GEORGETOWN UNIVERSITY LAW CENTER
EXAMINATION IN MERGER ANTITRUST LAW
TAKE HOME EXAM
(5 HOURS)

Professor Dale Collins — Date Exam Opens: Monday, December 7, 2020, at 8:30 am.
Date Exam Closes: Thursday, December 17, 2019, by 6:30 pm.

INSTRUCTIONS:

1. This is a TAKE HOME mode exam.
2. This five (5) hour exam will be available beginning at 8:30 am on Monday, December 7, 2020, and must be submitted five (5) hours after it is downloaded but no later than 6:30 pm on Thursday, December 17, 2020. The exam must be downloaded and submitted via www.exam4.com. Do **not** use the Exam4 software to type and submit your answers. **Write your answers to both questions as a *single* Word document**. When you are ready to submit your exam, you will upload the document via the www.exam4.com website where you downloaded the exam.
3. This exam is final. No clarifications or corrections will be provided. If you believe there is an error, inconsistency, or omission in the exam, please state your assumptions about the issue within your discussion of that issue. Once an examination is submitted for grading, no amendments or supplements will be permitted or accepted.
4. Exams at the Law Center are graded on an anonymous basis. The Student Disciplinary Code provides that the "unauthorized breach of anonymity in connection with a blind-graded examination" is a disciplinary violation. Therefore, be sure that you do not reveal your identity as the author of an examination in your answers themselves, in any communications with the professor, or otherwise discuss the substance of the exam with your professor(s) or with any other student from the time the exam is first administered until after grades are published.
5. You may consult any written source, including the reading materials, class notes, cases, outlines (commercial or otherwise), books, treatises, the Internet, Westlaw, and Lexis-Nexis. You may use Ctrl-F or search engines on your computer. Citations to cases or other primary sources are not required or particularly desired, although you may find reference to a case that we covered helpful at times to make your analysis more compelling or to shorten the exposition. Citations to secondary sources will *not* be helpful or appreciated. You may use calculators or spreadsheets as well as any spreadsheet templates you have prepared in advance.
6. As we discussed in class, you may cut and paste short passages ***from materials you have created*** to introduce a concept, a rule of law, a legal principle, or an economic proposition or formula. You may include quotes from cases in the materials you create for this purpose, but if you do so prepare the quote and cite the case (in proper Blue Book form) as you would in a brief. You are prohibited from copying/cutting and pasting any other prewritten text (written prior to starting your exam) into your take-home exam responses, regardless of who authored the text.

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7. Students who elect to print out take-home exam questions must destroy all exam documents after they have submitted their exam responses.
8. This exam consists of two questions. Each question presents a hypothetical fact situation that you are asked to analyze from a particular perspective (e.g., a special assistant to the Assistant Attorney General making a recommendation on the disposition of an investigation, a private practitioner providing advice on the antitrust risks and likely outcome of a proposed transaction, a law clerk preparing an initial analysis of the application of the law to the evidence for a judge). Be sure that you write from the assigned perspective *and* answer the question(s) asked.
9. Each question will be weighted equally for grading purposes. Grading will be on the quality of the substance and organization of the analysis and not on the particular conclusion you reach. Ideally, your answer to each question will persuade me that you have correctly identified the issues, properly analyzed them in the context of the prevailing legal standards, and advised a sensible course of action. I have no doubt that some of you will persuade me to go one way on a question, while others of you will equally persuade me to go a different direction on the same question.
10. Present your analysis in a well-organized, linear, and concise manner. Think about your answers before writing. *Remember Pascal's apology*: "I am sorry that this was such a long letter, but I did not have the time to write you a short one." Clarity of thinking and exposition are much more important than throwing in the kitchen sink. Penalties will be levied for excessive length, verbosity, or lack of organization.
11. If asked to write a memorandum in any capacity, you may start the answer with the first sentence of the memorandum. There is no need to include a privilege legend, "To" and "From" lines, or a subject line. Also, you may refer to tables by table number in your answer.
12. If you are asked to write a memorandum as an attorney in a law firm at a confidential phase of the transaction, it is *not* necessary or desirable to use code names for the transaction or the parties. This is an exception to the usual rules of practice.
13. You should assume that federal subject matter jurisdiction exists and that it is unnecessary to address any jurisdictional questions in your answers. Also, in the areas of interest all demand curves are linear and all marginal costs are constant.
14. It should go without saying that, outside of this examination, you should not believe everything (or anything) in the statement of any hypothetical fact situation. I have taken considerable liberties in fashioning the problems and have totally ignored reality whenever it was convenient. It will be in your best interest to unlearn the "facts" in the questions as soon as possible after you finish the examination.
15. The hypothetical facts should be complete in the sense that they present what is known at the time the analysis is requested. As in life, some information you would like to have may simply not be available. Analyze the facts as they are presented in the question.
16. Since this is an examination, I will not hold out hope that you find it enjoyable, but I do hope that you find it intellectually stimulating. I have sought to make the questions challenging, but you should be well-prepared to tackle them.

This exam consists of fourteen (14) pages, including these three (3) cover pages. Please be sure your exam is complete.

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Please be sure that you use your exam number (not your student ID number or social security number).

HONOR STATEMENT

BY SUBMITTING THIS EXAM THROUGH EXAM4, I AFFIRM ON MY HONOR THAT I AM AWARE OF THE STUDENT DISCIPLINARY CODE, AND (I) HAVE NOT GIVEN NOR RECEIVED ANY UNAUTHORIZED AID TO/FROM ANY PERSON OR PERSONS, (II) HAVE NOT USED ANY UNAUTHORIZED MATERIALS IN COMPLETING MY ANSWERS TO THIS TAKE-HOME EXAMINATION, AND (III) HAVE NOT WORKED MORE THAN FOUR (4) HOURS ON THIS EXAM.

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Vector-Based Illustration Software Merger

You are a junior trial attorney in the Mergers II Division of the Federal Trade Commission. The staff is nearing the end of preliminary investigation under the HSR Act of Corel Corporation's pending acquisition of Serif (Europe) Ltd. for possible anticompetitive effects in vector-based illustration software, which both companies develop and sell. Corel's product is CorelDraw and Serif's product is Affinity Designer. Thurman Arnold, Jr., your assistant director, has asked you to write a memorandum, based on the facts the staff has gathered to date, assessing the strength of a possible Section 7 claim against the transaction. In particular, Arnold would like you to (1) analyze each of the elements of a Section 7 prima facie case, and (2) anticipate and respond to any defenses the parties are likely to raise. For each element of the prima facie case and for each defense, Arnold would also like you to identify the types of evidence the staff should be seeking to develop in a second request investigation in order to prepare for litigation in the event that the staff decides at the end of the investigation to recommend to the Commission that it authorize a challenge to the deal. Arnold wants you to focus on the merits of the Section 7 claim; it is not necessary for you to address the requirements for preliminary or permanent injunction relief.

These are the facts that the staff has developed so far from the preliminary investigation:

Vector-based illustration software allows users to compose and edit vector graphics images interactively on a computer and save them in one of many popular vector graphics formats, such as EPS, PDF, WMF, or SVG. Objects in a vector image might consist of lines, curves, and shapes with editable attributes such as color, fill, and outline. Illustration software is used by professional graphics designers and hobbyists for creating sharp-edged artistic two-dimensional illustrations such as logos, icons, drawings, typography, and complex drawings for use in print, phone, tablet, and computer applications. These programs use mathematical formulas to draw lines and curves that can be combined to create an image from geometric objects such as circles and polygons. Vector images are then edited by manipulating the lines and curves that make up the image. Popular vector graphics programs include Adobe Illustrator, CorelDraw, Sketch, Affinity Designer, and Inkscape.

Not all illustration programs are vector based. Some programs, called commonly called paint or photo editing programs, use bitmapping. Bitmap images are stored as a series of tiny dots called pixels and saved in common formats such as GIF, JPG, PNG, TIFF, and PSD. Each pixel is a very small square that is assigned a color and then arranged in a pattern to form the image. Popular bitmap programs include Microsoft Paint, Adobe Photoshop, Corel Photo-Paint, Corel Paint Shop Pro, and GIMP.

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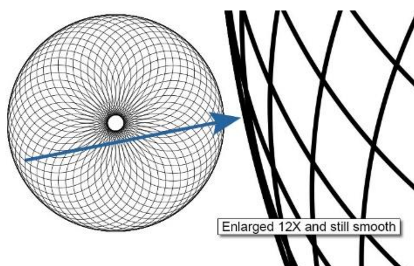
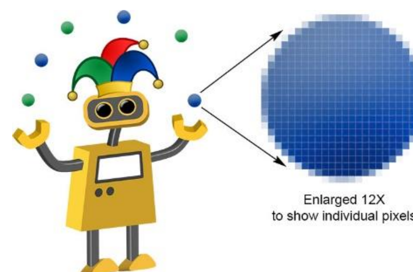


Vector-based image



Bitmap image

1

In interviews with the staff, graphics designers say that vector-based programs are not functionally substitutable with bitmap programs. Bitmap formats are best for images that need to have a wide range of color gradations, such as most photographs, which vector-based cannot handle easily. On the other hand, vector graphics are more scalable than bitmap images, and so can be resized easily without losing image quality, whereas bitmap images rapidly lose resolution as they are enlarged. That said, vector graphics are often converted to bitmap images to make sharable final products. Every picture you see on your phone, tablet, or computer, for example, is a bitmap, even if it was created using a vector-based program. Graphics designer need both types of programs in their work.

Vector-based illustration programs vary considerably in features, ease of use, price, rendering speed, the introduction of new features and functionality in annual updates, customer and community support, and third-party libraries of templates and other add-ins. Users choose their programs in light of their employer's requirements (if any) and the user's demand for features and functionality, ease of use, and price. Illustration program companies compete with one another on these dimensions as well as the additional features they create and add to their programs every year. The staff has learned that continuous product development is an important part of competition and that companies in the past that have not have not kept pace with their rivals in introducing new functionalities rapidly lose market share. Each manufacturer sells its programs either in shrink-wrapped retail boxes or downloaded over the Internet throughout the country at the same price and appears to adopt marketing and product development strategies directed to the nation as a whole. Most sales of these programs are in single units, although some professional graphics designer shops may order up to 50 or 60 units, depending on the number of designers they employ.

The "gold standard" of vector-based illustration programs is Adobe's Illustrator. Launched in 1987, Illustrator was originally designed for the Apple Macintosh. Adobe launched a Windows version in 1989. Illustrator is now in its 25th generation and is the program of choice of professional graphics designers, especially those of are employed in graphics design departments and working in teams. It has the most features and is the best program for drawing complex illustrations with fine and accurate detail in both shapes and colors. It is also the most expensive program and has the steepest learning curve. Illustrator can only be purchased on an annual subscription basis of $240 per year.

Corel's CorelDraw is the second most functional program, although many professional graphics designers find it suitable for their work. Launched in 1989 to run under Windows, CorelDraw is now in its 22d generation. CorelDraw largely yielded the MacOS space to Illustrator until 2019, when it launched a MacOS version. CorelDraw is easier to use than Illustrator and has a large user base in the professional graphics designer community, especially among those design on PCs. CorelDraw is available as a stand-alone program for $239 with optional annual upgrades available for a smaller additional fee. Although the first-year cost of CorelDraw is similar to that of Illustrator, it is much less expensive over several years since CorelDraw does not require annual subscription fees and the program continues to work without most updates (except those related to the program's compatibility with major changes in the computer's operating system).

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Sketch B.V. is a Netherlands company that offers the eponymous vector-based Sketch. It was first released in 2010 and won an Apple Design Award in 2012. With an intuitive interface and a low learning curve, Sketch has similar design functionality to CorelDraw. Sketch is designed primarily for creating illustrations for websites and mobile apps and does not include print design features. It is available only for the MacOS, although third-party programs will allow viewing and basic editing of Sketch-formatted output on PCs. Sketch is available for $99 with optional annual updates for $79.

Serif's Affinity Designer was launched in 2014 to compete with Illustrator and CorelDraw with an aggressively low price of $50, a functionality rapidly approaching that of CorelDraw, and active development program to create new features. While to date established users of Illustrator and CorelDraw have not switched in large numbers to Affinity Designer, the program is rapidly gaining acceptance by users—including professional designers—who are just starting in graphics design. Prior to acquisition discussions with Corel, Serif's business plan was to continue to significantly increase the functionality of the program every year. While the plan called for small increases the price consistent with the program's increasing functionality and value, Serif remained committed to aggressive pricing as a means of attracting new users and increasing its acceptance in the professional graphics designer community. The overall development plan was for Affinity Designer to keep pace as its user base becomes more experienced and demands more functionality in order to discourage them from switching to Illustrator or CorelDraw later in their careers. Affinity Designer was a winner of the 2015 Apple Design Award and was named "Application Creator of the Year" at the 2018 Windows Developer Awards.

