended.

III. APPLETON

8. Appleton is a Delaware corporation having its principal office and place of business in Appleton, Wisconsin.

9. Appleton, formerly the Appleton Papers Division of NCR, is a major producer of CCP and coated papers used in the graphic arts and publishing industry. In 1977, Appleton accounted for \$271 million in sales.

10. Appleton is the world's largest producer of CCI* (in terms of

tonnage) and presently has approximately 55% of U.S. domestic sales. Appleton is also the major licensor of CCP technology in the world. In 1977 Appleton had \$171 million in sales of CCP.

11. NCR is a Maryland corporation having its principal office and place of business in Dayton, Ohio. NCR produces and sells, among other products, computers and other business machines and systems. In 1977, NCR had approximately \$1.625 billion in sales and \$2.3 billion in total assets.

12. At all times relevant herein, Appleton sold and shipped its products throughout the United States and was a corporation engaged in commerce as commerce is defined in the Clayton Act, as amended, and was a corporation whose business was in or affecting commerce within the meaning of the Federal Trade Commission Act, as amended.

IV. THE ACQUISITION

13. On or about June 30, 1978, BAT, through its wholly-owned indirect subsidiary, Lentheric, Inc. (since renamed Appleton Papers, Inc.), purchased from NCR the Appleton Papers Division for a purchase price of \$280 million. As a result of the acquisition, BAT acquired the assets of Appleton and the patents held by NCR relating to the manufacture of CCP, and control over the licenses issued under such patents.

V. TRADE AND COMMERCE

A. *Relevant Market*

14. The relevant product market is the manufacture and sale of CCP. [3]

15. The relevant geographic market in the United States as a whole.

B. *Market Structure*

16. In 1978, U.S. industry sales of CCP totaled approximately \$250 million.

17. The U.S. CCP market is a highly concentrated industry with a four-firm concentration ratio of approximately 96%. The top two firms, Appleton and Mead, accounted for 86% of industry sales in 1977. Only five firms produced CCP in the United States in 1977, and only four of those firms produced CCP other than for their own consumption.

18. The barriers to entry into the production and sale of CCP are extremely high.

19. The production of CCP is a highly technical field that is protect-

ed by U.S. patents of Appleton and other domestic carbonless producers.

20. The high technology requirements of the CCP market constitute substantial barriers to entry into the industry. The manufacture of CCP requires encapsulation technology, sophisticated coating technology, and manufacturing know-how. It is extremely difficult to develop a commercially acceptable CCP technology. Such development is an expensive undertaking and can take anywhere from 3 to 10 years to complete. The new entrant also runs the substantial risk that its attempts to develop a viable technology will be unsuccessful.

21. The new entrant into the CCP market must make a substantial capital investment for specialized encapsulation, coating and other equipment.

*C. BAT Was A Significant Actual Potential Entrant Into
The U.S. CCP Market*

22. Objective factors demonstrate that at the time of the acquisition BAT was an actual potential entrant into the production and sale of CCP in the United States.

23. From the late 1950's until BAT's acquisition of Appleton, Wiggins Teape (which was acquired by BAT in 1972) manufactured CCP under license from NCR. Wiggins Teape was one of the first manufacturers of CCP, and was the only NCR licensee outside the United States that was permitted to use NCR's encapsulation technology. The license gave BAT the exclusive right to manufacture CCP under NCR's patents and know-how worldwide, except for the United States, Canada and Japan, and the nonexclusive right to sell CCP worldwide except for the United States and Canada. The license also provided for a continuous, complete and timely exchange between NCR and BAT of all information constituting carbonless know-how and all other information helpful in the development, manufacture or sale of CCP.

24. On or about June 1, 1977, BAT gave NCR notice of termination of the aforesaid license, effective July 1, 1980. Thus, after July 1, 1980, BAT would have been free of the license provisions which restricted it from manufacturing or selling CCP in the United States. The right to use unpatented know-how would have survived the termination of the license.

25. The size of the U.S. CCP market, its high growth in comparison to other paper products, and its considerable profit potential provided substantial incentives for BAT's entry into the U.S. market. [4]

26. BAT, by reason of its size and financial resources, its independent carbonless technology, and its expertise in the production and sale of CCP, was capable, at the time of the acquisition, of entering

the U.S. CCP market in the near future by means other than the acquisition of Appleton.

27. Feasible means existed by which BAT could have entered the U.S. CCP market, including the establishment of manufacturing facilities in the United States, joint ventures or licensing relationships with U.S. firms not already in the CCP market, acquisition of a toehold firm, or export of CCP into the U.S.

28. Due to BAT's financial resources, its CCP technology and marketing expertise, and the concentrated nature of the U.S. CCP market, it is likely that BAT would have entered the production or sale of CCP in the United States through means other than the acquisition of Appleton, and that such entry would have exerted a procompetitive effect on the market and preserved the potential for the significant future deconcentration of the industry.

D. BAT Is One Of The Few Most Likely Entrants Into The Market

29. The CCP industry is a highly technical industry which requires that a new entrant develop a sophisticated capsule technology and substantial production expertise before the entrant can establish a position in the market.

30. BAT's longstanding license with NCR provided BAT with the most extensive knowledge of a total CCP technology in the world, excluding Appleton.

31. BAT's substantial expertise in CCP technology and its large technical staff had allowed BAT to develop elements of its own carbonless technology and to achieve technological independence from NCR, as well as to develop substantial production expertise.

32. NCR's other CCP licensees had not been given access to a total carbonless paper technology and are dependent on their licensor (now BAT) for technical assistance, especially with respect to a supply of carbonless capsules, one of the most difficult aspects of CCP production.

33. Because of the difficulty, expense and risk involved in developing CCP technology, the expense of constructing manufacturing facilities, and the scale requirements of efficient production, few firms, if any, other than BAT, are likely to enter the production of CCP for sale to others in the United States.

VI. EFFECTS

34. The effects of the acquisition of Appleton by BAT may be substantially to lessen competition or to tend to create a monopoly in the production and sale of CCP throughout the United States in violation of Section 7 of the Clayton Act, as amended (15 U.S.C. 18), and the effects of the acquisition may be unreasonably to restrain trade and

to hinder competition unduly in the production and sale of CCP in the United States thereby constituting a restraint of trade and an unfair act and practice and an unfair method of competition in or affecting commerce in violation of Section 5 of the Federal Trade Commission Act, as amended (15 U.S.C. 45), in the following ways among others:

(a) Substantial potential competition between BAT and Appleton and between BAT and other producers of CCP in the United States will be eliminated; [5]

(b) The potential for substantial deconcentration of the U.S. CCP market as a result of BAT's likely alternative entry into the U.S. market will be eliminated;

(c) The competitive benefits of internal expansion and innovation by BAT may be eliminated;

(d) The already high barriers to entry into the U.S. CCP market may be heightened or increased;

(e) The dominant position of Appleton in the U.S. CCP market may be further strengthened by virtue of BAT's financial resources, and its substantial technological and production expertise with respect to CCP; and

(f) Customers of CCP and ultimate consumers of that product may be denied the benefits of free and open competition in the market.

VII. VIOLATIONS CHARGED

35. The acquisition of Appleton by BAT constitutes a violation of Section 7 of the Clayton Act, as amended (15 U.S.C. 18) and of Section 5 of the Federal Trade Commission Act, as amended (15 U.S.C. 45).

INITIAL DECISION BY

MORTON NEEDELMAN, ADMINISTRATIVE LAW JUDGE

NOVEMBER 21, 1983

I

STATEMENT OF THE CASE

The complaint in this proceeding was issued on May 13, 1980. It charges that B.A.T Industries, Limited ("B.A.T")¹ [2] and Appleton Papers, Inc. ("Appleton"), respondents herein, have violated Section 7 of the Clayton Act and Section 5 of the Federal Trade Commission Act by reason of B.A.T's acquisition of Appleton in 1978.

¹ On July 8, 1981, the official name of respondent B.A.T was changed to B.A.T Industries PLC. Transcript 8905.

According to the complaint, the relevant product market is the manufacture and sale of chemical carbonless paper ("CCP"), a coated paper used to make multi-part business forms in which images are transferred by a chemical reaction from top to middle to bottom sheets through the application of manual or mechanical pressure. The United States as a whole is the alleged relevant geographic market.

The complaint charges that at the time of the acquisition, B.A.T through its Wiggins Teape Group, Ltd. subsidiary ("Wiggins Teape" or "WT"), a paper manufacturer with headquarters in the United Kingdom, was the largest producer of CCP outside of the U.S. Appleton was said to be the largest manufacturer of CCP within the U.S. There is no allegation in the complaint that Appleton and WT were competitors in the U.S. before the acquisition. Nor is any charge made that WT was perceived as a potential entrant on the edge of the U.S. CCP market. The complaint is grounded solely on the theory that B.A.T (or WT) was a significant "actual" potential entrant into the U.S. market. In support of this theory the complaint alleges, in summary form, the following: [3]

- The U.S. CCP market was concentrated at the time of the acquisition, and there were high entry barriers into this market.
- Objective factors demonstrate that WT had the capability and incentive to enter the United States CCP market.
- Feasible means existed by which WT could have entered the U.S. CCP market, including establishment of new manufacturing facilities, a joint venture or licensing relationship with U.S. firms, acquisition of a toehold firm, or export of CCP to the U.S.
- It was likely that WT would have pursued one of the alternative means of entry had it not acquired Appleton.
- WT was one of the few most likely entrants into the U.S. CCP market.
- The effect of the Appleton acquisition was anticompetitive in that deconcentration of the U.S. CCP market as a result of WT's likely alternative entry was eliminated, entry barriers may have been heightened, and Appleton's dominance of the U.S. CCP market was heightened.

Respondents' answer, dated July 25, 1980, denies the allegations of the complaint relating to definition of the [4] relevant product market (respondents argue for a market consisting of all papers used to make multi-part business forms) as well as the elements of the actual potential theory outlined above.²

²The answer also raises the affirmative defense of laches and questions the Commission's in personam jurisdiction over B.A.T as well as the Commission's subject matter jurisdiction over B.A.T's acquisition of a U.S. firm. None of these affirmative defenses were pressed during the hearings or in the post-hearing briefs.

In the prehearing stage both sides were allowed extensive discovery, requests for admissions and interrogatories were answered, and stipulations were filed. Upon completion of the discovery stage, hearings were held for the purpose of ruling on objections and to receive into evidence documents which did not require supporting testimony. The case-in-chief began on February 16, 1982, and was completed on February 25, 1982. The defense case was presented between March 22, 1982, and July 9, 1982. A hearing for the receipt of rebuttal evidence was held on January 25, 1983. Surrebuttal evidence was received on February 24, 1983. The record, which was closed on February 25, 1983,³ consists of 9,150 transcript pages and 1,337 trial [5] exhibits. During the hearings all counsel were given full opportunity to be heard and to cross-examine the witnesses.

Proposed findings of fact and briefs were filed by both sides on May 16, 1983. Answering briefs were filed on June 17, 1983, and responses were filed on July 8, 1983.

After reviewing all the evidence as well as proposed findings and briefs submitted by the parties, and based on the entire record, including my observation of the demeanor of witnesses, I make the following findings of fact:⁴ [6]

³ The unusually long gap between the opening of the hearings and the closing of the record is attributable to the adjournments granted during the defense case and before the start of complaint counsel's rebuttal. These delays were occasioned by the extensive preparation undertaken by both sides in creating, and attempting either to discredit or to defend, the economic "models" which are treated in Findings 102 to 120.

⁴ Proposed findings not adopted in the form proposed or in substance are rejected, as either not supported by the entire record, or as involving immaterial or irrelevant matters.

The following abbreviations are used throughout in citing to the record: "CX" or "CPX" (complaint counsel's exhibit or physical exhibit); "RX" or "RPX" (respondents' exhibit or physical exhibit). Testimony is cited by name of witness, followed by transcript page as in "Sheehy 3465-67." ALJ Exhibit 1, preceding the CX's and ALJ Exhibit 2, preceding the RX's, are indices of all documentary exhibits which give description, source, status, date received or rejected, transcript reference, and in camera status.

Because of the highly sensitive cost data relied upon by both sides, especially in the economic "models" discussed in the Findings, a large volume of material, both exhibits and testimony, was placed in camera. It should be noted, however, that the Omnibus In Camera Order issued on February 25, 1982 which governs all in camera exhibits and testimony provides as follows:

It should be clearly understood that nothing contained in this Order in any way limits the public use of this material in decisions written by the Administrative Law Judge, the Commission, or reviewing courts. While I have no intention of making unnecessary disclosures, whether or not to publish in my Initial Decision all or part of the material contained in in camera exhibits must be left solely to the discretion of the Administrative Law Judge, and I must reserve the right to exercise this discretion without consulting any party or third party.

The Omnibus In Camera Order also provides that in camera status shall be removed three years after the date on which the record was closed, that is, on February 25, 1986. In camera exhibits are indicated by use of italics as in RX 355A-C.

The appearances of the witnesses were as follows:

<u>Name</u>	<u>Called By</u>	<u>Tr. Pages</u>
Gary McMullen	Complaint	241-421
Mitchell Business Forms, Inc.	Counsel	
(Forms Printer)	("c.c.")	

(footnote cont'd)

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(footnote continued from previous page.)

<u>Name</u>	<u>Called By</u>	<u>Tr. Pages</u>
W. Smith Duplex Products, Inc. (Forms Printer)	c.c.	422-652
Robert H. Reeves Standard Register Co. (Forms Printer)	c.c.	655-864
P.C. Smith Mead Corp. (CCP Manufacturer)	c.c.	865-1107
George O. Langlais Nashua Corp. (CCP Manufacturer)	c.c.	1108-1196 [7]
Joseph R. Kershaw Nashua Corp. (CCP Manufacturer)	c.c.	1198-1340
Ira Horowitz Univ. of Florida (Retained Economic Expert)	c.c.	1341-1642
Thomas A. Roth SCM Allied/Egry Business Systems (Forms Printer)	c.c.	1643-1802
John J. Hangen Appleton (President)	Respondents ("resp.")	1803-2355
Patrick G.M. Best Wiggins Teape (Chairman & Managing Director)	resp.	2356-2827
Vera M. Elliott Wiggins Teape (Finance & Planning Coordinator, retired, Dec. 1981, and retained to assist respondents in this litigation)	resp.	2828-3404, 6547-6982, 6983-8028
Patrick Sheehy B.A.T. (Deputy Chairman)	resp.	3405-3600
Pascal J. Ricketts B.A.T. (Director and General Counsel)	resp.	3601-3778
Joseph F. Ramey 3M Corp. (CCP Manufacturer)	resp.	3779-3917
Robert G. Hummell Burroughs Corp. (Forms Printer)	resp.	3918-4052
Robert A. Shade Shade Information Systems, Inc. (Forms Printer)	resp.	4053-4146 [8]
Maxwell A. Clampitt Clampitt Paper Co. (Paper Merchant)	resp.	4147-4220
William G. Eichner Reynolds & Reynolds Co. (Forms Printer)	resp.	4221-4294
Richard D. Mustari UARCO, Inc.	resp.	4295-4486

II

FINDINGS OF FACT

Identity Of Respondents And The Challenged Acquisition

1. B.A.T, the 28th largest industrial company outside of the United States, is a diversified, publicly-held, United Kingdom limited firm, with its headquarters located in London, England.⁵

2. In fiscal 1977, B.A.T had sales of approximately \$11 billion and assets of \$6 billion.⁶ About 53% of its assets were deployed in the tobacco business, 19% in retailing, 10% in paper, 2% in cosmetics, and 16% in miscellaneous activities.⁷ Operating profits in 1977 were \$827 million.⁸

3. Geographically, 29% of B.A.T's fiscal 1977 sales were derived from the U.S. and Canada, 14% from the U.K., 23% from Europe, 23% from Latin America, 6% from Asia, 4% from Africa, and 1% from Australia.⁹ [10]

<u>Name</u>	<u>Called By</u>	<u>Tr. Pages</u>
Theodore Dimitriou Wallace Business Forms, Inc. (Forms Printer)	resp.	4487-4573
Peter Pohly Beekman Paper Co. (Paper Merchant)	resp.	4574-4648
Robert W. Brogee Systemedia Group, NCR Corp. (Forms Printer)	resp.	4649-4791
Peter H. Smolka Burns, Doane, Swecker & Mathis (Retained Patent Attorney)	resp.	4792-4959 5740-5967
William C. Anderson Blake, Mofitt & Towne, Inc. (Paper Merchant)	resp.	4960-5056
Lynn Sushito-Topel Lexecon, Inc. (Retained Statistician)	resp.	5057-5249
Donald Cummings Wiggins Teape (Business Strategist)	resp.	5250-5739
William J. Baumol New York and Princeton Universities (Retained Economic Expert)	resp.	5968-6546
Robert Hietpas Appleton (Assistant Comptroller)	resp.	7381-8686 8967-9150 [9]

⁵ Complaint and Answer ¶2; RX 391B.

⁶ RX's 637G, K.

⁷ RX 637K.

⁸ RX's 637G, K.

⁹ RX 637K.

4. Presently, B.A.T's U.S. holdings include Appleton (paper), Brown and Williamson (tobacco), Gimbels, Marshall Field, and Saks Fifth Avenue (retailing), Germaine Monteil and Yardley (cosmetics).¹⁰ Sales in the U.S. and Canada were approximately \$3 billion in fiscal 1977.¹¹ The U.S. holdings of B.A.T are administered through Batus, Inc., a Delaware corporation which is responsible for initiating and carrying out U.S. strategies and policies for B.A.T.¹²

5. Since 1970, B.A.T has owned the Wiggins Teape Group, Ltd. ("WT"), a U.K. firm which has engaged in paper merchandising and manufacturing since 1756.¹³ WT's sales in 1978 were approximately \$920 million.¹⁴ WT produces and sells its products (a variety of specialty, writing, and industrial papers) primarily in Europe. In addition, it owns paper merchants in Japan, Hong Kong, Singapore, Malaysia, the Phillipines, and Indonesia, and it has paper mills or coating facilities in Australia, India, Argentina, and South Africa.¹⁵ [11]

6. WT's line of coated papers includes the "Idem" brand of CCP. In 1977, WT sold 85,000 metric tons of "Idem"; it was the largest producer of CCP in the U.K. and Europe (about 45% of the total sales), and it was second only to Appleton among the world's CCP producers.¹⁶

7. After serving for two years as the European contract coater for NCR (Appleton's parent company and the U.S. inventor of CCP) WT began the production of CCP for its own account in 1956. From 1956 until May 5, 1978, (the date of the Appleton acquisition challenged herein) WT continued its production of CCP under a series of licenses from NCR. These licenses limited WT to the manufacture and sale of CP (*i.e.*, CCP made pursuant to the NCR technology) within Europe and designated areas outside of the U.S. By the terms of the licenses, WT had access to NCR's patents, technology, and know-how; moreover, in the actual operation of the licensing arrangement, WT and Appleton were in close contact about the technological problems which inevitably arise during the course of CCP manufacture.¹⁷

8. WT has never produced or sold CCP in the U.S.¹⁸ [12]

9. NCR Corporation, a Maryland corporation with its headquarters in Dayton, Ohio, is primarily engaged in the manufacture of computers, office machines, and related products. In addition, through its

¹⁰ CX 274B (¶2).

¹¹ RX's 637G, K.

¹² Sheehy 3424.

¹³ Best 2376.

¹⁴ Complaint and Answer ¶ 5.

¹⁵ Complaint and Answer ¶ 5; Best 2377, 2383, 2393-99.

¹⁶ Finding 90; CX's 82E, T-U.

¹⁷ Hangen 1924-218; CX 14X.

¹⁸ Complaint and Answer ¶ 6; Best 2413.

Systemedia Division, NCR produces business forms.¹⁹ NCR's sales were approximately \$2.3 billion in 1977.²⁰

10. From experimentation begun in 1938, NCR eventually developed a commercially marketable CCP in 1954. In 1954 and 1955, it contracted out the manufacture of the product to several coaters, including Appleton Coated Paper Company, a Wisconsin paper coating firm, Mead Corporation, a major integrated paper company, and WT, the U.K. paper firm. NCR acquired Appleton in 1970, and in 1971 merged it with another former CCP contract coater and paper producer, Combined Paper Mills Co., to form Appleton Papers, Inc. as its CCP manufacturing and selling arm. In 1973, Appleton Papers, Inc. became the Appleton Papers Division of NCR.²¹

11. At the time of the subject acquisition in 1978, NCR's Appleton Papers Division had facilities for the manufacture and distribution of CCP in Appleton, Wis. (paper coating), Combined Locks, Wis. (pulp making, paper making, paper coating), Roaring [13] Spring, Pa. (pulp making, paper making, paper coating), Harrisburg, Pa. (warehousing and paper cutting), and Portage, Wis. (capsule production).²² From its coating facilities in Wisconsin and Pennsylvania, Appleton shipped to customers located throughout the U.S.²³

12. In 1978, the Appleton division of NCR produced approximately 213,000 tons of CCP, from which it realized revenues in excess of \$236 million.²⁴ At the time of the subject acquisition in 1978, Appleton was by far the largest producer of CCP in the U.S., accounting for approximately 60% of the CCP resale market.²⁵

13. On or about May 5, 1978, B.A.T and NCR entered into an agreement in principle for the acquisition by B.A.T of all the assets of NCR's Appleton Papers Division including plants, equipment, patents, and unpatented know-how. On June 30, 1978, the acquisition was consummated at a cost of \$299 million. [14] After the acquisition, Appleton Papers Division became Appleton Papers, Inc. an incorporated Delaware subsidiary of Batus.²⁶

14. With the acquisition of Appleton, B.A.T became the world's largest producer of CCP, accounting for over 40% of world-wide production.²⁷

¹⁹ Brogee 4651-52; RX's 496Z-78, 588B.

²⁰ CX 274B (¶7); RX 588Z-19.

²¹ Hangen 1812-14; CX's 2A, 82H, 274C (¶10).

²² CX's 35A-Z-12; RX's 16W-X.

²³ Complaint and Answer ¶ 12; CX 274F (¶26).

²⁴ CX's 274Z-23-Z-24 (¶50).

²⁵ Finding 49; CX 329A.

²⁶ Ricketts 3642; CX's 1A-Z-235, 274C (¶12), 274D (¶¶15, 16, 18). The acquisition was made through a Batus subsidiary, Lenthier, Inc., whose name was changed to Appleton Papers, Inc. after the acquisition.

²⁷ CX 82T.

Commerce

15. At all times relevant to this proceeding, B.A.T and Appleton were engaged in commerce, as "commerce" is defined in the Clayton Act, as amended, and the Federal Trade Commission Act, as amended.²⁸

Relevant Product Market

16. CCP is a complex coated paper used to make multi-part business forms which record information on several sheets of paper simultaneously, thus facilitating the transmission of data to customers and throughout a business organization.²⁹ [15]

17. The typical CCP business form is made up of a set of three sheets: a top sheet coated on the back ("CB"), a middle sheet coated on both front and back ("CFB"), and a bottom sheet with a coated front ("CF"). Two-part sets omit the CFB sheet. If the business form consists of more than three parts, all of the additional intermediate sheets are CFB.³⁰

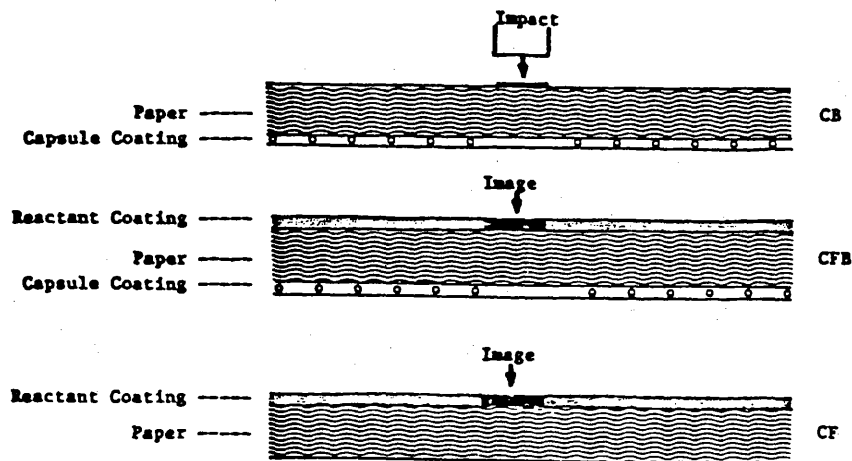
18. CCP is activated when the pressure applied to the CB sheet ruptures the microscopic capsules which are coated on the back of this top sheet, thereby releasing a color former. An image is created as the color former reacts chemically with the resin-based or clay-based coreactant which is coated on the front of the CFB sheet. Simultaneously, the pressure applied to the CB sheet ruptures the microscopic capsules on the back of the CFB sheet, causing an image to be formed on the coreactant-coated CF sheet.³¹ The process may be illustrated as follows: [16]

²⁸ Complaint and Answer ¶12; CX's 274B, F(¶¶2, 3, 26).

²⁹ CX's 262A-Z-68.

³⁰ CX's 262Z-26, Z-29, 274D-E(¶19).

³¹ McMullen 307, P.C. Smith 914, Langlais 1117-18, 1120-21; CX's 262Z-26, 274D,E(¶19). A product closely related to the CCP described in the text, but currently of minor commercial significance, is so-called "self-contained CCP." It combines both color former and color developer within one sheet of paper with the result that pressure applied to it by one sheet will produce an image on the back of the same sheet. CX's 262Z-26, 274D,E(¶19).



Source: *RX 314H*

19. In addition to CCP, multi-part business forms are commonly made from bond paper (known in the industry as "forms bond") interleaved with carbonized tissue. Since the carbonized tissues are discarded after use, the product (a combination of forms bond and carbonized tissue) is known as one-time carbon paper or "OTC." When pressure is applied to the top sheet of the OTC set, an image is transferred mechanically (not chemically as in CCP) from the back of each interleaved sheet of carbonized tissue to the front of each adjacent sheet of bond paper.³² [17]

20. While both CCP and OTC are used to make multi-part business forms, there is clustered around CCP a technology, a pricing structure, an industry-wide perception of competitive realities, as well as specialized customers and some unique applications, which constitute a viable relevant market for the purpose of gauging the effect of the subject acquisition (Findings 21-34).

21. Appleton and other U.S. CCP producers treat the manufacture and sale of CCP as a separate market in planning business strategy (including expansion of productive capacity) and in assessing their

³² W. Smith 500; CX's 262Z-12-Z-23. For purposes of this initial decision, I have treated together, as apparently the forms and CCP industries do, OTC and mechanical transfer paper. Mechanical transfer paper (not a significant factor in the multi-part forms industry) uses in place of carbon interleaf a bond paper coated with carbon material. McMullen 315-16, W. Smith 435, Roth 1671.

competitive strength.³³ Similarly, B.A.T analyzed the Appleton acquisition in the context of a market consisting only of CCP competitors, and concluded that "Appleton dominates this market."³⁴

22. CCP manufacture is an extremely difficult form of paper coating. If the CCP production is integrated into paper making, the coating takes place after a bond of paper or "web" has been produced. Alternatively, rolls of base paper produced elsewhere are coated by the CCP manufacturer. With respect to the difficulty of this coating operation, the entire record fully supports the opinion of WT managers who believe that CCP "is [18] easily the most complex product which is made in high volume in the paper industry."³⁵ While complexities (for example, maintaining the quality of the base paper and perfecting the coreactant) exist throughout the CCP manufacturing process, the most difficult problems arise from the costing of the CB sides which involves the microencapsulation of dyes and solvents and the subsequent coating of the base paper with these delicate capsules.³⁶

23. The microencapsulation and coating of capsules, which is at the heart of CCP technology, requires unique facilities, custom-designed equipment, and specialized raw materials [19] produced under proprietary arrangements with chemical companies.³⁷

24. CCP manufacture also requires the support of an especially rigorous level of quality control and testing, as well as an extensive and continuous research effort. These requirements of CCP, which are unique in the paper industry, demand that specially trained manufacturing, technical, and research personnel be employed.³⁸

25. The extraordinary demands of CCP manufacture would be wasteful if expensive CCP capability were used for a less demanding product

³³ P.C. Smith 891-92, 980-81, Kershaw 1220-21, 1227-28, 1308-09; CX's 7B, 10F-"O", 17H-I, 29V, Z-16, 32M, V, Z-7, 33J, Z-11-Z-14, 34J, 41C, "O", 48D, P, 87W, 91Q-S, 100N-P, 173C, 184Z-42-Z-47, 188A-"O", 209A-W, 210, 212B-C, 220B.

³⁴ CX 82H. See also CX's 2M-N, 47C.

³⁵ CX 36A.

³⁶ Langlais 1130-31; CX's 12Z-9-Z-12, 13V-Z-8, 262Z-31-Z-40; RX's 293L, 314G. At the heart of CCP technology is the creation of—

... discrete capsules for isolating the color forming components from the color developers until pressure or impact breaks the capsules, releasing the dyes and allowing them to react and to form an image.

The capsules range in size from roughly 3 microns to 15 microns, depending upon the specific [CCP] system. (A micron is equal to 0.000001 meters or approximately 0.0004 inches.) By way of comparison, a single capsule would be one hundred times smaller than the period at the end of this sentence.

(CX 262Z-27)

³⁷ P.C. Smith 870-71, 878, 880-81; CX's 10F-K, 13V-Z-6, 100H, 254Z-8-Z-11, 257P-Q, 274E-F(¶¶20-22,25); RX's 262A-N.

³⁸ Elliott 2907; CX's 10F-K, V-W, 27J, 65, 68N, 100M, 101F, 126G, 274Z-35(¶53); RX's 262L-N. Appleton's research staff consists of over 80 technicians (CX's 126J-K) and its research facilities represent "a major investment in proprietary equipment for carbonless paper." CX 126L. See also CX 2V. Appleton has had as many as 50 CCP research projects underway at the same time. CX's 126"O"-P. The technical requirements of CCP go beyond the factory and laboratory. Technical service representatives are trained to work with forms manufacturers on the intricacies of CCP printing. P.C. Smith 896-97; CX's 2"O", 3M, 10V-W, 31Z-1.

such as OTC.³⁹ Thus there is no reliable evidence that CCP equipment is used for OTC manufacture.⁴⁰ [20]

26. CCP paper is sold in rolls to printers of multi-part business forms who use CCP to make either stock (standard) or custom (individualized) forms, and either unit sets (forms designed to be filled out individually as they are torn from a glued stub) or continuous forms (containing perforations enabling many forms to be filled out sequentially; for example, as the paper is fed continuously through a computer or specialized printer).⁴¹

27. The main other channel of CCP distribution is through sheet sales which flow from CCP manufacturer to paper merchants who resell to commercial printers (so-called "quick printers") or to company in-plant printing facilities for use in making up unit sets.⁴²

28. The sheets produced by CCP manufacturers, which represent about 30% of all CCP production, and is higher-priced than CCP rolls, are non-substitutable products. The customers for CCP sheets—the aforementioned "quick printers" and in-plant printing operations—are for all practical purposes [21] precluded from turning to OTC even if the price of CCP were to be raised substantially in relation to OTC.⁴³

29. The multi-part forms printers who purchase CCP in rolls (in contrast to sheet sales to merchants for resale to "quick printers") can use either OTC or CCP to make forms suitable for most applications.⁴⁴ This functional overlap, however, has not eliminated the price differential which has existed between CCP and the combined ingredients (mainly bond paper and tissue) used by the forms manufacturers themselves to make OTC.⁴⁵ [22]

30. The premium paid for CCP over OTC persists because forms printers place a high value on neatness and cleanliness, considerations which carry forward into the forms market itself where CCP

³⁹ CX 35Z-12. See also P.C. Smith 888.

⁴⁰ See P.C. Smith 874-76, 880; CX 254Z-9. There is no evidence that OTC equipment has been successfully converted to CCP production. See P.C. Smith 871, Langlais 1132-34, Kershaw 1225-26, Hangen 2087-88.

⁴¹ McMullen 304-06, Roth 1659-60, Pohly 4594-95; CX's 138D-F, 262H-J. Large rolls are also sold to converters for the manufacture of teletype rolls and other smaller rolls. CX 38W.

⁴² CX 38W. There are presently over 100,000 in-plant printers. P.C. Smith 1002.

⁴³ McMullen 320-21, Reeves 681, 825-26, P.C. Smith 898-99, 985-86, Kershaw 1204, 1223, 1231, Roth 1668-70, Clappitt 4207-08, Pohly 4602, 4606, Anderson 5013; CX's 16Z-59, 22, 29Z-9, 31Z-7, 33Z-7, 210A-Z-16, 492M. In order to use OTC, the sheet printer would have to cut the carbon paper into the size appropriate for the order, interleave the carbon with the form paper, glue the form together, and perforate the glued form for later removal of the carbon. This process has been rejected since it is labor-intensive, time-consuming, and requires special equipment. McMullen 300-01, 320; CX's 66M, 213C.

⁴⁴ Hummell 3945, Shade 4062, Clappitt 4159, Mustari 4399. In some applications, however, CCP has taken over to the virtual exclusion of OTC. For example, unattended printers, such as those used in automated tellers and teletype machines, have been designed to use only CCP. CCP is the dominant multi-part material used in minicomputers. CCP is the preferred material in restaurants, hotels, and hospitals where cleanliness is a consideration. CCP is also preferred in businesses in which security is a major consideration. McMullen 312-20, W. Smith 440-47, 558-59, Roth 1665-66, Hangen 1964-65, Ramey 3883, Hummell 3942-44; CX's 18"O", 20B. The record, however, does not reveal what percentage of total CCP production is represented by these applications.

⁴⁵ McMullen 341-42, W. Smith 465, Reeves 675; CX's 381-J, 41L, 70, 79A-Z-11. In 1982, the difference between CCP costs and OTC costs to the forms printer was between 20% to 30%. W. Smith 464-65, Reeves 675.

forms are traditionally priced higher and independently of OTC forms. In a word, the forms printers and their customers (the forms users) are willing to pay a higher price for CCP in order to avoid the smudging and inconvenience associated with either carbonized tissues or bond paper with a carbon backing.⁴⁶

31. The ability of CCP manufacturers to maintain this premium and yet switch a significant number of customers from the more widely-used OTC does not turn on small changes in the price of either of the two products. H.F. Rance, the father of WT's CCP business and a seasoned follower of trends in the U.S. market and elsewhere,⁴⁷ observed: [23]

In my experience the amount of the price differential has little effect upon the penetration rate provided it is between 15% and 50%. In other words, a price differential of about 30%, balanced against the quality benefits of CCCP and allowing for the other subordinate constraining factors, determines the penetration rate at a figure of 1% per annum, and this penetration rate is not significantly reduced even if the price differential is doubled; nor is it significantly increased even if the price differential is halved.⁴⁸

32. Further contributing to the lack of price sensitivity between OTC and CCP, is the fact that once a decision to use a CCP form has been made, customers of the forms manufacturers rarely switch back to OTC on the basis of changes in the price spread between the two products.⁴⁹ [24]

33. Given the leverage which they have over sheet users who realistically cannot turn to a substitute, and the perception of CCP customers generally (*i.e.*, forms printers and forms users) that CCP is the technologically superior product which legitimately commands a substantial premium, in the day-to-day operations of CCP manufacturers, pricing decisions are not made on the basis of OTC prices, and the prices of the two products do not move in tandem.⁵⁰

⁴⁶ McMullen 312-13, 327, 355-56, W. Smith 465-66, Reeves 644, 675-77, 819-21, Kershaw 1222, Eichner 4275-76; CX's 12H, Z-22, Z-28, 66M.

⁴⁷ Rance's career was described as follows by one of respondents' attorneys:

Dr. Rance served WT for over forty years, some twenty of them as a director. At the time of his retirement, on January 31, 1975, he was in charge of all of WT's strategic planning and research functions. During his tenure at the company, he had acquired technical expertise in carbonless paper and had conducted all of WT's license negotiations with the NCR corporation. Accordingly, when he retired, at a time of considerable uncertainty in WT's relationship with NCR, WT took steps to ensure that Dr. Rance's knowledge and experience would remain at its disposal (affidavit of Paul S. Shrank attached to Respondents' Opposition to In Camera Examination of Certain Documents, 8/31/81). See also Best 2378-79.

The steps taken by WT to retain Dr. Rance's knowledge included a series of consultancy agreements and use of his services as a behind-the-scenes expert in this litigation.

⁴⁸ CX 12Z-25. See also Horowitz 1353-56, 1516-20, 1522-23, 1599.

⁴⁹ McMullen 331-32, 335, 337-38, 354-55, W. Smith 468, 644, Reeves 821-22, Kershaw 1230, Roth 1770-71, Clappitt 4209, Mustari 4485, Anderson 5038. Thus, even in times of recession, users do not switch from CCP to OTC on any significant scale. CX 12Z-25.

⁵⁰ W. Smith 466-67, Reeves 827, P.C. Smith 891-92, 905, 994, Kershaw 1220-21, 1227-29, 1231, Ramey 3879-80; CX's 11A-"O", 12Z-25, 41F-G, 43A, 44C, 91Z-20, 217A-C. Similarly, there is no relationship between the price charged by printers for CCP forms and the price charged for OTC forms. McMullen 356, W. Smith 466, Reeves

34. No weight can be given to the econometric analysis of Appleton's own elasticity, the CCP industry's elasticity, and the cross-elasticity between CCP and OTC, which was prepared for litigation by respondents' retained expert, Dr. William J. [25] Baumol. Baumol's entire exercise, as summarized in RX 562, is grounded on the assumption that CCP buyers make decisions about whether to switch to other suppliers of CCP, or to switch between CCP and OTC, in a period ranging from four to six months after a price change is announced. Baumol, who had no expertise in the CCP industry ("I am not qualified to report what the industry does")⁵¹ admitted that he knew of no evidentiary support for his "lag" hypothesis and he conceded that his study was useless if his assumption was in error.⁵² As it happens, the only support for this "lag" assumption is Baumol's own bootstrap argument that without it his studies produce "statistical nonsense."⁵³ But no Appleton or B.A.T. official (or any other CCP executive) testified about the existence of a four to six month "lag" in actual practice. Moreover, in a pre-litigation report on the feasibility of a study of Appleton's own elasticities in which a similar four month lag was [26] applied,⁵⁴ Appleton executives were warned of the bias and limitations inherent in the econometric approach to elasticities.⁵⁵ This earlier research (whose reliability was no more firmly established on the record than Baumol's study) reached the conclusion that Appleton's own elasticity was 1.1 which would indicate that Appleton could raise prices with little risk to itself.⁵⁶ In contrast, Baumol's construct produced a cross-elasticity coefficient of 4.19 and an Appleton own elasticity of 16.11. These results, which even came as a surprise to Baumol ("I can literally say that I have never for any firm found an elasticity higher than this, even for individual gasoline stations"),⁵⁷ suggest that the underlying data lends itself too easily to adversarial gerrymandering. This is corroborated by the fact that using Baumol's own

819-20, Eichner 4275. The fact that several witnesses testified that "if" or "when" CCP and OTC were priced at the same level, even more users would switch to CCP (Reeves 748, Roth 1691, Kershaw 1297-98, Hummell 3945-46) tells us little about the pricing discretion enjoyed by CCP manufacturers who, in fact, have historically priced their product above and independently of OTC while achieving a growth rate which far exceeds the growth of OTC. CX's 28G-H, 29'O", Z-6, 31'O", Z-4, 32Q, 33E, Z-6, 38Z-32, 58N, 191M-P, 209Q. For the period 1972 to 1979, the average annual growth for CCP was 17% while forms bond grew at 9%, and carbonizing tissue grew at a rate of 4%. CX 60J.

⁵¹ Baumol 6291. See also Baumol 6404, 6409-12.

⁵² Baumol 6157-58, 6292-93, 6340, 6345-46.

⁵³ Baumol 6342. The record suggests at least two other reasons why the study would produce "statistical nonsense" besides the insertion or removal of arbitrary "lags." The proxies used by Baumol for both CCP and OTC are questionable (see Baumol 6165-66, 6176-77, 6190, 6192-93) and there is strong evidence of a multicollinearity problem traceable to the identity of Mead and Appleton prices and the clear record proof that customers in fact do not switch CCP suppliers on the basis of price (see Tr. 6042, agreement of respondents' counsel, and Baumol 6039-42, 6046-47, 6202-03, 6206-09).

⁵⁴ CX's 372A-M.

⁵⁵ CX 372G.

⁵⁶ Baumol 6367. See also CX's 417, 454A-E for another Appleton pre-litigation estimate of own elasticity which ranged from 1.32 to 2.65.

⁵⁷ Baumol 5999.

annual regressions, complaint counsel's econometrician produced exhibits showing a cross-elasticity coefficient of $-.01$.⁵⁸ Moreover, by applying various monthly "lags"—0, 1, 2, 3 months— [27] which are as plausible on the basis of this record as Baumol's four to six month lag, the same data used by Baumol produces own elasticity and cross-elasticity coefficients which are not statistically different from zero.⁵⁹ In sum, because the validity of Baumol's econometric study was not established on the record, and because his testimony was largely based on the study, I have not relied on any of the opinions expressed by this witness.

Relevant Geographic Market

35. The relevant geographic market in which to evaluate B.A.T's acquisition of Appleton is the United States as a whole.⁶⁰

Concentration In The U.S. CCP Market

36. The first U.S. company to challenge NCR as a CCP producer was 3M Corp. which entered the market in 1962 with a self-contained form of CCP sold under the brand name "Action 100." "Action 100" has achieved limited acceptance.⁶¹ Beginning in 1966, 3M entered into the manufacture of standard, transfer-type CCP, first with the use of contract coaters and then through the purchase in 1971 of a coating plant in Nekossa, [28] Wis., which had formerly done contract coating for NCR.⁶² 3M, which is not integrated into paper making, lost money from its entry in 1962 until 1974.⁶³ Since then, its profits have averaged about 6% before taxes.⁶⁴ CCP is an infinitesimal segment of 3M's overall business,⁶⁵ and it is not aggressively promoted by 3M.⁶⁶

37. The next entrant into the U.S. CCP market was Nashua, a firm generally engaged in paper coating and converting. Nashua embarked on CCP development in 1965 with a clay-based CCF system which it began selling five years later with limited commercial success.⁶⁷ Subsequently, it converted to a resin-based CF sheet.⁶⁸ Nashua is not integrated into paper making and presently most of its CF is

⁵⁸ CX's 432, 450. See also CX 433 for a measure of the cross-elasticity of OTC and CCP using Baumol's data. It shows a range of values between .44 to 1.14.

⁵⁹ Baumol 6318-19, 6331-34, 6337-38.

⁶⁰ CX 274F(¶ 29).

⁶¹ Ramey 3792-93, 3798.

⁶² Ramey 3794-95.

⁶³ RX 609.

⁶⁴ RX 609. 3M turned a profit by concentrating on sheet sales during a 1974 shortage. To this day, 3M has made no profit on roll sales. Ramey 3824-25, 3832.

⁶⁵ Ramey 3889.

⁶⁶ Reeves 711-12, Roth 1675.

⁶⁷ Langlais 1117, 1135, 1193, Kershaw 1202.

⁶⁸ Langlais 1128; RX 223. The conversion was made over a two-year period, but could have been accomplished more quickly if the project had been assigned a higher priority. Langlais 1129.

coated by James River Company.⁶⁹ Nashua makes the other components of its CCP product in its [29] Merrimack, New Hampshire, facility.⁷⁰ Nashua cannot match either Appleton or Mead in the quality of finished product or the efficiency of its production.⁷¹ Nashua's commitment to CCP has been half-hearted at best.⁷² During most of the period 1976-1982, Nashua's CCP business has shown deep losses.⁷³

38. Mead, an integrated paper company with internal access to trees, pulp, and paper, began its production of CCP as a contract coater for NCR in 1954.⁷⁴ In 1971, Mead was given a license by NCR to manufacture CCP for its own account. Mead paid royalties to NCR for the use of NCR's patents and technology from 1971 through 1978.⁷⁵ Mead has also licensed patented technology from Fuji, a Japanese CCP producer.⁷⁶ Mead's CCP operation is successful and highly profitable.⁷⁷

39. Champion International, a large paper company, entered the U.S. CCP market in 1969 with its own technology. Although [30] it is fully integrated into paper manufacturing and has substantial financial and marketing resources, Champion was unable to overcome the technical problems of CCP production.⁷⁸ Throughout its existence as a CCP producer, Champion was plagued by quality problems, and because its product was not commercially accepted, Champion left the CCP market in 1976.⁷⁹

40. Boise Cascade, another large integrated paper company, obtained a license from Nashua in 1975 to produce and sell CCP west of the Mississippi.⁸⁰ Under Nashua's unpatented, proprietary technology, Boise began manufacturing CCP in 1978 but a west coast paper strike interrupted production soon after it began. The strike was followed by a series of quality problems and Boise did not resume production until 1980. Boise only produces CCP rolls for sale to the west coast multi-part forms printers.⁸¹

41. In addition to the CCP manufacturers described above who manufacture for resale, Moore Business Forms, a Canadian firm which is by far the largest producer of business forms in the world, has integrated backward into CCP production. Moore, [31] which has

⁶⁹ Kershaw 1213; RX 304Z-7.

⁷⁰ Kershaw 1213.

⁷¹ W. Smith 469, Reeves 711; CX's 12Y.

⁷² Kershaw 1251-52.

⁷³ RX 756B.

⁷⁴ P.C. Smith 940-44, Hangen 1813.

⁷⁵ P.C. Smith 1089-90.

⁷⁶ P.C. Smith 1089-90.

⁷⁷ P.C. Smith 1082-87.

⁷⁸ Ramey 3876.

⁷⁹ CX's 57C, 66X, 255Z-44.

⁸⁰ Hangen 1902; CX 66Y; RX's 512A-V, 565B.

⁸¹ Reeves 710; CX 29Z-11, 254Z-29; RX's 121Z-1, 134.

about 30% of the U.S. business forms market and is almost five times the size of its closest U.S. competitor, developed a CCP product in the 1960's using a clay-based CF.⁸² Moore's CF is currently made by James River, Great Northern Nekossa, and Fraser, integrated paper companies.⁸³ In addition, CCP has been produced for Moore by Appleton as a contract coater. In this segment of its business, Appleton uses Moore's own CCP formulation.⁸⁴ Moore produces some of its CCP requirements in its own plants.⁸⁵

42. Moore does not resell any CCP in the U.S. Its internal production (both in-house as well as the CCP obtained from contract coaters) is used exclusively in the manufacture of multi-part business forms.⁸⁶

43. Mead, which as indicated in Finding 49 is the second largest producer of CCP for resale, has been attempting to develop a CCP system (called "OPAS") which would allow forms [32] printers to coat bond paper themselves either on or off the printing press.⁸⁷ The system was designed for the low end of the CCP market.⁸⁸ Its technological feasibility has not been proven,⁸⁹ with the result that the system has met with practically no commercial success,⁹⁰ and WT has been advised that "OPAS" has limited potential.⁹¹

44. Like Mead, Frye ("a very small outfit") has been experimenting since 1978 with the development of a non-encapsulated CCF coating system which could be used for in-house coating by forms printers.⁹² As it presently formulated, the Frye system has severe technological limitations and has received minimum acceptance;⁹³ in fact, it has been licensed to only one forms printer, Shade Information System, which uses [33] the Frye system on specialized presses to make low-quality stock tab forms.⁹⁴

45. "Actionprint," 3M's on-press CCP system provides forms printers with pre-coated CB sheets and CF materials.⁹⁵ The system has limited applications ("spot" coating), has been plagued with technical difficulties, and has been so unsuccessful that 3M has discontinued all

⁸² W. Smith 551-52, Reeves 670-71; CX 330X. After ten years of work (CX 103D, and the expenditure of \$3 million a year on development (CX 15V), Moore still has technical problems (CX 265D), and its in-house produced CCP is confined to use in the lower-end forms applications. CX's 255Z-20-Z-21.

⁸³ CX 553X.

⁸⁴ CX 255Z-13.

⁸⁵ RX 354G.

⁸⁶ CX's 3K, 50G; RX's 354F-H.

⁸⁷ Every aspect of OPAS is controlled by Mead, and its use simply increases Mead's market share. W. Smith 482, P.C. Smith 1079, Horowitz 1634-35.

⁸⁸ CX 4C. For the scale problem presented by this application see W. Smith 480-81.

⁸⁹ W. Smith 478, 481, 611-12, 624-27, 640, Roth 1687-90, Eichner 4256-57; CX 16Z-39.

⁹⁰ W. Smith 639, Reeves 702, Roth 1693, Dimitriou 4508, 4534-35; CX's 16Z-39, 314B, 533X.

⁹¹ CX 14Z-9.

⁹² CX 15Z-4; RX's 120Z-9, 128B, 668.

⁹³ Reeves 721, Langlais 1181, Kershaw 1235, Roth 1676-77; CX's 264H, 277H-J.

⁹⁴ Shade 4124-28. There is evidence that the Frye system is no longer being offered to other printers because of CB offsetting and image stability problems. CX's 404G, 406.

⁹⁵ RX's 161A-L, 492A-D, 598A-C.

promotion to the point that the product has virtually been withdrawn from the market.⁹⁶

46. With the exception of Moore, the in-house CCP coating experiments of all other forms manufacturers have not met with discernible success.⁹⁷ [34]

47. In calculating market shares in the CCP market, it is proper to exclude Moore's in-house production. Moore is not regarded as a competitor by the CCP producers for resale. Patrick Best, the chairman of WT, gave the following persuasive testimony on this point:

Q. Why should you make a distinction between resale and for in-house use?

A. I think there is all the difference in the world. The person who is making carbonless paper for their own purposes and printing themselves such that to them it is a totally integrated process, I mean, they are doing their own coating, not their own paper making, but it is integrated as between coating and the printing of carbonless forms, is in a very different position to Wiggins-Teape or Mead or any of the family of carbonless papers producers that I was addressing myself to, because we are competing in the open market with each other for sales to printers and merchants and so on. The in-house user, like Moore, is in a very different situation.

Q. You don't really consider Moore a competitor of yours, do you?

A. No.⁹⁸

Best's perception of competitive realities is fully consistent with the record facts respecting the role of Moore in the CCP marketplace. Moore has never sold CCP to forms printers [35] and has no intention of doing so; Moore's internal production of CCP has had no discernible price-limiting effect on Appleton; and Moore itself remains largely dependent on the CCP manufacturers for its own supply of the product.⁹⁹

48. There is no real dispute about the high level of concentration in the U.S. CCP resale market. In their answer to interrogatories, respondents said that they "will not dispute that in 1977 Appleton accounted for approximately 53% of domestic CCP sales and approximately 56% of domestic CCP production."¹⁰⁰ Respondents further said they "will not dispute that in 1977 the two leading producers of CCP, Appleton and Mead, accounted for approximately 82% of all

⁹⁶ McMullen, 369-75, Reeves 705, Roth 1700; CX's 28U, 264H.

⁹⁷ CX 15Z-4. At the time of the trial, for example, Burroughs had still not developed a commercially proven CB technology. Hummell 4006; see also CX 101C. Wallace had largely abandoned its development of standard CCP (Dimitriou 4516-17, 4535) and is only in the experimental stage with an alternative method. Dimitriou 4539-40. UARCO, too, was no longer attempting to develop its own CCP system. Mustari 4402-03. Duplex had discontinued all efforts to produce CCP in-house. W. Smith 477, 483. Allied/Egry has exhausted all avenues of in-house coating. Roth 1773-74. This roster of CCP failures includes NCR's own Systemedia Division, a forms printer which by the terms of the NCR-B.A.T agreement for the sale of Appleton was given a license to manufacture CCP for in-house use after 1981. The license was confined, however, to know-how in existence at the time of the acquisition. Hangen 1986-87.

⁹⁸ Best 2659-60. See also Horowitz 1386 and CX's 32U, 33Z-14 for Appleton's recognition of a resale market.

⁹⁹ Findings 42, 62, 81.

¹⁰⁰ CX 274F ([31]).

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domestic CCP sales and approximately 81% of domestic CCP production."¹⁰¹ In a meeting of the key Appleton executives on February 8, 1980, the CCP market was described as follows:

Appleton Papers has about a 58% share of the carbonless market. As many of you realize—Mead is our No. 1 competitor. Its share of the market: about 30%. 3M is our No. 2 competitor. And Nashua is No. 3. Their combined share: About 10%. The No. 4 competitor would have been Boise Cascade, but as of this month, it had not yet resumed carbonless production following its strike. [36] It was at 1%. Frye and other in-plant coater programs represent .5 of a percent.¹⁰²

49. Complaint counsel's proposed universe and market shares, as shown in Table 1 below, are consistent with respondents' own admissions as outlined in Finding 48¹⁰³ and give an adequately reliable picture of the CCP resale market:

Table 1
U.S. Producers Share of CCP Resale Market In Percent Of Total Tons

	1975	1976	1977	1978	1979	1980
Total Tons	219,500	254,000	277,000 ¹⁰⁴	334,000	359,000	389,000
Appleton	57.0%	60.0%	61.0%	64.0%	64.0%	62.0%
Mead	23.0	26.0	26.0	25.0	25.0	26.0
3M	11.0	9.0	8.3	6.9	6.1	5.7
Nashua	7.3	4.0	4.3	4.5	4.5	4.4
Boise	0	0	0	.3	0	1.3
Champion	2.0	1.0	0	0	0	0
Frye	0	0	0	0	.3	.5

Source: CX 329A [37]

50. Concentration ratios among the top 2, top 4, and top 8 firms in the CCP resale market (see Table 1) are shown below:

Table 2
Leading Firm Concentration In CCP Resale Market

	1975	1976	1977	1978	1979	1980
Top 2 firms	80.0%	86.0%	87.0%	89.0%	89.0%	88.0%
Top 4 firms	98.3	99.0	100.0	100.0	99.6	98.1
Top 8 firms	100.0	100.0	100.0	100.0	100.0	100.0

Source: Table 1¹⁰⁵

¹⁰¹ CX's 274F-G (¶32). See also CX 4B.

¹⁰² CX's 34J, 220B. According to Appleton's own records, its 1977 share of the resale market was 61.6%. CX 219.

¹⁰³ The discrepancy between Table 1 and estimates appearing in Finding 48 are traceable to the attribution to Appleton as a contract coater of CCP produced for Moore and the inclusion of exports.

¹⁰⁴ The dollar value of CCP sales was approximately \$300 million in 1977. RX 16G.

¹⁰⁵ Respondents' "production" market, which reflects the internal production of Moore, and attributes to Moore all CCP produced for it by Appleton as a contract coater, shows Appleton with 48.7% of the market and a 4-firm

(footnote cont'd)

51. Using the Herfindahl-Hirschman Index of concentration, which shows the sum of the squares of all firms listed in Table 1, concentration is as follows: [38]

Table 3
Herfindahl-Hirschman Index (HHI) Of Concentration In CCP Resale Market

	1975	1976	1977	1978	1979	1980
HHI	3946	4374	4484	4789	4778	4573

Source: Table 1

Competition In The U.S. CCP Market

52. Given the high level of concentration in the CCP market, whether calculated by traditional concentration ratios or HHI, respondents have the burden to produce rebuttal evidence showing that the market has been performing competitively. The persuasive evidence in the record is all to the contrary (Findings 53-63).

53. The CCP market has a high technological entry barrier as indicated in Findings 16-18, 22-24, 36-41, 43-46, 74, 86, 91.

54. In Appleton's own view, its dominant position in the tightly barricaded CCP industry can be used to lead the industry to higher prices. Planning ahead to 1981, an Appleton official observed in 1976—

Price leadership is a phrase which has been used to indicate the ability bestowed upon the "strong one"—or leader of an industry. NCR Paper [Appleton's brand name] is the leader [39] and the strongest in total sales and product design. . . . It is our forecast, NCR Paper Sales can lead the chemical carbonless industry to a higher price level by remaining the leader.¹⁰⁶

55. Appleton announces its price changes four to six weeks in advance for the very purpose of giving its few competitors time to get into line.¹⁰⁷

concentration ratio of 95.3% at the time of the acquisition. RX 251. The 1978 HHI in respondents' version of the market was 4336. Complaint counsel's production market, which attributes to Appleton all CCP produced for Moore, shows Appleton's market share declining from 61.0% in 1978 to 51.0% in 1980 while Moore's own production grew from 4.8% to 15.0% during the same period. Concentration ratios in complaint counsel's production market are as follows:

	1978	1979	1980
Top 2	84.0%	76.0%	73.0%
Top 4	95.4%	94.5%	92.6%
Top 8	100.0%	100.0%	100.0%
HHI	4336	3680	3357

(CX 329B)

¹⁰⁶ CX 218C. See also CX's 91R, 532J-K. As part of its evaluation of the Appleton acquisition, WT cited the need to maintain a 50% market share "To ensure stability and real market leadership." RX 16Z-1.

¹⁰⁷ CX 44C; see also McMullen 343.

56. The Appleton price changes are planned long in advance as part of its annual budgeting process and have been put into effect even when immediate market conditions suggest a contrary strategy.¹⁰⁸ To illustrate, Appleton has raised its prices recently in the face of a deep recession and falling raw material costs.¹⁰⁹

57. Most price changes (and there have been relatively few in the history of the CCP industry) have been initiated by [40] Appleton.¹¹⁰ Occasionally, Mead has taken the lead.¹¹¹ Nashua and 3M consistently follow Appleton's and Mead's pricing,¹¹² and thus for all practical purposes, there is no price competition in the U.S. CCP market.¹¹³

58. Concessions from list prices are rarely given in the CCP industry.¹¹⁴

59. While CCP producers compete in quality, even when it was faced with a serious quality problem, Appleton's policy is to resist price cutting.¹¹⁵

60. Appleton's discretionary power over the price of CCP is not restrained by the demand elasticity of the product. Thus, pricing decisions are made on the assumption that small [41] increases in the price of CCP will have little effect on the quantity sold.¹¹⁶

61. Appleton's operating profit margins, in the words of its own officials, are "extraordinarily high by paper industry standards."¹¹⁷ Appleton is more profitable than most of the paper industry;¹¹⁸ in fact, between 1972 and 1980, Appleton consistently earned profits on its carbonless paper in excess of the profits earned by the 500 largest firms in the U.S. as measured by return on shareholders' equity.¹¹⁹

62. Moore began in-house coating because Appleton's prices were inordinately high;¹²⁰ there is no evidence, however, that Moore's efforts have had dampening effect on Appleton's pricing discretion.¹²¹ [42]

63. The history of the CCP industry has been marked by frequent

¹⁰⁸ Horowitz 1624-25; CX 454A.

¹⁰⁹ McMullen 343-45, Reeves 685-86, Horowitz 1404, 1407, 1636, Roth 1678-80.

¹¹⁰ McMullen, 343, Kershaw 1228, Roth 1677, Anderson 4997-98; CX's 42B, 254Z-1, 259Z-13, 449A-D.

¹¹¹ Reeves 682-83, Kershaw 1228.

¹¹² Kershaw 1229, 1258, Hangen 2208, Ramey 3879-80, Mustari 4473-74.

¹¹³ McMullen 342, Reeves 682-85, Kershaw 1228-29, Roth 1673-75, 1680, Dimitriou 4564; CX's 29Z-3, 33"O".

¹¹⁴ Reeves 687, Roth 1673, 1678, Hangen 2208, Mustari 4473-74; CX 44E.

¹¹⁵ See Hangen 2208, 2220-23; CX's 284B-C, 309C.

¹¹⁶ CX's 417, 454A-E. See also Horowitz 1353-54, 1387-88.

¹¹⁷ RX 179C. See CX's 183Z-1-Z-2, Z-4-Z-7, 528C; RX 726B for evidence of stability of Appleton's gross profits (between 26.5% and 29.0%) from 1974 to 1980.

¹¹⁸ See CX's 469, 471.

¹¹⁹ Horowitz 1405. Appleton's 1981-1985 five year plan projects stable profits. CX 32Z-77. Mead, too, had realized excellent profits from its CCP business. CX 188C.

¹²⁰ Horowitz 1406, 1575; CX's 15U, 27G.

¹²¹ For example, at the time of the trial in this matter, bond paper was selling at 10% to 15% off list. There was no corresponding off-list selling in CCP; in fact, CCP producers had recently raised list prices. McMullen 343-45, Reeves 685-86. One forms printer testified that the threat of in-house coating "surely should" exert pressure on Appleton and Mead to reduce prices (W. Smith 627-28) but within one month of calling the threat of Moore's in-house production to Appleton's attention, the price of CCP went up. W. Smith 637. See also Horowitz 1397-98.

periods of shortages during which supply had to be allocated.¹²² During the deep recession of recent years the industry has been in a state of over-capacity.¹²³ Even in the face of this condition, however, prices have remained firm.¹²⁴

B.A.T's And WT's Interest in the U.S. CCP Market

64. Because of its political stability, vigorous growth and high profits in industries familiar to B.A.T, and the absence of bars to foreign investment or profit remittance, the U.S. generally is considered a prime geographic area for B.A.T investments as shown by its aggressive U.S. acquisition and expansion policies.¹²⁵ In fiscal 1977, for example, B.A.T [43] reported capital expenditures in the U.S. of approximately \$77 million, which was 32% of its total capital expenditures for that year, and more than its outlay in any other country or area including the U.K. or Europe.¹²⁶

65. B.A.T's paper-making subsidiary, WT, had special reasons for looking to the U.S. CCP market. About 90% of all CCP production is centered in the North America, Japan and Europe.¹²⁷ The North American market (essentially the U.S.) accounts for approximately 45% of the world's tonnage, and is one and a half times larger than the European CCP market.¹²⁸ While WT was dominant in Europe,¹²⁹ by 1978 it saw a threat to that domination from Japanese exports.¹³⁰ Japan, on the other hand, was effectively foreclosed to any outside competition.¹³¹ As an international company, this left the U.S. as the only fertile field for expansion of its CCP business which clearly constituted WT's main growth potential.¹³² [44]

66. Consistent with B.A.T's general interest in the U.S. and WT's search for ways to expand its CCP sales, WT followed a policy of surveillance of the U.S. CCP market with the result that it had accumulated detailed knowledge about the opportunities and needs of the market.¹³³ Specifically, WT knew that not only was the U.S. CCP market huge in absolute terms, but it was expected to grow. Estimates made for WT prior to and after the acquisition placed CCP growth at about 15% annually for the next several years, a significantly higher

¹²² CX's 2M, 4F, 16Z-37, 71A, 124A, F, 209E-F, 254Z-5, Z-32, 259"O".

¹²³ See note 137, *infra*.

¹²⁴ McMullen 343-45, Reeves 685-86, Roth 1673-74, 1678-80, Hangen 2209-10. See also CX 91R for statement of Appleton policy "to avoid precipitating price wars during times of excess capacity."

¹²⁵ CX 49C. B.A.T does not canvass an unlimited number of potential investments to select the most profitable: it concentrates on opportunities in familiar fields. CX 128C.

¹²⁶ RX 637H.

¹²⁷ CX 48D; RX's 16E, T.

¹²⁸ RX 16T.

¹²⁹ RX 16E.

¹³⁰ CX 12F.

¹³¹ RX 16F.

¹³² CX 192B; RX's 16E-F.

¹³³ CX's 12A-15Z-21, 139A-D, 140A-Z-15, 148A-C.

growth rate than the U.S. paper market generally or the overall forms industry.¹³⁴ WT also knew the U.S. CCP market was growing faster than markets in other geographic areas.¹³⁵

67. That there were high profits to be made in the U.S. CCP market was also apparent to WT in the late 1970's.¹³⁶ [45]

68. WT planners also knew that throughout the 1970's, the carbonless industry had experienced periods of shortage and by 1981 new capacity would be needed.¹³⁷

69. WT recognized that the U.S. CCP market had a limited number of competitors and high barriers which for all practical purposes insulated the industry from entry by all except Appleton licensees.¹³⁸

70. The opportunities in the U.S. CCP market clearly aroused the interest of WT planners to the point that just prior to the Appleton acquisition WT took a preliminary step toward independent entry. This action occurred during the negotiations between WT and NCR over the 1972 license which was scheduled to be terminated in 1980 unless an extension was agreed upon in 1978. By the terms of this license, WT could not manufacture or sell in the U.S. CCP manufactured pursuant to the NCR technology. On May 19, 1977, WT informed Appleton that it [46] intended to terminate the license on July 1, 1980, but noted that both parties had agreed to continue a dialogue about extending the existing arrangement.¹³⁹ On September 7, 1977, WT officials proposed that the license be extended for five years, but with the addition of an amendment allowing for WT's use of any and all NCR technology in the manufacture and sale of CCP worldwide including the U.S. after June 30, 1980.¹⁴⁰ On September 12, 1977, NCR officials agreed to this proposal on payment of a 1% royalty.¹⁴¹ WT replied that it would pay no more than 1/2%.¹⁴² At about the same time, however, WT executives became aware of the possible

¹³⁴ CX's 12K-L, 18"O", 47I, 53B, 58A-"O", 96A, 128B, 209D, 221K, 257Z-27-Z-28, Z-62; RX's 16E, 591C, *F. See also* Best 2790-91, Sheehy 3560. Indeed, B.A.T.'s acquisition of Appleton was considered "a resounding expression of confidence on the part of one of the world's biggest companies, in the long term future of the whole CCCP business. . . ." CX 14Z-4. For long term projections of the continued growth of CCP by Appleton and others see CX's 4A, 10D, 20A, 21V, 31"O", 38Z-32-Z-33, 121X, 191D, 340N, 530D, 533Q-R, T.

¹³⁵ CX's 36H, 82V. There is some evidence that WT planners were attracted to the U.S. CCP market as a base for sales of other WT products in the U.S. and as a site where lower grade CCP could be made for shipment to Europe. CX's 29V, 47F, 49C, 82"O", 128D, 137B, 151A, 226B, 229B, 257Z-95-Z-96.

¹³⁶ RX's 16E, I.

¹³⁷ CX's 16Z-36, Z-39, 98A. *See* CX's 83D-E, U for a 1975 projection by WT planners of over-capacity until 1980 at which time Appleton and Mead might not be able to meet the market demands of the 1980's. *See also* CX 154C for a similar Appleton projection for 1980-1981. While the recent deep recession has put the CCP industry into an over-capacity position (Reeves 807, 816, P.C. Smith 963-64, Kershaw 1218-19, Hangen 1843; CX 56A; RX's 496Z-72, 524A), respondents themselves do not regard the transient risk of economic downturn or temporary overcapacity as deterrents to expansion. CX's 48F, 207G-H, 209E; RX's 591J, Z-8. *See also* CX's 330B, 419"O".