Inkscape, launched in 2003, is a free, open source vector-based illustration program. While it contains professional-level features, has robust community support, and a helpful website, it suffers from a steep learning curve, an unwieldy interface, weak text formatting tools, and poor interoperability with the more standard illustration programs. The program appeals primarily to novices and hobbyists; few professional graphics designers use the program.

Finally, the staff has heard rumors in the industry that Microsoft is thinking about developing a standalone vector-based illustration program that it would work seamlessly with the programs in the Microsoft Office Suite. The staff has not heard any rumors that any other company was considering entering with a vector-based illustration program.

Table 1 summarizes the information the staff has collected for each incumbent company on prices, unit sales ("seats"), revenues, and profits. Each company has a gross margin of 80%. While the staff has not been able to determine how unit sales would decline in the wake of a SSNIP, either individually by product or collectively, Table 2 provides the staff estimates of the diversion ratios from documents provided by the companies and from staff interviews with users and competitors.

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Table 1
Company Statistics (2019)

	Price	Seats	Revenue	Profits	Comments
Illustrator	240	250,000	$60,000,000	$48,000,000	Per year
CorelDRAW	239	150,000	$35,850,000	$28,680,000	
Sketch	99	30,000	$2,970,000	$2,376,000	
Affinity Designer	50	70,000	$3,500,000	$2,800,000	
Inkscape	Free	5,000	$0	$0	Open source
		505,000	$102,320,000	$81,856,000	

Table 2
Diversion ratios

From/to:*	Illustrator	CorelDRAW	Sketch	Affinity Designer	Inkscape	Other options
Illustrator	--	85.0%	5.0%	10.0%	0.0%	0.0%
CorelDRAW	75.0%	--	8.0%	17.0%	0.0%	0.0%
Sketch	10.0%	35.0%	--	50.0%	5.0%	0.0%
Affinity Designer	20.0%	60.0%	10.0%	--	10.0%	0.0%
Inkscape	0.0%	0.0%	5.0%	10.0%	--	85.0%

* So, for example, the diversion ratio from Illustrator to CorelDraw is 75%

In meetings with the staff, Corel said that it sees the acquisition of Serif's as the first step in a major effort to overtake Illustrator with CorelDraw as the vector graphics product of choice for professional graphics designers. Corel says that the acquisition will provide it with the impressive technological expertise that Serif has assembled in its development team and would allow Corel to incorporate the innovative features of Affinity Designer into future versions of CorelDraw. It also would provide Corel with a larger base of customers—and hence revenues—over which it could spread future development costs. When questioned by the staff of what Corel would do with Affinity Designer, Corel said that it will continue to support the program as a separate low-cost program, but admitted that the shift of most of the development resources into CorelDraw likely would reduce the rate of product improvement of Affinity Designer compared to its historical pace. The staff, however, has yet to see any CorelDraw documents that address the company's postacquisition plans, and the staff is not sure that Corel's explanation provides the full story.

Staff interviews indicate that CorelDraw professional users and consultants are excited that the acquisition will provide them with new functionality more quickly than Corel would do in the absence of the acquisition. CorelDraw users say that most of the features that Corel added over the last decade have not been very useful and that they frequently skip annual updates, although they also say that Corel has been better in the last two updates. Affinity Designer (and to a lesser extent Sketch) users are concerned that the Corel will not continue to develop the product at the same pace as would Serif in the absence of the acquisition and that Corel will increase Affinity Designer's prices and ultimately discontinue the product to force users into CorelDraw. While most Illustrator users said that they are unlikely to switch to Affinity Designer anytime soon even given its much lower price, they like Affinity Designer out there to incentivize Adobe to increase its rather slow rate of product improvement. The staff has not interviewed any Inkscape customers. Competitors have been noncommittal.

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Visa/Plaid Merger

(*Rely only on the facts stated in this problem and your general knowledge. I have added some background and simplified the allegations without losing the essence of the claim.*)

You are an associate in Able & Baker LLP. Patty Hewes, a partner in the firm, has asked you to prepare a memorandum analyzing the possible merits of a complaint just filed by the Department of Justice alleging that the acquisition by the firm's client Visa, Inc. of Plaid Inc. would violate Section 7 of the Clayton Act.[1] In particular, Ms. Hewes would like you to identify possible ways to refute the elements of the DOJ's prima facie case as well as spot any other defenses Visa might raise. In each case, Ms. Hewes also would like you to identify the most important facts that would need to be developed to test whether the defense will meritorious.

To help you get started, Ms. Hewes has asked another associate to summarize the background of the transaction and the factual allegations pertaining to each element of the DOJ's Section 7 claim. You may take the background facts as given and not in dispute, but Ms. Hewes reminds you that allegations in the complaint are just that—allegations. They are subject to refutation by evidence of contrary facts.

The background

Unlike a credit card, which actually extends credit by the card issuer to the cardholder, a debit card is a payment card that deducts money directly from a consumer's checking account to pay for a purchase. Debit cards, which are issued by the cardholder's bank, may be used to pay for consumer-to-business ("C2B") purchases just as a credit card. There are three types of debit card services in the United States: (1) *online debit cards*, which require an electronic authorization from the cardholder's bank of every transaction and the debits are reflected in the user's account immediately; (2) *offline debit cards*, which are authorized by the cardholder's signature, may be subject to a daily limit, and usually require one to three days to be reflected on users' account balance; and (3) *digital wallets*, such as PayPal, Apple Pay, or Google Pay, which require the consumer to deposit money in an account maintained by the service and which the services draws upon when paying the merchant. In the United States, online debit cards are by far the most popular.

Online debit cards require the merchant to use an online debit network that connects to the debit cardholder's bank to authorize, clear, and settle online debit transactions. Once the consumer's issuing bank authorizes the transaction, the debit network also guarantees the deposit of funds to the merchant's bank. Debit card networks do not issue cards directly to consumers or establish card-accepting services with merchants. Rather, debit card network typically contracts with the acquiring and issuing banks, which in turn contract respectively with merchants and consumers. Each issuing bank contracts with one debit card network to issue its debit cards, and debit card networks bid for these multiyear exclusive contracts.

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[1] The complaint also alleges that the acquisition would constitute an act of unlawful monopolization under Section 2 of the Sherman Act. Another associate is analyzing that claim, so you should focus solely on the Section 7 claim.

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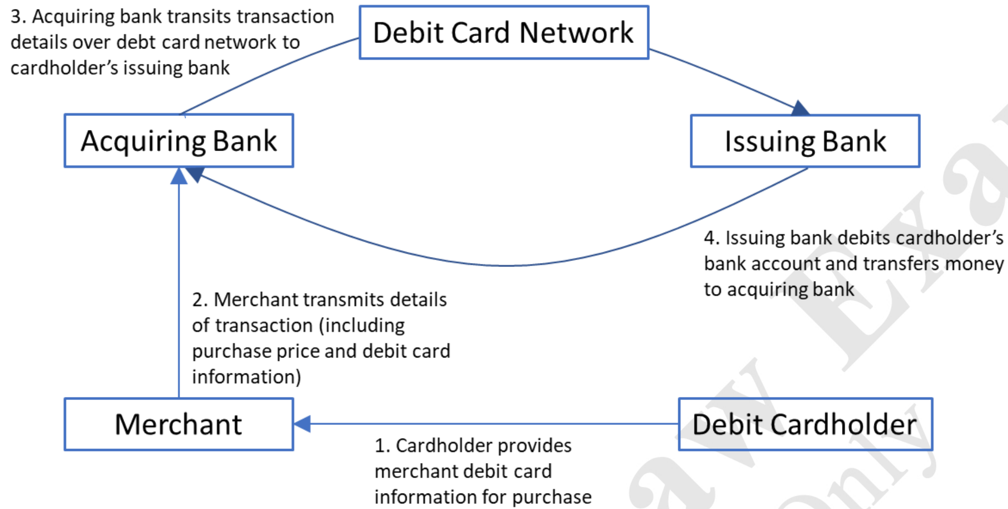
Online Debit System



Visa is a global payments company that operates the largest online debit network in the United States. Visa has a market share of online debit services of 70 percent by transaction volume. Bank of America, Wells Fargo, and most but not all Chase debit cards use the Visa online debit system. In 2019, Visa earned over $4 billion from its debit business, including approximately $2 billion from online debit.

MasterCard operate the second largest online debit system, with a share of 25 percent by transaction volume. Citibank and Truist (SunTrust and BB&T), respectively the fourth and sixth largest banks in the country, use the MasterCard debit system.

Table 1
Largest U.S. Commercial Banks
(by domestic assets)

Rank	Bank	Domestic Assets (Mil $)	Share	Debit System
1	Bank of America	2,163,962	12.4%	Visa
2	JPMorgan Chase	2,057,019	11.7%	Visa*
3	Wells Fargo	1,760,451	10.1%	Visa
4	Citibank	985,494	5.6%	MC
5	U.S. Bank	525,256	3.0%	Visa
6	Truist	493,957	2.8%	MC
7	PNC	451,002	2.6%	Visa
8	TD Bank	383,967	2.2%	Visa
9	Capital One	363,706	2.1%	MC
10	Bank of New York	236,430	1.4%	MC
	U.S. total domestic	17,512		

* The Chase Freedom Flex operates on the MasterCard debit system
Source: Federal Reserve Statistical Release, Large Commercial Banks (June 30, 2020), https://www.federalreserve.gov/releases/lbr/current/default.htm

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Debit card networks charge two types of fees to merchants: (1) *network fees* to process the transaction, and (2) *interchange fees* that the network pays to the issuing bank. Interchange fees paid to large commercial banks are regulated by federal statute;[2] network fees are not regulated. Part of the bidding by debit card networks to obtain contracts with commercial banks is the amount of the interchange fee the banks will receive for debit transactions using their cards.

There exist smaller debit networks (including Accel, Star, NYCE, and Pulse) that operate similarly to the Visa and MasterCard debit networks. These networks lack scale, which makes it difficult for them to bid to be the network for a commercial bank's debit card.

From a consumer's perspective, *offline debt cards* operate much like credit cards, but with much faster clearance times. Like credit cards, offline debit card transactions are signature-based, but unlike credit cards the consumer's bank account is debited one or two days after the transaction. There are two offline debit card networks, one run by Visa (called "Visa Check Card") and the other by MasterCard ("MasterMoney"), which essentially piggyback off the card associations' credit card networks. Unlike online debit, offline debit cards do not allow the consumer to obtain cash back at the point of sale.

Digital wallets provide another means of paying merchants. Money can be deposited in the digital wallet prior to any transactions or an individual's bank account or credit card can be linked to the digital wallet to be drawn upon as needed. Digital wallets may be either device-based or internet-based. Device based digital wallets, such as Apple Pay or Samsung Pay, use near field communication (NFC) technology to allow users to pay for purchases by waiving their smartphone or other NFC-capable device near a contactless reader. Internet-based digital wallets, such as PayPal or Google Wallet, enable payments to participating merchants when a customer authorizes the service to make the payment.

An emerging payments competitor to the Visa and MasterCard debit networks are so-called "*direct debit*" or "*pay-by-bank*" debit. Pay-by-bank is a form of online debit that uses a consumer's online bank account credentials (i.e. a consumer's online banking username and password) to identify and verify the user, bank, and account number and balance. Using this authorization, pay-by-bank debit services can complete the transfer of funds to the merchant using the Automated Clearing House ("ACH"), a low-cost funds transfer facility run by the Federal Reserve and The Clearing House (owned by a consortium of banks). Delivery of ACH transfers can take several business days, but emerging "payment initiation services" ("PIS") can reliably signal a merchant that a payment has been initiated, thereby giving the merchant

[2] Dodd–Frank Wall Street Reform and Consumer Protection Act § 1075. Pub. L. No. 111–203, § 1075, 124 Stat. 1376, 2068 (2010) ("Durbin amendment") (codified at 15 U.S.C. § 1693o-2). The Durbin amendment was intended to lower the cost to consumers of using debit cards. While the Durbin amendment did cut the interchange fee paid to large banks roughly in half, one study showed that the banks responded by reducing the availability of fee-free current accounts, more than doubling the minimum monthly holding required on fee-free current accounts, and doubling average monthly fees on (non-free) current accounts. *See* Todd J. Zywicki, Geoffrey A. Manne & Julian Morris, *Price Controls on Payment Card Interchange Fees: The US Experience* (George Mason Law & Economics Research Paper 14-18 (rev. Jan. 14, 2020)).

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comfort to complete a transaction and release the goods or services to the consumer in real time.

Plaid, Inc. is a financial data aggregator. Founded in May 2013, Plaid provides the technology and software that enables financial technology ("fintech") applications to collect, with the consumer's permission, a consumer's financial data from her financial institutions. The Plaid platform allows companies to create financial services apps without having to build out a tool that connects apps to the app user's bank accounts, something Plaid's founders themselves lacked when they set out to build a fintech startup years ago. When a consumer signs up with a Plaid-supported fintech app and provides her bank log-in credentials, Plaid uses those credentials to access the consumer's financial institution and obtain the consumer's financial data, which it transmits back to the fintech app. The data Plaid retrieves ranges from basic identifying information, such as account and routing numbers, to detailed transaction history and close to real-time account balance information. This data allows fintech apps to offer personal financial management tools, manage bill payments or other expenses, and support loan underwriting. A fintech app also could use the Plaid-accessed data, again with the consumer's permission, to transfer the consumer's funds to a payee through the ACH network. Plaid has a compound annual growth rate of 100% in user accounts since 2015.[3] In 2019, Plaid doubled the number of fintech apps it supports, and it expanded beyond the U.S. to the U.K., Spain, France and Ireland. Today, one in four people with a U.S. bank account have used Plaid to connect to more than 2,600 fintech developers across more than 11,000 financial institutions through apps such as PayPal's Venmo, Acorns, Betterment, Chime, and Transferwise. When a user sets up a Venmo account, for example, it is Plaid that enables the user to link their bank account to their Venmo account. Plaid has a network of more than 11,000 U.S. financial institutions and connects to over 200 million consumer bank accounts through its existing services.

On January 13, 2020, Visa agreed to buy Plaid for $5.3 billion. This is almost double the company's valuation of $2.65 billion in late 2018 when it raised its most recent round of financing. The Plaid transaction would be Visa's second largest transaction and, at a purchase price of 50X revenues, is one of the highest price-revenue multiples in recent history for a private company. Plaid will continue to operate as a separate business unit run by the current CEO and co-founder, Zach Perret, who will report to Visa Chief Product Officer.[4]

Visa says that its purpose in acquiring Plaid is two-fold. First, Plaid works with the vast majority of the largest fintech apps in the U.S. With the acquisition, Visa will get access to an important, ballooning base of customers to which it can sell additional payment services. In 2019, 75 percent of the world's internet-enabled consumers used a fintech application to initiate money movement versus 18 percent in 2015. Plaid has been a leader in enabling this connectivity at scale. Second, Visa has a global network that is unparalleled in financial technology, with millions of customers across 200 countries. That will make it much easier for

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3 *See* Visa, Inc. Transcript: Investor Call 3-4 (Jan. 13, 2020).

4 Visa, Inc., Investor Presentation: Visa's Acquisition of Plaid (Jan. 13, 2020).

Visa to take Plaid global.[5] Visa's CFO reported that he expects the acquisition will be accretive to revenue immediately.[6]

Notably, in the investor call and in the trade and newspaper reports at the time of announcement, no analyst or financial reporter raised the question of whether the deal presented an antitrust issue.

Gravamen of the DOJ complaint

The DOJ alleges that Visa's acquisition of Plaid likely substantially lessen competition in the online debit market in the United States by eliminating "nascent" competition between Visa and Plaid, resulting in higher prices and reduced service, quality, choice and innovation than would be the case if the acquisition did not occur. According to the complaint, Visa's intense interest in eliminating Plaid as a future competitor is manifest in its agreement to pay an "extraordinarily" high purchase price. The complaint further alleged that the Visa CEO said that Visa needed to buy Plaid as an "insurance policy protect our debit biz in the US." In making the case to buy Plaid to Visa's Board of Directors, Visa's senior leadership estimated a "potential downside risk of $300-500M in our US debit business" by 2024 should Plaid fall into the hands of a rival.

In essence, the DOJ complaint alleges that Visa is a dominant firm in online debit transactions, with debit cards operating on its network accounting for a 70% share of online debit transaction by transaction volume, and that MasterCard (with a 25% share) and smaller debit networks have been unsuccessful in materially reducing Visa's dominance. Moreover, because of its dominant share, merchants have no choice but to accept Visa-network debit cards. As the result of this dominance, Visa has been able to charge merchants supracompetitive network fees, which in turn are passed on to customers in the form of higher prices for the merchant's goods and services.

The complaint further alleges that Visa's dominance is protected by high barriers to entry and expansion, since new challengers would need millions of connections with customers to attract thousands of merchants and thousands of merchants to attract millions of customers.

Finally, the complaint alleges that Plaid is a highly innovative company that is "uniquely positions to surmount these barriers and undermine Visa's monopoly in online debit services." Although the complaint acknowledges that Plaid does not compete today with Visa debit for C2B transactions, it has the customer base to permit fintech companies to develop apps that would compete directly with Visa debit. Moreover, the DOJ alleges that Plaid is developing a new pay-by-bank debit service by the end of 2021 that "would compete against Visa's online debit services." The complaint concludes that "[c]ompetition from Plaid likely would drive down prices for online debit transactions, chipping away at Visa's monopoly and resulting in substantial savings to merchants and consumers," that that Visa is acquiring Plaid in part to eliminate that competitive threat.

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5 *See* Visa, Inc. Transcript: Investor Call 4 (Jan. 13, 2020).

6 *Id*. at 6.

Relevant product market: Online debit transactions

This market includes traditional online debit services and emerging pay-by-bank debit services. It is defined by services that that enable payments authorized online that are made from directly existing funds in a consumer's bank account to a merchant' bank account. Credit cards payments are excluded from this market because they draw from a consumer's line of credit and not from the consumer's bank account and because many consumers do not qualify for a credit card and must pay from their bank account with a debit card. Credit cards also cost the merchant more on a given transaction than debit cards. ACH payments are excluded because the consumer must enter her bank account and routing information separately for each merchant and because it takes several busines days to determine whether a payment is successful. Cash is excluded from the market because cash cannot be used for online payments.

Relevant geographic market: The United States

Both Visa and Plaid treat the United States as a distinct geographic market. Visa has separate rules governing merchant acceptance and separate uniform pricing for debit transactions in the United States, and federal law and regulations governing online debit transaction operate on a national level.

Likely anticompetitive effect: Higher prices and reduced innovation

Plaid's entry into online pay-by-bank debit services would increase competition and erode Visa's dominance by giving merchants and consumers cheaper, a more innovative alternative to Visa' online debit services and would likely result in lower prices and higher volumes of online debit transactions. Unlike MasterCard and other debit card network services that must compete with Visa for a bank's debit card contract, as a pay-by-bank service Plaid would compete with Visa debit for each transaction during the checkout process. To reduce losses to Plaid and defend its online debit volume, Visa would likely lower its prices.

Visa' acquisition of Plaid also would eliminate a disruptive and innovator competitor. In the absence of the acquisition, Plaid, on its own or in combination with a company other than Visa, "would continue to act as a disruptive competitor, developing and launching new, innovative solutions in competition with Visa." In particular, if Visa acquires Plaid, Visa would have an incentive to raise the price, degrade or delay, or terminate altogether Plaid's development of its pay-by-bank debit service.

Visa's response

> "Visa strongly disagrees with the Department of Justice (DOJ), whose attempt to block Visa's acquisition of Plaid is legally flawed and contradicted by the facts. This action reflects a lack of understanding of Plaid's business and the highly competitive payments landscape in which Visa operates. The combination of Visa and Plaid will deliver substantial benefits for consumers seeking access to a broader range of financial-related services, and Visa intends to defend the transaction vigorously.
>
> "As we explained to the DOJ, Plaid is not a payments company. Visa's business faces intense competition from a variety of players – but Plaid is not one of

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> them. Plaid is a data network that enables individuals to connect their financial accounts to the apps and services they use to manage their financial lives, and its capabilities complement Visa's. Together, Visa and Plaid will deliver better digital experiences and more choice for consumers in managing their money and financial data. Visa is confident that this transaction is good for consumers and good for competition."[7]

Plaid declined to comment.

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[7] Press Release, Visa Inc., Visa Statement on Planned Acquisition of Plaid (Nov. 5, 2020).

Merger Antitrust Law
Fall 2020

EXAM QUESTION #1: VECTOR-BASED ILLUSTRATION SOFTWARE MERGER

INSTRUCTOR'S ANSWER

MEMORANDUM OF LAW VERSION

Note: This answer is much longer, more detailed, and more complete than anything I would expect for a writing assignment, much less a timed exam answer. I prepared this as a teaching tool to explain the law and the reasoning in detail rather than as a model exam answer.

You have asked me to assess, based on the facts the staff has gathered to date, the strength of a possible Section 7 claim against Corel Corporation's pending acquisition of Serif (Europe) Ltd. for possible anticompetitive effects in vector-based illustration software, which both companies develop and sell. In particular, you have asked that I (1) analyze each of the elements of a Section 7 prima facie case, and (2) anticipate and respond to any defenses the parties are likely to raise. For each element of the prima facie case and each defense, you have asked that I identify the types of evidence the staff should be seeking to develop in a second request investigation to prepare for litigation if the staff decides at the end of the investigation to recommend to the Commission that it authorize a challenge to the deal.

For the reasons explained below, I believe that we will be able to develop a strong Section 7 case against the merger. The evidence so far appears to strongly support vector-based illustration programs sold to professional graphics designers in the United States as the relevant market. Only three companies operate in this market—Corel with CorelDraw, Adobe with Illustrator, and Serif with Affinity Designer—so this would be a three-to-two merger. Admittedly, the *PNB* presumption standing alone, while triggered under the Merger Guidelines and that case law, is not as strong as it has been in many cases the Commission has brought. The combined market share is only 39.6%, and the transaction results in a postmerger HHI of 5216 and a delta of 254. There likely will be strong additional evidence, however, supporting the merger's anticompetitive effect: the transaction (1) creates an anticompetitive unilateral effect likely to lead to a price increase for Affinity Designer, (2) increases the likelihood and effectiveness of anticompetitive coordinated effects on the prices of all products in the market, (3) eliminates Serif as a maverick, and (4) likely decreases in the rate of innovation and product improvement in Affinity Designer. Finally, the defenses that may be advanced by the parties are likely to fail, although additional evidence will be necessary to assess the merits of some defenses:

1. *Entry defense*: Entry is likely to be expensive, and there are likely substantial reputational and switching barriers to entry. In addition, Microsoft's rumored entry is

uncertain in timing, product attributes, consumer acceptance, and competitive effect and appears unrelated to the transaction.

2. *Power buyers*: The products appear to be primarily purchased in single units, there are no apparent large buyers within the meaning of the defense, and there is no apparent mechanism for any buyer to protect itself from an anticompetitive price increase, much less a decrease in the rate of innovation in Affinity Designer.
3. *Efficiencies*: In their deal announcement, the parties indicated that they would differentiate the two products, which they expect to increase unit sales, revenues, and products. But this expectation is likely to be speculative at best, not verifiable, and in any event insufficient to negate the price and innovation anticompetitive harms likely to result from the transaction.
4. *Failing firm*: Although Serif's Affinity Designer only earned $3.5 million in revenues in 2019 and therefore could be unprofitable as a product line, there is no indication that Serif is in financial trouble or is thinking about terminating Affinity Designer. Moreover, before the acquisition discussions began, Serif prepared a business plan that anticipated the Affinity Designer product's continued development and sale.

Governing Law and Procedure

Section 7 of the Clayton Act prohibits mergers and acquisitions "where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. § 18. By its terms, a Section 7 violation contains three essential elements: (1) a relevant product market ("line of commerce"), (2) a relevant geographic market ("section of the country"), and (3) a reasonably probable anticompetitive effect in the relevant market (that is, the combination of the relevant product market and the relevant geographic market).