¹³⁸ Sheehy 3561; CX 142J; *see also* CX 48D.

¹³⁹ RX's 232A-B.

¹⁴⁰ CX's 117A-B. This proposal did not originate in September 1977. As early as February 1976, WT executives had planned to ask for "Freedom of sale anywhere in the world" as part of the license renegotiations. CX 118B.

¹⁴¹ CX 117B.

¹⁴² RX 234B.

availability of Appleton through acquisition,¹⁴³ and on October 10, 1977, the chairman and managing director of WT passed on to other key executives the following cautionary note:

... it would be desirable for WT *not* to have negotiated U.S. manufacturing or selling rights under a new agreement with NCR before acquisition, since this would weaken the argument that the acquisition of Appleton is [47] WT's only practicable entry into the U.S. market.¹⁴⁴

After this warning was received, the idea of amending the license to allow for independent entry was not pursued further.¹⁴⁵ Eventually, the question of the license renewal became moot when the acquisition agreement was reached on May 5, 1978.

71. During the hearings there was testimony from WT and Appleton officials that the September 7, 1977, proposal to amend the license to allow for WT entry into the U.S. market was intended by WT and perceived by Appleton as a bargaining strategem aimed at reducing royalties.¹⁴⁶ There are no contemporaneous documents, however, at either WT or Appleton which dismiss the WT demand for access to the U.S. market as a ploy. To the contrary, Thomas Busch, the vice president of Appleton at the time said without reservation that "Wiggins Teape would like access to the North America continent but did not give details."¹⁴⁷

*WT's Ability To Overcome Barriers And Disincentives To Entry
Into The U.S. CCP Market*

72. Notwithstanding the attractiveness of the profits and the growth potential of the U.S. market, there were in 1978 a [48] number of conditions which made entry difficult. As Appleton's executive vice president for development and research observed—

In operating terms the complexity of each aspect of the business and their combined strength amounts to a formidable deterrent to new entrants.¹⁴⁸

The seriousness of the barriers and whether WT was uniquely situated to overcome such disincentives to entry are treated in Findings 73–85.

73. By 1972, the key NCR CCP patents covering the encapsulation

¹⁴³ As Chairman Best of WT put it: "the renegotiation of the 1972 agreement was, in fact, overtaken by the opportunities which we took during the negotiations to open up the subject with NCR of their potential interest in selling [Appleton]. . . ." CX 257Z–27.

¹⁴⁴ CX 47H.

¹⁴⁵ Cummings 5709.

¹⁴⁶ Hangen 1945, Best 2552, 2689–90, 2697.

¹⁴⁷ CX 114B. See also CX 120A.

¹⁴⁸ CX 48D.

process had expired.¹⁴⁹ Nevertheless, there still existed at least an appearance of a patent maze which might deter entry.¹⁵⁰ A WT planning officer made the following assessment of the patent problem just months after the Appleton acquisition:

We recognize their [Appleton's] strength lies in the sheer volume of patents they hold: of the order of 150 representing 50% of CP related products in the USA, for instance; with new ones being continually added; for example, this number has held constant since 1974 as old patents have expired and new ones have been obtained; even though many appear to offer dubious protection, they all [49] add up to an inhibiting influence on the rate at which CP technology can spread in terms of new entrants to the CP business and the general difficulties existing producers have to contend with in developing new materials and processes that are free of patent infringement.¹⁵¹

74. If the patent threat was composed of a large measure of illusion and some substance, the same cannot be said of mastery of the technology and know-how of CCP production.¹⁵² The record proof is overwhelming that the technical problems inherent in CCP manufacture—especially the microencapsulation and coating of color formers—requires years of extraordinary effort with no guarantee that at the end of this long lead-time a quality product will be produced at an acceptable cost.¹⁵³ [50]

75. WT's confidence in its CCP technology was boundless. It conceded little to Appleton's expertise, and it believed that it shared equally with Appleton the claim to being "the world's leading technologists in this [CCP] field."¹⁵⁴

76. WT had available at least two possible ways of applying its vast CCP experience and thereby overcoming the technological and know-how barrier as well as whatever patent problems may have existed. First, it could have obtained from NCR an extension of the licensing agreement which could have given WT the right to use in the U.S. Appleton patents and all of Appleton's unpatented know-how relating to the manufacture of a resin-based CCP.¹⁵⁵

¹⁴⁹ Hangen 1814; CX's 12X-Y.

¹⁵⁰ See P.C. Smith 1064-65, Langlais 1130.

¹⁵¹ CX 343A. A 1977 assessment by H.F. Rance concluded that Appleton had already exploited its patent position far beyond its legal life, and that by 1980 patents would not be a major deterrent to entry. CX 194E.

¹⁵² To illustrate the complexity of the CCP technology, two Japanese CCP producers, Jujo and Mitsubishi, who were not required to take out patent licenses (NCR did not have patent protection in Japan) nevertheless did so in order to acquire Appleton know-how. Cummings 5427-28. See also CX's 12Z-11-Z-12 for evidence that a license for questionable patents may be taken in order to meet the real need for know-how.

¹⁵³ International Paper, which eventually abandoned its efforts to produce CCP, spent five years attempting to develop a CF formulation, the aspect of CCP technology which is easiest to master. It then estimated that even with a viable CF formulation, it would take four to six years more to master the remaining technology but that additional technical problems could mean an even longer lead time. CX's 66Z-26, Z-28. Champion failed to produce an acceptable CCP despite the expenditure of \$8 million to \$10 million on development. CX 101A. It took Moore ten years to perfect its capsule technology at a development cost of \$3 million per year. See Finding 41 and CX's 14F, 257L-N.

¹⁵⁴ CX 128B. See also CX's 105B, 114A-D, 116D, 257N, 258Q; RX's 174A-K.

¹⁵⁵ See CX 105 (Appendix A at W). A proper inference to be drawn from the offer of this license (see Finding 70), is that by 1977, NCR's evaluation of its own and WT's technology had led to the conclusion that WT could not be

Respondents' argument that entry into the U.S. with a resin-based technology would have placed WT in the position of a raw [51] beginner, feeling its way with an unfamiliar product, is not supported by the record. It is inconceivable that the conversion from clay to resin could constitute an entry barrier to the combined expertise of the two leading CCP technologists whose 30 year open-door technological exchange would have continued under NCR's proffer of a license to manufacture in the U.S.¹⁵⁶ As it happens, the difference between clay-based and resin-based applies mainly to the CF coating, the easier aspect of CCP technology.¹⁵⁷ With respect to the CB coating, the technology of clay-based and resin-based starts from a common base,¹⁵⁸ and historically the switch from clay to resin has been well within the technological capability of experienced CCP firms.¹⁵⁹ [52]

77. As an alternative to a licensing agreement with Appleton, WT could have attempted to use its own independent "Idem" technology which was grounded in a clay-based CF reactant. Beginning in the early 1970's, the technology of the two firms diverged (Appleton switched to resin-based CF, while WT continued with clay-based),¹⁶⁰ and the British firm began to develop technological independence. By 1978, WT was convinced that its independent technology had progressed to the point that the "Idem" brand of CCP could be produced in 1980 without infringing NCR patents.¹⁶¹ Appleton officials concurred in this agreement of WT's capability.¹⁶² [53]

78. It is not clear, however, that a clay-based "Idem" could be made in a cost-effective manner and sold profitably in the U.S. While WT's "Idem" is superior in quality and less vulnerable to attacks on toxicological, ecological, and environmental grounds than Appleton's

kept out of the U.S. through the assertion of a dubious patent block, and that the most that NCR could reasonably expect was the payment of a 1% royalty. See Hangen 1885 for a similar line of reasoning which preceded the grant of a license to Mead in 1971.

¹⁵⁶ For evidence of the practically unlimited access which WT had to Appleton technology see CX's 47B, 105 (Appendix A at M, W), 255S-T, 257S-T; RX's 6A-7D, 12A-P.

¹⁵⁷ P.C. Smith 910-11, Langlais 1124, 1139-40, 1156, Hangen 2269, Hummell 4041, Brogee 4746; CX's 105B, 255Z-3, 492C. There is also evidence that resin CF is easier to master than clay CF. See Langlais 1158, 1167.

¹⁵⁸ Hangen 2062-63, Best 2714. WT's development of an independent capsule technology began with the acquisition of NCR's Borehamwood, England plant (Best 2711-12) which essentially duplicated Appleton's own Dayton capsule plant. Hangen 2353.

¹⁵⁹ See Langlais 1153. Appleton and Mead switched from clay to resin. Mitsubishi and Jujo, Appleton's Japanese licensees, produce both a clay and a resin CCP. Langlais 1129, Hangen 2066, Cummings 5429.

¹⁶⁰ WT had not moved to a resin system because of the cost of importing resin and the persistent shortage of raw materials. CX's 12Z-9-Z-10.

¹⁶¹ CX's 36B, 82L-M, 116D, 257S-T, Z-50; RX's 37D, 75B. A prepared-for-litigation memorandum (RX 402A-Z-164) by a patent attorney, Peter Smolka, is simply a lawyer's attempt to dredge up every conceivable patent problem that might face an entrant with a clay-based product. The Smolka memorandum is far removed from every-day business realities in which patent lawyers and technicians find ways to alter formulations as they skirt specific patents and avoid spurious infringement suits (See Smolka 5851, 5896-5900, 5908, 5910-11; CX's 12Z-11-Z-12; see also Hangen 1921 for evidence that Moore was able to produce a clay-based CCP without infringing anyone's patents). Moreover, Appleton itself seems to be quite prepared to settle patent claims against alleged infringers who might have claims of their own to assert against Appleton (see Hangen 1981-83), a policy which would be pertinent in the case of WT since it has accumulated a portfolio of U.S. patents. CX's 274Z-16-Z-17(¶46); see also CX 200A.

¹⁶² CX's 254Z-47, 255X.

"NCR" paper,¹⁶³ it is a superiority which may only be obtainable at a higher cost than the U.S. market is willing to pay.¹⁶⁴ Respondents also point to the evidence of some buyer reluctance to accept a clay-based product in the U.S.¹⁶⁵ In making this argument, respondents of course nicely overlook their alleged apprehension over the dire consequences for Appleton (or WT as a hypothetical independent entrant) resulting from Moore's integration into [54] manufacturing, although Moore's integration happens to be with a clay-based product.¹⁶⁶ In any event, the issue of clay versus resin need not be resolved here since complaint counsel's expert conceded that entry with "Idem" as it is formulated in the U.K. would not have been competitive,¹⁶⁷ and the economic model of entry, which is at the heart of complaint counsel's case, is premised on WT entry with a resin-based CF subject to the payment of a 1% royalty to Appleton.

79. Entry into the U.S. CCP market not only requires a substantial capital outlay in absolute terms, but the outlay is at considerable risk depending upon the stage of the potential entrant's technological advancement. Champion is reported to have spent between \$8 million and \$10 million on CCP research and development alone with nothing but losses to show for the effort. In addition to the continuing costs associated with research and development, the production of CCP requires extensive physical facilities—emulsion plant, coaters, converting equipment, warehouse facilities—which were estimated to approximate \$50 million in 1979 for a facility capable of producing about 60,000 tons of CCP. These capital outlays are at risk, too, since they represent sunk costs that [55] cannot easily be recovered because the equipment is so specialized it cannot be converted economically to other uses.¹⁶⁸

80. B.A.T's financial strength was such that its officials believed that it was probably one of the few paper companies in the world that could afford NCR's \$300 million asking price for Appleton. By the same token, the more modest form of entry posited by complaint counsel (\$44 million for a greenfield coating plant, *see* Finding 113) was well within the financial reach of many firms.

81. Respondents argue that an important disincentive to indepen-

¹⁶³ Cummings 5408; CX's 132-8, 256Z-12-Z-13, 257Z-11-Z-13, 265A.

¹⁶⁴ Best 2405-06, Elliott 3085, 3394-95; CX 14S. *See also* concession of complaint counsel at Tr. 6895-96 ("Idem . . . is apparently not the product that the U.S. buyers are willing to pay more money for. . .")

¹⁶⁵ This reluctance, however, may not be deeply ingrained since it stems partially from Appleton's own inferior clay-based CCP which was discontinued in 1973 (Roth 1759-60) and partially from the use of Attapulgite clay which has been replaced by Stilton clay from Japan. CX's 12Z-9-Z-10. Given WT's reputation for producing a clay CCP which is superior to Appleton's resin paper, it is reasonable to assume that any existing prejudice against clay-based would not have been an insurmountable barrier. As for the incompatibility of clay and resin, this can hardly amount to a serious deterrent since even the resin CCP's of different U.S. manufacturers are not intermixed as a rule. W. Smith 474, Hangen 1870, Hummell 4014-17, Clampitt 4215, Eichner 4270-71.

¹⁶⁶ Langlais 1124.

¹⁶⁷ Horowitz 1607-08.

¹⁶⁸ *See* Findings 25, 113; CX 101A.

dent entry was the prospect of in-house coating by forms printers. Respondents, however, have not explained how the seriousness of this threat in 1978 would have been a disincentive for an investment of less than \$50 million (that is, for de novo entry as assumed in complaint counsel's economic models) but did not discourage the expenditure of \$300 million to purchase Appleton. Moreover, the record plainly reveals that in 1977 and later, after addressing the issue of in-house coating, Appleton and WT officials were sanguine about the prospects of the CCP manufacturers despite the threat of the [56] loss of some of Moore's business. Respondents' managers were informed that because of scale considerations and developmental costs, in-house coating would be confined essentially to Moore, and Moore's conversion to CCP from its historic attachment to OTC (even if it were to be accomplished through in-house coating) should be encouraged since it would boost CCP sales generally.¹⁶⁹

82. Respondents also argue that any de novo entrant in 1978 would have been discouraged by the threat to CCP growth posed by such technological advances as non-impact printers, "intelligent" copiers, computer output on microfilm, and electronic information storage which eliminate entirely the use of multi-part business forms. This alleged threat to CCP from technological advances was assessed by Appleton itself in 1976 and later and was largely dismissed as management predicted [57] vigorous growth for the industry. In fact, Appleton management believed that technological innovations would have no appreciable impact on CCP, or may well prove to be a positive factor in increasing growth,¹⁷⁰ a view shared by WT advisers and planners.¹⁷¹

83. A potential entrant into the U.S. CCP market would have to come to grips with the question of whether to have an integrated paper supply. How this issue impacts on manufacturing costs and profits of a new entrant is treated at length in Findings 103-110. Even apart from the cost factor, some CCP customers prefer to deal with a manufacturer who has an assured (namely, its own) source of paper.¹⁷² The record indicates, however, that assured sources of paper

¹⁶⁹ CX's 12Z-23, 14Z-11-Z-12, 39D, 47I, 48E, 50G, 209E. For evidence of Moore's heavy investment in OTC see CX's 140K-L. Respondents' assessment of the significance of Moore's entry was shared by Nashua (Kershaw 1238) but a 1977 report to Mead by the Boston Consulting Group predicted a low rate of growth due to backward integration. RX 496"O". But see RX 591I for respondents' 1981 statement that "Feasibility of further inroads by forms manufacturers may be questionable." Moore still considers itself an important CCP customer since its "production of carbonless paper is not adequate to meet its requirements for carbonless paper now or in the near future." RX 354H. In 1978, Moore's future projections showed that it will have to purchase 65% of its carbonless requirements. RX 354H.

¹⁷⁰ CX's 20D, 29Z-9, 38Z-32-Z-33, 91Z-Z-2, 156A, 255Z-36, 532D, 533L.

¹⁷¹ Sheehy 3560; CX's 12Z-33-Z-35, 13Z-13, 14Z-18, 15Z-20, 18R, 82L. See also W. Smith 483-87 for evidence that CCP growth will continue as a result of such applications as minicomputers and distributed data processing.

¹⁷² Reeves 719-20, Roth 1756-57, Clappitt 4181, Mustari 4365-66, Dimitriou 4517, Pohly 4616. But see McMullen 366, W. Smith 473-74, 600.

are readily available.¹⁷³ [58]

- 84. Putting together a paper merchant distribution system from scratch would have been a major problem for a new entrant. Because of the high cost of inventory, established merchants are generally not receptive to the notion of carrying more than one brand of CCP,¹⁷⁴ and they may be reluctant to switch to a new entrant even if a discount is offered.¹⁷⁵ Respondents make no claim, however, that Appleton and Mead have tied up every paper merchant. Moreover, considering the importance and profitability of CCP, as well as the uneven reputation for quality of some existing manufacturers, WT could have broken into the market by distributing through merchants who are not opposed to "dual-lining," or who have indicated a willingness to switch suppliers because of quality concerns, or who either had not carried CCP previously or had carried the product once before and had subsequently discontinued distribution.¹⁷⁶ [59] Whether such a group of merchants would have grown into a viable distribution network would have depended upon WT's success in producing a quality product and marketing that product aggressively, attributes which WT had demonstrated convincingly in Europe and elsewhere.¹⁷⁷ Similarly, while it would not have been easy to take the business of the forms printers away from the entrenched CCP manufacturers,¹⁷⁸ there is evidence that large CCP users would welcome a new manufacturer who could offer a quality product and serve as a reliable and geographically convenient alternative source of supply.¹⁷⁹ If the new entrant sold a quality product below market price, this would be an added attraction,¹⁸⁰ but see Finding 116 for the feasibility of entry into this tight oligopoly by use of price-cutting. [60]

85. Much is made by respondents about WT's alleged lack of technical personnel for U.S. entry.¹⁸¹ While the technology is elusive, there is no proof of a shortage of technicians. To the contrary, the record indicates a ready pool of personnel which could be pulled together from former WT technicians who were dropped as an economy meas-

¹⁷³ CX's 21Z-5, 48J, 186H-I, 209J, 330D. See also P.C. Smith 1061.

¹⁷⁴ P.C. Smith 1101, Kershaw 1249-50, Ramey 3831, Pohly 4622-23, 4628-29, Anderson 4968-69; CX 278J; RX 313B. Some measure of this reluctance may itself be a function of the current market structure in which a merchant has much to lose if the dominant firm is alienated. Thus, the fact that one would have to "shoot" long-time Appleton loyalist Clampitt before he would even consider trying a new line (Clampitt 4181) suggests that the eagerness to please an essential supplier has supplanted a reasoned concern for quality and price competition.

¹⁷⁵ Clampitt 4184, Pohly 4630, Anderson 5031-32.

¹⁷⁶ For evidence of the availability of merchants for one or more of these reasons see W. Smith 472, 591-92, P.C. Smith 1057-58, 1104-05, Kershaw 1209-11, Hangen 2219, 2223, 2244, Clampitt 4206-07, Pohly 4616-17, Anderson 5006; CX's 203, 259Z-16-Z-17, 279B, 284B-C, 286, 288A-B, E-F, 307B, 309C-D, 314B, 340R-S; RX's 480A-Z-103.

¹⁷⁷ Best 2730-32, Kershaw 1242; CX's 47C, 136A, 257Z-35-Z-36.

¹⁷⁸ Reeves 757-58, Roth 1748-49, Hummell 3994, Brogee 4675.

¹⁷⁹ W. Smith 470-72, 591-92, 596, Reeves 687, 814, Mustari 4469; CX's 254Z-31-32; RX's 480B,S, Z-5, Z-9-Z-10, Z-12, Z-80, Z-84.

¹⁸⁰ W. Smith 470-473, Reeves 687, 712-16, Kershaw 1324, Roth 1747-48, Ramey 3852, Eichner 4263-66; RPXF, Vol. II at 217.

¹⁸¹ P.C. Smith 1061.

ure, existing 3M personnel who are underutilized, and Mead or Appleton employees who might want to get in on the ground floor of a new CCP operation.¹⁸²

Other Alleged Potential Entrants

86. It is manifest that mastery of the coating technology has operated in the past to limit the field of potential entrants into the U.S. CCP market. As Chairman Best of WT put it "only the NCR licensees had made real progress on the world scene (save possibly Fuji with Sarrio/DRG). There had to be a reason."¹⁸³ The obvious reason is that a licensing [61] arrangement with NCR gives the licensee the experience, the technological capability, and the know-how which are required before entry can even be contemplated. That a prior relationship with Appleton is a clear advantage in overcoming the technological entry barrier is illustrated by the fact that of the U.S. paper companies, only Mead, after 17 years of experience with the process and an intimate working relationship with Appleton, was able to achieve a clear success.¹⁸⁴ The importance of the relationship with Appleton is further demonstrated by the history of Boise, a major paper company and a licensee of Nashua. Boise's success after nearly five years of development is by no means assured as it continues to be plagued by technological difficulties.¹⁸⁵ Champion, a large and well-respected paper company, was a failure because of technological problems.¹⁸⁶

Both Crown Zellerbach and International Paper Company, giants in the paper industry, considered the possibility of entering the U.S. CCP market and eventually rejected it. Both [62] have excellent distribution networks, are fully integrated, and have extensive coating experience. Crown worked at CCP development over a ten year period before deciding that technology barriers were too difficult for it to overcome.¹⁸⁷ International Paper has made an "irreversible" decision not to enter the CCP field.¹⁸⁸ International Paper believed that development of technology from scratch would take many years and carried with it a high risk of patent infringement and no guarantee of

¹⁸² P.C. Smith 1063, Langlais 1173, Ramey 3833-34. Also, the exit of Champion left a group of CCP technicians who might have welcomed an opportunity to take another crack at the problems of CCP production; this time, however, with one of the world's best CCP technologists.

¹⁸³ CX 142J. See also Best 2478. Thomas Busch, Appleton's Executive Vice President for research and development wrote in 1979: "The characteristics of the carbonless business worldwide are such that it offers an opportunity for growth to relatively few paper companies. By paper making standards, the number of competitors is small." CX 48D.

¹⁸⁴ RX 283P. See also CX 254Z-33.

¹⁸⁵ See Finding 40 and CX 212C.

¹⁸⁶ See Finding 39.

¹⁸⁷ CX's 199A, 254Z-54.

¹⁸⁸ CX 208A.

a successful product.¹⁸⁹ The fact that Great Northern Nekoosa, Frazier, James River Corp. and Georgia-Pacific Corp. coat CF for Moore and Nashua does not show that they are even close to perfecting the infinitely more difficult CB technology.¹⁹⁰ Indeed, the President of Appleton acknowledges that paper companies are not likely potential entrants.¹⁹¹

87. Appleton's Japanese CCP licensees—Jujo and Mitsubishi—are legally barred by the terms of a 1977 [63] licensing agreement from entering the U.S. at least until 1985.¹⁹²

88. Fuji, another Japanese producer, manufactures CCP pursuant to an agreement with Mead, which provides that Mead has the exclusive right to manufacture and sell CCP in the U.S. using the Fuji technology.¹⁹³

89. The status of the fourth Japanese producer, Kanzaki, is unclear. Although there is evidence that this firm is barred from selling in the U.S. because it licenses the Fuji technology and is subject to the Fuji-Mead restriction,¹⁹⁴ it has sent samples of CCP to U.S. firms.¹⁹⁵ The record, however, [64] contains no proof of actual Kanzaki sales of CCP in the U.S.¹⁹⁶

90. As shown in Table 4 below, at the time of the Appleton acquisition, apart from WT, all other European producers had achieved limited success even in their own home market.

Table 4
Share of European Market By European Producers and Exporters in 1977

European Producers	%
WT	45.4
Sarrio	6.3
DRG	5.9
Feldmuhle	4.7
Zanders	3.8
Reed	3.4
Binda	3.0
3M	2.8
Pelikan	1.8

¹⁸⁹ CX 66Z-28.

¹⁹⁰ Langlais 1139-40.

¹⁹¹ CX 254Z-54.

¹⁹² Hangen 1894-95, Best 2663-64, Cummings 5435-37; CX's 257Z-88-Z-89. There is nothing in the record that suggests that in 1985 the Japanese firms will request, or more importantly that respondents will grant, the boon which WT was given in 1977—an opportunity to enter the U.S. with Appleton technology. See CX 255Z-7-Z-8. There is evidence that the Japanese firms produce an excellent resin-based product using advanced coating techniques, but whether they could enter without a licence is doubtful since in 1977 Fuji and Mitsubishi, unlike WT, decided to renew their licenses thus indicating a continued dependence on Appleton. See CX's 54B, 59C, 105 (Appendix A at L), 112C, 120B, 258Z-29, Z-36-Z-37, 272L.

¹⁹³ CX's 341A-Z-19; RX's 633A-35S.

¹⁹⁴ P.C. Smith 1071.

¹⁹⁵ Reeves 850-51, Mustari 4379, Anderson 4965-66; RX's 194A-B.

¹⁹⁶ See CX 259I.

European Producers	%
Ahlstrom	0.8
Imports from Japan	13.9
Imports from U.S.	6.6
Others	1.6

Source: CX 54D¹⁹⁷

91. There is no substance to respondents' argument that entry potential should be afforded to firms listed in Table 4 or [65] to other European producers who have not even registered a discernible market share. Sarrio and DRG, WT's principal European competitors at the time of the Appleton acquisition, are apparently barred from entry because they are Fuji licensees and subject to the Fuji-Mead entry restriction into the U.S.¹⁹⁸ As for the others, the record suggests sound reasons for their modest European accomplishments and there is nothing in the record to indicate that U.S. entry would serve to cure the defects of these insignificant producers. To illustrate, Pelikan does not have a research or development program.¹⁹⁹ Feldmuhle purchases a technologically unsophisticated CB emulsion from BASF.²⁰⁰ And Kores, another firm nominated by respondents as a potential entrant, made CCP with a chemical process which was described by a visiting U.S. forms printer as requiring "an explosion-proof environment, and our printing plants are no place to have that kind of technology, so I had to rule that out right away because of that."²⁰¹ [66]

92. There is no reliable evidence that Moore or any other business form printer has shown any interest in producing CCP for the U.S. resale market.²⁰²

93. There is no reliable evidence that chemical companies have mastered the technology of CCP production or are capable of doing so.²⁰³

Temporal Factors

94. Given its already established high level of technological competence, it is reasonable to infer that had B.A.T not acquired Appleton, and assuming further that de novo entry was economically attractive, independent entry could have been accomplished by WT between 1980 and 1982. On June 1, 1977, B.A.T notified NCR of its intention to terminate the licensing agreement which meant that this restraint on WT's entry after July 1, 1980, would have been removed.²⁰⁴ That July 1, 1980, is reasonable as the target date for actual entry draws

¹⁹⁷ In 1981, European market shares were: WT 39%, Jujo 9%, Feldmuhle 8%. Cummings 5477-78.

¹⁹⁸ CX's 16Z-50, 257Z-88, 258U; RX's 633-35.

¹⁹⁹ CX 258Z-13.

²⁰⁰ CX 257Z-86.

²⁰¹ Roth 1702. See also CX 257Z-87.

²⁰² See Finding 42.

²⁰³ See Langlais 1145, 1149-50.

²⁰⁴ CX's 258Z-59-Z-60.

additional support from WT's request of NCR (which was granted but not pursued further because of the impending Appleton [67] acquisition) that instead of terminating the license, it be allowed to continue the NCR license but with the right to manufacture and sell in the U.S. beginning on July 1, 1980.²⁰⁵

95. Not only is the date of entry reasonably predictable (that is, assuming it was economically feasible) but successful²⁰⁶ entry at any point in the foreseeable future would be competitively beneficial, given the tight oligopolistic structure of the U.S. CCP market and the unlikelihood that CCP [68] will soon become obsolete as a result of new technologies. Since the early 1970's and the entry of Mead, the CCP industry has assumed its present shape, and the long-range projections of Appleton, WT, and others indicate that it is likely to remain a highly concentrated market with few potential entrants on the horizon.²⁰⁷

Pro-Competitive Impact Of Alternative Entry

96. Appleton itself recognized that new competition from abroad "would have to be met competitively on quality and price in the marketplace."²⁰⁸ Similarly, B.A.T knew that Appleton's [69] ability to impose price leadership and "stability" on the CCP market was a function of its 50% market share, and that this "effective influence" could be eroded by any significant loss of market share.²⁰⁹ Clearly, successful new entry would not only increase consumer choice but would make collusive behavior by Mead and Appleton less likely.²¹⁰

²⁰⁵ Finding 70. While July 1, 1980, is a reasonable target date, respondents' records suggest that it would take two to four years to plan and construct a new coating operation. CX's 159A, 241H; RX 121Z-45. Chairman Best's estimate of six years (i.e., 1978 to 1984, see Best 2500-11) was done on the spur-of-the-moment for litigation and is the product of a presumed lack of information which would be truly remarkable for any firm which has been in the CCP business for even a short period of time and for a firm like WT, which has had a nearly 30-year relationship with Appleton and had developed intimate knowledge of U.S. costs and requirements (see, e.g., CX's 12A-15Z-21, 47B, 171A-Z-8; RX's 459A-463F, 592A-F). Best's estimate can only be viewed as an exaggeration beyond belief.

²⁰⁶ The issue of successful entry presents a temporal element of its own because of the interval between the date of the evidence showing the violation, and the time when an entry decision would have to be made should divestiture be ordered. While every antitrust case must deal with the problem of staleness (and the Commission has warned against any tendencies to "up-date" already too voluminous records, see *Koppers Company, Inc.*, 77 F.T.C. 1675, 1677 n. 4 (1970)), the time factor is somewhat aggravated here because of the nature of government's case which rests essentially on an economic model of entry reflecting 1978 data. These data may or may not be valid for the purpose of determining whether a violation occurred—i.e., a violation grounded on what B.A.T would have done in 1978 had the acquisition been blocked. But a divestiture of Appleton can be justified now only if economic modeling undertaken from a 1978 perspective remains presently valid, at least to the extent that the major factual assumptions respecting volume, prices, and costs have not changed so that independent entry which may have been feasible in 1978 is still feasible today. There is evidence that at least one of the components of complaint counsel's models should be adjusted to reflect more recent cost experience (see Finding 114) and there was some testimony that in the recent state of over-capacity, a new entrant may have difficulty reaching the volume levels projected in complaint counsel's models. See Reeves 816, Ramey 3824. The lesson to be drawn from all this is that in actual competition cases grounded on economic models, the case must be tried on an expedited basis, hardly the lodestar followed by either side in this litigation.

²⁰⁷ CX's 12Z-1-Z-2, Z-37, 32U, 51B, 53A; RX'S 16K-L.

²⁰⁸ CX 100Q. Even Boise's modest entry on the West Coast has instilled a small element of competition. McMullen 359, Hangen 1904-05, 2213-14; CX's 33Q, 252C.

²⁰⁹ RX 16Z-1.

²¹⁰ Horowitz 1500-11.

97. WT's own experience demonstrates the pro-competitive impact of new entry. Notwithstanding WT's huge market share in Europe, the entry of Japanese firms since 1972 has instilled price and quality competition.²¹¹

98. There is no evidence that the B.A.T acquisition of Appleton has had any pro-competitive effects. Undoubtedly, B.A.T brought WT's historic enthusiasm for CCP to the U.S. market at a time when NCR's main interests were focused elsewhere.²¹² This enthusiasm has manifested itself in the construction of new facilities and the updating of old.²¹³ [70] But the CCP resale market remains essentially as it was before: Appleton dominates, Mead lags far behind, and no other producer is a significant factor.

The Economic Feasibility Of Alternate Entry By WT

99. Respondents argue that in the so-called "Cummings Study" it had been determined conclusively prior to this litigation that absent the Appleton acquisition, WT had no other means of feasible entry into the U.S. CCP market. The study specifically rejects de novo entry or acquisition of 3M or Nashua. The Cummings Study, however, is not an objective analysis of entry and it proves nothing about the economic feasibility of alternatives, a question which is barely touched on in the report.²¹⁴

Donald Cummings, a WT business strategist, prepared the study early 1977 at the request of Patrick Best, WT chairman. Best admitted that the study was a "brief for the [71] acquisition"²¹⁵ which was "prepared to basically justify an application to our shareholders of B.A.T and to substantiate that [the Appleton] acquisition strategy."²¹⁶ Moreover, the report was prepared with one eye cocked toward U.S. antitrust considerations. The report itself acknowledges that the antitrust laws may be a problem,²¹⁷ and Cummings was aware of the antitrust implications of alternate entry before the report was completed.²¹⁸

100. Respondents' officials testified, in substance, that they never seriously considered de novo entry prior to the Appleton acquisi-

²¹¹ Best 2405, 2408.

²¹² CX's 82P-Q, 184Z-37, Z-74-A-75.

²¹³ Reeves 805-06; CX's 258Z-103-Z-105; RX 397J.

²¹⁴ The study can be said to consider the feasibility of de novo entry only if entry is equated with an assurance of a dominant market share ("... the capacity already installed is such that there is little hope that we could profitably invest in a greenfield site and buy market share on, say, a ten year time horizon in an attempt to wrest C-P market leadership from Appleton; nor is it likely we could oust Mead as number two; at best, therefore, WT would be a poor third with 15% maximum market share after Appleton and Mead's combined 80%." RX 16F).

²¹⁵ CX 257Z-62.

²¹⁶ CX's 257Z-61-Z-62.

²¹⁷ CX 82P.