The Commission will rely in the first instance on whether the transaction violates the principles set forth in the 2010 Horizontal Merger Guidelines. Since the Commission may have to prove its case and obtain relief from a federal district court, however, I will analyze the transaction under the usual judicial framework:

1. The prima facie Section 7 case
    a. The relevant product market
    b. The relevant geographic market
    c. Market shares, concentration, and the *PNB* presumption
    d. Additional evidence supporting the prima facie case
2. The defendants' arguments
3. Conclusion on Section 7 legality

Substantive Analysis

1. The prima facie Section 7 case

The Commission must present evidence that permits the trier of fact to find the existence of each of the three essential elements of a Section 7 violation: (1) the relevant product market ("line of commerce"), (2) the relevant geographic market ("section of the country"), and (3) a reasonably probable anticompetitive effect in the relevant market.

a. The relevant product market

The relevant product market in which to analyze this acquisition's competitive effects is the market for the production and sale of vector-based illustration programs to professional graphics designers in the United States. This is a three-product market: Illustrator, CorelDraw, and Affinity Designer.

There are two complementary approaches to product market definition: the *Brown Shoe* "outer boundaries" and "practical indicia" criteria, and the hypothetical monopolist test. Both approaches strongly point to a professional vector-based illustration programs product market.

The Brown Shoe judicial tests. Under *Brown Shoe*, the "outer boundaries" of the relevant product market "are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it." *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). Moreover, "within this broad market, well-defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes. The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors." *Id*. (internal citations and footnotes omitted). The original purpose of the *Brown Shoe* "practical indicia" was to enable the finding of relevant (sub)markets within larger markets defined by the "outer boundaries" test. Modern courts, however, do not view submarkets as any different from markets and regard the *Brown Shoe* "practical indicia" as factors probative of reasonable interchangeability of use and high cross-elasticity of demand.

Professional vector-based illustration programs satisfy the *Brown Shoe* "outer boundaries" and "practical indicia" criteria. The high cross-elasticity/reasonable interchangeability of use between Illustrator, CorelDraw, and Affinity Designer is indicated by the high diversion ratios between the three products. Illustrator's closest substitute is CorelDraw (85% diversion ratio).[1] CorelDraw's closest competitor is Illustrator (75%). Affinity Designer's closest substitutes are CorelDraw (60%) and Illustrator (20%). Although Sketch's closest substitutes are Affinity

[1] **Note to students**: There was a typo in the footnote to Table 2 that caused some of you (understandably) to read the diversion ratios in the reverse order than I had intended. The footnote should have said diversion ratio from Illustrator to CorelDraw was 85%, not 75% (which was the diversion ratio from CorelDraw to Illustrator). Given my mistake, I assessed the merits of your analysis on whatever way you read the diversion ratios.

Designer (50%) and CorelDraw (35%), this only indicates that Affinity Designer and CorelDraw exert downward pressure on Sketch. More importantly for the analysis here, Sketch is not a particularly good substitute for either CorelDraw (8.0%) or Affinity Designer (10.0%). Accordingly, Sketch does not need to be included in the market when analyzing a transaction between CorelDraw and Affinity Designer (including it would only weaken the *PNB* presumption). Inkscape's closest substitutes are primarily outside options (85%), so it should not be included in the relevant market. In the second request investigation, we should confirm the accuracy of these diversion ratios through documents, econometric analysis of data obtained from the merging parties and competitors (through CIDs), and, if necessary, a customer survey. [2]

The *Brown Shoe* "practical indicia" confirm that professional vector-based illustration programs are a relevant product market. Illustrator and CorelDraw are mainstays for professional graphics designers and Affinity Designer is gaining increasing acceptance, especially by those just starting in the profession, and has won several prodigious awards. Sketch has similar design functionality to CorelDraw and may be used by some professional graphics designers, but it is limited since it has no print design features and is available only for the MacOS. The evidence so far is that few graphics designers use Inkscape. Illustrator and CorelDraw are by far the most expensive illustration products. While Affinity Designer is much less costly, Serif prices it aggressively explicitly to draw users from Illustrator and CorelDraw. In the second request investigation, we should confirm these facts and obtain whatever additional evidence we can on the substitutability of CorelDraw and Affinity Designer with each other and with other products.

Finally, I should note that bitmapping paint and photo editing programs should not be included in the relevant product market. In interviews with the staff, graphics designers say that vector-based programs are not functionally substitutable with bitmap programs. Bitmap formats are best for images that need to have a wide range of color gradations, such as most photographs, which vector-based cannot handle easily. On the other hand, vector graphics are more scalable than bitmap images and so can be resized easily without losing image quality, whereas bitmap images rapidly lose resolution as they are enlarged. The lack of substitutability between vector-based illustration programs and bitmapping programs is further evidenced by the lack of diversion from vector-based programs to bitmapping programs. None of the programs identified by name in Table 2 are bitmapping programs, and none of the three programs in the relevant market divert any sales to bitmapping programs (i.e., diversion to the "outside option" in each case is zero). In the second request investigation, we should confirm these facts and obtain additional evidence

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[2] **Note to students**: Under the Merger Guidelines, the product market definition could have included Sketch (since the Guidelines not longer employ the smallest market principle), although there is certainly a good argument under *Brown Shoe* that Sketch should be excluded. The overall competitive analysis is not very sensitive to whether Sketch is included or not, although the *PNB* presumption is marginally weakened if it is. Inkscape should have been excluded from the market on both *Brown Shoe* and diversion ratio grounds. From a prosecutor's perspective, you want a market definition that the court will accept, but if there are ways to narrow the market to increase the HHI statistics and so strengthen the *PNB* presumption—as there is here—you need to consider it.

from company documents and user interviews that bitmapping programs are not substitutable for vector-based programs.

The hypothetical monopolist test. The "hypothetical monopolist test," which was introduced by the Merger Guidelines in 1982 and now adopted in one form or another by the courts, deemed a product grouping ("candidate market") to be a relevant market if a hypothetical monopolist of all products in the product group could profitably raise the prices in the product grouping by a small but significant nontransitory price (SSNIP), usually taken to be 5% for a period of one year. The current 2010 Merger Guidelines have modified the hypothetical monopolist test in two significant ways:

1. Originally, the hypothetical monopolist test only deemed the smallest product grouping that satisfied the test to be a relevant market (the "smallest market principle"). Under the 2010 Merger Guidelines, while the smallest market principle remains the preferred approach, a larger market can be used where appropriate to reflect the economic realities.

2. Originally, the hypothetical monopolist test required the hypothetical monopolist to increase the prices of all of the products in the candidate market. Under the 2010 Merger Guidelines, where the hypothetical monopolist could raise the prices of one or more products selectively while leaving the prices of the other products constant, the hypothetical monopolist test requires only that the hypothetical monopolist to be able to profitably raise the price of a *single* product in the product group for the product grouping to be a relevant market.

The courts are increasingly adopting these modifications. In particular, modern courts are using the one-product SSNIP test to define markets. *See, e.g.*, *FTC v. Wilh. Wilhelmsen Holding ASA*, 341 F. Supp. 3d 27, 47 (D.D.C. 2018); *United States v. Anthem, Inc.*, 236 F. Supp. 3d 171, 198 (D.D.C. 2017); *United States v. Aetna Inc.*, 240 F. Supp. 3d 1, 20 (D.D.C. 2017); *FTC v. Staples, Inc.*, 190 F. Supp. 3d 100, 121 (D.D.C. 2016); *FTC v. Sysco Corp.*, 113 F. Supp. 3d 1, 33 (D.D.C. 2015); *United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 51-52 (D.D.C. 2011). An important practical implication of these two modifications is that any product grouping containing a relevant market is itself a relevant market, since the hypothetical monopolist could simply profitably raise the prices for the products that create the original relevant market and leave unchanged the prices of all of the other products in the larger product grouping.[3]

[3] **Note to students**: The reason for the change in the 2010 Merger Guidelines almost surely was due to the fact that courts were rejecting market definitions using the smallest market principle that resulted in "markets" that were unrecognizable to the industry and hence did not coreesspond to "commercial realties." *See, e.g.*, United States v. Oracle Corp., 331 F. Supp. 2d 1098 (N.D. Ca. 2004). The 2010 change allowed the agencies to expand the "smallest" market to something more recognizable in the industry without violating the Guidelines. From a prosecutor's perspective, the right approach is to use the smallest market that is a more "natural" product grouping provided it yields a strong *PNB* presumption.

Professional vector-based illustration programs satisfy the hypothetical monopolist test under a one-product SSNIP test.[4] We can apply the aggregate diversion ratio test to test the presumptive profitability of a uniform SSNIP. The aggregate diversion ratio test (the test applied in *H&R Block*) states that if the smallest individual recapture rate R_i in the candidate market is greater than the critical recapture rate R_{cl}, then the hypothetical monopolist can presumably profitably impose a uniform SSNIP on all products and the candidate market is presumably a relevant market. The critical recapture rate R_{cl} for the aggregate diversion ratio test is:

$$R_{cl} = \frac{\delta}{\delta + m},$$

where m is the revenue share-weighed average of all of the products in the candidate market. We know that m for all products in the candidate market is 80%,[5] so that the critical recapture rate is:

$$R_{cl} \leq \frac{0.05}{0.05 + 0.80} = 5.9\%$$

Based on the evidence obtained in the preliminary investigation, the recapture rates are:

Illustrator: CorelDraw (85%) + Affinity Designer (10%) = 95%
CorelDraw: Illustrator (75%) +Affinity Designer (17%) = 92%
Affinity Designer: Illustrator (20%) + CorelDraw (60%) = 80%

Since the actual minimum recapture rate (80%) exceeds the critical recapture rate, professional vector-based illustration programs is presumptively a relevant market.

Note to students: You could also have applied a one-product SSNIP test, although the calculation is much more involved. It was not necessary for you to do both the one-product and uniform SSNIP tests. Either one suffices for the exam.

As noted above, modern courts have held that a product grouping to be a relevant market if a hypothetical monopolist could profitably impose a SSNIP on only *one* of the products in the grouping, provided the price increase applies to at least one product sold by one of the merging firms.

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[4] **Note to students:** Recall that one-product SSNIP tests are appropriate when the products are differentiated.

[5] **Note to students**: I confess error on the margin as a matter of exam writing. Note that profits/revenues for each product is 80%. But profits are equal to revenues minus fixed and variable costs. Dollar gross margins, on the other hand, are equal to price minus marginal cost. Hence, if there are any fixed costs, dollar gross margins will be greater than profits/revenues. I essentially assumed that there were zero fixed costs in the production of illustration programs. But software programs exhibit high fixed costs and low marginal costs, so either the percentage margin should have been much higher than 80% or I should have significantly decreased the profits to take into account fixed costs. None of this, of course, has any implications for your answers. You were given 80% as the margin and that is the number you should have used.

We can implement the one-product SSNIP test using percentage critical aggregate recapture. A one-product SSNIP for product *i* is profitable to the hypothetical monopolist if and only if:

$$R_i > R_i^{cl} = \frac{\delta}{m_{other}} \frac{p_i}{p_{other}},$$

where

R_i is the actual aggregate recapture rate within the candidate market (i.e., the sum of the diversion ratios from product *i* into another product in the candidate market)
R_i^{cl} is the critical aggregate recapture rate within the candidate market
δ is the percentage SSNIP (here, 5%)
m_{other} is the revenue-share weighted average of the margins of the products other than product *i* in the candidate market (for revenue shares within the candidate market)
p_i is the current price of product *i*[6]
p_{other} is the revenue-share weighted average of the prices of the products other than product *i* in the candidate market (for revenue shares within the candidate market).

So far in the investigation, we have learned the prices, revenues, profits, margins, and diversion ratios of the various vector-based illustration programs.

At this point, there is an easy way and a hard way to apply the one-product recapture SSNIP test.

The easy way. The actual recapture ratios for all vector-based products except Inkscape are 100% in the candidate three- (or four-) product vector-based illustration program market. In particular, the actual recapture ratios for CorelDraw and Affinity Designer—the two products involved in the merger—are 100%. Consequently, if either product's critical recapture ratio is less than 100%, then the candidate market is a relevant market under the one-product recapture SSNIP test.