²¹⁸ Cummings 5701-02, 5707-08. See also CX 239B.

tion.²¹⁹ This testimony cannot be assigned any weight since obviously corporate executives have every incentive to dismiss alternative forms of entry once the government raises a question about an acquisition. Moreover, the testimony is not convincing because during the 1977 license negotiations with NCR some high officials at WT must have thought about the desirability of independent manufacture in the U.S. for why else ask for North American rights. Prior to 1977, there would have been little cause to discuss any form of U.S. [72] entry since WT was effectively barred from doing so by the terms of the licensing agreement.²²⁰ Besides, since the main issue in this case is whether alternative entry was economically feasible, respondents hardly aid their cause by saying that alternative entry was not considered. If the Appleton acquisition were found to be illegal, then presumably B.A.T and WT executives would do what any rational businessman would be expected to do—consider whether there is an economically feasible alternative.

101. Equally inconclusive on the issue of feasibility of entry is the advice of Ramey of 3M who testified that he would have counseled WT not to enter the U.S. CCP market de novo or by toehold.²²¹ Considering the limited success which 3M has had, the pessimism of this witness is not surprising but hardly apposite to the entry of WT which would have the key advantage 3M lacked—access to the Appleton technology.²²² [73]

Complaint Counsel's Economic Models

102. Complaint counsel's argument in favor of the economic feasibility of alternate entry rests on the models prepared for litigation by their retained expert, Dr. Ira Horowitz, a University of Florida econometrician. These financial models use a discounted cash flow analysis ("DCF")²²³ to product internal rates of return ("IRR") that Horowitz believes B.A.T might have earned by greenfield entry had respondents been denied the Appleton acquisition. The base model, CX 260 (in three different scenarios identified as CX's 260A–C) was drawn up by Horowitz from certain stated assumptions and from record facts known or presumably available to B.A.T at the end of 1977 or the beginning of 1978. The model proceeds from the basic premise that

²¹⁹ Best 2717, Elliott 2851–52, Sheehy 3434, Ricketts 3671–72, Cummings 5414.

²²⁰ See, e.g., statement of WT former Chairman Bennett ("North America is the largest world market for paper and WT is excluded from this area for carbonless paper by the terms of the present NCR license." CX 47B).

²²¹ Ramey 3849.

²²² Several forms printers and the former head of Mead's CCP business would have advised WT to stay out of the U.S. CCP market. This advice is based on predictions about the impact on the industry of in-house coating and technological developments (P.C. Smith 1015–31, Hummell 3994–98, Mustari 4395–97, Brogee 4717–19), "threats" which were discounted by respondents' own executives in 1978 when they predicted long-range growth for the CCP industry. See Findings 81–82.

²²³ The discounted cash flow is the financial technique for evaluating a long-term project that takes into account the present value of all expected net cash receipts, discounted by the marginal cost of capital. Horowitz 1446–48.

WT would have entered the U.S. market with resin-based CCP (essentially Appleton's technology for which Appleton would be paid on 1% royalty) produced in a non-integrated operation, that is, without an internal source of base paper. All crucial factual assumptions made by Horowitz are discussed in Findings 103-117. [74]

During the defense case, Vera Elliott, a recently retired WT planning officer, gave testimony challenging the Horowitz assumptions and Robert Heitpas, the assistant comptroller of Appleton, prepared models which were designed to show that the results would have been changed drastically if Horowitz had applied different facts. A counter-attack on Heitpas' models, which was mounted in rebuttal by David Painter, chief supervising accountant of the Commission's Bureau of Competition, used still other factual premises to revise the basic Horowitz models and to construct alternate scenarios to the Heitpas models. During the surrebuttal case the Painter models were answered by more Heitpas models. In addition, Elliott constructed a separate series of models (discussed in Finding 119) which were based on an entirely different set of facts than the Horowitz-Painter-Heitpas models.

103. That the bottom line of all the models (the IRR's with or without debt) is extremely sensitive to even small differences in the perspectives and assumptions of the advocate who makes the fact selection, can be illustrated by reference to the crucial issue of manufacturing costs (and the related issue of "other expenses") to be assigned to the prospective new entrant. As shown in Table 5 below, the investment decision of the prospective new entrant might well turn on how the manufacturing cost and "other expenses" elements alone are skewed: [75]

Table 5
Effect On IRR's Of Manufacturing Cost Cost And "Other Expenses" Variations

	Selling Price Per Ton	Mfg. Cost Per Ton	"Other Expenses" as % of Net Rev.	IRR w/o Debt	IRR with Debt	Source & Proponent
Model 1	\$1232	\$ 875	12.5%	14.0%	17.9%	CX 260A (Horowitz) ²²⁴
Model 2	1232	1044	12.5	2.3	0.7	RPXE, Vol. VI at H00144 (Heitpas) ²²⁵
Model 3	1232	974.34	9.5	10.2	12.6	CX's 474A-D, F-H (Painter) ²²⁶
Model 4	1232	998.57	12.5	5.5	5.8	RX 752A (Heitpas) ²²⁷ [76]

(footnotes appear on next page)

104. As illustrated in Table 5, the Horowitz-Painter models show manufacturing costs that result in generally favorable IRR's (*but see* Finding 118 for a discussion of respondents' "hurdle rates"), while Heitpas' models inevitably produce costs which would tend to discourage entry). Summarized below (Findings 105-110) are the contentions of both sides and a review of the record evidence on the pivotal issue of manufacturing cost and the related issue of "other expenses".

105. The manufacturing cost used by Horowitz in Model 1 of Table 5—\$875 (or 69% of the selling price of \$1270—*i.e.*, Appleton's price before a 3% discount)—was derived by extrapolation from Appleton's own experience. While recognizing that Appleton had the facially plausible advantage of an integrated source of base paper, Horowitz reasoned that this benefit would be offset by the hypothetical entrant's use of state-of-the-art technology in its new coating operation. From the presumed trade-off between integration and technology, Horowitz concluded that the new entrant's manufacturing costs would approximate Appleton's—that is, consistent with Appleton's actual experience, which ranged from a low of 65.3% in 1973 to a high of 73.5% in 1980, the new entrant would have a manufacturing cost equal to 69% of its sales revenues.²²⁸ [77]

Apart from the statement of his conclusions, the record is sketchy as to how Horowitz went about quantifying the benefit to Appleton from integration, or how he solved the even more elusive problem of determining how much of that advantage will be neutralized by a technologically advanced new entrant who only engages in coating. While Horowitz's expertise in financial planning and stochastic modeling was unchallenged, his expertise in CCP manufacture is recently

²²⁴ Horowitz prepared three models. In addition to the results shown in Model 1 of Table 5 (based on Appleton's price of \$1270 less a 3% discount), the IRR's without debt were 15.7% without a 3% discount in selling price (CX 260C) and a 7.8% with a 3% discount in selling price and a manufacturing cost of \$975. CX 260B.

²²⁵ With or without debt, with price discounts and without discounts, and with various ways of determining cost of manufacturing, Heitpas built over 40 models, all of which show losses or entry-dissuaging IRR's. RPXE, Vol. VIII; RX's 714A-E. Model 2 in Table 5 keeps all of Horowitz's assumptions constant except for a variation in manufacturing cost which was calculated as shown in Finding 107 and note 249, *infra*. Most of the other models done by Heitpas introduce sharp departures from the Horowitz models, including the use of proxies (selected sheets and rolls or rolls only) to determine selling price and manufacturing costs, as well as significant changes in projected volume, maintenance capital, start-up costs, and distribution expenses. See RPXE, Vols. I-V. The proxies are especially suspect since they eliminate without adequate justification many of the most profitable items in the Appleton line. Heitpas 7399-7402, 7407, 7991-8020, 8054-57; see CX's 38D, 323C-D.

²²⁶ The modeling game can be played with endless permutations, to wit: the 10.2% IRR becomes 10.5% with a lower tax rate, 9.8% with straight line depreciation, 10.6% or 10.9% with lower working capital, 12.2% with no price cut, 9.1% with base paper penalty of \$105/ton and 13.0% if the new entrant's plant is 5% more efficient than Appleton's plants. CX's 474D-E.

²²⁷ Respondents' variations on the moves reported in note 226, *supra* appear in RX 752A-B which, in turn, were answered during surrebuttal by CX 557.

²²⁸ Horowitz 1433, 1441-43, 1446, 1471-77, 1490-91, 1498-99, 1583.

acquired and comes about solely from his reading of the record.²²⁹ On the basis of this record, however, there can be no presumption in favor of Horowitz's integration—technology trade-offs or his premise that a non-integrated coating operation is an economically sound choice for a new entrant to make.²³⁰ For not only does the testimony of industry members reject the non-integrated entry mode, but most of the pre-complaint documents which touch on the [78] subject are in accord with this testimony.²³¹ Moreover, there is no evidence whatsoever that WT investigated the profitability of non-integrated entry or that it had any other basis for assuming its profitability. To the contrary, WT officials believed that their success in the European CCP market was directly related to the integrated nature of their operation.²³²

That integration is an important factor in efficient CCP production is also clearly reflected in the views of International Paper (IP) which studied the possibility of entering the CCP business in 1975–1976. IP concluded that non-integrated CCP facilities could not be cost-competitive. Thus [79] in one study, an IP official stated that "vertical integration, where pulp mill, paper mill, coating and converting are at one location, would produce the most economical product."²³³ In another study, IP observed that "Vertical integration is the critical cost factor."²³⁴ IP also noted that "Appleton has been the industry leader in carbonless, but Mead, with full integration and the lowest cost facilities, is rapidly gaining a strong competitive position; 3M and Nashua without control of their base stock supply, will not be competitive in the longer term."²³⁵ IP believed that merely coating CCP was not profitable or only marginally profitable, and predicted that the CCP "business in the future will be served by fully-integrated producers who can control and achieve profits on base stock produc-

²²⁹ See, e.g., Horowitz 1556–58.

²³⁰ Whether or not a new integrated CCP producer could successfully compete against Appleton and Mead has not been definitively resolved in this record. Respondents' evidence relating to an integrated operation shows that adding the cost of a paper machine (\$125 million to \$150 million) to the Horowitz model (with its CCP volume of 67,000 tons) would have resulted in steady losses. RX's 706–712. While complaint counsel quarrel with this estimate of the cost of a paper machine (but see P.C. Smith 970, Hangen 2052–53, Best 2478–79, Elliott 2874, Hietpas 8438–41, and CX 160N, for higher estimates and RX's 479C–D (¶5) for complaint counsel's concession that "the cost of constructing a fully integrated carbonless paper plant would be approximately \$200–250 million. . ."), it is noteworthy that there is no evidence which shows that even the highly profitable CCP industry would allow for an adequate return on investment in a costly new integrated operation unless it is assumed that a significant volume (at least double the 67,000 tons in the Horowitz-Painter models) could be wrested away from Appleton and Mead. See, e.g., Ricketts 3672–74.

²³¹ See CX's 171, 52A–D, 91Z–5, 101B, 184A–Z–83; RX's 115"0", 179C, 286A–L, 309L, 312A–C, 316A. While from time to time questions have been raised at Appleton about the advantages of integration (see, e.g., CX's 186H–K, 241H, 330D, 465), complaint counsel's heavy reliance on these incidents is misplaced. Appleton in point of fact is substantially integrated, and because complaint counsel's models are based on Appleton's operations (but without integration) the technical problem of determining the value of such integration is not materially advanced by generalized discussions about integration as an abstraction.

²³² Elliott 2867–68.

²³³ RX 303I.

²³⁴ RX 312B.

²³⁵ RX's 304Z–12.

tion.”²³⁶ The reason for this was that “fully integrated producers enjoy significant cost advantages resulting from a lower cost of base stock, less handling and packaging and the potential reuse of waste generated.”²³⁷ The objective for IP, if it were to acquire Appleton, 3M, or Nashua, would be to “supply their base stock requirements to offset their product marginal profitability;” this would require IP to “integrate [80] their operations into IP as soon as feasible to achieve the economies of integrated paper production and coating facilities.”²³⁸

Nashua, Mead and 3M share Appleton’s and IP’s view that paper making capability is important to success in the CCP business. Nashua believes it is at a competitive disadvantage in the CCP business because its “facilities are not vertically integrated causing them to be non-competitive price wise.”²³⁹ Mead would not invest money in CCP coating equipment which was not part of a totally integrated facility that included the production of base paper and a substantial proportion of pulp. Not only does integration reduce costs, but according to Mead it also gives the CCP producer better control over the quality of its finished product.²⁴⁰ 3M’s Ramey identified the cause of his company’s lack of success in CCP as follows:

... I think that the situation, the nonintegrated producers, namely, Nashua and 3M, are in very low profitability as a direct result of not being fully integrated.²⁴¹ [81]

* * * * *

... we are dependent upon other companies for the base part of the product—the paper—and we have to pay the market price for paper. We do not get that profit on the papermaking. We do not get the profit on the pulp-making, so we are paying one or two companies a profit and then we are trying to make a profit in an industry that really does not have room for, you know, three profit centers, I do not think.²⁴²

Horowitz’s choice of the non-integrated entry mode is especially puzzling for a presumed WT entry since WT’s CCP operations in Europe use internally produced paper.²⁴³ WT’s commitment to paper making is shown also by its plans for a European “third site” which also contemplated an integrated facility.²⁴⁴

106. Even assuming that the integration advantage is not nearly as decisive as the evidence above indicates, it was never explained by Horowitz how the new entrant would overcome even a lesser advantage through technologically advanced coating. For notwithstanding

²³⁶ RX 308A.

²³⁷ RX 308F.

²³⁸ RX 304Z-25.

²³⁹ RX 312A. See also CX’s 101B, 184Z-44-Z-45; RX’s 115“O”, 309L, 317A, 320; RPX F, Vol. I at 29, 34, Vol. VI at 123.

²⁴⁰ P.C. Smith 921-22, 1093-94.

²⁴¹ Ramey 3481. See also 316A.

²⁴² Ramey 3844-45. See also Ramey 3908-10.

²⁴³ Best 2384.

²⁴⁴ CX’s 160A, E, 268A-B. See also Elliott 2867-68, Ricketts 3675.

Appleton's flawed performance as a paper maker,²⁴⁵ its coating capability, including the efficiencies [82] traceable to coating on its paper machines, is unsurpassed.²⁴⁶ And despite the near 30 year relationship with Appleton, WT's European operation has never matched the efficiency of Appleton, or for that matter of Appleton's Japanese licensees.²⁴⁷ Horowitz made no attempt to address these particular subtleties in his integration—technology trade-off, and his opinion respecting the transferability of Appleton's efficiencies to the new entrant represents little more than an educated guess in an area which requires some precision.

107. Heitpas, totally rejecting the notion of the offset of integration by improved efficiencies, would include in the new entrant's manufacturing costs a substantial base paper penalty. Heitpas reasoned that if Appleton's experience is to be used it is necessary to deduct the benefit which Appleton derives from having about 70% of its base paper produced internally.²⁴⁸ The various penalties used by Heitpas (all of which produce [83] entry-d discouraging IRR's), were developed from Appleton business records existing prior to litigation including Appleton's November 1978, projections of the penalty used in planning for a Harrisburg expansion (\$151.37 per ton applied to Model 2 of Table 5)²⁴⁹ and the actual experience of the Appleton, Wisconsin plant for the year 1977 (a penalty of \$113.50²⁵⁰ per ton, inflated to 1981 values, adjusted to reflect Appleton's level of integration, and used in Model 4 of Table 5).

108. Complaint counsel's answer to the Heitpas base paper penalty calculations was to have Painter modify the Horowitz model by including a penalty, but one that was substantially smaller than any imposed by Heitpas. This was done by first having Painter adopt Appleton's actual 1977 manufacturing costs, thereby raising the manufacturing cost from \$875 to \$902. Painter then added an \$85 base paper penalty, and after applying a yearly inflation factor of 5% and adjusting for a 70% [84] integration level (Appleton's level of

²⁴⁵ CX's 38Z-4, 41C, 66Z-30, 184Z-65; RX's 303Y, 304Z-5. Since 1978, Appleton has modified and somewhat improved its paper making capability. CX's 35Z-8-Z-10; RX's 118Z-49, Z-62-65, 119Z-44, Z-59-Z-64, 120Z-46, Z-55-Z-60.

²⁴⁶ CX's 3D, 171A-Z-8, 177A; RX's 38F, 314X, 460C. Appleton's Harrisburg facility is the most modern coating plant in the world. Heitpas 8112. See also Kershaw 1301-03, 1326 for the opinion of a Nashua executive who recognized the importance of back-integration but believed that Appleton's technologically advanced coating and distribution network were even more important advantages which Appleton had over Nashua.

²⁴⁷ RX's 38F, 41C, 80H, 84F, 459A-L, 460A-R, 592A-F.

²⁴⁸ Heitpas 7392.

²⁴⁹ CX 168E; RPXE, Vol. VI at H00142. The Harrisburg CAR (Capital Authorization Request) projected a penalty of \$177.04 for base paper acquired on a completely bought-in basis during the period October 1980 to September 1981. Heitpas 7844-45; CX 462C. To reflect Appleton's anticipated level of integration (projected in Appleton's 1978 long range plan to approximate 85-1/2% in 1981), the \$177.04 penalty was multiplied by .855 to reach \$151.37. Heitpas 7567-68; CX 168E. Adding this penalty, Heitpas then arrived at a manufacturing cost as a percentage of sales of 82.2% (RPXE, Vol. VI at H00142) which was applied to Horowitz's non-discounted selling price of \$1270 (\$1232 plus \$38) to reach the manufacturing cost of \$1044 shown in Model 2 of Table 5.

²⁵⁰ Derived from RX 750, an adjusted version of CX 459B.

integration in 1977), he raised the manufacturing cost from \$902 to \$974.34 as shown in Model 3 of Table 5. Painter further assumed that if the new entrant is to be charged with a base paper penalty as a non-integrated producer, it must not be charged with Appleton's expenses attributable to base paper production; accordingly, the "other expenses" category was reduced by the 3% reduction from Model 1 which appears in Model 3 of Table 5.²⁵¹

109. Although Table 5 illustrates the extreme sensitivity of the IRR's to changes in the manufacturing cost element alone, the adjustment made by Painter to reach an \$85 penalty can hardly be described as a precise calibration commensurate with the delicacy of the issue. It is instead a rough estimate, undefended by Painter as a witness but advanced by complaint counsel as more reasonable than respondents' figure of \$113.50. As complaint counsel would have it, the penalty must be less than \$113.50 (they ignore the evidence of a much higher base paper penalties which appear in the record)²⁵² and probably close to \$85 because of doubts which were raised during the cross-examination of Heitpas about the way in which the benefit had been calculated in respondents' pre-litigation business [85] records. Even assuming, however, that respondents' business records are somewhat less than totally reliable for establishing the exact amount of the base paper penalty, nowhere do complaint counsel explain how any alleged imperfections in respondents' business records operate either to (1) negate the other record evidence indicative of a substantial handicap for a non-integrated producer, or (2) allow for a reasoned choice between \$113.50 and \$85 or some other figures, higher or lower, which could spell the difference between attractive and unattractive IRR's for a hypothetical non-integrated entrant. That the record evidence does not compel rejection of the \$113.50 figure (or some higher figure) taken from respondents' business records, or acceptance of the \$85 figure which Painter put together, may be illustrated by the following points pressed by complaint counsel in their attack on the validity of RX 750, the source of respondents' \$113.50 base paper penalty:

(a) Complaint counsel claim that respondents' business records showing a penalty of \$113.50 (RX 750) may reflect a [86] small and unrepresentative portion of the base paper used by respondents' Appleton, Wisconsin plant, with the result that it may fail to take into account internally produced base paper having significantly higher

²⁵¹ CX's 474A.

²⁵² See, e.g., note 249, *supra*. See also CX 504E which shows that in September 1981, a penalty of \$184.90 (\$857.50 to buy, \$672.60 to produce) was projected in connection with a proposal to build a new paper machine and Heitpas 8617-18 which shows a penalty of \$183.56 when RX 750 is extended to 1981. If all the assumptions of the Painter adjustment are kept constant (including a 3% reduction in "other expenses"), and the base penalty added to Model 3 of Table 5 is \$150 instead of \$85 or \$113.50, the IRR's become 6.3 without debt and 7.0 with debt. RX 752A.

costs.²⁵³ But all that the record allows on this point is (1) that respondents derived the base penalty in RX 750 from business records (annual gross profit reports) comparing the cost of raw base stock (*i.e.*, base stock which is later used for coating in contrast to the base paper component of CCP which is made on the paper machine) produced by the Locks and Spring paper mills and shipped for coating to respondents' Appleton, Wisconsin plant, with the cost to the same plant of bought-in base;²⁵⁴ (2) most of the raw internal base stock coated by all Appleton plants was, in fact, produced by the Locks paper mill;²⁵⁵ (3) there were times when [87] the Locks paper mill was more efficient than the Spring paper mill, at other times the efficiencies were reversed, and most of the time they were roughly equivalent;²⁵⁶ and (4) RX 750 excludes base papers with respondents virtually never bought on the outside as well as small quantities of base papers which were always bought on the outside for use in specialty CCP applications.²⁵⁷ How either of these omissions impact on calculation of the new entrant's base paper penalty was not explored on the record.

(b) Complaint counsel also say that RX 750 gives too much weight to "MCP" (CCP produced by Appleton as a contract coater for Moore) which may have a higher penalty than base paper used in Appleton's production of CCP for resale. There is no claim made that RX 750 inaccurately reflects the base paper cost for "MCP," and if the new entrants' manufacturing costs are to be modeled on the Appleton experience, exclusion of this part of Appleton's experience is not warranted.

(c) According to complaint counsel, the sales value assigned to base paper by respondents for the purpose of calculating the penalty in RX 750 may overstate the price that [88] WT as an entrant would have paid an outside supplier. There is evidence that in 1981, Appleton's Harrisburg plant was able to purchase base from Fraser Paper at a lower price than the Appleton, Wisconsin plant paid for the same paper when purchased from the Brown Company.²⁵⁸ Complaint counsel argue that in assessing the size of the non-integrated entrant's penalty, the lower prices available from Fraser must be factored in. But complaint counsel has not explained on what basis it can be

²⁵³ Complaint counsel argue that as Appleton's cost of producing base paper increases this reduces the penalty which is calculated as the difference between cost of bought-in base and cost of internally produced base. By concentrating on Appleton's paper-producing deficiencies, complaint counsel nicely draw attention away from the fact that the new entrant will have to buy paper and compete against *both* Mead and Appleton, Mead having the advantage of superb internal paper making capability while Appleton has the advantages which arise from even mediocre paper making capability when combined with an efficient coating technique. See CX 342.

²⁵⁴ Heitpas 7754-55, 7854, 8299-8302; CX's 323A-Z-10, 482A-"O", 483A-Z-35, 484A-Z-32, 488A-Z-26, 489A-Z-29, 490A-Z-21. Complaint counsel's criticism of the use of the Appleton plant is especially questionable in light of Horowitz's reliance on the same information. Horowitz 1442.

²⁵⁵ CX's 483E.

²⁵⁶ CX's 323C, 482C, 483E, 484D, 489D, 491C-E, 519K, 521P, 538"O"-P, 544-47.

²⁵⁷ Heitpas 7415-16, 7938-39.

²⁵⁸ CX's 538"O", 539B.

assumed that the new entrant would be a more perspicacious buyer of base paper than Appleton. Appleton buys from two suppliers because it cannot obtain the full range of colors, widths, weights, and grades from either one.²⁵⁹ If WT were to make the full range of CCP grades and colors then presumably it, too, would have had to buy from a second supplier. In any event, the price differential between Brown and Fraser was not nearly as sharp nor as persistent as complaint counsel suggest.²⁶⁰

(d) Another possibility raised by complaint counsel is that the base paper penalty calculated by respondents is flawed by reason of failure to take into account freight savings that WT, as a new entrant located close to base paper suppliers, might have over the Appleton, Wisconsin plant. It is fair to [89] assume that WT would have chosen the most advantageous plant location—that is, like Appleton's Harrisburg plant near enough to paper suppliers so as to gain all the freight saving which a Harrisburg enjoys over a Wisconsin plant in the purchase of base paper from Maine paper mills, and yet close to the eastern CCP customers who represent the heart of the market.²⁶¹ But strangely enough, complaint counsel totally ignore the fact that respondents' business records project large base paper penalties for their Harrisburg plant.²⁶²

(e) The quantification of the base paper penalty is not advanced by still other nagging doubts which complaint counsel raise about the reliability of respondents' business records and [90] the penalties reported in RX 750. For example, complaint counsel point to Appleton's 1977–1980 "Long-Range Plan"²⁶³ and the 1978 "Five Year Plan"²⁶⁴ which are allegedly at odds with the base penalties in RX 750 because the plans show decreasing reliance on external purchases of base paper in one instance and increasing reliance in another without substantial changes in gross profit margins. Such broad-gauged predictions are of no use whatsoever in determining the size of the penalty which even complaint counsel now concede must be inserted into the entry model.

²⁵⁹ Heitpas 7981–82.

²⁶⁰ See CX's 540D, 541N; RX 244I.

²⁶¹ See CX 124P. See also CX 284B for Appleton statement of the disadvantage "of our multiple manufacturing and shipping locations."

²⁶² See note 249, *supra* and Finding 107. Neither side explored in detail the applicability of the Harrisburg expansion to the entry question. Complaint counsel suggest but have not vigorously pressed the argument that the projections for respondents' Harrisburg expansion (a 14% DCF on the assumption of bought-in base paper, CX 168H *but see* Heitpas 7538–39, 8144–45 for evidence of disappointing actual performance at Harrisburg) may have some bearing on the profitability of the hypothesized new entrant. Although the Harrisburg expansion is similar to the entry model (*i.e.*, both are two coater operations but Harrisburg also performs "finishing" on CCP produced at Appleton's Roaring Spring plant, CX 489Z–11) there are differences: Harrisburg was conceived of as part of the established Appleton operation which had the effect of reducing "other" expenses (Heitpas 7573–75) and adding benefits (immediate access to Appleton's existing demand, long production runs, and spreading of fixed costs over a larger tonnage, Hangen 1841, Heitpas 7585–7601) which do not apply to the new entrant.

²⁶³ RX 117Z–49.

²⁶⁴ CX 99Z–60.

(f) Finally, contrary to the argument of complaint counsel, the penalty calculations of RX 750 cannot be rejected (and presumably Painter's figure accepted) because a penalty of \$113 indicates a profit on paper making which is much higher than the profits realized by other paper companies. The base paper benefit (which is the source of the base paper penalty in RX 750) is not a measure of the profits Appleton could earn by selling its base stock. It is instead an assessment of the contribution to Appleton's profits from in-house production measured by the difference between Appleton's cost of manufacturing base stock and the weighted average price of Appleton's purchases of base stock.²⁶⁵ Thus, while complaint [91] counsel argue that Appleton's base paper benefit is high when compared with the profits of other paper companies, they ignore the fact that Appleton's costs for manufacturing base stock do not include a charge to itself for expenses—such as freight and packaging—that Appleton would incur if it, like other paper companies, actually sold the base stock as a finished product in the open market.

110. Complaint counsel do not maintain that the "other expenses" element of their models in Table 5 has been determined any more precisely than "manufacturing cost." Horowitz's figure (12.5% of net revenue before a 1% reduction for royalty expense) approximates Appleton's actual experience.²⁶⁶ However, when Painter inserted a base paper penalty into the Horowitz model, he took a 3% reduction—from 12.5% in Model 1 of Table 5 to 9.5% in Model 3—on the grounds that a change from Appleton's integrated operation to the new entrant's non-integrated mode might result in savings in the "other expenses" category. The savings were to flow, for example, from the prospect that the WT finance department officials would not have to check pulp prices, the chief executive of WT would not have to develop long-range plans relating to paper making, the WT engineering department would not have to plan the proper loading of paper [92] machines, and the warehousing expenses attributable to paper making would be eliminated.

Whether any of these predicted savings would approach 3% of net revenue is sheer conjecture. An equally plausible line of speculation might lead to the conclusion that WT as a new entrant may have a different set of "other expenses" which could conceivably exceed 3%. What the record shows on this point is that "other expenses" ("other distribution costs" and "department expenses" in Appleton's financial statements) comprise freight, shipping, finished goods warehousing, operations services, marketing, "R&D," finance, and the

²⁶⁵ Heitpas 7767.

²⁶⁶ Horowitz 1434-35, 1480-81.

expenses of the president's office.²⁶⁷ The last three—marketing, finance, and the president's office—clearly relate to Appleton's total business, not to specifics such as the manufacture of paper, and these expenses are not likely to be reduced by merely substituting the purchase of paper for in-house production.²⁶⁸ Insofar as freight and warehousing are concerned, these charges (or at least the bulk of them) relate to the finished CCP product. Whether a roll of CCP is made with internally-produced or purchased base, it still must be coated, and after it is coated, it must still be shipped. Thus it incurs a freight charge and would do so for WT's plant just as [93] it does for Appleton's.²⁶⁹ And whether coating of CCP takes place on a paper machine (as in the case of Appleton) or off the paper machine (as in the case of the hypothesized unintegrated new entrant) the category called "operations services"—that is, industrial relations, fringe benefits, freight planning and distribution planning—is not likely to change.²⁷⁰

Furthermore, it is by no means certain that the differences between a non-integrated new entrant and integrated Appleton necessarily favor one over the other with respect to the total amount of "other expenses." For example, instead of checking purchase prices for raw materials related to paper making, the WT finance department would have to check base stock purchase prices.²⁷¹ Instead of planning the loading of the paper machines and assisting in the development of standard cost information for paper machines, the WT engineering department would have had to plan the loading of coating machinery and assess its standard costs.²⁷² The "R&D" component of "other expenses" would still be substantial, especially considering the new entrant's need to adopt a resin-based technology. And presumably, personnel in the office of the new entrant's chief [94] executive would have to plan for the future as carefully as the Appleton planners. Moreover, as a non-integrated new entrant, WT may have to engage in other activities that are not reflected in Appleton's current level of "other expenses." WT would have to recruit and train new personnel, a cost subsumed under "other expenses." WT would have to devote "R&D" resources and manpower to developing new suppliers of raw materials, particularly resin. Finally, in an attempt to gain sales for the new entrant WT might have had to advertise and promote its CCP product much more heavily than Appleton, thereby

²⁶⁷ CX 183Z-1.

²⁶⁸ Heitpas 7779-80.

²⁶⁹ Heitpas 7797-98.

²⁷⁰ Heitpas 9052.

²⁷¹ Heitpas 8604-05.

²⁷² Heitpas 8330-32, 8604-06.

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incurring greater costs in the marketing component of the "other expenses" category.

111. Several other components of the Horowitz models—all largely adopted in the Painter models—involve various degrees of still additional controversy (Findings 112–117).²⁷³ [95]

112. In the Horowitz model WT would be expected to achieve in its first year of U.S. operation (1981) 15% of the projected incremental growth in U.S. CCP sales for the period 1977 to 1981—that is, 15% of the growth from 279,000 tons to 452,000 tons or sales of 26,000 tons by 1981.²⁷⁴ Thereafter, WT would obtain 15% of the incremental growth each year until 1987 when volume would reach 67,000 tons, the projected capacity. The model then assumes that WT sales would remain constant until [96] 1995, the end of the useful life of the facility.²⁷⁵ In other words, the Horowitz model assumes that WT would have obtained a 5.8% share of total industry sales in its first year of operation, and that its share would gradually increase to a maximum of 9.0% in 1986.

The Horowitz volume assumptions are reasonable. Since they are based on a percentage of incremental sales only, they do not take into account the possibility that WT could take some business away from

²⁷³ The base models (CX's 260A-C) cover the period 1977 to 1995. In the first year of actual production (1981) the model appears as follows:

(1) Industry Projected Volume (000 tons) 452	(2) W.T. Projected Volume (000 tons) 26	(3) Capital Outlay (\$ millions) (\$ 44 million) for years 1978-80)	(4) Start-Up Costs (\$ millions) 1	(5) Investment Tax Credit (\$ millions) 3.3
(6) Set-Up Distribution Network (\$ millions) (\$1 million in 1980)	(7) Net Price/ Ton (\$ actual) 1232	(8) Mfg Cost/ Ton = 875 (\$ actual) 875	(9) New Revenue Less 1% Royalty (\$ millions) 31.71	(10) Mfg. Cost (\$ millions) 22.75
(11) Other Expenses at 12.5% of NR (\$ millions) 4.00	(12) Profit Pre-Tax (\$ millions) 3.96	(13) Post-Tax (\$ millions) 1.98	(14) Total Working Capital (\$ millions) 6.41	(15) Additional Working Capital (\$ millions) 6.41
(16) Depreciation Included in Cost and Expenses (\$ millions) 2.93	(17) Net Cash Flow Without Debt (\$ millions) 1.80	(18) With Debt = .385 (\$ millions) .95		

Source: CX 260A.

²⁷⁴ Horowitz 1420–22. The industry projection comes directly from WT's own 1977 estimates of growth of the U.S. CCP market converted to short tons. CX 82Z–2.