Let's look again at the critical one-product recapture formula:

$$R_i^{cl} = \frac{\delta}{m_{other}} \frac{p_i}{p_{other}}.$$

The first fraction on the right-hand side of the equation is 0.05/0.80 = 0.0625, which is less than one. So if the second fraction is less than one, the critical recapture ratio will be less than one. Let Affinity Designer be the product subject to the SSNIP. Affinity Designer has a price of $50, which is much lower than the prices of Illustrator ($240) and CorelDraw ($239). Averaging Illustrator and CorelDraw in a three-product market (or Illustrator, CorelDraw, and Sketch in a four-product market) using normalized revenue shares will yield a p_o of something above $200 and in any event much larger than $50. Consequently, the second fraction is also less than one.

[6] **Note to students**: Some of you used the current price plus the SSNIP. The right variable to use is just the current price.

The product of two fractions both less than one is something less than one. Hence, Affinity Designer's actual recapture ratio of 100% is greater than the critical recapture ratio and so the candidate market is a relevant market.

The hard way. Do the actual calculations:

Revenue Shares for Averaging

		Market	Shares of "Other" Products		
	Revenue	Share	Illustrator	CorelDraw	Affinity Designer
Illustrator	60,000,000	60.4%		94.5%	62.6%
CorelDRAW	35,850,000	36.1%	91.1%		37.4%
Affinity Designer	3,500,000	3.5%	8.9%	5.5%	
	99,350,000	100.0%	100.0%	100.0%	100.0%

"Other" Prices (p_o)

For Illustrator:	Price	Relative share	Contribution
CorelDraw	$239.00	91.1%	$217.74
Affinity Designer	$50.00	8.9%	$4.45
		p_{other} =	$222.19

For CorelDraw:	Price	Relative share	Contribution
Illustrator	$240.00	94.5%	$226.77
Affinity Designer	$50.00	5.5%	$2.76
		p_{other} =	$229.53

For Affinity Designer:	Price	Relative share	Contribution
Illustrator	$240.00	62.6%	$150.23
CorelDraw	$239.00	37.4%	$89.39
		p_{other} =	$239.63

One-Product SSNIP Test Calculations

Candidate market	R_i	p_i	p_{other}	δ/m	p_i/p_{other}	$R_i^{cl} = \delta/m * pi/p$	One-Product SSNIP test
Illustrator	95.0%	$240.00	$222.19	0.0625	1.08	6.8%	PASSES
CorelDRAW	92.0%	$239.00	$229.53	0.0625	1.04	6.5%	PASSES
Affinity Designer	80.0%	$50.00	$239.63	0.0625	0.21	1.3%	PASSES

%SSNIP (δ)	5.0%
%m	80.0%

Note that the actual recapture ratios (R_i) far exceed the critical recapture rations (R_i^{cl}) for all three products in the professional vector-based illustration programs, making this product grouping a relevant product market under our assumptions.[7]

In the second request investigation, we should confirm all of the facts used in these HMT tests.

I should note that under a one-product recapture SSNIP test, CorelDraw and Affinity Designer alone qualify as a relevant product market. But for the same reasons the government and the court in *H&R Block* included TurboTax in the relevant market with HRB and TaxACT, it would be tactically wise to include Illustrator in the relevant market here. Given the high diversion ratios between Illustrator and CorelDraw, it would look too much like the product market was gerrymandered to leave Illustrator out.[8]

In sum, the relevant product market in which to analyze the competitive effects of a Corel/Serif transaction is professional vector-based illustration programs.

b. The relevant geographic market

The relevant geographic market is the United States.

The second essential element of a *prima facie* Section 7 case is the relevant geographic market. In *Philadelphia National Bank*, the Supreme Court defined the relevant geographic market to be "the area of effective competition . . . in which the seller operates, and to which the purchaser can practically turn for supplies." *United States v. Philadelphia Nat'l Bank*, 374 U.S. 321, 359 (1963). To the same effect, "[t]he proper question to be asked ... [is] where, within the area of competitive overlap, the effect of the merger on competition will be direct and immediate." *Id*. at 357. Congress prescribed a "pragmatic, factual approach to the definition of the relevant market and not a formal, legalistic one." *Brown Shoe Co. v. United States*, 370 U.S. 294, 336 (1962).

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[7] **Note to students**: Some of you used a percentage critical loss analysis. For this analysis, you need the actual loss in candidate market for a uniform SSNIP. That information was not given in the hypothetical and it cannot be derived from the diversion ratios. Remember, the diversion D_{12} ratio assumes that the price of product 1 is increased and the prices of all other products in the candidate market are held constant; it does not tell you what happens if the prices of both products 1 and 2 are increased. Moreover, the diversion ratio D_{12} only measures the percentage of marginal sales of product 1 that divert to product 2; it does not tell you anything about the magnitude of the marginal sales (and hence about the percentage actual loss) that product 1 would lose in response to a SSNIP.

Consider the following example: the diversion ratio between red cars and blue cars is 100% in both directions. But if the price of red cars and blue cars both increased by a SSNIP, there is no diversion between them and all of the diversion is to yellow cars. Knowing that the diversion ratios between read and blue cars is 100% does not tell you that there is zero actual loss in a candidate blue car-red car market in response to a uniform SSNIP as some of you seemed to assume.

[8] **Note to students:** *See supra* note 3.

“An element of ‘fuzziness would seem inherent in any attempt to delineate the relevant geographical market.’” *United States v. Conn. Nat’l Bank*, 418 U.S. 656, 669 (1974) (quoting *Philadelphia Nat’l Bank*, 374 U.S. at n.37). The boundaries of a relevant geographic market “need not . . . be defined with scientific precision,” *id*., or “by metes and bounds as a surveyor would lay off a plot of ground,” *United States v. Pabst Brewing Co.*, 384 U.S. 546, 549 (1966). Rather, the relevant geographic market should “‘correspond to the commercial realities’ of the industry and be economically significant.” *Brown Shoe*, 370 U.S. at 336-37. The relevant geographic market also may be assessed using the hypothetical monopolist test.

Here, each manufacturer of a professional vector-based illustration program sells its product either in shrink-wrapped retail boxes or downloaded over the Internet throughout the country at the same price. Moreover, the preliminary investigation reveals that each manufacturer appears to adopt marketing and product development strategies directed to the nation as a whole. Courts have held that where the companies in the relevant product market sell their products nationwide at uniform prices, the United States is a relevant geographic market. The Merger Guidelines recognize this principle as well. Moreover, using the hypothetical monopolist test, we know that a hypothetical monopolist could profitably raise prices by 5% across the country for at least one product in the market. (The math is the same here as in the relevant product market analysis above.) This confirms that the relevant geographic market is the United States.

In the second request investigation, we should confirm these facts.

c. Market shares, concentration, and the *PNB* presumption

In *Philadelphia National Bank*, the Supreme Court held that “a merger which produces a firm controlling an undue percentage of the relevant market, and results in a significant increase in the concentration of firms in that market, is so inherently likely to lessen competition substantially that it is must be enjoined in the absence of evidence clearly showing that the merger is not likely to have such anticompetitive effects.” *United States v. Philadelphia National Bank*, 374 U.S. 321, 363 (1963). In *PNB* itself, the Court held that a combined firm with at least 30% share and an increase in the 2-firm concentration ratio from 44% to 59% was sufficient (but not necessary) to constitute an “undue market share” and cause a “significant increase in concentration” to predicate the *PNB* presumption. The 2010 Guidelines provide that mergers in markets with a postmerger HHI above 2500 and a delta of 200 or more “will be presumed to be likely to enhance market power” and be sufficient predicate the *PNB* presumption. Although the Guidelines are not binding on courts, modern courts frequently cite the Guidelines as supporting authority when finding that mergers that increase the HHI by 200 or more points and result in a postmerger HHI of 2500 or more as authority in finding that the merger satisfies the predicates for the *PNB* presumption. *See, e.g.*, *United States v. Anthem, Inc*., 855 F.3d 345, 349 (D.C. Cir. 2017); *FTC v. Penn State Hershey Med. Ctr.*, 838 F.3d 327, 347 (3d Cir. 2016); *ProMedica Health Sys., Inc. v. FTC*, 749 F.3d 559, 568 (6th Cir. 2014); *FTC v. Staples, Inc.*, 190 F. Supp. 3d 100, 128 (D.D.C. 2016) (“Staples’ proposed acquisition of Office Depot is therefore presumptively illegal because the HHI increases more than 200 points and the postmerger HHI is

greater than 2,500."). The Guidelines also provide that in moderately concentrated markets (that is, markets with an HHI between 1500 and 2500), transactions that increase the HHI by more than 100 points "potentially raise significant competitive concerns and often warrant scrutiny."

Professional vector-based illustration programs are differentiated in price and functionality, so revenue shares are the proper measure for the HHI calculations.[9] The transaction combines Corel, the number 2 firm with a 36.1% revenue share, with Serif, the number 3 firm with a 3.5% share, giving the combined firm a 39.6% share. The transaction would increase the HHI by 254 points to 5216:

HHI Calculations

	Share	HHI
Illustrator	60.4%	3647
CorelDRAW	36.1%	1302
Affinity Designer	3.5%	12
	100.0%	4962
Combined share	39.6%	
Premerger HHI		4962
Delta		254
Postmerger HHI		5216

Note to students: If you included Sketch in the relevant market, the HHI calculations are as follows:

HHI Calculations

	Share	HHI
Illustrator	58.6%	3439
CorelDRAW	35.0%	1228
Sketch	2.9%	8
Affinity Designer	3.4%	12
	100.0%	4686
Combined share	38.5%	
Premerger HHI		4686
Delta		240
Postmerger HHI		4926

Although the combined share and HHI statistics are not as high as they have been in many Commission cases, they nonetheless exceed the Merger Guidelines threshold of 2500 for a "highly concentrated market." In highly concentrated markets, a delta of 200 or more is sufficient under the guidelines for a presumption that the transition will be anticompetitive.

[9] **Note to students**: A number of you used unit shares. This had the effect of providing a much stronger *PNB* presumption on the numbers than you would have obtained if you used the correct measure of revenue shares.

Moreover, the statistics here are above those in at least one modern case where the court applied the *PNB* presumption. *See United States v. UOM-Kymmene OYJ*, No. 03 C 2528, 2003 WL 21781902 (N.D. Ill. July 25, 2003) (complaint alleging a combined market share of 20%, a delta of 190, and a postmerger HHI of 2990).

Admittedly, the HHI statistics are low, and a court could find the *UOM-Kymmene* case to be an outlier that should not be followed. But there likely will be additional evidence of anticompetitive effect that we can use to substantially strengthen the presumption.

d. Additional evidence supporting the prima facie case

Modern courts and the Merger Guidelines recognize that mergers are anticompetitive under Section 7 when they have a reasonable probability of increasing prices, reducing market output, reducing product or service quality, or the reducing rate of technological innovation or product improvement in the market compared to what would have happened in the market on a going-forward basis in the absence of the transaction. For the Corel/Serif merger, there are strong indications that the transaction will (1) creates anticompetitive recapture unilateral effects, (2) increases the likelihood and effectiveness of anticompetitive coordinated effects, and (3) eliminates Serif as a maverick. There is also likely to be a decrease in the rate of innovation and product improvement in Affinity Designer

Recapture unilateral effects. Both the courts and the Merger Guidelines recognize the theory of unilateral effects. Unilateral effects is a theory of anticompetitive harm that goes to the elimination of significant "local" competition between the merging firms so that the merged firm can raise prices independently of how other incumbent firms react. The 2010 Merger Guidelines explain:

> A merger between firms selling differentiated products may diminish competition by enabling the merged firm to profit by unilaterally raising the price of *one or both products* above the premerger level. Some of the sales lost due to the price rise will merely be diverted to the product of the merger partner and, depending on relative margins, capturing such sales loss through merger may make the price increase profitable even though it would not have been profitable prior to the merger.

2010 DOJ/FTC Horizontal Merger Guidelines § 6.1 (emphasis added). Under the 1992 Merger Guidelines, the unilateral effects theory applied whenever: (1) the two merging firms were each other's closest competitors, and (2) their combined market share was greater than 35%. The 2010 Merger Guidelines relaxed these requirements so that (1) only one firm needs to be a close competitor to the other (but not necessarily the closest), and (2) the 35% combined share requirement was eliminated.

The Corel/Serif merger satisfies the 1992 Merger Guidelines requirements for unilateral effects and so a fortiori satisfies the 2010 requirements. CorelDraw and Affinity Designer have a

combined share of 39.6% and Affinity Designer's closest competitor is CorelDraw (with a diversion ratio of 60%).[10]

Moreover, it is easy to show that it would be profitable for the combined firm to increase Affinity Designer's prices by at least 5%. For every 100 customers AD would lose as a result of this price increase, CorelDraw would recapture 60 (given a diversion ratio of 60%). Assuming again a margin of 80%, AD would lose $40 for every lost customer and CorelDraw would gain its margin of $191.20 (80% of the purchase price of $239). Even leaving aside the profits AD would make on its inframarginal customers, a 5% price increase would be profitable:[11]

	$m	*q₂*	Gain
Affinity Designer's loss	$40.00	-100	-$4,000.00
CorelDraw's gain	$191.20	60	$11,472.00
NET GAIN			$7,472.00

Indeed, this calculation suggests that the combined firm could unilaterally increase the price of Affinity Designer profitably by much more than 5%.

The combined firm's ability to profitably increase the price of at least one of its products is the essence of an anticompetitive recapture unilateral effect.

In the second request investigation, we need to determine the appropriate dollar margin to use and confirm the diversion ratios. We should also determine Affinity Designer's actual loss rate to incorporate its gain from retained inframarginal sales in this calculation.[12]

Coordinated effects. Coordinated interaction involves conduct by multiple firms that is profitable for each of them only as a result of the accommodating reactions of the others. A merger has an

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[10] **Note to students:** If you read the diversion ratio from Affinty Designer to CorelDraw as 17% rather than 60%, *see supra* note 1, then you could have argued that the degree of substitutability between the two products was too low to support a recapture unilateral price increase on Affinity Designer but high enough to support a price increase of CorelDraw. I credited those arguments, even if the inference is probably wrong on CorelDraw. *But See infra* note 12.

[11] **Note to students**: Since the problem does not state how many unit sales Affinity Designer would lose with a 5% SSNIP, it was not necessary for you to estimate the profit gains from the increased margin on the inframarginal sales.

[12] **Note to students**: This same exercise is not so straightforward for a unilateral price increase for CorelDraw. Each loss of a CorelDraw sale costs the combined company CorelDraw's dollar margin of $191.20, but a recapture only gains the company $40 (the AD dollar margin). Moreover, assuming that the diversion ratio from CorelDraw to Affinity Designer is 60% rather than 17% (as I intended), the net loss on every sale of CorelDraw is $167.20 (= $191.20 – (0.6)($40)). For a unilateral price increase to be profitable, the combined company would have to offset this loss by the profit gain on CorelDraw's inframarginal customers who would continue to purchase at the higher price. The price of CorelDraw is $239, so a 5% SSNIP would earn the combined company an additional $11.95. So for each customer CorelDraw lost, it would have to retain fourteen or more customers (167.20/11.95 = 13.99). So the most the combined company could lose is 6.67% of CorelDraw's customers (= 1/15) for a 5% price increase. That raises a second request investigation question.

anticompetitive coordinated effect under Section 7 when it is likely to increase the ability and incentives of a sufficient number of firms in the market to engage in successful tacit collusion. There are two conditions for the coordinated effects theory to apply: (1) the market must be susceptible to tacit coordination, and (2) the merger must make tacit collusion either more likely or more successful.

Here, the professional vector-based illustration programs market is susceptible to tacit coordination premerger. Premerger, the market contains two significant firms with a combined revenue share of 85.1% and one smaller firm with a 14.9% revenue share. Transactions in the market are small, numerous, and spread among a mass of individual consumers, each of whom has low bargaining power; prices and features are transparent (they are posted for potential customers to observe); prices can be changed easily; and there are likely barriers to switching due to the "stickiness" of the professional vector-based illustration programs products (i.e., once a designer is experienced with a given program, it is likely to stay with it absent a compelling reason to change). *See United States v. H & R Block, Inc.*, 833 F. Supp. 2d 36, 78 (D.D.C. 2011). If, as I suspect, customers are likely to stay with a program once they are experienced with it, it is also likely that the Illustrator and CorelDraw focus more on selling upgrades to their existing customers rather than engaging in price competition to gain each other's customers. Indeed, Illustrator is available only on a subscription basis. All of these factors indicate that this market structure is susceptible to coordinated interaction.

Postmerger, the Corel/Serif combination will make tacit collusion more likely or more successful. First, it eliminates one of the three independent firms in the market, making the market a duopoly. Moreover, the unilateral effect due to this transaction (as described above) is likely to result in a significantly increased price of Affinity Designer, which in turn will reduce the attractiveness of AD to entry-level professional graphics designers and further incentivize Adobe and Corel to tacitly coordinate on increasing the prices of Illustrator and CorelDraw.

In the second request investigation, these facts need to be confirmed. The staff should also look for evidence indicating prior cooperation among Adobe and Corel, whether lawful or unlawful, in any area (and not limited to Illustrator and CorelDraw).

Elimination Serif as a maverick. Antitrust law regards a maverick as a firm that "plays a disruptive role in the market to the benefit of customers." U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 2.1.5 (rev. 2010). Here, it is likely that Serif plays a disruptive role in the market for vector-based illustration programs sold to professional graphics designers in the United States. Before Serif's entry, there were only two firms in the market—Adobe and Corel—and both priced their programs comparably at around $240 for the initial purchase. In 2014, Serif entered the market expressly with the intent of taking share away from Adobe and Corel. To do this, it aggressively priced its program at $50 for the initial purchase, one-fifth of the price of the Adobe and Corel programs. Moreover, Serif's program was a professional-grade program with functionality approaching that of CorelDraw.

The investigation so far has not determined what effect Serif's entry has had on Adobe and Corel. Although legacy users of these programs have not switched to Affinity Designer in any substantial numbers, new professional graphics designers are purchasing the program and Serif's business plan, in the absence of its acquisition by Corel, was to continue to increase the functionality of the program in order to dissuade its users from switching to Illustrator or CorelDraw as they become more experienced. In the second request investigation, the staff should explore the extent to which Adobe and Corel were tracking Affinity Designer and developing strategies or plans—either in pricing or in innovation—to respond so as not to lose so many new designers to AD.

In the second request investigation, the staff should look for evidence that either Adobe or Corel reacted to Affinity Designer's presence in any way, including curbing any price increases or adding additional features in upgrades that they would not have included in the absence of Affinity Designer. The staff also should look for evidence from Adobe and Corel indicating any concerns that Affinity Designer will take away market share and what, if anything, Adobe or Corel is considering doing—now or in the future—to maintain its market share in Affinity Designer's presence.

Innovation unilateral effect. Corel admitted to the staff in the preliminary investigation that would shift most of Affinity Designer's development resources into CorelDraw and that this would likely reduce the rate of product improvement of Affinity Designer. Such a reduction in product improvement is at least a gross anticompetitive effect of the transaction. In the second request investigation, the staff should explore further what the nature of this product improvement reduction is likely to be.

e. The prima facie case: Summary

Application of the *Brown Shoe* "outer boundary" and "practical indicia" factors, as well as the hypothetical monopolist test, show that a relevant product market in which to analyze the transaction is the sale of vector-based illustration programs to professional graphics designers. The relevant geographic market is the United States. The HHI statistics in this relevant market predicates the *PNB* presumption and should establish a prima facie case of anticompetitive effect within this market, although the HHI statistics are not as high as they have been in many cases recently brought by the Commission and the Antitrust Division. The prima facie case, however, is likely to be supported by evidence of (1) the combined firm's unilateral incentive to substantially increase the price of Affinity Designer; (2) a coordinated effect theory of anticompetitive harm, since the market is already susceptible to tacit coordination and the merger will reduce the number of incumbent firms from three to two; (3) the elimination of Affinity Designer as a maverick in the market; and (4) a decrease in the rate of innovation and product improvement in Affinity Designer.

2. Possible defenses

None of the four traditional defenses is likely to apply to this transaction.

Entry defense. To establish an entry defense, courts and the Horizontal Merger Guidelines require entry to be sufficiently timely, likely, and sufficient in magnitude and scope to negate the transaction's anticompetitive effects that would likely occur in the absence of the entry. Entry is a *negative* defense: the prospect of new entry must be such as to alleviate the concerns that the merger would be anticompetitive. Entry is not an *affirmative* defense: it cannot justify or excuse a transaction that would be anticompetitive even in the presence of the anticipated entry.

Here, an entry defense will likely fail.

Entry into the creation and sale of professional vector-based illustration programs is likely to be expensive, and there are likely substantial reputational and switching barriers to entry. The staff should explore the character and magnitude of these barriers in the second request investigation.

First, the preliminary investigation revealed that the margin for vector-based illustration programs is 80%. The most recent entry was Affinity Designer in 2014, six years ago. If an 80% margin has not attracted additional entry over the last six years, it is doubtful that a SSNIP would be enough to cause a firm that otherwise would not have entered the market to enter. Accordingly, there should be a strong presumption against entry here in the absence of a concrete identification of a firm that would enter. The staff in the second request investigation should explore all possibilities to see if any firm is considering entering this space. (I address Microsoft below.)

The experience of Affinity Designer also suggests that these barriers are substantial. Serif entered the market with Affinity Designer in 2014. Although the product had functionality approaching that of CorelDraw, won several prestigious awards, and was aggressively priced at one-fifth that of Illustrator and CorelDraw, in the succeeding six years, Affinity Designer could only gain about 15% of the market. Moreover, it appears that most of Affinity Designer's customers were entry-level professional graphics designers who did have not developed a deep understanding and familiarity with either Illustrator or CorelDraw. The initial investigation reveals that very few experienced designers have switched from Illustrator or CorelDraw to Affinity Designer, suggesting that the switching costs are high. In the second request investigation, the staff should explore the costs in dollars and engineering design hours of initially creating Affinity Designer and then improving it through annual updates. The staff also should explore what obstacles Serif encounters in creating, improving, marketing, and selling Affinity Designer.

In addition, the limitations of Sketch and Inkscape indicate that there are relatively high technological barriers to entry. Inkscape, in particular, appears to have had technological difficulties in developing its product. The problem is no so much that the programming expertise

is not available in the market to create professional-grade products, but rather that the investment necessary to create a product acceptable to professional graphics designers is high relative to the likely ability of the new entrant to penetrate the market, and that this discourages the investment in the first instance. With the exception of Microsoft, the staff has not heard any rumors that any other company was considering entering with a vector-based illustration program.

The staff has heard rumors that Microsoft is thinking about developing a standalone vector-based illustration program that would work seamlessly with the programs in the Microsoft Office Suite. Although the staff should investigate this further, it is unlikely that anything Microsoft is considering doing would give much support to an entry defense.

- First, it is unclear—and probably unlikely—that Microsoft would develop a professional-grade vector-based illustration program if its intent would be to have the program work with the Microsoft Office Suite. Professional vector-based graphics programs—Illustrator, CorelDraw, and Affinity Designer—are largely standalone programs with little need to integrate with word processing, spreadsheet, or mail programs, and Microsoft has little history of developing sophisticated standalone applications programs. Unless Microsoft is planning on entering with a professional-grade program, its entry would not satisfy the requirement that entry into the relevant market is "likely."
- Second, even if Microsoft was considering creating a professional-grade program, the timing of its entry is unlikely to be soon enough to satisfy the timing requirement of the entry defense. Entry "must be rapid enough to make unprofitable overall the actions causing those effects and thus leading to entry, even though those actions would be profitable until entry takes effect." U.S. Dep't of Justice & Fed. Trade Comm'n, Horizontal Merger Guidelines § 9.1 (rev. 2010). Here, the merger, if it occurs, will take place within the next year or so. Unless Microsoft is ready to launch its product within that time frame, the combined company could increase the price of Affinity Designer—which it could do immediately after the closing, creating an anticompetitive effect.
- Third, apart from the questions of likelihood and timing, Microsoft's entry is unlikely to be sufficient in magnitude and scope to negate the transaction's anticompetitive effects. To be sufficient, Microsoft's product would have to be substantially similar in price and functionality to Affinity Designer. Anything short of that would not give designers the option postmerger of a high-functionality, aggressively product they had premerger, nor would it provide the same degree of competitive constraints postmerger on Illustrator and CorelDraw that Affinity Designer provided premerger.

In the second request investigation, the staff should obtain Microsoft's documents and depose knowledgeable Microsoft employees on any plans Microsoft has on creating a vector-based illustration program (whether or not professional grade). If Microsoft has any such plans, the staff should obtain as much detail as possible on the nature of the product, the current state of development, the timing of a commercial release, Microsoft's expectations on the type of

customer who would purchase the product and the market share Microsoft will obtain, and any difficulties Microsoft has encountered or anticipates encountering in the development and commercial release of the product.