1463–65.

industry leaders. Moreover, the modest total market share projected by Horowitz (5.8% to 9.0%) should be contrasted to estimates made by B.A.T planners who predicted that a share as high as 15% was a possibility for a greenfield operation,²⁷⁶ and the actual experience of Mead which went from a 15% market share in the first year of independent operations to 25% within seven years.²⁷⁷ Mead's success, however, is only partially germane to a possible greenfield entry by WT. On the one hand, WT, like Mead, had a long prior history of CCP manufacture (Mead as an NCR contract coater, WT as a contract coater and independent foreign producer) and both were parties to NCR licensing agreements which gave them [97] intimate access to Appleton technology and production know-how. There are, on the other hand, sharp differences between WT and Mead: Mead had 17 years experience in making CCP for the U.S. market, it had an established nation-wide distribution system, and it entered the market at a time when there was only one substantial supplier.²⁷⁸

113. The \$44 million appearing under "Capitol Outlay" (Column 3 of CX 260 for the years prior to 1981) is the assumed cost over three years for the construction of a non-integrated CCP operation with a capacity of 67,000 tons. Of this total, \$42 million is WT's own 1977 estimate for such a plant, while \$2 million represents the cost of a capsule plant as estimated by Appleton in connection with a proposed expansion of its Harrisburg facility.²⁷⁹ There is some evidence that the cost would be slightly higher if state-of-the-art equipment such as "tandem" coaters were used.²⁸⁰

114. The start-up costs estimated by Horowitz (Column 4 of CX 260) were \$1 million per coater, a figure derived from [98]Appleton's estimate for its proposed Harrisburg expansion.²⁸¹ Appleton's estimate, however, has proven to be wrong. Start-up costs at Harrisburg have been \$14.9 million spread over nine years, with the bulk of the charge occurring in the early years.²⁸² In addition, Horowitz did not assess the new facility with a maintenance charge which may amount to as much as \$3 million over the life of the project.²⁸³

115. Since he had no data reflecting the cost of setting up a distribution network (*i.e.*, cost of conducting market studies; recruiting, training, and hiring salesmen; enlisting paper merchants and other initial one-time-only expenses), Horowitz arbitrarily assigned to this func-

²⁷⁶ CX 82F.

²⁷⁷ See Finding 49.

²⁷⁸ P.C. Smith 943-44.

²⁷⁹ Horowitz 1422-24; CX's 82Z-3, 86.

²⁸⁰ See Horowitz 1573-74, Hangen 2187, 2345.

²⁸¹ Horowitz 1424-25; CX's 167H, 168A.

²⁸² Heitpas 7538-7559, RPXE, Vol. V. at H00128. With start-up expenses reflecting the actual Harrisburg experience and "other expenses" at 12.5, the IRR's in Model 3 of Table 5 become 6.2 without debt and 6.7 with debt. RX 752B.

²⁸³ Elliott 3042, Hietpas 7531.

tion \$1 million (Column 6 of CX 260).²⁸⁴ This figure does not include costs attributable to ongoing distribution operations which are shown under the "other expenses" heading. Whether such a modest investment in a distribution network would produce the 26,000 [99] tons of CCP sales called for in the first year of the Horowitz model is speculative.²⁸⁵

116. The net price per ton used by Horowitz (Column 7 of CX 260) was Appleton's actual sales price in 1977 adjusted for a 5% inflation rate, the same inflation factor projected by both WT and Appleton in 1977.²⁸⁶ Horowitz then followed two different scenarios: in CX 260A and CX 260B, he assumed that WT as a new entrant would sell CCP at 3% less than the projected Appleton prices; in CX 260C, he assumed that WT would enter at the same prices as the projected Appleton prices.²⁸⁷ On this record, however, it is doubtful that any appreciable volume could be obtained on the basis of a 3% reduction,²⁸⁸ or that Appleton and Mead would allow any significant market share to be eroded through an unanswered price cut.²⁸⁹

117. Horowitz's method of calculating straight-line depreciation was in error. While he correctly added (in Column 16 of the model) \$2.93 million each year (a \$44 million capital expenditure depreciated over 15 years) he failed to include an [100] equivalent amount in manufacturing costs (Column 8 of the model) because of a faulty assumption respecting the applicability of Appleton costs to a new entrant having a far lower volume of production than Appleton.²⁹⁰ When corrected the IRR's shown in Model 1 of Table 5 are reduced by 1%. Painter sought to regain the 1% by switching to accelerated depreciation. Accelerated depreciation, however, is not used by either Appleton or B.A.T in assessing the profitability of proposed investments.²⁹¹

Respondents' "Hurdle" Rates

118. Painter's adjustment of manufacturing costs and "other expenses" produces an IRR of 10.2% without debt as shown in Model 3 of Table 5. Complaint counsel then argue that an IRR of 10.2% would induce de novo entry since the Appleton acquisition was made on the basis of an estimated discounted cash flow over 15 years of 10.5%.²⁹² While 10.5% may be adequate inducement for acquiring a relatively

²⁸⁴ Horowitz 1427.

²⁸⁵ See, e.g., Elliott 3049-50.

²⁸⁶ Horowitz 1417-18, 1428.

²⁸⁷ Horowitz 1470, 1506.

²⁸⁸ Ramey 3835, 3853.

²⁸⁹ Horowitz 1586-87, Kershaw 1320.

²⁹⁰ Hietpas 7497-7505.

²⁹¹ CX's 32Z-74, 124Q, 160N, 168B, I; RX's 61E, 62Z-34.

²⁹² CX 98C, but see also CX 137B where B.A.T described the expected return on the Appleton acquisition as "th minimum acceptable" and "not . . . outstandingly attractive." See also RX 28.

risk-free, profitable, and dominant [101] firm,²⁹³ there is no evidence that it is equally attractive for a greenfield venture involving considerable uncertainty. The record indicates that B.A.T. has required at least a 15% IRR for a greenfield investment in the paper industry.²⁹⁴

Respondents' Greenfield Models

119. The greenfield models prepared by Vera Elliott for respondents' defense case cannot be used any more confidently than the Painter-Horowitz models.²⁹⁵ The Elliott models (all of which show losses or entry-discouraging IRR's) are unreliable for the following reasons:

(a) *Product mix.* Elliott's models are based on a product mix consisting of just seven items (CB 15 # rolls, CB 15 # [102] sheets, CFB 17 # rolls, CFB 17 # sheets, CFB 14 # rolls, CF 15 # rolls, CF 15 # sheets) which were at the low-end of Appleton's rankings calculated on the basis of gross profit as a percentage of sales. Thus Elliott excluded from her model, without adequate explanation, ten products which in 1977 were more profitable than the most profitable item in her product mix.²⁹⁶

(b) *Technology.* Elliott proceeded from the premise that WT would not enter the U.S. with any technological innovations which were not already in use by WT's European operations in 1977/1978. This assumption effectively denied the hypothetical entrant such state-of-the-art techniques as tandem coating (except in RX 701), high solids capsule coating, and CB and CFB coating on the paper machine for the Elliott models which included back-integration into paper making.²⁹⁷ Elliott's rejection of these advanced processes (all originated [103] by Appleton and available to WT under the license proffered in 1977)²⁹⁸ seems to be an odd starting point for a planning document, especially in the light of B.A.T.'s corporate policy of seeking out the most advanced technology for non-paper (*i.e.*, cigarette)²⁹⁹ expansions,

²⁹³ Best 2483-84, Sheehy 3432.

²⁹⁴ RX 758H. For the purpose of determining the attractiveness of an investment, B.A.T. looks first to the DCF without debt. Obviously IRR's could be wildly manipulated by changing the equity to debt ratio.

²⁹⁵ The Elliott greenfield models include RX 277 (Single Coater for Clay-based CCP), RX 278 (Three Coaters for Clay-based CCP), RX 279 (Two Coaters and Base/CF Machine For Clay-based CCP) RX 542 (Two Coaters and Base/CF Machine For Resin-based CCP) RX's 593, 594 (Two Coaters & Base/CF Machine With Certain Efficiencies Added For Clay-based CCP), RX 701 (Two Coaters For Clay-Based CCP), RX 702 (Two Tandem Coaters For Clay-based CCP). RX 705 is a revised version of RX 279 which corrects Elliott's earlier testimony respecting pulp prices.

²⁹⁶ CX 483F. This deficiency in the Elliott models, as well as the questionable proxies used in the Heitpas models (see note 225, *supra*), suggest that the question of product mix must be carefully resolved in constructing a model of a two coater operation which would not be able to produce the entire range of products turned out by much larger Appleton. The Horowitz-Painter models simply gloss over the entire question as they proceed from the notion that the Appleton experience will simply be replicated by the new entrant.

²⁹⁷ Elliott 2866-67, 2873, 2941-42, 3076-77, 3179-81, 3210, 3238-39, 6787, 6801-02.

²⁹⁸ Elliott 3077, 3180, 3235; CX 196F.

²⁹⁹ Sheehy 3578, 3596-98.

and WT's plans to include new technology in its own European operation.³⁰⁰ By excluding advanced technologies, the Elliott models may have inflated capital costs (at a higher machine speed even one coater may have met the targeted volume), raw material costs, freight costs, energy costs, production yields, machine downtime, broke (waste), and employee costs.³⁰¹

(c) *Performance.* Even apart from the exclusion of new technology, Elliott's handling of the performance of the new entrant's mill in her models is unpersuasive.³⁰² [104]

(d) *Costs.* Elliott used the capital costs (and the related depreciation costs and interest costs) experienced by WT in 1977 during expansions in Belgium and at its South Wales facility in the U.K. as well as costs used in 1980 for a proposed European expansion (the so-called "third site").³⁰³ There is substantial evidence that some of the capital costs (and related depreciation and interest costs) would have been lower if U.S. costs rather than European costs had been used.³⁰⁴ Similarly, Elliott's figure for "mill capital" (normal capital expenditures necessary "to keep a paper machine or a paper mill up to scratch")³⁰⁵ were based on WT's European [105] experience which may not accurately reflect the more relevant U.S. experience.³⁰⁶ The costs Elliott assigned to base paper³⁰⁷ raise still other doubts about the usefulness of her models, as do her highly questionable employee costs.³⁰⁸

³⁰⁰ Elliott 6781-82; CX's 36A-C, 192G, 376D, 377N, 399A-C, 455A-456C; RXPXG at B320683A, B302733A.

³⁰¹ See P.C. Smith 916, Elliott 6731, 6734, 6736-38, 6746-47, 6749-50, 6754-57, CX's 405, 439A.

³⁰² In creating her first set of greenfield models (RX's 277-79), Elliott used the performance of WT's Belgian operation, hardly an appropriate choice for a hypothetical new U.S. entrant considering: (a) the Belgium mills use a much larger percentage of lightweight base paper (which impacts on speed and broke, CX 14R) than the U.S. entrant (Elliott 3095, 6718); (b) the Belgian mills produce more sheets (which also impacts on broke) than the U.S. entrant (RX 279Z-1); (c) Belgian production runs are shorter than U.S. runs resulting in increased broke and more downtime (Elliott 3168-70, 6757); and (d) WT's Belgian operation was inefficient (Elliott 3069; CX's 361, 379, 388F, 389G-"O"), and even improvements in Belgium efficiency undertaken in 1978 were ignored by Elliott. Elliott 3069-71, 3113-14, 3229-30, 3240-41, 3264-66, 3303-09.

In later models (RX's 593, 594), Elliott used the 1980 efficiencies of WT's planned expansion to a planned European "third site," but she did not adopt the advanced technologies described in Finding 119(b).

³⁰³ Elliott 3100, 3104-05, 3107-08, 3110-11. Unaccountably, however, Elliott switches to Appleton's 20% working capital figure instead of WT's 15%. Elliott 3188.

³⁰⁴ For example, in the Elliott model, the cost per ton of a single coater is \$1,114 (\$49 million divided by 44,000 tons). RX's 277F.R. Elliott, herself, in evaluating the Appleton acquisition had indicated that the cost of a U.S. CCP coating plant is \$636 per ton. Elliott 7101; see also CX 82Z-3.

³⁰⁵ Elliott 2972-73.

³⁰⁶ Compare Elliott 3320 and CX 375 with Hietpas 8159-62. See CX 82Z-8-Z-9 for a mill capital expenditure for all of Appleton of \$2 million as contrasted with Elliott's \$2.7 million per year for an integrated two-coater operation. See also Elliott 3156.

³⁰⁷ Elliott used 1975 base paper costs inflated by a 12.6% factor instead of actual 1977 costs which were lower. See Elliott 6586, 6589-91. In addition, by using Appleton's freight costs (Elliott 2999-3000) she made no allowance for freight saving on shipments to an east coast plant where the new entrant would presumably locate. See Elliott 3342.

³⁰⁸ In her base models, Elliott charges the new entrant with 914 employees, 27 more than WT's proposed European "third site" although the productivity of U.S. workers is greater than their European counterparts, and the U.S. work week and work year is longer. Elliott 3119-23. Elliott also attributed to the new entrant 77 R&D personnel although Appleton uses only 85 in a much larger operation. Elliott 3352.

Other Forms Of Entry

120. As an alternative to Horowitz's base model in which the green-field entrant coats the CF, CB, and CFB components of CCP, Painter constructed a model (CX's 476A-C, F-H) which has the new entrant buying all of its outside base paper, contracting out for the manufacture of CF and then reselling the CF at no profit, or only selling CB and CFB, under the assumption that the forms printer would buy CF from a paper [106] company.³⁰⁹ There is no record support for the proposition that CF could be purchased from an outside supplier and resold at a break-even price. Indeed, the experience of Nashua, which does purchase its CF from an outside supplier, is to the contrary. Nashua's actual experience shows that it sustains large losses on its CF sales—nearly 20% in 1981.³¹⁰ As a result, Nashua's carbonless division usually operates at a loss. Although Nashua's experience is the best "model" for this hypothesis, respondents tested it further in an economic model based on Nashua's actual costs of purchasing rolls of CF superimposed on Appleton's operating efficiencies. Such a plant projects losses on CF and a low overall IRR of 6%.³¹¹

121. Complaint counsel also argue that B.A.T could have entered the U.S. CCP market through a joint venture. Although [107] there is a fragment in the record suggesting that WT considered (and rejected) the possibility of such a joint venture with International Paper in 1976,³¹² and even allowing that this evidence is entitled to greater weight than the post-complaint testimony of B.A.T officials concerning their general distaste for joint ventures,³¹³ the economic feasibility of such a project was not established on the record and is entirely speculative.³¹⁴

122. Another alternative advanced by complaint counsel is the pos-

³⁰⁹ CX's 476A-C is an "adjustment" of one of the Heitpas base models appearing in RPX E, Vol. I. In addition to the "wash" sale of CF, the model can be had with different inflation rates, various forms of depreciation, several adjustments of "other expenses," a wide choice of financial packages, and altogether in 16 different "scenarios." CX's 476D-E.

³¹⁰ RX's 753A-P. See also RX 317A ("on roll sales there is not room for a CP base paper manufacturer and then a converter like Nashua on CB and CFB to take two profits and compete with NCR and Mead who are fully integrated").

³¹¹ RX 751J, CX 556 is complaint counsel's answer with different assumptions about "other expenses," working capital, freight savings, and plant efficiencies. Most of complaint counsel's criticism of respondents' "Nashua Model" (RX 751J) revolves around endless speculation as to how Nashua treats "other expenses" and calculates "working capital." All that was established on the record is that RX 751J requires a small adjustment for failure to take into account volume rebates on purchases of CF. CX's 561A-B.

³¹² RX's 44A-C.

³¹³ Best 2536-40, 2584-85, Sheehy 3451-54, Ricketts 3605-06, 3690.

³¹⁴ Complaint counsel did not carry out even a rudimentary analysis of the profitability of such a venture. And while respondents' model of a joint venture (RX's 472A-C) is suspect since it derives from the Elliott models (see Finding 119), the attractiveness of a 50/50 joint venture (in which costs and profits are shared equally) cannot be any stronger than the results shown in Table 5. As for a joint venture in which a U.S. paper company would join its paper making capability with WT's coating ability, it was not shown on the record that such a venture would interest WT or that a paper company would willingly share profits with a coater, given the evidence in the record that paper making accounts for as much as two-thirds of the profits derived from CCP production. See Hangen 2044, Best 2585.

sibility of WT entry into the U.S. through one of two toehold acquisitions—Nashua or 3M—although there is no evidence whatsoever that B.A.T. considered acquiring the CCP [108] assets of either firm.³¹⁵ Since neither Nashua or 3M is lacking in financial resources, the relative failure of these firms as CCP producers must be attributed to either lack of an integrated paper supply or an inefficient technology or both.³¹⁶ A WT acquisition would not have provided a paper supply; therefore, the base paper penalties which attach to Horowitz's green-field models would have applied with at least equal force had either unintegrated toehold been acquired. Furthermore, given the importance which the CCP industry assigns to the design of cost efficient plants,³¹⁷ it was never explained by complaint counsel why WT would have been attracted to CCP manufacturers who not only lacked paper making capability (the most efficient mode of manufacture), but also were operating coating facilities which had never matched Appleton's quality or Appleton's efficiency. Of course, it is anyone's guess whether 3M's or Nashua's unintegrated coating operations could have been up-graded to the point where they would have returned a profit sufficient to have attracted WT.³¹⁸ As it happens, others who have examined the prospect of acquiring [109] Nashua or 3M (both were apparently available from time to time)³¹⁹ have rejected the idea, a judgment concurred in by 3M's own management.³²⁰

123. Still another form of entry advanced by complaint counsel is for WT to license its technology to a U.S. firm. Although there is some evidence that the licensing option was raised,³²¹ the record indicates that the return would have been too minimal for WT to risk creating a potential new competitor who might be attracted to WT's main market in Europe.³²²

124. Complaint counsel have abandoned the allegation in the complaint that WT could have entered the U.S. CCP market by exporting CCP from Europe.³²³ [110]

³¹⁵ See Best 2440, Cummings 5414. The Cummings Report, without going into detail, rejected Nashua, 3M, and Boise as too small for WT to build on. Cummings 5414; RX 16G. In addition, Boise and Nashua were thought to be producing CCP under a technology which WT considered to be inferior. RX 16G.

³¹⁶ See Findings 36, 37, 105. See also Best 2727-28, Sheehy 3443-44, Cummings 5266-67.

³¹⁷ See CX 533Z-21.

³¹⁸ There is evidence that both firms have inefficient equipment and plants. Kershaw 1251-52, 1301-02, Ramey 3903. Respondents constructed models for litigation which purport to show that the addition of new machines and coaters to either 3M or Nashua would have produced negative IRR's. Cummings 5311, 5341; RX's 474C, 475C. These models are extensions of the Elliott models (Cummings 5580-83, 5625-26) and were not relied upon for the reasons stated in Finding 119.

³¹⁹ CX's 82"O", 238A. As Kershaw of Nashua put it "I suppose anything is for sale at a price." Kershaw 1334.

³²⁰ Ramey 3812-20. See also Kershaw 1315 for a less than enthusiastic endorsement of the attractiveness of Nashua.

³²¹ CX's 240A, 243, 245, 365, 366; RX's 36E, 37C, M.

³²² Best 2557-58, Sheehy 3448-49, Ricketts 3692-93, Cummings 5355, 5405; RX 37C.

³²³ Tr. 3400; RX 479C(¶10H). All the record evidence indicates that export of CCP from the U.K. to the U.S. is not economically feasible. See CX 54A; RX's 79A, 276A-L.

III

DISCUSSION

B.A.T, through its Wiggins-Teape (WT) subsidiary, is the world's second largest manufacturer of CCP, a complex coated paper used to make multi-part business forms. WT does not sell CCP in the U.S. Appleton, a division of NCR, is the world leader and the largest U.S. producer of CCP. In 1978, B.A.T acquires Appleton from NCR. Does the B.A.T acquisition of Appleton violate Section 7 of the Clayton Act by reason of the actual potential competition doctrine?

The actual potential doctrine postulates that in oligopolistic markets, Section 7 may be violated when the opportunity for injecting deconcentration or other procompetitive benefits through future de novo or toehold entry is eliminated as a result of a leading firm acquisition by a potential entrant. There is no issue in this case of the perceived potential competition doctrine, the second branch of the potential competition hypothesis. Under the perceived potential theory, present competition in a concentrated market is said to be adversely affected when the discretion-tempering impact of a firm on the fringe and perceived to be a potential independent entrant is eliminated through the acquisition of a [111] leading company in the targeted market. *United States v. Marine Bancorporation*, 418 U.S. 602, 624-25 (1974).³²⁴

In contrast to the perceived theory, the actual potential doctrine assumes that the acquiring firm exerts no competitive influence on the targeted market prior to the merger, but competition would have been heightened had the acquirer entered by alternate means. Although the Supreme Court has twice reserved ruling directly on the validity of the actual potential theory, *United States v. Marine Bancorporation, Inc.*, 418 U.S. 602, 625, 639 (1974), *United States v. Falstaff Brewing Corp.*, 410 U.S. 526, 537 (1973),³²⁵ the Commission has emphatically endorsed it. The circuit courts, on the other hand, have for the most part not dwelled on the validity of the theory,³²⁶ grappling instead with the adequacy of the record facts required under the various elements of the doctrine as articulated by the Supreme Court and the Commission; that is, the competitiveness of the targeted market, the number of potential entrants, the capacity, interest, and economic [112] incentive for entering de novo or by toehold, and the

³²⁴ Not only is the perceived potential theory absent from the complaint, but there was no proof offered under any theory that U.S. CCP producers identified WT as an imminent entrant.

³²⁵ But see dictum in *FTC v. Procter & Gamble Co.*, 386 U.S. 568, 575 (1967) ("If Procter had actually entered, Clorox's dominant position would have been ended and concentration of the industry reduced").

³²⁶ A clear endorsement for the theory, however, appears in *Mercantile Texas Corp v. Board of Governors, etc.* 638 F.2d 1255, 1265 (5th Cir. 1981) ("We believe that the doctrine has logical force and is consonant with the language and policy of the Clayton Act.")

likelihood that successful alternate entry would have occurred in the reasonably near future with the result that deconcentration or other significant pro-competitive effects would have been achieved. *Ecko Products*, 65 F.T.C. 1163 (1964), *aff'd*, 347 F.2d 745 (7th Cir. 1965); *Budd Co.*, 86 F.T.C. 518, 580 n. 5 (1975); *British Oxygen Co.*, 86 F.T.C. 1241 (1975), *rev'd and remand sub nom. BOC Int'l v. FTC*, 557 F.2d 24 (2d Cir. 1977); *Brunswick Corp.*, 94 F.T.C., 1174 (1979), *modified as to relief*, 96 F.T.C. 151 (1980), *aff'd as modified sub nom. Yamaha Motor Co. v. FTC*, 657 F.2d 971 (8th Cir. 1981), *cert. denied*, 456 U.S. 915 (1982); *Heublein, Inc., et al.*, 96 F.T.C. 385 (1980); *Tenneco, Inc.*, 98 F.T.C. 464 (1981), *rev'd on other grounds*, 689 F.2d 346 (2d Cir. 1982).

In the absence of a definitive statement to the contrary by the Supreme Court, I am bound by the Commission's clear holding as to the validity of the actual potential doctrine.

As I have indicated in the Findings, CCP production for resale is a tightly blockaded oligopoly which easily qualifies as a market ripe for application of the actual potential doctrine as articulated by the Commission. On the threshold issue of market definition, in its recent synthesis of its views the Commission has emphasized that irrespective of the criteria [113] used (cross-elasticities or "less direct market indicia"),³²⁷ the purpose of market analysis (consistent with the objective of preventing or eliminating structural conditions which are conducive to collusion or tacit interdependent conduct) is to determine "whether related products or services place a significant constraint on the ability of the merging firms to raise prices, limit supply or lower quality."³²⁸ In a word, [114] OTC is not a significant constraint on CCP prices, supply, or quality. The two products are priced differ-

³²⁷ These "less direct market indicia" include:

... the persistence of sizeable price disparities for equivalent amounts of different products; the presence of sufficiently distinctive characteristics which render a product suitable only for a specialized use; the preference of a number of purchasers who traditionally use only a particular kind of product for a distinct use; or the judgment of purchasers or sellers as to whether products are in fact competitive. In addition, where firms routinely study the business decisions of other firms, including their pricing decisions, such evidence may reflect a single product market.

Statement of Federal Trade Commission Concerning Horizontal Mergers (June 14, 1982), *reprinted in* Trade Reg. Rep. (CCH) No. 546 at 84 (special supplement to 2 Trade Reg. Rep. (CCH) ¶ 4225 (June 16, 1982)).

³²⁸ *Ibid.* The constraints on the ability of the merging firm to raise prices is also the focus of market definition in the Justice Department's Merger Guidelines which provide that "the Department will hypothesize a price increase of five percent and ask how many buyers would be likely to shift to the other products within one year." In evaluating substitutability the Department will consider:

- (1) Evidence of buyer's perceptions that the products are or are not substitutes, particularly if those buyers have shifted purchases between the products in response to changes in relative price or other competitive variables;
- (2) Similarities or differences between the products in customary usage, design, physical composition and other technical characteristics;
- (3) Similarities or differences in the price movements of the products over a period of years; and
- (4) Evidence of sellers' perceptions that the products are or are not substitutes, particularly if business decisions have been based on those perceptions.

U.S. Dept. of Justice, Merger Guidelines, Section IIA (June 14, 1982), *reprinted in* 2 Trade Reg. Rep. (CCH) ¶ 4502 at 6881-8 (Aug. 9, 1982) [hereinafter "Merger Guidelines"].

ently from one another with CCP enjoying a persistent premium of 15% or more over OTC. The reliable evidence on cross-elasticities shows that small changes in the size of this premium has no impact whatever on the demand for either product. The premium persists because in certain applications CCP is a non-substitutable product while in others there is a marked preference based on convenience and cleanliness. Thus in their everyday business decisions relating to price, increases in productive capacity, or quality, CCP manufacturers look to what other CCP manufactures are likely to do and these decisions are not [115] constrained by OTC considerations. Moreover, there is no supply-side flexibility between the two products since OTC manufacturing facilities cannot be converted to CCP, and CCP facilities cannot be switched profitably to OTC manufacture.

That the CCP resale market is highly concentrated is not in dispute.³²⁹ Furthermore, respondents have not come close to showing that this market is performing competitively; to the contrary, the reliable evidence points to a concentrated, extremely anti-competitive oligopoly, sorely in need of a successful new entrant.

As for the other elements of the actual competition doctrine, there are the related issues of incentives and [116] disincentives to entry and whether WT enjoyed a unique advantage in overcoming the most significant barrier. The incentives are obvious: in 1978, when presumably a decision would have been made about entering *de novo* had the Appleton acquisition been denied, the U.S. CCP industry was in the midst of a period of sharp growth and high profits. Both conditions were expected to continue. Respondents, however, claim that the path leading to attractive financial returns in the U.S. market was strewn with problems—patents, technology, paper supply, distribution, personnel, and many others. While there may be some substance to some of the problems, there is nothing in the case law which suggests that alternative entry will be regarded as feasible only if respondent had before it a problem-free path to success. What complaint counsel must prove is that with respect to entry-blocking barriers (not all “problems”) WT enjoyed unique advantages which made entry feasible and likely to succeed.

³²⁹ Concentration in the CCP market, whether Moore's in-house production is included or not, far exceeds the threshold HHI of 1800 which is likely to provoke a Justice Department challenge of a potential competition merger. Merger Guidelines, Section IVA3(a), 2 Trade Reg. Rep. (CCH) ¶ 4504 at 6881-16. Although the internal production of Moore's is presumptively part of the overall market according to the Merger Guidelines, Section IIB3, 2 Trade Reg. Rep. (CCH) ¶ 4502 at 6881-9, in calculating concentration ratios and market shares, the Merger Guidelines would seem to exclude CCP produced in-house by Moore since “the Department will include only those sales likely to be made or capacity likely to be used in the geographic market in response to a small but significant and non-transitory increase in price.” Merger Guidelines, Section IID, 2 Trade Reg. Rep. (CCH) ¶ 4502 at 6881-11. There is no evidence that Moore has responded to any price increase by selling in the open market or that it has any intention to engage in such competition in the future so as to “frustrate an effort by the sellers of the relevant product to exercise market power.” Merger Guidelines, Section IIB3 note 20, 2 Trade Reg. Rep. (CCH) ¶ 4502 at 6881-9.

From my reading of the record, it is plain that mastery of the difficult capsule coating technology with a cost-efficient manufacturing process represents a significant barrier to entry into the U.S. CCP market.³³⁰ With respect to this barrier, [117] the record shows that in 1978 WT officials had supreme confidence in their ability to make CCP using their own clay-based technology. Moreover, on the basis of almost a 30-year relationship with Appleton, and with a license to manufacture in the U.S. with the NCR technology which Appleton was willing to grant, it is likely that WT could have overcome the differences between clay and resin and produced a high-quality, resin-based CCP for the U.S. market. These advantages alone immediately separate WT from the entire class of potential entrants nominated by respondents who either lack the technological know-how or are legally barred from using the technology in the U.S. and thus cannot be considered as serious potential candidates.³³¹ However, the non-integrated mode of entry advanced by complaint counsel's expert, Dr. Horowitz, has the effect of not only eliminating any presumption that WT could have matched the efficiencies of Appleton or Mead, but it also raises serious doubts about even attempting entry notwithstanding WT's mastery of the technology. [118]

On the question of the feasibility of alternate entry, after calculating the pluses and minuses (for example, the lure of participation in the world's largest and most profitable CCP market weighed against the problems of switching to a resin-based CF and setting up a distribution system) it is reasonable to infer that because the incentives were so palpable, and the disincentives were not so overwhelmingly discouraging, that WT would have looked at the bottom line—that is, would alternate entry have been profitable? The burden of producing evidence on this issue lies with complaint counsel who must prove that WT's examination of entry alternatives would have revealed that it could have entered the U.S. CCP market through some economically attractive means other than the Appleton acquisition.

In evaluating the evidence on alternate entry, I agree at the outset with complaint counsel that the issue is not resolved by the so-called "Cummings Report" which shows that de novo entry or a toehold acquisition were specifically rejected in 1978 when the attractiveness of the Appleton acquisition was being aggressively advocated by WT corporate planners. The Cummings Report was a brief in favor of the Appleton acquisition. Moreover, it was prepared with knowledge tha

³³⁰ For recognition of specialized manufacturing and technological experience as an entry barrier see *Kennecott Copper Corp. v. FTC*, 467 F.2d 67 (10th Cir.), cert. denied, 410 U.S. 930 (1974); *United States v. Black and Deck Mfg. Co.*, 430 F.Supp. 729 (D. Md. 1976).

³³¹ See Merger Guidelines, Section IVA3(c), 2 Trade Reg. Rep. (CCH) ¶ 4504 at 6881-16. ("Other things being equal, the Department is increasingly likely to challenge a merger as the number of other similarly situated firms decreases below three and as the extent of the entry advantage over non-advantaged firms increases.")

the issue of alternate forms of entry has antitrust consequences, and it is fairly predictable (as one court has noted) that—[119]

... once the legal issues are known to astute corporate counsel, future facts as to corporate intent can be expected to be shaped under careful legal guidance to negate any inference that a corporation intended to enter any particular market which it later enters by merger.³³²

Nor is the entry issue disposed of by testimony of respondents' officials to the effect that under no circumstances would B.A.T have entered the U.S. market except by the Appleton acquisition. It is so patently in respondents' self-interest to present such testimony that "its utility is sharply limited."³³³ Besides, the views of company officials about the desirability of leading-firm acquisition and the unattractiveness of de novo entry reflects a management perspective respecting competition which has little relevance to the antitrust issue at hand. Thus to WT, acquisition of Appleton and maintenance of Appleton's 50% or more market share against any erosion was desirable to "ensure stability and real market leadership."³³⁴ In other words, clearly if WT had its way, it would prefer to enter the U.S. CCP market in a mode which does not upset the competitive status quo. The issue here is what [120] would have happened if WT had not had its way because of the antitrust laws of the United States. Or as the district court observed in *Phillips Petroleum*:

... entry by acquisition is almost always more attractive to management than independent entry. An acquisition enables a company to quickly capture the acquired company's share of the market. Risk is minimized. Moreover, the competitive force of the acquired company, which would be present if the acquiring company entered unilaterally, is eliminated. It will thus be in a company's self-interest to present subjective evidence of a lack of any intent to enter the market unilaterally. . . .³³⁵

By the same token, the alternate entry issue is not resolved by a showing that Appleton and Mead have experienced a level of growth and profits sufficient to attract the interest of WT. It is one thing for a firm to be interested in a market, but until that interest manifests itself in an investment decision, the only proper inference to be drawn is that had the acquisition route been blocked, B.A.T would have made an evaluation of the profitability of another form of entry. Complaint counsel concede this point more or less since they concentrated their efforts during the hearings on constructing and demolishing various

³³² Brodley, *Oligopoly Power Under the Sherman and Clayton Acts - From Economic Theory to Legal Policy*, 19 L. Rev. 285, 357-58 (1967), quoted in *United States v. Phillips Petroleum Company*, 367 F.Supp. 1226, 1238 (Calif. 1973).

United States v. Falstaff Brewing Corp., 410 U.S. 526, 565 (1973) (concurring opinion of Mr. Justice Marshall).
RX 16Z-1.

367 F.Supp. at 1238.

economic models—expert estimates of potential profit based upon assessment of risks, costs, and rate of return under various hypothetical conditions—which were created [121] specifically for this litigation in an attempt by the government to prove the feasibility of de novo entry and by respondents to prove the impracticality of this option.