Power buyers defense. The courts and 2010 Horizontal Merger Guidelines recognize the possibility that powerful buyers may constrain the ability of the merging parties to raise prices. The courts and Guidelines, however, do not presume that the mere presence of powerful buyers prevents a merger from having anticompetitive effects. Even buyers with considerable bargaining leverage may have to accept higher prices in the wake of an increase in market power on the sell side of the market. Moreover, the merger may have anticompetitive effects, such as a reduction in product or service quality or the rate of technological innovation or product improvement, that a buyer with sufficient bargaining power can avoid a nominal price increase cannot protect itself. Finally, even if the powerful buyers can protect themselves from a price increase from an anticompetitive merger, the market power created or enhanced by the merger can be used to harm less powerful buyers in the relevant market.

As a result, to be effective, the defense requires the showing of (1) a mechanism by which the putative powerful will be able to protect themselves from the anticompetitive effects of the merger, and (2) that there are no other buyers in the market that will likely be harmed as a result of the merger.

The power buyer defense will almost surely fail on both requirements. For a power buyer defense to be cognizable, there would have to be a mechanism by which a putative power buyer would be able to protect itself. The Merger Guidelines and the cases suggest three possible mechanisms:

(1) *Share shifting*, where the purchases of the product by the putative power buyer from the merged firm are sufficiently large that a shift of some or all of these purchases to alternative suppliers would make the price increase to that buyer unprofitable

(2) *Inducing entry*, where the purchases of the product by the putative power buyer are sufficiently large that the buyer could sponsor the entry of a minimum efficient scale firm to supply the buyer, and

(3) *Vertical integration*, where the putative power buyer itself vertically integrates into the production of the input it otherwise would purchase from the merged firm.

In each case, the putative power buyer has to make large volume purchases. The preliminary investigation reveals that most sales of these programs are in single units, although some professional graphics designer shops may order up to 50 or 60 units, depending on the number of designers they employ. If the second request investigation confirms this finding, none of the purchases would have the volume of purchases necessary to any of the above productive mechanisms. Moreover, in the unlikely event that some purchasers could protect themselves (probably through share shifting), the single unit purchasers could not. I would not expect the merging parties to proffer a power buyers defense here.

In the second request investigation, the staff should explore whether either Corel or Serif have offered volume or other discounts on their vector-based illustration programs and, if so, to whom and on what basis. The staff should also explore whether either company has engaged in negotiations with any customer over the purchase price and, if so, what were the circumstances and results of such negotiations.

Efficiencies. The Horizontal Merger Guidelines recognize an efficiency defense when the efficiencies will negate the anticompetitive effect shown in the proof of the prima facie case. Courts have been more cautious in recognizing the validity of the principle of an efficiencies defense because of statements in earlier Supreme Court cases (*Brown Shoe* and *Procter & Gamble*) that efficiencies will not save an anticompetitive merger. However, most courts have been willing to assume, at least for the purposes of analysis, that the efficiencies defense described in the Horizontal Merger Guidelines is a cognizable defense, although no court has yet to find on the facts that the elements of an efficiency defense were satisfied. As with the entry defense, an efficiency defense is a negative defense: the efficiencies must negate the anticompetitive effect the merger otherwise would have. Moreover, to be cognizable, courts and the merger guidelines require the efficiencies to be merger specific and verifiable in addition to being sufficient to overcome the otherwise anticompetitive effect of the merger.

When the anticompetitive concern is higher prices postmerger, to be a defense the efficiencies must generate sufficient downward pressure on prices to offset the upward pressure resulting from the merger's reduction of competition. Because a profit-maximizing firm will set prices and output so that its marginal revenue will equal its marginal cost, only changes in marginal costs resulting from the merger will affect the merged firm's prices. Here, there is no indication that the transaction will reduce the marginal costs of producing or delivering professional vector-based programs. Moreover, it is hard to see where any marginal cost savings could result. The production of software application programs may involve substantial fixed costs of development and programming, but once the program is finalized, the costs of producing and delivering additional units reside largely in the pressing of new CDs and packaging and shipping for shrink-wrapped retail sales and only negligible costs for Internet downloads. The second request investigation should explore with the parties whether they anticipate any marginal cost savings as a result of the transaction and, if they do, to ascertain in detail the extent to which these claimed savings are merger specific and verifiable in nature and magnitude.

In meetings with the staff, Corel said that it sees the acquisition of Serif as the first step in a major effort to overtake Illustrator with CorelDraw as the vector graphics product of choice for professional graphics designers. Corel says that the acquisition will provide it with the impressive technological expertise that Serif has assembled in its development team and would allow Corel to incorporate the innovative features of Affinity Designer into CorelDraw's future versions. It also would provide Corel with a more extensive base of customers—and hence revenues—over which it could spread future development costs.

It is unlikely that this provides the basis for a cognizable efficiencies defense. Unless there is protected intellectual property involved, software development is usually just a matter of devoting the requisite time, resources, and software engineering expertise, all of which either merging party could do on its own in the absence of the merger. Although the staff should explore this in the second request investigation, I suspect that the requisite technological expertise to improve CorelDraw or even to replicate any innovative feature in Affinity Designer is available in the marketplace and does not require the acquisition of Serif. Likewise, while it might be more profitable for Corel to invest more money into product development if it had a more extensive customer base, it is not strictly necessary. Accordingly, neither reason satisfies the merger-specificity requirement for an efficiencies defense.

The staff in the second request investigation should test the verifiability requirement by exploring the nature of the product improvements Corel believes will result from the merger to determine whether the improvements are real and verifiable and not just speculative or even pretextual as well as the expected timing of any improvements. The staff should focus both on what Corel's documents say as well as take the depositions of knowledgeable Corel employees.

Finally, if Corel seeks to make an efficiencies defense, the staff in the second request investigation should press Corel on why it believes that its anticipated product improvements in CorelDraw will result in a net consumer welfare improvement when measured against the likely price increases and the reduction in Affinity Designer's product improvement rate that are likely to result from the merger. In litigation, the merging parties would bear at least the burden of adducing sufficient evidence to raise a genuine issue of fact whether the cognizable benefits of the transaction would outweigh the transaction's likely costs and so produce a net consumer welfare benefit.

Failing firm. The "failing firm" defense has existed as a defense to a Section 7 action since the Supreme Court's decision in *International Shoe Co. v. FTC*, 280 U.S. 291, 299-303 (1930). The idea behind the defense is that it is better to permit an "anticompetitive" acquisition than to allow the failing firms assets—and therefore productive capacity—to exit the market. Under *International Shoe*, it is a complete defense to a Section 7 claim that the acquired entity is "a corporation with resources so depleted and the prospect of rehabilitation so remote that it faced the grave probability of a business failure." *Id*. at 777. The 2010 Horizontal Merger Guidelines have refined the elements of the defense to require:

(1) the allegedly failing firm would be unable to meet its financial obligations in the near future;

(2) it would not be able to reorganize successfully under Chapter 11 of the Bankruptcy Act; and

(3) it has made unsuccessful good-faith efforts to elicit reasonable alternative offers that would keep its tangible and intangible assets in the relevant market and pose a less severe danger to competition than does the proposed merger.

U.S. Dep't of Justice & Fed. Trade Comm., Horizontal Merger Guidelines § 11 (rev. 2010). Moreover, the Guidelines provides that, for the purpose of the third requirement, "[a]ny offer to purchase the assets of the failing firm for a price above the liquidation value of those assets will be regarded as a reasonable alternative offer." *Id*. § 11 n.16.

Here, the preliminary investigation has not produced any information on the financial condition of either of the merging parties. The staff in the second request investigation should obtain financial information sufficient to show whether either company would be unable to meet its financial obligations in the near future. In the unlikely event that one or both of the companies are unlikely to be able to meet their financial obligations in the near future, then the staff should also ascertain whether the failing company is likely to be able to reorganize under Chapter 11 and to what extent, if any, has there been an effort to elicit reasonable alternative offers and the nature of any resulting offers.

3. Conclusion on Section 7 legality

The staff likely will be able to make out a strong case that Corel's acquisition of Serif would violate Section 7 of the Clayton Act by substantially lessening competition in the market for vector-based illustration programs sold to professional graphics designers in the United States.

Application of the *Brown Shoe* "outer boundary" and "practical indicia" factors, as well as the hypothetical monopolist test, indicates that a relevant product market in which to analyze the transaction is the sale of vector-based illustration programs to professional graphics designers. The relevant geographic market is the United States. The HHI statistics in this relevant market predicates the *PNB* presumption and should establish a prima facie case of anticompetitive effect within this market, although the HHI statistics are not as high as they have been in many cases recently brought by the Commission and the Antitrust Division. The prima facie case, however, is likely to be supported by evidence of (1) the combined firm's unilateral incentive to substantially increase the price of Affinity Designer; (2) a coordinated effect theory of anticompetitive harm, since the market is already susceptible to tacit coordination and the merger will reduce the number of incumbent firms from three to two; (3) the elimination of Affinity Designer as a maverick in the market; and (4) a decrease in the rate of innovation and product improvement in Affinity Designer.

None of the traditional defenses are likely to apply:

1. *Entry defense*: Entry is likely to be expensive, and there are likely substantial reputational and switching barriers to entry. In addition, Microsoft's rumored entry is uncertain in timing, product attributes, consumer acceptance, and competitive effect and appears unrelated to the transaction.
2. *Power buyers*: The products appear to be primarily purchased in single units, there are no apparent large buyers within the meaning of the defense, and there is no apparent

mechanism for any buyer to protect itself from an anticompetitive price increase, much less a decrease in the rate of innovation in Affinity Designer.

3. *Efficiencies*: In their deal announcement, the parties indicated that they would differentiate the two products, which they expect to increase unit sales, revenues, and products. But this expectation is likely to be speculative at best, not verifiable, and in any event insufficient to negate the anticompetitive harms likely to result from the transaction.

4. *Failing firm*: Although Serif's Affinity Designer only earned $3.5 million in revenues in 2019 and therefore could be unprofitable as a product line, there is no indication that Serif is in financial trouble or is thinking about terminating Affinity Designer. Moreover, Serif's business plan prepared before the acquisition discussions anticipated the continued development and sale of Affinity Designer.[13]

[13] **Note to students**: Some of you also addressed the balancing of the equities and assessed whether the Commission would succeed on a motion for a preliminary injunction to block the transaction. The assignment was explicit at the end of the first paragraph that you did not have to do this: "Arnold wants you to focus on the merits of the Section 7 claim; it is not necessary for you to address the requirements for preliminary or permanent injunction relief." While I did not penalize students who included an equities analysis, I did not credit it either. You should read the assignment carefully to make sure both that you are answering the questions asked and not spending needless time answering questions that were not asked.

Merger Antitrust Law
Fall 2020

EXAM QUESTION #2: THE VISA/PLAID MERGER

INSTRUCTOR'S ANSWER

MEMORANDUM OF LAW VERSION

> *Note: This answer is much longer, more detailed, and more complete than anything I would expect for a writing assignment, much less a timed exam answer. I prepared this as a teaching tool to explain the law and the reasoning in detail rather than as a model exam answer.*

You have asked me to prepare a memorandum analyzing the possible merits of a complaint just filed by the Department of Justice alleging that the acquisition by the firm's client Visa, Inc. of Plaid Inc. would violate Section 7 of the Clayton Act. In particular, you would like me to identify possible ways to refute the elements of the DOJ's prima facie case as well as identify other defenses Visa might raise. In each case, you have asked that identify the most important facts that would need to be developed to test whether the defense will be meritorious.

On January 13, 2020, Visa agreed to buy Plaid for $5.3 billion. Visa is a global payments company that operates the largest online debit network in the United States. Visa has a market share of online debit services of 70 percent by transaction volume. Plaid, Inc. is a financial data aggregator, founded in May 2013, that provides technology and software that enables financial technology ("fintech") applications to collect, with the consumer's permission, a consumer's financial data from her financial institutions.