The approach taken by complaint counsel is supported by the emphasis which the Commission, the courts, and other authorities have placed on objective facts relating to the feasibility of alternate entry such as the actual experience of other firms,³³⁶ the existence of any special cost advantages or disadvantages to the new entrant,³³⁷ and whether entry is attractive in the sense that expected profits are likely to survive the output expansion represented by the production of the new firm.³³⁸ As it happens, in a seminal article on the subject, a leading antitrust scholar seems to have anticipated the very "modeling" approach taken by complaint counsel by suggesting an inquiry into the prospects for future profit—that is, having experts predict what the range of profit would have been if independent entry has been attempted, and whether [122] the predicted profit level would have induced independent entry.³³⁹

In short, there is ample precedent in Commission and court cases as well as respected academic support for the proposition that economic models grounded on objective facts alone may serve as a surrogate for the feasibility of alternate entry. Still to be resolved, however, is the question of whether the models constructed by complaint counsel for this case can be used with a reasonable degree of confidence to predict an entry decision. Or to put it somewhat differently, it must be determined whether the record contains a model whose assumptions and factual [123] predicates have withstood the adversarial process to the point that it represents convincing evidence that it was in B.A.T.'s economic self-interest to attempt a greenfield entry. Since the

³³⁶ *Heublein, Inc.*, 96 F.T.C. 385, 588 (1980).

³³⁷ *Tenneco, Inc. v. FTC*, 689 F.2d 346, 354 (2d Cir. 1982).

³³⁸ 5 P. Areeda and D. Turner, *Antitrust Law*, ¶ 1121c2, at 109 (1980).

³³⁹ Pitofsky, *Joint Ventures Under The Antitrust Laws: Some Reflections on the Significance of Penn-Olin*, 82 Harv. L. Rev. 1007, 1028-29 (1969). However, another highly respected scholar has warned (with remarkable prescience) that the profit modeling approach will open the door to evidentiary conflict and unmanageable complexity in litigation as "competing experts escalate the subtlety of the analysis." Brodley, *Potential Competition Under the Merger Guidelines*, 71 Cal. L. Rev. 376 at 391 (1983). Professor Brodley's own approach to potential competition, which is based upon geographic and product proximity (*Ibid.* and Brodley, *Potential Competition Mergers: A Structural Synthesis*, 87 Yale L.J. 1 (1977)), has been rejected by the Commission with a concurring statement by then Commissioner Pitofsky. Statement of the Federal Trade Commission Regarding Staff Recommendation of Advance Notice of Proposed Rulemaking on Potential-Competition Mergers [1969-1983 Transfer Binder] Trade Reg. Rep. (CCH) ¶ 50,419 at 55,943 (October 7, 1980). Subsequently, the modeling approach may have received some support from *Republic of Tex. Corp. v. Board of Gov. of Fed. Res.*, 649 F.2d 1026, 1047 (5th Cir. 1981) but with the added caveat that the plaintiff must offer "a persuasive rationale" showing that based upon an analysis of comparative profitability the acquiring firm would prefer entry into the targeted market over other investment opportunities.

burden rests with complaint counsel, this means that their entire case depends on the validity of the Horowitz-Painter models.

There are several reasons why the government's models do not inspire confidence. To begin with, the reliability of the models initially rested on Horowitz's supposition that the non-integrated new entrant (WT) would simply trade efficiencies with integrated Appleton with the result that manufacturing costs of one could be borrowed by the other for the purpose of creating a model. One searches the record, however, in vain for solid support for this facile trade-off, and apparently not sure themselves that divestiture can rest on such a slender reed, complaint counsel next attempted to build into their model a non-integration penalty of \$85 accompanied by a substantial reduction in "other expenses." For these crucial adjustments, however, there was no testimony at all, complaint counsel relying instead on their adroitness in raising questions about the accuracy of much higher penalties which appear in respondents' pre-litigation business records. But even complaint counsels' consummate skill in cross-examination did not produce evidence which proves that a \$85 penalty is clearly right or a \$113 penalty (one of several higher penalties which [124] appear in respondents' business records) is clearly wrong. What it did produce is additional doubt about the usefulness of models which are patchwork affairs that pick and choose selectively from another firm's experience when on its face the experience of integrated Appleton may not be germane to the hypothetical non-integrated new entrant.³⁴⁰ And although it may be possible to make corrective adjustments when the costs of one firm are engrafted onto those of a markedly different firm, the adjustments were not made here with a level of precision that convinces me that the form of U.S. entry posited by Horowitz—a 67,000 ton non-integrated coating operation—would have been profitable enough to attract B.A.T.

It should be understood that I am not holding complaint counsel to an elevated standard of proof which exceeds the "reasonable probability" test for judging the likelihood of independent entry.³⁴¹ Certainly,

³⁴⁰ Complaint counsel might have attempted to improve on Heitpas' and Elliott's performances (see note 225, *supra* and Finding 119), and with the support of an engineering study and expert testimony respecting product mix and costs, perhaps they could have constructed an acceptable model of a non-integrated CCP producer. Instead, they had Horowitz and Painter borrow selectively from integrated Appleton's experience, but they drew the line at using Appleton's pre-litigation assessment of the penalty which arises when base paper is brought in. This crucial void in the record was never adequately filled.

³⁴¹ *United States v. Penn-Olin Chemical Co.*, 378 U.S. 158, 175-76 (1964). Complaint counsel devote considerable effort in their briefs to attacking two other articulations of the quantum of proof required in potential cases—Professor Turner's "clear proof" that de novo entry would have been "certain" (Turner, *Conglomerate Mergers and Section 7 of the Clayton Act*, 78 Harv. L. Rev. 1313, 1384, 1386 (1965)) and the Fourth Circuit's "unequivocal proof" that an acquiring firm actually would have entered de novo. *FTC v. Atlantic Richfield Co.*, 549 F.2d 289, 294 (4th Cir. 1977). Complaint counsel argue that these standards may have been superceded by later authority (see, e.g., *BOC Int'l Ltd v. FTC*, 557 F.2d 24, 28 (2d Cir. 1977); *Mercantile Texas Corp. v. Board of Governors, etc.*, 638 F.2d 1255, 1268 (5th Cir. 1981)) indicating either a growth in confidence or a decline in apprehension over predicting what businessmen will do in the future if the acquisition is overturned or would have done in the past had the acquisition been blocked. Although I am not as certain as complaint counsel that in this stage of its development

the government is not being [125] asked to create doubt-free economic models which absolutely assure entry. What I am saying is that when a record contains no convincing industry testimony in support of entry in the form of a non-integrated coating operation, or evidence of a past history of successful entry in the mode hypothesized by the government, or contemporaneous internal documents from respondents' own files establishing that a particular investment course was investigated and found to be attractive, and instead complaint counsel stake their claim exclusively on a model constructed for litigation, the bottom-line profitability of [126] that model must be so clearly established and so convincingly defended that it rationally *compels* the conclusion that had the acquisition route been blocked it would have been clearly in the respondents' economic self-interest to invest *de novo* in a non-integrated 67,000 ton coating operation in the U.S. CCP market. As it happens, putting the models aside, the record evidence indicates that the mode of entry advanced by complaint counsel's expert would have been a departure from what the industry generally regards as the most efficient form of CCP manufacture. As for the reliability of the models, they are simply too speculative and uncertain with respect to the cost of manufacturing to be used to predict a course of business behavior which is not otherwise supported on the record by either contemporaneous documents, or by a track record of success, or by industry opinion as to the likelihood of success. Finally, even if all doubts about the Painter-Horowitz model were resolved in complaint counsel's favor, there is nothing in the record which proves that B.A.T would invest in a U.S. greenfield CCP facility (hardly a risk-free venture) in anticipation of a 10% IRR, the bottom line of complaint counsel's ultimate model.

The complaint should be dismissed for failure of proof. [127]

IV

CONCLUSIONS OF LAW

1. The Federal Trade Commission has jurisdiction over respondents and the subject matter of this complaint.

2. On or about June 30, 1978, respondent B.A.T acquired all of the assets of respondent Appleton from NCR Corporation.

one can safely discard any potential competition criteria not explicitly repudiated by the Supreme Court, I have proceeded on the premise that the government would have prevailed had it proven that there was available to B.A.T a form of entry which was so demonstrably profitable that it could not rationally be rejected by a firm interested in the targeted market. I believe that this approach is consistent with the formula suggested by Mr. Justice Marshall in his concurring opinion in *Falstaff*, 410 U.S. at 568 ("... in a case where the objective evidence strongly favors entry *de novo*, a firm which asks us to believe that it does not intend to enter *de novo* by implication asks us to believe that it does not intend to act in its own economic self-interest").

3. At all times relevant to this proceeding, B.A.T and Appleton were engaged in Commerce within the meaning of the Clayton Act.

4. For the purpose of assessing the legality of the acquisition under Section 7 of the Clayton Act, the relevant line of commerce is the manufacture of CCP for resale.

5. The United States is the appropriate geographic market.

6. The U.S. CCP market is highly concentrated, blockaded by a technological entry barrier, dominated by Appleton, and undoubtedly would benefit from the pro-competitive effects of successful new entry.

7. B.A.T (through its WT subsidiary) never sold CCP in the U.S.; however, because of its technological capability and prior [128] relationship with Appleton, it was the most likely potential entrant into the otherwise blockaded U.S. CCP market.

8. Although WT had an interest and an incentive in evaluating the feasibility of U.S. entry, the model of entry advanced by complaint counsel does not constitute reliable, probative, and substantial evidence that it would have been in WT's economic self-interest to enter by means of a non-integrated greenfield coating operation.

9. There was a failure of proof that WT would have entered by toehold acquisition, joint venture, export, or through a licensing arrangement.

Accordingly, the following order should be issued:

ORDER

The complaint is dismissed.

OPINION OF THE COMMISSION

By DOUGLAS, *Commissioner*:

The 1980 complaint in this matter alleges that B.A.T Industries, Ltd. ("B.A.T")¹ and Appleton Papers, Inc. ("Appleton") violated Section 7 of the Clayton Act, 15 U.S.C. 18, and Section 5 of the Federal

¹ After the complaint was filed, B.A.T changed its official name to B.A.T Industries PLC. ID at 1 n.1.
The following abbreviations are used in this opinion:

ID	-	initial decision page number
IDF	-	initial decision finding number
Tr.	-	transcript of testimony page number
CX	-	complaint counsel's exhibit number
CAB	-	complaint counsel's appeal brief
CRB	-	complaint counsel's reply brief
CPF	-	complaint counsel's proposed finding of fact number
CRF	-	complaint counsel's reply finding of fact number
RX	-	respondent's exhibit number
RAB	-	respondent's answering brief

Trade Commission Act, 15 U.S.C. 45, when B.A.T acquired the assets of the Appleton Papers Division of NCR Corporation ("NCR") in 1978. More precisely, the complaint alleges that the acquisition might substantially lessen competition or tend to create a monopoly, and unreasonably restrain trade and hinder competition, in the manufacture and sale of chemical carbonless paper ("CCP") in the United States.² At the time of the acquisition, B.A.T's Wiggins Teape [2] Group, Ltd. subsidiary ("Wiggins") was the largest CCP producer outside the United States, and Appleton was the largest CCP producer within the United States. ID at 2. The complaint does not allege either that Wiggins competed with Appleton in the United States market or that Wiggins was perceived to be a potential entrant into that market at the time of the acquisition. Instead, it alleges that Wiggins was a significant "actual potential entrant" into the United States market, because (1) the market was highly concentrated and protected by extremely high entry barriers; (2) Wiggins was one of only a few firms that possessed the capability and incentive to enter the market, and would probably have entered the market by other means if it had not acquired Appleton; (3) feasible alternative forms of entry existed, including establishing manufacturing facilities in the United States, establishing joint ventures or licensing relationships with firms not already in the CCP market, acquiring a toehold firm, or exporting CCP into the United States; and (4) the Appleton acquisition eliminated the prospective deconcentration of the United States market from an alternative form of entry, heightened Appleton's dominance of and entry barriers into that market, and may have eliminated the competitive benefits of internal expansion and innovation by B.A.T. [3]

The Administrative Law Judge in this matter dismissed the complaint. In their appeal from that decision, complaint counsel argue that the initial decision should be reversed, and that B.A.T should be ordered (1) to divest Appleton completely,³ or (2) to divide Appleton into two freestanding CCP operations, either by retaining one plant and selling the other or by selling both plants to different purchasers acceptable to the Commission. CAB at 5, 52-53. B.A.T and Appleton argue in response that the complaint should be dismissed.

This case raises important questions relating to the contours of the actual potential competition doctrine. For the reasons detailed below, including in particular the absence of clear proof that B.A.T would have entered the United States CCP market independently had it not

² CCP is a coated paper used to make multipart business forms. A typical CCP form consists of three sheets: a top sheet with a chemically coated back ("CB"); a middle sheet chemically coated on both front and back ("CFB"); and a bottom sheet with a chemically coated front ("CF"). Mechanical or manual pressure applied to the top sheet begins a chemical reaction that transfers images from the top sheet to lower sheets. IDF 16-18.

³ Pursuant to the proposed divestiture, B.A.T would be permitted to reserve the right to manufacture and sell CCP in the United States, using the Appleton patents and knowhow (as improved since the acquisition).

been able to acquire Appleton, the Commission has determined that the allegations of a violation of the actual potential competition doctrine have not been sustained, and that the complaint must therefore be dismissed. [5]

I. INTRODUCTION

B.A.T, the twenty-eighth largest industrial firm outside of the United States, is chartered in the United Kingdom and has its headquarters in London, England. IDF 1. In fiscal 1977, B.A.T controlled assets valued at \$6 billion, and earned \$827 million in operating profits on sales valued at \$11 billion. IDF 2. Its United States holdings, administered through Batus, Inc., a Delaware corporation, include Appleton (paper), Brown and Williamson (tobacco), Gimbels, Marshal Field, and Saks Fifth Avenue (retailing), and Germaine Monteil and Yardley (cosmetics). In fiscal 1977, B.A.T's sales in the United States and Canada totalled \$3 billion. IDF 4. B.A.T has owned Wiggins, a United Kingdom paper manufacturing and merchandising firm, since 1970; Wiggins' sales approximated \$920 million in 1978. IDF 5. In 1977, Wiggins sold 85,000 metric tons of "Idem," its brand of CCP, representing 45 percent of total CCP sales in the United Kingdom and Europe and making Wiggins the second largest CCP producer in the world. IDF 6. From 1956 through 1978, Wiggins produced CCP under a series of licenses from NCR Corporation that gave it access to NCR's patents, technology, and knowhow but limited its CCP sales to Europe and other designated areas outside the United States. IDF 7.

NCR Corporation, headquartered in Dayton, Ohio, is primarily engaged in the manufacture of computers, office machines and related products, and business forms. Its sales amounted to approximately \$2.3 billion in 1977. IDF 9. In 1954, NCR developed a commercially marketable CCP; it contracted out the [6] manufacture of the product for over a decade to the Appleton Coated Paper Company and other firms. In 1971, after acquiring Appleton, NCR combined Appleton with another CCP producer to form Appleton Papers, Inc. as its CCP manufacturing and selling arm. In 1973, Appleton became the Appleton Papers Division of NCR. IDF 10. In 1978, Appleton produced 213,000 tons of CCP, valued at more than \$236 million, making it the largest CCP producer in the world, accounting for approximately 60 percent of CCP sales in the United States alone. IDF 12.

On June 30, 1978, B.A.T acquired Appleton from NCR for \$299 million. With that acquisition, B.A.T became the world's largest CCP producer, accounting for over 40 percent of world-wide production. IDF 13-14.

II. THE ACTUAL POTENTIAL COMPETITION DOCTRINE

A. *Economic Principles*

The *actual* potential competition doctrine represents a rather peculiar theory of competitive injury that can best be explained by first comparing and contrasting it with the *perceived* potential competition doctrine, and then developing relevant economic principles to govern its application. The perceived potential competition doctrine postulates that the prospect of entry may pressure firms in oligopolistic markets to behave more competitively than they might otherwise.⁴ The perception that entry will occur if prices are raised to supracompetitive levels may in fact produce a competitive [7] equilibrium, regardless of other structural or behavioral characteristics. In this situation, the removal of a perceived prospective entrant through merger or acquisition may weaken the restraint on raising prices and therefore substantially lessen *current* competition or tend to create a monopoly within the meaning of Section 7 of the Clayton Act.⁵

By contrast, the *actual* potential competition doctrine postulates that a merger or acquisition may prevent the relevant market from *becoming* as competitive as it might otherwise become.⁶ The theory postulates a market of oligopolistic firms that currently does *not* perform competitively, at least in part because the market incumbents do not perceive any particular firm to be a prospective entrant that constrains their pricing discretion. The theory nevertheless postulates that at least one firm outside the market actually does possess the financial and productive capability, interest and incentive to enter successfully. If that firm then acquires or merges with an incumbent firm, instead of entering the market itself, the market will theoretically not *become* as competitive as it would have become had the outside firm simply entered independently, by [8] means of *de novo* entry, a toehold acquisition, or in some other alternative fashion.⁷ In short, the actual potential competition doctrine focuses upon

⁴ E.g., P. Areeda and D. Turner, *V. Antitrust Law: An Analysis Of Antitrust Principles And Their Application* 69 (1980).

⁵ E.g., *United States v. Marine Bancorporation*, 418 U.S. 602, 639-40 (1974); *United States v. Falstaff Brewing Corp.*, 410 U.S. 526, 535 n. 13 (1973); *id.* at 559-60 (Marshall, J., concurring); *Mercantile Texas Corp. v. Board of Governors of the Federal Reserve System*, 638 F.2d 1255, 1264 (5th Cir. 1981); *BOC International Ltd v. FTC*, 557 F.2d 24, 26 (2d Cir. 1977).

⁶ Areeda and Turner, *supra* note 4, at 69.

⁷ *Mercantile Texas Corp. v. Board of Governors of the Federal Reserve System*, 638 F.2d 1255, 1264 (5th Cir. 1981); see *BOC International Ltd. v. FTC*, 557 F.2d at 26.

Precisely defining a "toehold" acquisition is of course difficult. See, e.g., *BOC International, Ltd. v. FTC*, 557 F.2d at 26 n. 3 and cases and commentary cited therein. The Commission has previously taken the position that the acquisition of a firm accounting for ten percent or less of sales in a given market should be presumed to be a procompetitive toehold acquisition. E.g., *Beatrice Foods Co.*, 86 F.T.C. 1, 66 n. 8 (1975); *The Budd Co.*, 86 F.T.C. 518, 582-83 (1975). The Department of Justice has determined that it will not challenge acquisitions under the actual or perceived potential competition doctrines if the acquired firm controls five percent or less of production or sales in the target market. *Justice Department Merger Guidelines* (June 14, 1984), reprinted in 46 *Antitrust & Trade Reg. Rep. Special Supplement* (June 14, 1984) ("DOJ Guidelines"), at S-9.

(footnote cont'd)

the prospect of *future* injury because a currently noncompetitive industry will not become as competitive as it might have as a consequence of the merger or acquisition at issue. This characteristic limits the doctrine's applicability considerably. As the Second Circuit has indicated, the doctrine

rests on speculation about the future conduct and competitive impact of a firm currently outside the market and perhaps intending to remain so. Even if the likelihood of a firm's entry is a probability, as distinguished from an "ephemeral possibility," . . . its potential entry does not promote existing competition, since at most it may become a competitor *in futuro*.⁸ [9]

By contrast, the perceived potential competition doctrine focuses upon the prospect of *current* injury to a state of competition that already exists.

The actual potential competition doctrine rests upon firmest ground when it is virtually certain that, but for the merger or acquisition, the prospective entrant would have entered the market involved on an independent basis in the near future. As the Second Circuit has indicated:

If there is no showing that the acquiring firm would have entered the market but for the acquisition—and if the acquiring firm is exerting no present influence on the market as a perceived potential entrant, as is concededly the case here—then it cannot be said that the effect of the acquisition "may be substantially to lessen competition," Clayton Act Section 7, 15 U.S.C. Section 18. In such situations, to the contrary, "there may even be a competitive gain to the extent that [the acquiring firm] strengthens the market position of the acquired firm."⁹

If independent entry into the relevant market is unlikely to occur, then the acquisition or merger that actually occurs will almost certainly have no effect on future competitive conditions. Therefore, the likelihood of injury to future competition from the merger or acquisition falls as the likelihood that the outside firm would have actually entered independently falls.

The economically sensible application of the actual potential competition doctrine requires the existence of a number of other necessary conditions as well. First, the relevant [10] product and geographic markets must be both concentrated and performing poorly; that is, they must be oligopolistic and characterized by prices

Hereinafter, *de novo* entry, entry by means of a toe-hold acquisition, and other forms of entry that are alternatives to entry through merger with or the acquisition of a substantial incumbent firm, will be referred to collectively as "independent entry."

⁸ *United States v. Siemens Corp.*, 621 F.2d 499, 504 (2d Cir. 1980) (citation omitted).

⁹ *BOC International Ltd. v. FTC*, 557 F.2d at 27-28, quoting *United States v. Falstaff Brewing Corp.*, 410 U.S. at 561 (Marshall, J., concurring).

substantially in excess of marginal cost.¹⁰ Second, barriers to entry must be substantial; however, entry cannot be completely blockaded or the loss of a potential entrant through an acquisition will be of no consequence.¹¹ Third, only a few firms must be capable of entry, so that the loss of a single firm as a prospective entrant may in fact injure prospective competition.¹²

When all the necessary conditions listed above exist, independent entry may yield more competitive benefits than the acquisition of a leading firm in the target market by an actual potential competitor. However, applying the actual potential competition doctrine too vigorously may insulate inefficient leading firms in noncompetitive markets with substantial barriers to entry from the threat of potential takeovers, without inducing the desired alternative outcome of independent entry. For example, consider an oligopolistic market where entry is very difficult, perhaps due to problems associated with mastering a complex technology, and only a few outside firms (using the same or a similar technology) are capable of recognizing competitive sloth or technical inefficiency in incumbents. In these circumstances, ousting current management through an acquisition [11] might very well improve competitive conditions, but might nevertheless be deterred by overly zealous application of the actual potential competition doctrine. In short, while the doctrine is theoretically sensible, it must be applied with considerable care, lest it create more competitive problems than it solves.

The evidentiary problems associated with the actual potential competition doctrine present almost as many difficulties as its theoretical foundation. The theory presumes that incumbent firms in the target market do not consider the acquiring firm to be a likely potential independent entrant. Because incumbent firms presumably understand industry conditions quite well, however, that creates a strong presumption that the acquiring firm is in fact *not* a potential independent entrant.¹³ Incumbent firm perceptions presumably incorporate all publicly available information. Therefore, the best information for establishing that the acquiring firm is in fact a likely actual potential entrant ordinarily will *not* be available to incumbent firms. If publicly available information gives incumbent firms the impression that the acquiring firm is unlikely to enter independently, then it seems likely that the acquiring firm will reach a similar conclusion and not attempt to enter independently. [12]

¹⁰ See Areeda and Turner, *supra* note 4, at 76-80, 88.

¹¹ *Id.* at 85-88.

¹² *Id.* at 70-71; Brodley, *Potential Competition Under the Merger Guidelines*, 71 Cal. L.J. 377, 378 (1983).

¹³ In *perceived* potential competition cases, courts have analogously relied upon the perceptions of incumbent firms to determine whether or not a potential entrant constrains incumbent behavior. See *Tenneco, Inc. v. FTC*, 689 F.2d 346, 358 (2d Cir. 1982); *United States v. Siemens Corp.*, 621 F.2d at 508; *United States v. Black & Decker Mfg. Co.*, 430 F.Supp. 729, 769-73 (D. Md. 1976).

The best evidence that a firm is an actual potential entrant therefore will ordinarily consist of internal, non-public information, such as capital budgets or expansion plans, that makes it clear that the firm would have entered the target market independently had it not been for the merger or acquisition. The credibility of this sort of "subjective" evidence should be heightened by the fact that its existence conflicts with the litigation interests of the acquiring firm.¹⁴ As Areeda and Turner point out:

The only clearly credible [subjective] evidence [relating to pre-merger entry intentions] is that which is contrary to a firm's litigation interests. The clearest example would be subjective evidence by a firm defending a merger of its affirmative intention to enter independently a market actually entered by merger.¹⁵ [13]

It will often be difficult to secure such evidence. Nevertheless, if the firm's intention to enter independently has become sufficiently concrete to warrant the preparation of capital budgets and other actual steps toward entry, that intention will ordinarily be memorialized in one documentary form or another. The credibility of subjective evidence that the firm would have entered independently but for the acquisition must of course outweigh the credibility of conflicting publicly available information.

B. Legal Principles

The Supreme Court has twice reserved judgment on whether an actual potential competition merger may violate Section 7 of the Clayton Act.¹⁶ However, two lower courts have concluded that such a merger or acquisition may violate Section 7 in some circumstances.¹⁷ The Federal Trade Commission has reached the same conclusion, stating that

a potential entrant's acquisition of a leading firm in a concentrated target market may

¹⁴ Subjective evidence purportedly establishing the opposite conclusion must be evaluated carefully. An outside firm defending a merger or acquisition has a strong incentive to deny that it would have entered independently if the merger or acquisition had been prevented. As Areeda and Turner point out, testimony "in the course of litigation is the least reliable," but firms that anticipate the possibility of merger or acquisition are also likely to keep internal documents discussing independent entry as negative as possible "until the moment of actual positive steps toward entry." Areeda and Turner, *supra* note 4, at 103-04, citing *United States v. Falstaff Brewing Corp.*, 410 U.S. at 568-69 (Marshall, J., concurring). Some courts have nevertheless considered this sort of evidence, at least when objective evidence also makes it doubtful that independent entry would have occurred. *Id.* at 104, citing *United States v. Penn-Olin Chemical Co.*, 246 F.Supp. 917, 931-34 (D. Del. 1965), *aff'd by an equally divided Court*, 389 U.S. 308 (1967) and *United States v. Wachovia Corp.*, 313 F.Supp. 632, 636 (W.D.N.C. 1970).

¹⁵ Areeda and Turner, *supra* note 4, at 104.

¹⁶ *United States v. Marine Bancorporation*, 418 U.S. 602, 625, 639 (1974); *United States v. Falstaff Brewing Corp.*, 10 U.S. 526, 537 (1973).

¹⁷ *Yamaha Motor Co., Ltd. v. FTC*, 657 F.2d 971, 977-79 (8th Cir. 1981), *cert. denied*, 456 U.S. 915 (1982); *United States v. Phillips Petroleum Co.*, 367 F.Supp. 1226, 1232-34 (C.D. Cal. 1973), *aff'd mem.*, 418 U.S. 906 (1974). The Second Circuit has on three occasions declined to conclude that an actual potential competition merger may violate section 7 of the Clayton Act. *Tenneco, Inc. v. FTC*, 689 F.2d 346, 352, 355 (2d Cir. 1982); *United States v. Siemens Corp.*, 621 F.2d 499, 504, 506 (2d Cir. 1980); *BOC International Ltd. v. FTC*, 557 F.2d 24, 28 (2d Cir. 1977).

violate Section 7 of the Clayton Act if it is likely that, but for the acquisition, the acquiring firm would [14] have entered the target market independently, or through a "toehold" acquisition of a firm lacking a significant share of that market.¹⁸

Establishing liability through the actual potential competition doctrine requires establishing four separate facts. First, the Commission must establish that the relevant product and geographic markets are concentrated.¹⁹ The precise degree of concentration required has not been conclusively established. However, the Supreme Court has indicated that a high degree of concentration establishes "a *prima facie* case that the . . . market [is] a candidate for the potential competition [15] doctrine."²⁰ For example, in *Marine Bancorporation*, the Court indicated that the fact that three firms controlled 92 percent of the relevant market made such a *prima facie* showing.²¹ The Court has also indicated that the *prima facie* case can be overcome by evidence that the concentration data, "which can be unreliable indicators of actual market behavior," do not "accurately depict the economic characteristics of the [relevant] market."²²

The Commission has concluded that considerably lower degrees of concentration can satisfy the concentration requirement of the doctrine: [16]

Four-firm market shares in the range of 50 percent are sufficient to raise concern over the loss of potential competition.²³

¹⁸ *Grand Union Co.*, 3 Trade Reg. Rep. (CCH) ¶22,050 (July 18, 1983), at 22,708 (citations omitted); *accord*, *Tenneco Inc.*, 98 F.T.C. 464, 577 n.3 (1981), *rev'd on other grounds*, 689 F.2d 346 (2d Cir. 1982); *Heublein, Inc.*, 96 F.T.C. 385, 583 n.22 (1980); *Brunswick Corp.*, 94 F.T.C. 1174, 1267 n.25 (1979), *modified as to relief*, 96 F.T.C. 151 (1980), *aff'd as modified sub nom. Yamaha Motor Co. v. FTC*, 657 F.2d 971 (8th Cir. 1981), *cert. denied*, 456 U.S. 915 (1982).

¹⁹ *United States v. Marine Bancorporation*, 418 U.S. at 630-31; *Tenneco, Inc. v. FTC*, 689 F.2d 346, 352-53 (2d Cir. 1982); *Mercantile Texas Corp. v. Board of Governors Of The Federal Reserve System*, 638 F.2d at 1266-67; *United States v. Siemens Corp.*, 621 F.2d at 505; *Grand Union Co.*, ¶22,050 at 22,709; *Heublein, Inc.*, 96 F.T.C. at 584; *Brunswick Corp.*, 94 F.T.C. at 1269. This requirement applies to both actual and perceived potential competition cases. *United States v. Marine Bancorporation*, 418 U.S. at 630-31. Areeda and Turner argue that a market "may be presumed to be non-competitive" when the same four firms have accounted for seventy-five percent of the target market (or sixty-five percent, when the eight-firm concentration ratio is ninety percent) for five years prior to the merger, unless "concentration has been declining and will probably decline below the specified ratios." Areeda and Turner, *supra* note 4, at 70.

²⁰ *United States v. Marine Bancorporation, Inc.*, 418 U.S. at 631; *accord*, *Republic of Texas Corp. v. Board of Governors of Federal Reserve System*, 649 F.2d 1026, 1045-46 (5th Cir. 1981) (four-firm ratio of 72.4 percent sufficient to establish *prima facie* case); *Mercantile Texas Corp. v. Board of Governors Of The Federal Reserve System*, 638 F.2d at 1267 (four-firm ratios of 86.1 percent and 73.8 percent in two relevant markets sufficient); *United States v. Black & Decker Mfg. Co.*, 430 F.Supp. 729, 748-49, 755 (D. Md. 1976) (four-firm ratio of more than 75 percent sufficient); *Grand Union Co.*, ¶22,050 at 22,711; *Tenneco, Inc.*, 98 F.T.C. 464, 577, 583-84 (1981), *rev'd on other grounds*, 689 F.2d 346, 352 (2d Cir. 1982) (court of appeals concluded that four-firm ratio in excess of 90 percent, and two-firm ratio in excess of 77 percent, sufficient).

²¹ *United States v. Marine Bancorporation*, 418 U.S. at 630-31.

²² *Id.* at 631; *accord*, *Tenneco, Inc. v. FTC*, 689 F.2d at 353; *United States v. Siemens Corp.*, 621 F.2d at 506; *United States v. Hughes Tool Co.*, 415 F.Supp. 637, 643, 645 (C.D. Cal. 1976); *United States v. Falstaff Brewing Corp.*, 383 F.Supp. 1020, 1022-23 (D.R.I. 1974), *on remand from* 410 U.S. 526 (1973).

²³ *Tenneco, Inc.*, 98 F.T.C. at 584; *accord*, *Heublein, Inc.*, 96 F.T.C. at 584-85 (four-firm concentration of 47.9 percent, two-firm concentration ratio of 41.9 percent sufficient); *Budd Co.*, 86 F.T.C. 518, 574-77 (1975) (four-firm ratio of 56 percent-61 percent prior to the merger sufficient); *The Bendix Corp.*, 77 F.T.C. 731, 826 (1970) (four-firm concentration ratio of 80.8 percent sufficient), *rev'd and remanded on other grounds*, 450 F.2d 534 (6th Cir. 1971).

However, the Commission has indicated more recently that the strength of the presumption, and the strength of the evidence needed to overcome it, vary directly with the degree of market concentration. In *Grand Union*, the Commission concluded that four-firm concentration ratios ranging from 49 percent to 72 percent in the thirteen markets under consideration were sufficient to trigger additional analysis, but that the respondents succeeded in rebutting the presumption in most of those markets.²⁴ The Justice Department has indicated that it is ordinarily unlikely to challenge potential competition mergers, whether actual or perceived, unless the Herfindahl-Hirschman Index in the acquired firm's market exceeds 1800.²⁵ As a necessary corollary, the market must be characterized by significant barriers to entry. The Justice Department has concluded that barriers should be as high as in horizontal merger [17] cases, in which the relevant question is whether a "small but significant and nontransitory" price increase would attract new entry.²⁶

In addition to establishing that the target market is concentrated, the Commission must second establish that independent entry would result in

a substantial likelihood of ultimately producing deconcentration of [the target] market or other significant procompetitive effects.²⁷ [18]

Third, the acquiring firm must be one of only a few equally likely actual potential entrants, since eliminating one of many potential entrants could not be expected to eliminate substantial future competition.²⁸

Fourth and finally, the Commission must establish that the acquiring firm would have entered the market independently, either *de novo* or by making a toehold acquisition, if it had not acquired the target

²⁴ *Grand Union Co.*, ¶22,050 at 22,712, 22,714. The Commission also noted the greater reliability of Herfindahl-Hirschman Indexes, relative to concentration ratios, as a basis for assessing concentration levels. *Id.* at 22,711. The parties have provided both concentration measures in this case.

²⁵ DOJ Guidelines, *supra* note 7, at S-9.

²⁶ *Id.* at S-6, S-9.

²⁷ *United States v. Marine Bancorporation*, 418 U.S. at 633; *accord, Tenneco, Inc. v. FTC*, 689 F.2d at 352; *Brunswick Corp.*, 94 F.T.C. 1174, 1269 (1979), *aff'd as modified sub nom. Yamaha Motor Co., Ltd. v. FTC*, 657 F.2d 971, 977-78 (8th Cir. 1981), *cert. denied*, 456 U.S. 915 (1982); *Republic of Texas Corp. v. Board of Governors of Federal Reserve System*, 649 F.2d at 1047; *Mercantile Texas Corp. v. Board of Governors of Federal Reserve System*, 638 F.2d at 1270 (not enough to show that entry will "shake things up"; must show "lasting impact"); *BOC International Ltd. v. FTC*, 557 F.2d at 27-28; *Grand Union Co.*, ¶22,050 at 22,709; *Heublein, Inc.*, 96 F.T.C. at 584. Areeda and Turner would, absent "clear evidence to the contrary," presume "a significant procompetitive effect from alternative methods of entry" if the acquired firm "is a significant competitive factor in the market—with 10 percent or more of sales or a substantial and steadily expanding share." Areeda and Turner, *supra* note 4, at 71.

²⁸ *E.g., Republic of Texas Corp. v. Board of Governors of Federal Reserve System*, 649 F.2d at 1047; *Mercantile Tex. Corp. v. Board of Governors of Federal Reserve System*, 638 F.2d at 1267; *FTC v. Atlantic Richfield Co.*, 549 F.2d 289, 300 (4th Cir. 1977); *United States v. First National State Bancorporation*, 499 F.Supp. 793, 814 (D.N.J. 1980); *United States v. Black & Decker Mfg. Co.*, 430 F.Supp. 729, 771-72 (D. Md. 1976); *United States v. Hughes Tool Co.*, 415 F.Supp. 637, 646 (C.D. Cal. 1976); *Grand Union Co.*, ¶22,050 at 22,709; *Heublein, Inc.*, 96 F.T.C. 385, 588-89 (1980); Areeda and Turner, *supra* note 4, at 70-71.

firm.²⁹ Establishing this factor requires showing that the acquiring firm possessed the "capabilities, economic incentives, and interest to enter the target market," and that entry by a means other than the acquisition would have [19] been feasible.³⁰ It also requires establishing that independent entry would have occurred within the near future.³¹ Not surprisingly, this fourth issue has proven to be the most difficult to resolve in actual potential competition cases.

In his article on conglomerate mergers, Donald F. Turner argued that clear proof that entry would have occurred should be required:

[W]hen the *only* alleged anticompetitive consequence of a merger is the elimination of what would have been a new entrant in a tight oligopoly, there must, in order to support prohibition, be clear proof that the firm would in fact have entered—an admittedly rare case, and one bound to become even less frequent if this rule were adopted.³²

The Fourth Circuit has adopted this position, concluding that the Commission must present "clear proof" that the firm would have entered the market but for the acquisition, and that "little [20] evidence is required to prove that there would not be *de novo* entry."³³ The Second Circuit has similarly concluded that *if* the actual potential competition doctrine is a viable doctrine, then the Commission must adduce clear proof that entry would occur.³⁴ The Fifth Circuit, although holding that independent entry must be at least "reasonably probable," has required proof of a "persuasive rationale" that the acquiring firm would prefer independent entry "over other opportunities for expansion or investment."³⁵ Among the Circuit Courts of

actual or perceived—if the "entry advantages" of the outside firm (or comparable advantages) are possessed by three or more other firms. *DOJ Guidelines*, *supra* note 7, at S-9; *accord*, Areeda and Turner, *supra* note 4, at 70.

²⁹ *United States v. Marine Bancorporation*, 418 U.S. at 633; *Heublein, Inc.*, 96 F.T.C. at 584. In *perceived* potential competition cases, by contrast, it may not be necessary to establish that the acquiring firm would have entered independently; the key question is whether incumbent firms *believe* that the acquiring firm may enter. *United States v. Falstaff Brewing Corp.*, 410 U.S. at 533-34.

³⁰ *Grand Union Co.*, 122,050 at 22,709; *accord*, *Brunswick Corp.*, 94 F.T.C. at 1269.

³¹ *BOC International Ltd v. FTC*, 557 F.2d at 28-30 ("the near future"); *Mercantile Texas Corp. v. Board of Governors*, 638 F.2d at 1271-72 (independent entry should be expected within two or three years); *Republic of Texas Corp. v. Board of Governors of the Federal Reserve System*, 649 F.2d 1026, 1047 (5th Cir. 1981) (within a specified "range of months or years").

³² Turner, *Conglomerate Mergers and Section 7 of the Clayton Act*, 78 Harv. L. Rev. 1313, 1384 (1965). Turner notes that the case against the merger would be strengthened if the acquiring firm were a *recognized* potential entrant, so that it *currently* influences the behavior of incumbent firms; that is, that it is a *perceived* potential entrant rather than simply an *actual* potential entrant. More recently, Areeda and Turner have taken the position that one should require a showing that the acquiring firm "would probably have entered the market within a reasonable period of time"; to establish that they would require "proof that (1) the firm has the requisite economic capabilities for substantial *de novo* entry and (2) such entry is economically attractive to it." Areeda and Turner, *supra* note 4, at 70.

³³ *FTC v. Atlantic Richfield Co.*, 549 F.2d 289, 294-95 (4th Cir. 1977).

³⁴ After initially adopting the "reasonable probability" standard, the Second Circuit has now recognized its problems and endorsed the "clear proof" standard instead. *Tenneco, Inc. v. FTC*, 689 F.2d 346, 352 (2d Cir. 1982) ("would likely have entered the market in the near future either *de novo* or through toehold acquisition"); *United States v. Siemens Corp.*, 621 F.2d 499, 506-07 (2d Cir. 1980) ("at least a 'reasonable probability' that the acquiring firm would enter the market . . . and preferably clear proof that entry would occur . . ."); *BOC International Ltd. v. FTC*, 557 F.2d 24, 28-29 (2d Cir. 1977) ("reasonable probability").

³⁵ *Republic of Texas Corp. v. Board of Governors of Federal Reserve System*, 649 F.2d 1026, 1047 (5th Cir. 1981); *Mercantile Texas Corp. v. Board of Governors of Federal Reserve System*, 638 F.2d 1255, 1265, 1268-69 (5th Cir. 1981).

Appeal, only the Eighth Circuit has actually sustained liability under Section 7 under the theory that the respondent was an actual potential entrant into the relevant market. It determined that the respondent "probably" would have entered the relevant market independently were it not for the formation of the joint venture at issue.³⁶ In short, the Second and Fourth Circuits have [21] adopted the "clear proof" standard, the Fifth Circuit has adopted a variant of the "reasonable probability" standard (*i.e.*, "persuasive rationale") which, in practice, is very close to the "clear proof" standard, and the Eighth Circuit has adopted the "reasonable probability" standard.

Our review of the legal and economic bases for the actual potential competition doctrine has persuaded us that clear proof that independent entry would have occurred but for the merger or acquisition should be required to establish that a firm is an actual potential competitor. The actual potential competition doctrine focuses upon future rather than current competitive conditions. Therefore, even if all the conditions of the doctrine are currently satisfied, there is no guarantee that these conditions will persist until the future time at which independent entry might occur. The likelihood of injury to future competition may therefore not be particularly great even if independent entry but for the merger or acquisition is a virtual certainty. The likelihood of injury will fall substantially if independent entry is only reasonably probable. Moreover, as the Second, Fourth and Fifth Circuits have all recognized, the "reasonable probability" standard is quite ambiguous. The difficulties that the courts have had in identifying the evidence that will show that independent entry is reasonably probable confirm the correctness of that view. For these reasons, we therefore adopt the "clear proof" standard.

Determining whether the acquiring firm is an actual potential entrant requires a detailed examination of its financial and managerial capabilities and interests, and its [22] incentive to enter the target market in some fashion other than by acquiring a substantial incumbent firm in that market.³⁷ Much of the evidence relating to capabilities, interests, and incentives can be objective.³⁸ For example,

³⁶ *Yamaha Motor Co., Ltd. v. FTC*, 657 F.2d 971, 977-79 (8th Cir. 1981), *cert. denied*, 456 U.S. 915 (1982).

³⁷ See, e.g., *United States v. Marine Bancorporation*, 418 U.S. 602, 624-25 (1974); *Tenneco, Inc. v. FTC*, 689 F.2d at 353-55; *Yamaha Motor Co. v. FTC*, 657 F.2d 971, 978-79 (8th Cir. 1981), *cert. denied*, 456 U.S. 915 (1982); *Mercantile Tex. Corp. v. Board of Governors of Fed. Reserve Sys.*, 638 F.2d 1255, 1268-70 (5th Cir. 1981); *United States v. Siemens Corp.*, 621 F.2d 499, 506-08 (2d Cir. 1980); *United States v. Black & Decker Mfg. Co.*, 430 F.Supp. 729, 756-60 (D. Md. 1976); *United States v. Phillips Petroleum Co.*, 367 F.Supp. 1226, 1239-51 (C.D. Cal. 1973), *aff'd mem.*, 418 U.S. 906; *Grand Union Co.*, 122,050 at 22,714; *Tenneco, Inc.*, 98 F.T.C. 464, 586-603 (1981); *rev'd on other grounds*, 689 F.2d 346 (2d Cir. 1982); *Heublein, Inc.*, 96 F.T.C. 385, 584-88 (1980). But see *Sun Newspapers, Inc. v. Omaha World-Herald Co.*, 1983-2 Trade Cas. (CCH) ¶65,522 (D. Neb.), *modified on other grounds and aff'd per curiam*, 713 F.2d 428 (8th Cir. 1983) (court entered preliminary injunction prohibiting proposed acquisition by one firm of a potential competitor without detailed examination).

³⁸ Areeda and Turner define "objective" evidence in antitrust cases to be circumstantial evidence, consisting largely of observable economic data such as a market's profitability or the previous behavior of a firm. By contrast, they define "subjective" evidence to include, for example, statements by officers of a firm relevant to the likelihood

evidence as to the financial resources of the acquiring firm is relevant to determining its *capacity* to enter independently. Similarly, evidence that the firm has acquired firms in related product or geographic markets may help to establish its *interest* in entering the market in question.

Finally, evidence that independent entry likely would be substantially more profitable than alternative entry modes may help to establish the acquiring firm's *incentive* to enter [23] independently.³⁹ The Fifth Circuit Court of Appeals has concluded that a firm should be considered to possess such an incentive

[i]f the expected profits from independently entering [the relevant market] are markedly higher than those expected from other opportunities . . .⁴⁰

The best evidence concerning the incentives of the acquiring firm to enter independently, however, is likely to be subjective; that is, how did the firm evaluate its independent entry prospects? Did it find them to be sufficiently attractive to warrant preparing concrete capital investment plans? Did its corporate management approve those plans? As we noted above, the most probative evidence to reach this finding ordinarily would be evidence that is *not* available to incumbent firms. Moreover, simply establishing an incentive to enter by acquiring a large incumbent firm is not sufficient. The Commission must establish that the respondent intended to enter *independently* [24] because entry in that fashion rather than through a more substantial merger or acquisition ordinarily entails greater risks and higher costs.⁴¹

The quality of subjective evidence on this issue is crucially important. Internal management studies prepared contemporaneously with or prior to the acquisition represent the best evidence, because they provide the best guide to discerning whether or not the corporation involved actually contemplated some form of independent entry during the relevant time period. For example, a directive from corporate management to prepare a capital acquisition plan, and to begin making the capital expenditures needed for independent entry, would

that it would enter independently. See Areeda and Turner, *supra* note 4, at 103-114; accord, e.g., *Mercantile Texas Corp. v. Board of Governors of Federal Reserve System*, 638 F.2d at 1269.

³⁹ See, e.g., *United States v. Marine Bancorporation*, 418 U.S. at 640, 642; *United States v. Penn-Olin Chemical Co.*, 378 U.S. 158, 175 (1964).

⁴⁰ *Mercantile Texas Corp. v. Board of Governors of Federal Reserve System*, 638 F.2d 1255, 1269 (5th Cir. 1981); accord, *Republic of Texas Corp. v. Board of Governors of Federal Reserve System*, 649 F.2d at 1047. The Fifth Circuit has indicated that such a profitability study should consider the profit levels enjoyed by incumbent firms, any competitive advantages or disadvantages that the acquiring firm as an independent entrant would confront (such as the costs of entry), and the profitability of alternative investment opportunities. *Mercantile Texas Corp. v. Board of Governors of Federal Reserve System*, 638 F.2d at 1269.

⁴¹ *Tenneco, Inc. v. FTC*, 689 F.2d at 353-55; *Grand Union Co.*, 122,050 at 22,715-16; Douglas, *Risk In The Equity Markets: An Empirical Appraisal Of Market Efficiency*, 9 Yale Economic Essays (Spring, 1969); Areeda and Turner, *supra* note 4, at 108.

be strongly probative.⁴² This type of study may often be difficult to secure. However, the consequences of that problem are substantially outweighed by the danger of relying upon the uncertain conclusions of financial studies or other material prepared in contemplation of litigation. Relying primarily upon such studies would place the Commission in the undesirable [25] position of substituting its business acumen for that of the acquiring firm, and of ignoring the apparent conclusion of the acquiring firm at the time of the acquisition that both the acquisition and other alternative investments would be more profitable and otherwise sensible than independent entry.

Determining whether a firm had in fact decided to enter independently, and would have done so but for the merger or acquisition at issue, is no easy matter because an entry effort requiring substantial expenditures will ordinarily require the approval of several progressively higher levels of corporate management before it can be considered to have been approved. The Penn-Olin joint venture case provides a useful example. Pennsalt Chemicals Corporation and Olin Mathieson Chemical Corporation formed a joint venture (Penn-Olin Chemical Company) for the production and sale of sodium chlorate in the southeastern United States. The Justice Department challenged the formation of that joint venture. The district court extensively considered the procedures by which each of the two corporations decided whether or not to undertake capital investments.⁴³ It noted that in the case of Olin, for example, each division annually presented capital expenditure proposals to [26] corporate staff; the staff then evaluated these proposals. The ones they recommended were in turn forwarded to the "Capital Appropriation Requirements Committee;" any proposals they in turn recommended were then forwarded to the president for signature. Capital expenditures greater than \$25,000 had to be approved finally by the Board of Directors.⁴⁴ In its 1959 report the Chemicals Division had recommended the construction of a chlorate plant, but that recommendation had been rejected by senior management, who ultimately decided to enter into the joint ven-

⁴² See, e.g., *Mercantile Texas Corp. v. Board of Governors of Federal Reserve System*, 638 F.2d at 1269 ("Internal office memoranda could furnish a sufficient basis for inferring intent [to enter independently]"). By contrast, financial studies prepared by an acquiring firm in contemplation of litigation are likely to be less useful because of their presumed recognition that interest in independent entry may strengthen the antitrust case against an acquisition. However, such studies may certainly be used to corroborate or dispute the conclusions that one may draw from internal pre-acquisition studies.

⁴³ *United States v. Penn-Olin Chemical Co.*, 246 F.Supp. 917 (D. Del. 1965). The district court had initially dismissed the complaint, but on appeal the Supreme Court vacated the judgment and remanded with the directive that the district court should determine whether it was reasonably probable that "either one of the corporations would have entered the market by building a plant, while the other would have remained a significant potential competitor." *United States v. Penn-Olin Chemical Co.*, 217 F.Supp. 110 (D. Del. 1963), *rev'd and remanded*, 378 U.S. 158, 175-76 (1964).

⁴⁴ *United States v. Penn-Olin Chemical Co.*, 246 F.Supp. at 919-20.

ture instead.⁴⁵ The evidence that the Division proposal had been carefully considered internally and then rejected helped to lead the district court to conclude that Olin would not have entered independently.⁴⁶

Recent Commission cases provide additional guidance as to the sorts of evidence that can be relied upon to determine whether independent entry would have occurred. In *Brunswick Corp.*, the Commission concluded that the record was "unusually clear" that Yamaha would have entered the United States outboard motor market "if the joint venture [with Brunswick] had been unavailable to it."⁴⁷ The Commission noted that Yamaha had tried to enter the United States market twice before the creation of [27] the joint venture.⁴⁸ Moreover, Yamaha had developed extensive plans for the production of several different outboard motors designed expressly for export to the United States, and planned to begin production of at least one of these motors in January, 1973, only two months after the joint venture ultimately became effective.⁴⁹ In short, as the Commission indicated, "Yamaha had concrete plans to enter the market by 1973, abandoned only when the joint venture alternative arose."⁵⁰ Furthermore, Yamaha possessed the capability to enter successfully; it planned production of a full line of high quality low and high horsepower motors, and its management was experienced both in producing and marketing outboard motors, and in marketing motorcycles and snowmobiles in the United States.⁵¹ The Court of Appeals sustained these conclusions.⁵²

By contrast, the *Tenneco* case (addressing Tenneco's acquisition of Monroe) provides an illustration of the sort of evidence that will *not* suffice to show that an acquiring firm [28] would have entered independently.⁵³ The Court noted that Tenneco had both the interest and the incentive to enter the market for replacement shock absorbers, given (1) the complementarity between its exhaust system products line and shock absorbers identified in internal company documents; (2) Tenneco's acquisition of a small manufacturer with a patent on a new shock absorber design; (3) Tenneco's "adequate financial resources;" and (4) Tenneco's active consideration of entry throughout

⁴⁵ *Id.* at 923-24.

⁴⁶ *Id.* at 926-27; see also *United States v. Siemens Corp.*, 621 F.2d at 508; *FTC v. Atlantic Richfield*, 549 F.2d at 296-97 and n. 9.

⁴⁷ *Brunswick Corp.*, 94 F.T.C. at 1269.

⁴⁸ *Id.*

⁴⁹ *Id.* at 1208-15 (Initial Decision), 1262.

⁵⁰ *Id.* at 1269. Of course, the fact that Yamaha ultimately chose to participate in a joint entry effort supports the conclusion that it found *de novo* entry, at least with the help of another firm, to be economically attractive. That support is of course not available when, as here, the ultimate decision was instead to acquire an incumbent firm.

⁵¹ *Id.* at 1269-71.

⁵² *Yamaha Motor Co., Ltd. v. FTC*, 657 F.2d at 978-79.

⁵³ *Tenneco, Inc. v. FTC*, 689 F.2d 346 (2d Cir. 1982).

the late 1960s and early 1970s.⁵⁴ However, the Court noted that Tenneco had decided not to enter during that period, despite high profitability in the target market, because it anticipated inadequate earnings during the first few years following entry. The Court found no evidence to support the Commission's conclusion that Tenneco *would* have entered the market later (in 1977, when it acquired Monroe) when market earnings were much lower.⁵⁵ The Court also noted that Tenneco had unsuccessfully negotiated to make a toehold acquisition in the market.⁵⁶

These cases suggest that establishing a likelihood of independent entry but for the merger or acquisition at issue requires proof of concrete internal plans for independent entry that have been at least tacitly approved at the governing levels of corporate management. Internal plans that have not been approved at that [29] level cannot be relied upon, regardless of how enthusiastically they promote independent entry, because they cannot be characterized as the concrete plans of the corporation itself.

III. THE APPLICATION OF THESE PRINCIPLES TO THIS CASE

A. *Relevant Markets*

A merger or acquisition that threatens actual potential competition may do so either because it is a *product* extension merger, in which one firm acquires another firm selling related or complementary products, or because it is a *geographic* extension merger, which involves firms selling the same products in different geographic areas.⁵⁷ As these characterizations suggest, product and geographic market definitions are crucially important to determining whether a particular merger or acquisition is simply horizontal and therefore governed by an actual competition theory, or instead subject to a potential competition theory. For example, consider two merging firms that produce the same product, one solely within the United States, and the other solely within the United Kingdom. If the relevant geographic market includes both the United States and the United Kingdom, then the two firms are horizontal competitors. If, on the other hand, the United States and the United Kingdom are separate geographic markets, then liability can be established only by considering, absent the merger, the potential for competition between the two firms. [30]

⁵⁴ *Id.* at 353.

⁵⁵ *Id.* at 354.

⁵⁶ *Id.*

⁵⁷ See *United States v. Atlantic Richfield Co.*, 297 F.Supp. 1061, 1069 (S.D.N.Y. 1969), *aff'd mem. sub nom. Bartlett v. United States*, 401 U.S. 986 (1971) (geographic market extension); *Grand Union Co.*, 3 Trade Reg. Rep. (CCH) ¶122,050 (July 18, 1983).

1. Relevant Geographic Market

The ALJ and the parties agree that the United States represents the relevant geographic market in this case. IDF 35; CAB at 7. The record evidence supports that conclusion.

2. Relevant Product Market

Multi-part business forms ("MPBF") are pre-printed documents used to record business data on several sheets of paper simultaneously. They are made almost exclusively from CCP or from bond paper interleaved with carbonized tissue; the latter product is known as "one-time-carbon" ("OTC") because the carbonized tissues are discarded after a single use. IDF 16-19 and n.32. However, the record indicates that CCP should be treated as the relevant product market in this case, separate and distinct from OTC.

As the Commission has previously indicated, reliable measures of supply and demand elasticities provide the most accurate estimates of relevant markets.⁵⁸ Unfortunately, the econometric evidence in the record on this issue—an analysis of Appleton's own elasticity, the CCP industry's elasticity, and the cross-elasticity of demand between CCP and OTC prepared for B.A.T by Dr. William Baumol—is not as useful as it might have been. To conduct his analysis, Baumol assumed that CCP buyers decide whether to switch between CCP and OTC between four and six months after a price change is announced. However, the record does not contain any evidence to support that assumption. IDF 34. [31] Moreover, if lags of zero, one, two, or three months are assumed instead, Baumol's data generate cross-elasticities that are not significantly different (in the statistical sense) from zero. Complaint counsel's econometrician, Dr. Ira Horowitz, used Baumol's annual regressions to produce a cross-elasticity coefficient of -0.01, and he testified that there was no significant cross price elasticity between CCP and OTC.⁵⁹ These estimates are consistent with a number of prelitigation estimates of Appleton's own elasticity—which should exceed cross price elasticity with more distant products such as OTC—and of cross price elasticity that were similarly not statistically significantly different from zero.⁶⁰ Given these conflicting estimates and the problems with Baumol's lag assumptions, his estimate that the cross-elasticity of demand between CCP and OTC is 4.19 cannot be accepted. Respondents have not attempted to rehabilitate the Baumol models on appeal.

In the absence of adequate elasticity measurements, the Commission has indicated that a number of surrogates can be considered. On

⁵⁸ *ITT Continental Baking Co.*, ¶22,188 at 23,085; *Grand Union Co.*, ¶22,050 at 22,702-03.

⁵⁹ Horowitz, Tr. 1518; IDF 34, citing CX 432, 433, 450.

⁶⁰ See Baumol, Tr. 6147-49, 6365-70, 6497; IDF 34; CX 372; CX 417; CX 450; CX 454.

the demand side, the crucial question is whether a small change in the price of CCP would generate a significant and like-signed change in the quantity of OTC demanded, and vice-[32]versa.⁶¹ Approximately 70 percent of CCP production is sold in rolls to MPBF printers who use it to make both unit sets (which can be torn individually from a glued stub) and continuous forms (which are perforated, so that many forms can be filled out sequentially). IDF 26. These printers can use either CCP or OTC in most applications. However, a substantially and persistently higher price for CCP than for OTC (20 to 30 percent higher in 1982)—attributable largely to the greater cleanliness and convenience associated with CCP—indicates that a small price change for either product would be unlikely to induce MPBF printers to switch to the other product.⁶²

The remaining 30 percent of CCP production is sold in the form of sheets rather than rolls to paper merchants, who sell the sheets in turn to commercial printers or to company in-plant printing facilities. These buyers cannot switch from CCP to OTC because interleaving carbon sheets and form paper and gluing them together are labor-intensive, time-consuming, and require special equipment. IDF 27-28 and n.43. In conjunction with the other evidence noted above, this factor indicates that the cross-elasticity of demand between CCP and OTC is quite low. [33]

On the supply side, the key question is whether a small change in the price of CCP would generate a significant and opposite-signed change in the quantity of OTC supplied, and vice-versa.⁶³ The record supports the conclusion of Wiggins managers that CCP "is easily the most complex product which is made in high volume in the paper industry." IDF 22. Manufacturing CCP requires unique facilities, custom-designed equipment, specialized raw materials, specially trained personnel, extensive research efforts, and rigorous quality control and testing procedures. IDF 22-24. These highly specialized and expensive facilities cannot economically be used to produce OTC, and there is no evidence that OTC manufacturing facilities can be used to produce CCP. IDF 25 and n.40. In short, the cross-elasticity of supply between CCP and OTC also appears to be quite low.

Record evidence concerning industry perceptions confirms the foregoing conclusions. B.A.T analyzed the Appleton acquisition by treating CCP production alone as the relevant market, and Appleton and other U.S. producers treat CCP as a separate market in develop-

⁶¹ *ITT Continental Baking Co.*, 3 Trade Reg. Rep. (CCH) ¶22,188 (July 25, 1984), at 23,086 n.54.

⁶² IDF 29-33. Dr. H. F. Rance, the "father" of Wiggins' CCP business, observed that even with a thirty percent higher price, CCP could still increase its sales relative to OTC sales by roughly one percent per year. IDF 31; CX Z-25. During the 1972-1979 period, CCP sales grew at an average annual rate of 17%, while forms bond and bonizing tissue grew at rates of only 9% and 4% respectively. IDF 33 n.50.

⁶³ *ITT Continental Baking Co.*, ¶22,188 at 23,087.

ing business strategy and "assessing their competitive strength." IDF 21. CCP production therefore appears to be the relevant product market.

B. Concentration Levels

The United States CCP market is highly concentrated. Respondents admit that in 1977, Appleton alone accounted for 53 percent of domestic CCP sales and 56 percent of domestic CCP [34] production; Appleton and Mead, the second largest domestic producer, together accounted for 82 percent of domestic CCP sales and 81 percent of domestic CCP production; and 3M and Nashua together accounted for only 10 percent of the market. IDF 48. The Herfindahl-Hirschman Index ("HHI") in the United States CCP market ranged from 3946 to 4789 between 1975 and 1980. That figure is of course far above the 1800 HHI level that the Justice Department has chosen to rely upon in actual potential competition cases.⁶⁴ As the following tables indicate, these market values remained relatively constant during the 1975-1980 period: [35]

Table 1
United States Producers' Share of CCP Resale Market in Percent of Total Tons⁶⁵

	1975	1976	1977	1978	1979	1980
Total Tons	219,500	254,000	277,000 ⁶⁶	334,000	359,000	389,000
Appleton	57.0	60.0	61.0	64.0	64.0	62.0
Mead	23.0	26.0	26.0	25.0	25.0	26.0
3M	11.0	9.0	8.3	6.9	6.1	5.7
Nashua	7.3	4.0	4.3	4.5	4.5	4.4
Boise	0	0	0	.3	0	1.3
Champion	2.0	1.0	0	0	0	0
Frye	0	0	0	0	.3	.5

Table 2
Leading Firm Concentration in CCP Resale Market (Percent)⁶⁷

	1975	1976	1977	1978	1979	1980
Top 2 Firms	80.0	86.0	87.0	89.0	89.0	88.0
Top 4 firms	98.3	99.0	100.0	100.0	99.6	98.1
Top 8 firms	100.0	100.0	100.0	100.0	100.0	100.0

⁶⁴ The Justice Department will probably not challenge actual or perceived potential competition mergers or acquisitions unless the HHI in the acquired firm's market exceeds 1800. *DOJ Guidelines*, *supra* note 7, at S-9.

⁶⁵ IDF 49, *citing* CX 329A. Although the 1977 shares for Appleton, Mead, 3M and Nashua differ slightly from those to which respondents admitted, the ALJ concluded that these data were consistent with respondents' admissions and provide "an adequately reliable picture of the CCP resale market . . ." IDF 49.

⁶⁶ In 1977, these sales were worth approximately \$300 million. IDF 49 n.104, *citing* RX 166.

⁶⁷ IDF 50.

Table 3
Herfindahl-Hirschman Index (HHI) of Concentration in CCP Resale Market⁶⁸

	1975	1976	1977	1978	1979	1980
HHI	3946	4374	4484	4789	4778	4573 [36]

These data do not include the substantial quantities of CCP that Moore Corporation, the world's largest forms printer, produced solely for its own internal consumption. In 1981, Moore produced 105,000 tons of CCP for its own use, making it the second largest domestic CCP manufacturer when both production for resale and captive production are included. Captive production should ordinarily be treated as part of the relevant product market in merger cases when, as the Justice Department has suggested, a "small but significant and non-transitory" price increase is likely to induce vertically integrated firms to increase production of the relevant product, either for outside sales or to increase their own downstream sales.⁶⁹ The record evidence on the issue in this case is mixed. On the one hand, Moore is the only forms manufacturer that has thus far been able to develop an economically viable in-house CCP coating process. IDF 46 and n.97. Moreover, Moore has never sold CCP to forms printers and apparently does not intend to do so. IDF 42, 47. Consistent with these facts, the chairman of Wiggins testified that production for resale and production for in-house use were very different situations, and that he did not consider Moore to be a competitor of Wiggins. IDF 47. On the other hand, Moore's in-house CCP production may nevertheless constrain CCP resale prices to some degree. If buyers from Appleton or other resale manufacturers cannot secure prices that are competitive relative [37] to Moore's internal costs, their downstream sales of business forms in competition with Moore will suffer. We therefore cannot conclude, unlike the ALJ, that Moore's captive CCP production should definitely not be included in the relevant product market. However, it is not necessary to resolve the captive production issue in this case. Even if Moore's internal production were included, and all of the CCP that Appleton produces for Moore were attributed to Moore rather than to Appleton, at the time of the acquisition Appleton still accounted for 48.7 percent of the market; the four-firm concentration ratio was 95.3 percent; and the Herfindahl-Hirschman index was 4336.⁷⁰ [38]

⁶⁸ IDF 51.

⁶⁹ DOJ Guidelines, *supra* note 7, at S-3.

⁷⁰ IDF 50 n.105, citing RX 251 (*in camera*), CX 329B. Record evidence other than the foregoing data does not rebut the *prima facie* inference that the concentration requirement of the actual potential competition doctrine has been satisfied. See IDF 54-60, 63 for a discussion of that evidence. We disagree with one element of the ALJ's analysis, however. The ALJ cites Appleton's high accounting profits relative to those of most of the paper industry as evidence of poor competitive performance. IDF 61. However, accounting profits may diverge quite significantly

(footnote continued)

C. Barriers to Entry

The record evidence indicates that the costs associated with and time required for entry into the United States CCP market are substantial. It is extremely difficult to manufacture CCP, and the ALJ chronicles the consequently limited or completely failed entry efforts of a number of large firms. IDF 36-37, 39-40, 44-46, 74 n.153. The ALJ concluded that developing a viable CCP manufacturing process "requires years of extraordinary effort with no guarantee that at the end of this long lead-time a quality product will be produced at an acceptable cost." IDF 74; see IDF 72. For example, Champion spent an estimated \$8 million-\$10 million on CCP research and development, but could not enter successfully. IDF 79. Required capital expenditures are large in an absolute sense; in 1979, a facility capable of producing 60,000 tons annually (with emulsion plant, coaters, converting equipment, and warehouse facilities, but *without* a base paper facility) would have cost \$50 million to construct. IDF 79. Moreover, because CCP equipment is highly specialized and cannot be converted to other uses economically, much of the investment in such facilities represents a sunk cost. IDF 79. Furthermore, a prospective new entrant into the United States CCP market must develop a distribution system. Because of high inventory costs, some established merchants will not carry more than one brand of CCP, and others will not want to risk alienating Appleton, the dominant firm in the United States market, by switching to another brand or beginning to carry more than one brand. IDF 84. Finally, because developing the process [39] is so difficult, only Mead and Wiggins—firms that have entered into licensing arrangements with NCR and therefore have secured the fruits of NCR's and Appleton's experience, technological capability, and know-how—have been able to develop economically viable CCP manufacturing processes.⁷¹ In 1972, the key NCR patents covering the encapsulation process—in which dyes and solvents are encapsulated for later application to the base paper—expired. IDF 73. Nevertheless, Appleton continued to hold a variety of valid patents on a number of related manufacturing processes, and as some patents expired it obtained new ones. Even though many of these latter patents offered only "dubious protection," they nevertheless continued to

from real economic profits, and their utility for evaluating competitive performance is therefore limited. See, e.g., Fisher and McGowan, *On the Misuse of Accounting Rates of Return to Infer Monopoly Profits*, 73 Amer. Econ. Rev. 82 (1983).

For a discussion of the significance of structural, behavioral, and performance factors in evaluating the state of competition in a given market and the likelihood that a collusive strategy could succeed, see Clark, *Price Fixing Without Collusion: An Antitrust Analysis Of Facilitating Practices After Ethyl Corp.*, 1983 Wis. L. Rev. 887 891-906 (1983).

⁷¹ IDF 10, 69 and n. 138, 86-87, citing Sheehy, Tr. 3561, CX 142J, CX 48D (*in camera*).

inhibit entry into the United States CCP market to some degree. IDF 73.

D. Number of Firms Capable of Entry

As the foregoing discussion suggests, the difficulty of mastering the coating technology and the prospect of running afoul of one or more Appleton patents substantially limited the number of prospective entrants into the United States CCP market at the time of the Appleton acquisition. IDF 86. Respondents argue that a number of paper companies were "as likely" as B.A.T to enter independently at that time. RAB at 55-58. However, among U.S. paper companies, which can of course supply base paper internally, only Mead had successfully entered, and that followed a close seventeen year relationship with Appleton. Several other large paper companies, including Boise Cascade, Champion, and [40] Crown Zellerbach, had been unable to acquire more than very small shares of the U.S. market.⁷² Appleton's two Japanese CCP licensees—Jujo and Mitsubishi—were barred from entering until 1985 at the earliest under the terms of a 1977 licensing agreement. IDF 87. A third manufacturer, Fuji, had a licensing agreement with Mead under which Mead acquired the exclusive right to manufacture and sell CCP in the United States using the Fuji technology, to the exclusion of Fuji.⁷³ European firms were similarly unlikely to enter. In 1977, Wiggins accounted for 45.4 percent of all European sales; its closest competitors accounted for only 6.3 percent and 5.9 percent of European sales respectively, and they were barred from entering the United States because they were Fuji licensees, and hence subject to the Fuji-Mead restrictions. The other European manufacturers were so small that even if they had been able to enter the U.S. market, their entries would probably not have had a very significant competitive effect. IDF 90-91. Finally, there is no evidence that Moore or any other business form printer contemplated entering the U.S. resale market at the time of the acquisition. IDF 92. [41]

E. Competitive Benefits from Independent Entry

The record evidence establishes that if B.A.T had entered the United States CCP market independently, that sort of entry might have substantially improved competition conditions in that market. Despite Wiggins' large share of European CCP sales, the entry of Japanese firms into that market since 1972 has substantially increased price and quality competition.⁷⁴ Appleton recognized that new competition in the United States from abroad would have similar effects in that market; it "would have to be met competitively on quality and

⁷² IDF 86; see Table 1, *supra*.

⁷³ IDF 88. This arrangement apparently also prevented a fourth Japanese firm, Kanzaki, from selling CCP in United States. IDF 89.

⁷⁴ IDF 97; Best, Tr. 2405, 2407-08.

price in the marketplace.”⁷⁵ B.A.T believed that Appleton’s power to impose price leadership and price “stability” on the CCP market would decline if its large market share were eroded by, for example, new entry.⁷⁶ However, we need not determine whether independent entry by Wiggins would have improved competitive conditions—and whether the competitive benefits from that sort of entry would have outweighed the competitive benefits associated with Wiggins’ acquisition of Appleton—because of our conclusion that the record evidence is not sufficient to constitute clear proof that Wiggins would have entered the United States CCP market independently if it had not acquired Appleton. We now discuss the support for that conclusion. [42]

F. *Likelihood That B.A.T Would Have Entered Independently*

Determining whether a respondent would have entered independently absent the acquisition at issue requires an assessment of its financial and managerial capabilities, interests, and incentives. That assessment is complicated in this case because the complaint alleges only that B.A.T was an *actual* potential entrant (not a *perceived* potential entrant) and therefore implies that incumbent firms did *not* perceive B.A.T to be a likely entrant; the record evidence confirms that implication. An effort to establish that B.A.T would have entered the market independently must consequently contradict and overcome the perceptions of the incumbent firms that presumably are the most knowledgeable in the business.

B.A.T arguably possessed the capability to enter the United States CCP market in an alternative fashion, such as by constructing a “greenfield” plant in the United States, or by exporting CCP from Europe. However, a number of obstacles stood in its way. The first obstacle was Wiggins’ licensing arrangement with NCR, under which it was permitted to use certain Appleton CCP technologies. The license gave Wiggins the exclusive right to manufacture CCP in Western Europe, most of the British Commonwealth, and other countries but not in Japan, Canada or the United States. It also gave Wiggins the non-exclusive right to sell CCP worldwide, except in Canada and the United States. RX 12. However, as we note *infra*, in 1976 Wiggins began negotiating to secure an extension of the licensing agreement that would have for the first time permitted it to use [43] Appleton’s patents and knowhow to market resin-based CCP in the United States after June 30, 1980.⁷⁷ Wiggins’ experience under its earlier license,

⁷⁵ CX 100Q; see IDF 96 and n.208.

⁷⁶ IDF 96; RX 16Z-1.

⁷⁷ By 1977 NCR had concluded that it could no longer keep Wiggins out of the United States simply by asserting a patent block of dubious validity, and therefore was apparently willing to permit Wiggins to produce CCP under license in the United States. IDF 76 n.155.

including its familiarity with Appleton's techniques, probably would have helped it to produce resin-based CCP in this country. Although there are some differences between clay-based and resin-based CCP technologies, most of the technological processes are similar, and most experienced CCP firms can switch from clay to resin. IDF 76.

The second obstacle related to patent coverage. Although the key NCR patents covering encapsulation had expired in 1972, Appleton continued to hold a large number of CCP patents, and continually added new ones as old ones expired.⁷⁸ Nevertheless, Wiggins' CCP mentor, Dr. Rance, did not believe that the Appleton patents would be a major deterrent to entry.⁷⁹ Wiggins' "Idem" technology relied upon clay-based reactants to produce CCP, and both Wiggins and Appleton believed that by 1980 Wiggins would be able to produce the Idem brand of CCP in the United States without infringing any NCR patents. IDF 77. In short, Wiggins clearly possessed the technological *capability* to produce Idem in the United States if it had wished to do so. [44]

Securing an assured paper supply represented a third potential obstacle to independent entry by Wiggins. The most secure way to assure such a supply would of course have been to integrate backward into paper production, and that is the course that Wiggins had followed in all of its markets. Long-term supply contracts represented an alternative, however, and the record evidence does suggest "that assured sources of paper are readily available." IDF 83. Of course, as we have noted *infra*, purchasing base paper is considerably more expensive than producing it internally. Establishing a paper merchant distribution system represented a fourth potential difficulty, given the apparent reluctance of many merchants to carry more than one brand of CCP, or to switch to a new brand without a substantial discount. IDF 84. Finally, Wiggins could not have entered independently sooner than two to four years after B.A.T acquired Appleton. Its licensing agreement with Appleton would have expired on June 30, 1980. IDF 94. Wiggins believed that "it would take two to four years to plan and construct a new coating operation."⁸⁰

These five types of obstacles would have made it more difficult for Wiggins to enter the United States CCP market independently. The record evidence nevertheless indicates that Wiggins possessed the financial, technical, and managerial capability to overcome them. B.A.T's substantial financial resources would have been particularly helpful. B.A.T could afford to pay NCR \$300 million for Appleton, and we can therefore [45] assume that it could also have afforded to invest

⁷⁸ IDF 73, quoting CX 343A (a Wiggins planning officer).

⁷⁹ IDF 73 n.151; CX 194E.

⁸⁰ IDF 94 n.205, citing CX 159A (*in camera*), 241H (*in camera*), RX 121Z-45 (*in camera*).

the \$175-\$200 million needed to construct a greenfield coating plant and an integrated base paper production facility, as well as any additional funds needed to set up a distribution system.⁸¹

The record evidence also indicates that B.A.T. was interested in entering the United States CCP market. B.A.T. considered the United States to be a high priority investment area as of 1978, and its investment strategy reflected that view; in 1977, for example, it devoted 32 percent of its total capital expenditures to United States investments, more than in any other country.⁸² B.A.T.'s acquisition of Germaine Monteil, Gimbel Brothers, Saks Fifth Avenue, and Marshall Field, among others, as well as its operation of the Brown & Williamson Tobacco Corporation, certainly suggest that it has had a sustained interest in the United States as an important area for investment. See IDF 4. More parochially, Wiggins considered the United States to be its most likely territory for expansion, because of its large [46] absolute size (it accounts for almost half of the world's CCP tonnage) and its substantial growth potential (greater than other geographic areas).⁸³

The principal difficulty with the foregoing evidence is that it simply establishes that B.A.T. possessed the capability to enter and an interest in entering the United States CCP market. It does not establish that independent entry would have been *sufficiently* attractive to induce B.A.T. to enter the market independently but for its acquisition of Appleton. The Commission must establish that B.A.T. had sufficiently strong economic incentives to enter the United States CCP market independently, rather than through the acquisition of a leading firm, so that if the acquisition had been prevented, it *clearly* would have entered the market in some other fashion.⁸⁴

The record evidence does not satisfy this burden. At the time of the Appleton acquisition the United States CCP market was profitable; it consisted of a limited number of competitors insulated by substantial entry costs; it was growing relatively rapidly; and Wiggins had both the interest and the capability needed to enter. However, the crux of this case amounts to whether Wiggins would have found it profitable to enter independently, and planned to do so. General circumstantial evidence, including in particular non-public documentary evidence not prepared in contemplation of litigation, provides the best [47] picture of whether an acquiring firm would have entered indepen-

⁸¹ IDF 80, 81 113; see CPF 194 (*in camera*); CX 2061. B.A.T. argues that the prospect of in-house coating by forms printers discouraged independent entry, but one would expect that prospect to discourage a \$300 million investment to purchase Appleton to an even greater degree. IDF 81. Moreover, both B.A.T. and Appleton believed that scale considerations and development costs would confine in-house coating to Moore, and knew that Moore had historically produced OTC rather than CCP for its business forms. IDF 81.

⁸² IDF 64; Sheehy, Tr. 3465-67; CX 49C.

⁸³ IDF 65-67; CX 45C; CX 128A; CX 257Z-62; CX 192F.

⁸⁴ *Grand Union Co.*, 122,050 at 22,715.

dently but for its acquisition. As complaint counsel correctly point out, financial model evidence prepared in contemplation of litigation ordinarily should be relied upon only to corroborate or dispute conclusions drawn from that sort of more general evidence. CAB at 18-22. We will discuss both types of record evidence in the following sections.

1. Independent Entry by Exporting CCP from Europe

The record evidence indicates that exporting CCP from the United Kingdom to the United States would not have been economically feasible, and complaint counsel have now abandoned that argument. IDF 124 and n. 323; *see* 324-33. It is not clear that Wiggins' clay-based Idem could have been manufactured and sold in the United States in a cost-effective fashion. Although Idem is apparently a better quality CCP than Appleton's resin-based CCP, and is "less vulnerable to attacks on toxicological, ecological, and environmental grounds," it is more expensive than Appleton's CCP because of higher production costs.⁸⁵ Wiggins had therefore concluded that the North American market was not available to W.T. exports (RX 79; CX 54A), and complaint counsel's expert conceded that entry into the United States market with Idem, as it is formulated in the United Kingdom, would not have been competitive. IDF 78; Horowitz, Tr. 1607-08. [48]

2. Independent Entry by Securing A Nonexclusive License from NCR

The only completely independent alternative to exporting Idem that is discussed in the record would have been to set up production facilities in the United States, under license from NCR.⁸⁶ However, a "greenfield" entry effort of that sort would have been inconsistent with B.A.T.'s corporate policy to prefer the "flying start" from acquiring firms "with a quality position in the [target] market" to greenfields investments.⁸⁷ In the 1970s, B.A.T.'s new investments in the United States all involved the acquisition of "industry leader[s]." Sheehy, Tr. 3517-18. Moreover, B.A.T. ordinarily required new Wiggins operations to reach or maintain a significant market share within five years after entry, and even complaint counsel's models projected a share from *de novo* entry no greater than 6.7 percent

⁸⁵ IDF 78. Wiggins' European CCP prices have consistently exceeded United States CCP prices by 25%-40%. RPF 14. During the trial, complaint counsel acknowledged that B.A.T.'s product "is apparently not the product that U.S. buyers are willing to pay more money for . . ." Newborn, Tr. 6895-96; IDF 78 n.164.

⁸⁶ There is some question whether entry under license should be characterized as independent entry, because terms of the license can importantly affect the competitive significance of the licensee. One might in fact argue that such an entry effort will ordinarily not produce the prospective procompetitive effects that the actual potential competition doctrine requires, because the licensor could make the royalty charges high enough to prevent the entrant from offering lower prices than incumbent firms.

RX 60A, 60F; RPF 265-68; RRF 162-65; Sheehy, Tr. 3495-96, 3512-13.

during the first five years, and never greater than 9 percent.⁸⁸

The record evidence concerning B.A.T's internal calculations confirms the validity of these conclusions. The respondents argue that [49]

B.A.T did not draw up plans to enter, did not conduct surveys of the market in anticipation of entry, [and did not] budget even a shilling to consider entry.

RAB at 42; *accord*, RPF 242-51. Complaint counsel admit that B.A.T did not produce any "comprehensive written plan to enter the U.S. market" prior to its acquisition of Appleton. CRF 197. It is true that in 1976 and 1977 Wiggins and NCR discussed an extension of their licensing agreement—due to expire in 1980—that would have permitted Wiggins to sell CCP produced under license from NCR in the United States.⁸⁹ In September, 1977 Wiggins formally proposed a five-year extension under which it would have been able to manufacture and sell CCP in the United States after June 30, 1980. In response, NCR offered to license Wiggins nonexclusively to produce and sell CCP worldwide, in exchange for a royalty equal to one percent of sales.⁹⁰ However, Wiggins did not agree to these terms, but instead offered to pay a royalty equal to one-half of one percent of sales in exchange for the license. At the same time, Wiggins became aware that Appleton might be available for acquisition, and the licensing negotiations therefore ended before a final agreement had been reached.⁹¹ [50]

As we noted above, the best evidence of B.A.T's intention to enter independently would be internal, concrete capital investment plans that both were *not* prepared in contemplation of litigation and were *not* available to incumbent firms. However, the ALJ concluded that no contemporaneous documents from respondents' files indicated that B.A.T had in fact concluded that independent entry would have been attractive. ID at 120-21, 125-26. The only real evidence from internal documents relates to the licensing negotiations, which could be characterized as an affirmative step toward entry. IDF 70. However, a variety of additional obstacles, described more fully in the discussion of the financial models *infra*, suggest that that sort of independent entry would have been unlikely.

The absence of internal, non-public, and contemporaneous documentary evidence that B.A.T intended to enter independently com-

⁸⁸ IDF 112; CX 260; RPF 272.

⁸⁹ IDF 70; CX 114B; Best, Tr. 2697.

⁹⁰ CX 114; CX 117; CX 120.

⁹¹ IDF 70. One reason that negotiations ended may have been the fact that B.A.T's lawyers advised that further negotiations would undercut B.A.T's argument that it could practicably enter only via acquisition. See IDF 70; CX47H. However, the fact that B.A.T decided to purchase Appleton certainly obviated, in any event, further discussions of licensing arrangements.

pare favorably with the testimony of witnesses representing downstream form printers (SCM, Burroughs, and Uarco, among others) and competing firms (Mead, 3M, and NCR) that independent entry by B.A.T into the United States CCP market, to compete with strongly entrenched incumbents like Appleton and Mead, would not have made any economic sense.⁹² In short, the "non-model" [51] evidence in the record simply does not provide clear proof that Wiggins would have entered independently but for its acquisition of Appleton.

The financial model evidence does not contradict this conclusion. Complaint counsel have presented a number of financial studies that purport to show that independent entry pursuant to a license from Appleton for its resin-based CCP technology would have been profitable, while respondents have presented other studies that purport to show that it would not have been profitable. As we have already indicated, studies of this sort that are prepared for or in contemplation of litigation will ordinarily be useful only to corroborate or refute the conclusions to be drawn from contemporaneous internal studies.

We will begin by determining whether the studies proffered by complaint counsel suggest that independent entry by Wiggins would have been profitable. The principal study (CX 260), prepared by Dr. Ira Horowitz, assumes that Wiggins would have entered the United States market by constructing a United States facility to produce resin-based CCP (with production to begin in 1981), would have paid Appleton a one-percent royalty for the use of its resin-based technology, would *not* have integrated backward into base paper production, and would have sold CCP at a 3 percent discount that incumbent firms would *not* have matched and that would have been sufficient to sustain an annual rate of growth, once established, of 15 percent. With these assumptions, Horowitz calculated the present value of all expected net cash receipts from *de novo* entry of this sort, discounted by the [52] marginal cost of capital, and from that calculated B.A.T's rate of return from such an investment. IDF 102. Horowitz determined that B.A.T would have earned an internal rate of return of 14 percent if it had financed the entire investment with internal funds ("without debt"), and an internal rate of return of 17.9 percent if it had financed 38.5 percent of the investment through borrowing at an annual interest rate of ten percent ("with debt").⁹³ This result assumes a manufacturing cost of \$875/ton, "other expenses" of 12.5 percent of net

⁹² P. Smith (Mead forms paper division president), Tr. 1031; Roth (SCM forms printing division president), Tr. 1760-61; Reeves (Standard Register Co. forms printer), Tr. 816-17; Ramey (3M CCP operations manager), Tr. 3849-53; Hummell (Burroughs), Tr. 3994-98; Mustari (Uarco), Tr. 4398; Shade (Shade Information Systems), Tr. 4087-93; Eichner (Reynolds & Reynolds), Tr. 4268-69.

⁹³ B.A.T ordinarily determined the relative desirability of investments without considering financing techniques. The "without debt" return figures are therefore more probative with respect to divining its investment intentions.

revenue, and a selling price of \$1232/ton.⁹⁴ If the manufacturing cost had been raised to \$975/ton (to account for additional costs attributable to nonintegration into base paper production) (*see* note 101 *infra*), and all the other assumptions had been retained, then Horowitz' calculated rate of return would have fallen to 7.8 percent (without debt). IDF 103 n.224.

These estimates are highly sensitive to a number of factors. For example, Horowitz estimated that Wiggins' manufacturing costs in the United States would be \$875 per ton, approximately the same as Appleton's costs, despite the fact that Appleton has an integrated base paper source that Wiggins would [53] not have had, and purchasing paper is more expensive than manufacturing it.⁹⁵ Although adding a base paper production machine would dramatically increase the cost of *de novo* entry (by \$125 million-\$150 million, assuming a CCP volume of 67,000 tons), most industry members testified that non-integrated entry would not be economically feasible.⁹⁶ Wiggins officials apparently believed that their European CCP success was directly related to the integrated nature of their operation, and there is no evidence that Wiggins "investigated the profitability of non-integrated entry." IDF 105. In its 1975-76 analyses, International Paper similarly concluded that "non-integrated CCP facilities could not be cost-competitive," citing cost advantages associated with lower base stock, handling, and packaging costs, and revenues from waste products.⁹⁷ Nashua and 3M both felt that their lack of profitability was largely attributable to their lack of integration into base paper production. Mead believed [54] that integration into base paper production was essential to reduce costs and provide better quality control. IDF 105. Horowitz justified his comparable costs assumption by arguing that advantages associated with technologically advanced coating processes (which he assumed that Wiggins as a new entrant would possess) would completely offset the advantages of full integration. IDF 106. However, the ALJ noted that Appleton itself was highly efficient, largely because it could coat on its own paper machines; that it had just recently constructed the most modern CCP plant in the

⁹⁴ IDF 103. The selling price was calculated by subtracting a 3 percent discount from Appleton's selling price of \$1270 per ton. *Id.* Dr. Horowitz assumed that if B.A.T. offered such a discount, it might be able to acquire market share; however, the ALJ considered it unlikely that a 3 percent discount would suffice. IDF 116.

⁹⁵ IDF 105. The \$875 cost figure represents 69 percent of the selling price of \$1270, a rough approximation of Appleton's manufacturing costs, which ranged from 65.3 percent of price in 1973 to 73.5 percent of price in 1980. IDF 105, *citing* Horowitz, Tr. 1433, 1441-43, 1446, 1471-77, 1490-91, 1498-99. Horowitz also assumed that Appleton's integration advantage would be offset by Wiggins' presumed use of "state-of-the-art technology" in its United States coating operation.

⁹⁶ IDF 105 and n.230. Respondent's evidence indicates that adding the cost of a paper machine to the Horowitz model, with its assumed annual CCP volume of 67,000 tons, results in steady losses. The ALJ suggests that twice that volume would have to be taken from Appleton and Mead to produce an adequate return on investment in a new integrated operation. IDF 105 n.230.

⁹⁷ IDF 105. For example, significant savings can be achieved if base paper can be coated while it is still on the paper-making machine, an option not available to a non-integrated producer. IDF 106.

world; and that the record did not provide a basis for presuming, as Horowitz did, that Wiggins as an independent entrant would have been sufficiently more efficient than Appleton to offset Appleton's integration advantage. IDF 106 and n.246.

The assumptions that Wiggins could have secured customers by offering prices only 3 percent below those offered by incumbent firms, and that incumbent firms would not have lowered their prices to prevent customer defections, also seem implausible. Joseph Ramey, a group vice-president at Mead, testified that Mead had had to offer a 20 percent discount to secure a significant share of the United States CCP market.⁹⁸ The ALJ considered it unlikely either that Wiggins could secure any appreciable volume on the basis of a 3 percent discount or that Appleton and Mead would permit any significant erosion in their market shares [55] through unanswered price reductions.⁹⁹ In addition, it seems unlikely that Appleton, as Wiggins' licensor, would enthusiastically facilitate the entry of a prospectively substantial competitor into its most lucrative CCP market. The weakness of these assumptions severely limits the utility of the Horowitz financial models.

To address the Horowitz model, respondents relied upon Mr. Robert Heitpas, Appleton's assistant controller, to prepare models based upon somewhat different assumptions. IDF 102. In particular, Heitpas assumed that if Wiggins were not integrated, it would suffer from the same base paper purchasing disadvantage that confronted Appleton's non-integrated facilities.¹⁰⁰ Heitpas estimated that that penalty ranged from \$113.50 per ton to \$151.37 per ton.¹⁰¹ With all other factors used by Horowitz held constant, these corrections produced internal rate of return [56] estimates of 5.5 percent and 2.3 percent respectively (without debt) and internal rate of return estimates of 5.8 percent and 0.7 percent respectively (with debt).¹⁰²

In response to Heitpas' efforts, complaint counsel relied upon modifications in the Horowitz models prepared by David Painter, chief supervising accountant in the Commission's Bureau of Competition. Painter relied upon Appleton's actual 1977 costs (\$902 per ton), added to that a \$72.34 per ton base paper penalty,¹⁰³ and subtracted

⁹⁸ Ramey, Tr. 3835, 3853.

⁹⁹ IDF 116, citing Horowitz, Tr. 1470, 1506, 1586-87 and Kershaw, Tr. 1320.

¹⁰⁰ Appleton produces about 70 percent of its base paper needs internally. IDF 107.

¹⁰¹ The first penalty estimate—\$113.50 per ton—represents the actual cost advantage of the integrated Appleton, Wisconsin plant in 1977. To apply that figure to a 1981 entry, Heitpas adjusted it to account for inflation and for Appleton's level of integration. IDF 107. The second penalty estimate—\$151.37 per ton—represents the cost advantage projected for an expansion of Appleton's Harrisburg, Pennsylvania plant, adjusted to reflect Appleton's anticipated level of integration. IDF 107 and n.249.

¹⁰² IDF 103. Respondents also proffered a number of models prepared by Vera Elliott, a recently retired Wiggins planning officer. IDF 102. The ALJ concluded that these models were unreliable. IDF 119. In light of the conclusions we draw from the Painter models, we need not evaluate the Elliott models.

¹⁰³ This figure was derived by adjusting an \$85 per ton estimate of the base paper penalty downward to account for inflation and Appleton's overall integration level of 70 percent in 1977. IDF 108. The ALJ criticized the \$85

three percentage points from the "other expenses" category to account for Appleton's base paper production expenses.¹⁰⁴ With Painter's modifications and with all other factors held constant, the Horowitz model produces internal rate of return estimates of 10.2 percent (without debt) and 12.6 percent (with debt). IDF 103. [57]

The extreme sensitivity of the foregoing internal rate of return estimates to even small changes in their underlying assumptions illustrates why models of this sort should be used primarily to corroborate or dispute conclusions based upon internal analyses not prepared in contemplation of litigation. However, the models themselves do not in any event establish that Wiggins would have entered independently but for its acquisition of Appleton. The rates of return produced by the original Horowitz model are not plausible because they assume (1) that Wiggins would have entered on a non-integrated basis, without accounting for the apparently substantial penalties (in the form of higher base paper costs) associated with non-integrated production; and (2) that Wiggins would have been able to secure customers—sufficient, once established, to sustain a 15 percent annual growth rate—by offering only a 3 percent discount without provoking retaliatory price reductions by Appleton and Mead sufficient to prevent any significant shift in market shares. The Painter model provides somewhat more credible internal rate of return estimates because it does account for non-integration penalties, although its assumed value for those penalties is not as well grounded in Appleton's actual experience as the Heitpas penalty estimates. However, it relies upon the unsupported assumption that Wiggins would have saved 3 percent of net revenues in "other expenses" by virtue of *not* integrating backward into base paper production. If "other expenses" were instead held at 12.5 percent, Painter's model might have projected a rate of return as low as 8.5 percent (without [58] debt).¹⁰⁵ Moreover, the Painter model assumes, like the Horowitz model, that Wiggins could capture market share by selling CCP at a price 3 percent lower than Appleton's price. The ALJ found this assumption to be "doubtful," and the record evidence suggests that a 10 percent to 20 percent discount would be required to induce customers to switch from an established firm to a new entrant. IDF 116; RPF 369–76, 380.

figure as a "rough estimate undefended by Painter as a witness . . ." that was contradicted by the \$113.50 and higher estimates in respondents' business records. IDF 109. For a thorough discussion of how the base paper penalty should be calculated, see IDF 109.

¹⁰⁴ IDF 108. The ALJ criticized Painter's reduction in the "other expenses" percentage from 12.5 percent to 9.5 percent, characterizing the view that the predicted savings would approach 3 percent of net revenue as "sheer conjecture." IDF 110. The "other expenses" category included, in Appleton's case, "freight, shipping, finished good warehousing, operations services, marketing, [research and development], finance, and the expenses of the president's office." IDF 110.

¹⁰⁵ See CAB at A-1, ¶II.(b). This assumes that the reduction in the 10.9 percent rate of return projected in (without debt) would be three times as great as the 0.8 percent reduction a percentage point increase in "other expenses" would produce.

Increasing the discount to 10 percent would reduce the Painter model rate of return projection (without debt) to less than 5 percent. RAB at 30.

Furthermore, even if Painter's model is accepted as valid, there is little reason to believe that the rates of return it estimates would have induced Wiggins to enter independently. Wiggins acquired Appleton "on the basis of an estimated discounted cash flow" (without debt) of 10.5 percent over fifteen years. IDF 118. The Painter model provides an internal rate of return (without debt) of only 10.2 percent. As the ALJ points out, while 10.5 percent may be a sufficient rate of return to warrant

acquiring a relatively risk-free, profitable, and dominant firm, there is no evidence that it is equally attractive for a greenfield venture involving considerable uncertainty. [59]

IDF 118 (citations omitted). B.A.T itself has in the past required a rate of return of at least 15 percent to justify "a greenfield investment in the paper industry."¹⁰⁶ The 10 percent rate of return which the Painter model identifies is actually more consistent with the sort of economic equilibrium that perceived potential entry can create. Of course, the complaint does not allege that B.A.T was a perceived potential entrant, and complaint counsel were therefore foreclosed from pursuing that line of inquiry.

3. Other Forms of Independent Entry

Complaint counsel argue that Wiggins could have entered by establishing a joint venture with another firm. Wiggins apparently did consider setting up a joint venture with International Paper in 1976, but it ultimately rejected the idea, and there is no evidence to establish that such a venture would have been profitable or feasible. IDF 121. As the ALJ points out, since a horizontal joint venture would presumably entail the same sort of investment in new plant and equipment as *de novo* entry, it is unlikely that it would have been any more profitable than *de novo* entry by Wiggins alone. IDF 121. Complaint counsel have also suggested that Wiggins could have entered by licensing its technology to an existing firm. However, if it were licensed to an incumbent firm, it is difficult to see why that would improve competitive conditions. If, alternatively, it were licensed to a new firm, that firm would probably confront even more *de novo* entry problems than Wiggins itself. Finally, there is no evidence that Wiggins considered entering the United States CCP market by making a toehold acquisition of the CCP components of firms such as

¹⁰⁶ IDF 118, citing RX 758H. For example, B.A.T rejected a proposal to convert one of its United Kingdom paper to other paper products—a far less risky venture than *de novo* entry—because it did not project an IRR of 15 percent. RX 758; RPF 430.

Nashua, 3M, or Boise. IDF 122. The CCP businesses of Nashua and 3M are not integrated into base paper production, so that if Wiggins had acquired either firm, it would have confronted the same non-integration and inefficient technology problems that both firms confront. IDF 122 and n. 318.

IV. CONCLUSION

Complaint counsel have failed to demonstrate that B.A.T was an actual potential entrant into the United States CCP market. The Commission has therefore determined to dismiss the complaint in this matter in all respects.

COMMISSIONER PATRICIA P. BAILEY, CONCURRING IN
B.A.T INDUSTRIES, LTD. AND APPLETON PAPERS, INC.

Is there the opposite of a Pyrrhic victory? If so, it would describe this case, where the Commission's litigation unit has lost the battle but won the war—for the business community as well as themselves. *B.A.T* was intended as a test case to see if purely objective evidence could establish liability under the actual potential entrant theory. The answer today is that it cannot. Despite a well-litigated case which presented us with as extensive and in-depth an economic record as we are likely to see, the inherent limitations of economic evidence mean that, standing alone, it cannot meet a "clear proof" (or, in my opinion, even a "reasonable probability") standard. Financial models of expected profitability are a complicated web of interrelated assumptions. They can be a useful business planning tool but were never designed to withstand the scrutiny of normal judicial process, which is concerned with demonstrable facts. Models are highly vulnerable to litigation challenge where doubts raised about even one part can invalidate the whole. The clear trend among the courts, which this Commission today joins, is reluctant to undo business transactions on the basis of speculation.

In practice this means that, at the Commission at least, actual potential competition theory is dead. Only "concrete plans" will carry the day, but the more anticompetitive an acquisition is, the less a company is likely to create—or preserve—documents assessing expected returns on other, more legitimate, means of entry. Thus, only those entities who ignore the wisdom of some well known sages¹ need fear the toils of the actual potential competition net. But on the whole this is preferable to wasting resources trying to prove chalkboard speculations. Both our staff and the business community should welcome the certainty this opinion brings.

¹ See no Evil, Hear no Evil, and especially Speak and Write no Evil.

FINAL ORDER

This matter has been heard by the Commission upon the appeal of complaint counsel from the initial decision and upon briefs and oral argument in support of and in opposition to the appeal. For the reasons stated in the accompanying Opinion, the Commission has determined to affirm the initial decision. Complaint counsel's appeal is denied. Accordingly,

It is ordered, That the complaint be, and it hereby is, dismissed. Commissioner Azcuenaga did not participate.

IN THE MATTER OF
INTERNATIONAL HARVESTER COMPANY

FINAL ORDER, OPINION, ETC. IN REGARD TO VIOLATION OF SEC. 5 OF
THE FEDERAL TRADE COMMISSION ACT

Docket 9147. Complaint, Oct. 10, 1980—Final Order Dec. 21, 1984

This Order affirms in part and reverses in part the 1982 Initial Decision of the Administrative Law Judge ("ALJ") and orders that it be adopted as the "Findings of Fact and Conclusions of Law of the Commission, except as is inconsistent with the accompanying Opinion." The ALJ had ruled that a Chicago, Ill. manufacturer of farm machinery had violated Sec. 5 of the FTCA by failing to adequately disclose to consumers that its gasoline-powered tractors were subject to a safety hazard known as "fuel geysering," even though the company knew of the potential danger. While the Commission agreed that the company's failure to disclose the safety risk constituted an unfair trade practice, it ruled that, contrary to the ALJ's finding, the practice could not, as a matter of law, be considered deceptive since there was no representation, practice or omission likely to mislead consumers found in this case. Although the Commission ruled that the manufacturer has violated the FTCA, it upheld the ALJ's decision not to order further remedial action because the company no longer manufactures gasoline-powered tractors and because the company's 1980 voluntary notification program had already provided as much relief as could be expected from a Commission order.

Appearances

For the Commission: *Richard H. Gateley, Michael Milgrom, Rosemary Rosso, Michael L. Sirota and Cynthia E. Smith.*

For the respondent: *James R. Fruchterman*, in-house counsel, Chicago, Ill. and *J. Alan Galbraith, Aubrey M. Daniel, III, William E. McDaniels, Carolyn H. Williams and Michael S. Sundermeyer, Williams & Connolly*, Wash., D.C.

COMPLAINT

The Federal Trade Commission, having reason to believe that International Harvester Company, respondent, has violated the Federal Trade Commission Act, and it appearing to the Commission that a proceeding by it in respect thereof would be in the public interest, issues this complaint.

1. Respondent is a Delaware corporation with its executive offices at 401 North Michigan Avenue, Chicago, Illinois.
2. Respondent is now, and has been, engaged in the design, manu-