The DOJ alleges that Visa's acquisition of Plaid likely will substantially lessen competition in the online debit market in the United States by eliminating "nascent" competition between Visa and Plaid and will result in higher prices and reduced service, quality, choice, and innovation than would be the case if the acquisition did not occur. In essence, the DOJ complaint alleges that Visa is a dominant firm in online debit transactions, with debit cards operating on its network accounting for a 70% share of online debit transactions by transaction volume, and that MasterCard (with a 25% share) and smaller debit networks have been unsuccessful in materially reducing Visa's dominance or market power. Moreover, because of Visa's dominant share, merchants have no choice but to accept Visa-network debit cards. As the result of this dominance, Visa has been able to charge merchants supracompetitive network fees, which in turn are passed on to customers in the form of higher prices for the merchant's goods and services. The complaint further alleges that high barriers to entry and expansion protect Visa's dominance since new challengers would need millions of connections with customers to attract thousands of merchants and thousands of merchants to attract millions of customers. Finally, the

complaint alleges that Plaid is a highly innovative company that is "uniquely positioned to surmount these barriers and undermine Visa's monopoly in online debit services." Although the complaint acknowledges that Plaid does not compete today with Visa debit for consumer-to-business ("C2B") transactions, it has the customer base to permit fintech companies to develop apps that would compete directly with Visa debit. Moreover, the DOJ alleges that Plaid itself is developing a new pay-by-bank debit service by the end of 2021 that "would compete against Visa's online debit services." The complaint concludes that "[c]ompetition from Plaid likely would drive down prices for online debit transactions, chipping away at Visa's monopoly and resulting in substantial savings to merchants and consumers," and that Visa is acquiring Plaid in part to eliminate that competitive threat.

There are a number of possible ways to refute the elements of the DOJ's prima facie Section 7 case as well as several other defenses to explore. To begin to frame the analysis, I should note that the transaction is not horizontal. As the complaint acknowledges, Visa and Plaid do not currently compete with one another for consumer-to-business ("C2B") transactions.[1] Plaid develops software for financial data aggregation; it does not currently offer any C2B transactions service. Nor is there any allegation that Plaid is a market participant because it is a "rapid entrant" that would very likely and quickly produce and sell a C2B transactions service in the event of a SSNIP without incurring significant sunk costs. Rather, the allegations sound in (1) the elimination of Plaid as an actual potential entrant into the online debit market, and (2) the vertical foreclosure of fintech companies that, in the absence of the acquisition, would use Plaid software to develop online debit services that would compete with Visa debit. The elimination of perceived potential competition and other theories of vertical harm are not alleged or implied by the complaint.[2]

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[1] **Note to students:** Some of you developed arguments that Visa and Plaid were not currently selling services in the same relevant market. There was no allegation in the complaint, however, that said that they are. Indeed, the hypothetical is explicit that "the complaint acknowledges that Plaid does not compete today with Visa debit for C2B transactions." Unless Plaid is a nonselling participant in the alleged relevant market, the transaction would not be horizontal and the *PNB* presumption would not be applicable nor need to be addressed. While not alleged in the complaint, the DOJ could argue that Plaid is a current participant in the alleged relevant market because of the new service the DOJ alleges will is developing, but for the DOJ to develop this as a horizontal case it would have to ascribe a future market share to Plaid. Given the burden on the DOJ of providing not only that Plaid, if it remained independent, would create a new pay-by-bank product but also of proving a future market share sufficiently high to yield a strong *PNB* presumption, it is probably better for the DOJ to try the case under an actual potential competition or vertical foreclosure theory and not challenge the transaction as a horizontal merger.

[2] **Note to students**: Be sure that you understand the procedural posture of the hypothetical in writing your answer. The hypothetical involved *allegations* in a complaint, not facts or even evidence. Just because a plaintiff alleges something is true (and has some evidence to support the allegation to avoid Rule 11 problems), the defendant can still attack the truth of the allegations with other evidence. Some of you analyzed the hypothetical as if the allegations were facts and did not look for ways to dispute any of the allegations. Moreover, the factual allegations in a complaint need only be sufficient to raise a plausible claim of a violation; they do not need to be complete. Some of you equated the absence of particular factual allegations as an absence of evidence and concluded that the DOJ could not discharge its burden of proof under *Baker Hughes*. But the DOJ is free to offer evidence of facts not alleged in but consistent with the complaint. What you needed to do was identify what evidence required to refute what the DOJ needed to show to win under a particular theory of the case. So, for example, it is not sufficient to say

I see ten avenues to explore to defeat the Section 7 claim:

The relevant market

1. The alleged relevant product market in which Visa participates is improperly defined and should either be limited to debit card transactions or expanded to include credit card transactions, if not also electronic payment services, cash, and checks.
2. The relevant market is competitive today and will remain so postmerger.

The elimination of actual potential competition

3. Plaid is not an actual potential entrant into the online debit market.
4. Even if Plaid is an actual potential entrant, it is not unique: Other companies offer financial aggregation services similar to Plaid that they could use to enter the market or enable fintech companies to enter the market.
5. Even if Plaid is an actual potential entrant, its entry is too uncertain in timing, magnitude, and competitive effect to predicate an anticompetitive elimination of actual potential competition.

Vertical foreclosure

6. Visa has no incentive to foreclose rivals from using Plaid
7. Plaid is not unique or necessary to provide third-party fintech companies with the technology or connections to create a pay-by-bank service
8. It is speculative whether fintech companies would enter into pay-by-bank services using Plaid services even if Plaid remained independent.
9. If one or more fintech services would enter into pay-by-bank services using Plaid technology in the absence of the acquisition, their entry (individually or collectively) is too uncertain in timing, magnitude, and competitive effect to predicate an anticompetitive harm.

Efficiencies

10. The consumer benefits from the transaction outweigh any possible anticompetitive effect.

Given the nature of the services, I do not see any prospect for refuting the allegation that the relevant geographic market is the United States. Moreover, since the transaction is not horizontal, there is no role for the *Philadelphia National Bank* presumption and hence no need to address it.

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that the DOJ had only summarily alleged that Plaid would enter the relevant market by the end of 2021 and therefore conclude that the DOJ could not show that Plaid was an actual potential entrant. You needed to identify what evidence you should be seeking to show that Plaid was not in fact an actual potential entrant despite the DOJ's allegation that it was.

Section 7 of the Clayton Act

Section 7 of the Clayton Act prohibits mergers and acquisitions "where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. § 18. By its terms, a Section 7 violation contains three essential elements: (1) a relevant product market ("line of commerce"), (2) a relevant geographic market ("section of the country"), and (3) a reasonably probable anticompetitive effect in the relevant market (that is, the combination of the relevant product market and the relevant geographic market). The plaintiff's failure to prove any of these essential elements requires dismissal of the claim.

The Relevant Market

1. Online debit is not the relevant product market

The complaint alleges that the relevant product market is online debit transactions, which the DOJ alleges include traditional online debit services and emerging pay-by-bank debit services. The complaint defines the market as services that enable payments authorized online that are made from directly existing funds in a consumer's bank account to a merchant's bank account. The complaint, however, excludes ACH payments on the grounds that the consumer must enter her bank account and routing information separately for each merchant and that it takes several business days to determine whether a payment is successful. This appears to qualify further what pay-by-bank services are in the relevant market since ACH payments made online otherwise fit the complaint's definition of an online debit transaction. Given the reasons for the ACH exclusion, the DOJ's definition more narrowly appears to be services that (a) enable payments authorized online that are made from directly existing funds in a consumer's bank account to a merchant's bank account, (b) do not require the entry of the purchaser's bank information for each merchant, and (c) quickly informs the merchant that payment has been made (which debit cards do not do) or—more likely what the DOJ means—guarantees payments upon authorization (which debit cards do). We should investigate what "pay-by-bank services" fit this definition and, to the extent they exist, how successful they have been, and what barriers exist that have impeded their expansion. It may be that the DOJ has defined a product that does not exist today, which, if true, should undermine the credibility of the DOJ's complaint somewhat. It also defines some of the attributes that a Plaid product or a Plaid-enable fintech product must have under the DOJ's theory.

The idea behind the DOJ's complaint appears to be that merchants or customers would shift materially from debit cards in general (and Visa network debit cards in particular) to Plaid if Plaid remained independent and allowed to develop its own pay-by-bank service or to third-party fintech companies that would develop their own pay-by-bank service using Plaid technology. This raises two related questions about market definition: Are debit cards sufficiently unique that the relevant market in which Visa participates should be limited to traditional debit card services? Alternatively, if the relevant market includes pay-by-bank debit services, should it be

expanded to include at least credit cards, if not also electronic payment services, cash, and checks?[3]

The law. Pleading and proof of a relevant market are required for every alleged Section 7 violation. A plaintiff's failure to prove a relevant product market requires the Section 7 claim to be dismissed.

There are two complementary legal approaches to product market definition: (1) the *Brown Shoe* "outer boundaries" and "practical indicia" criteria, and (2) the hypothetical monopolist test.

Under *Brown Shoe*, the "outer boundaries" of the relevant product market "are determined by the reasonable interchangeability of use or the cross-elasticity of demand between the product itself and substitutes for it." *Brown Shoe Co. v. United States*, 370 U.S. 294, 325 (1962). Moreover, "within this broad market, well-defined submarkets may exist which, in themselves, constitute product markets for antitrust purposes. The boundaries of such a submarket may be determined by examining such practical indicia as industry or public recognition of the submarket as a separate economic entity, the product's peculiar characteristics and uses, unique production facilities, distinct customers, distinct prices, sensitivity to price changes, and specialized vendors." *Id*. (internal citations and footnotes omitted). The original purpose of the *Brown Shoe* "practical indicia" was to enable the finding of relevant (sub)markets within larger markets defined by the "outer boundaries" test. Modern courts, however, do not view submarkets as any different from markets and regard the *Brown Shoe* "practical indicia" as factors probative of reasonable interchangeability of use and high cross-elasticity of demand.

The "hypothetical monopolist test," which was introduced by the Merger Guidelines in 1982 and now adopted in one form or another by the courts, deems a product grouping ("candidate market") as a relevant market if a hypothetical monopolist of all products in the candidate market could profitably raise the prices of all products uniformly by a small but significant nontransitory price ("SSNIP"), usually taken to be 5% for one year. Under the 2010 Merger Guidelines, the relevant market need not be the smallest market that satisfies the hypothetical monopolist test. Most recent courts that have addressed the issue have adopted this principle.[4]

Application. Both *Brown Shoe* and the Merger Guidelines look to measures of demand-side substitutability—whether cross-elasticity of demand, diversion ratios, or reasonable interchangeability of use—as the defining characteristic of a relevant market. Products within a

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[3] Another consumer of Visa's debit card services are banks that contract with Visa to provide network support for the debit cards the bank issues to its account holders. There is nothing in the complaint that suggests that the DOJ is alleging that banks will switch to Plaid or a Plaid-enabled fintech pay-by-bank service to displace the bank's debit cards, although that is at least theoretically conceivable. I will not address this possibility in this memorandum.

[4] **Note to students:** In your boilerplate, be sure that it is either neutral as to the identifies of the merging parties or that you customize your answer to name the parties at hand. References to parties in other deals (e.g., MGC and Bell) undermine the credibility of the answer. I should note that this is a problem in practice as well when attorneys reuse previously written material. Best to learn this lesson now and not when the partner—or even worse, the client—catches the error.

relevant market exhibit significant demand-side substitutability with each other and much less substitutability with products outside of the market. The DOJ's alleged market requires debit card services and pay-by-bank services to exhibit high substitutability with one another and much less substitutability with other payment services, such as credit card services, electronic payment services, cash, and checks.[5]

But from the perspective of both merchants and purchasers, it is not apparent that debit card services and pay-by-bank services exhibit a high degree of substitutability with one another. Indeed, the *Brown Shoe* "practical indicia" suggests that debit card services should be isolated in their own relevant market. Although this would need confirmation, I suspect that the industry and the public recognize debit card services as a separate economic entity, and traditional debit cards have peculiar characteristics and uses, distinct prices (interchange and network fees), and specialized vendors (the commercial banks) apart from other payment products generally and pay-by-bank products in particular. Conversely, I suspect that the industry and the public recognize pay-by-bank products as a separate economic entity, and pay-by-bank products have peculiar characteristics and uses, distinct prices, and specialized vendors apart from other payment products generally and debit card services in particular.

Moreover, if prices of debit card services to merchants were to increase by a small but significant nontransitory amount (a "SSNIP"), I suspect that few if any merchants would switch to a pay-by-bank service as a partial or complete replacement for debit card transactions. Indeed, I have encountered few merchants that ask customers to use a different payment method unless the merchant does not take the customer's preferred payment method. For example, some merchants do not take American Express and so ask customers to use another payment mechanism, but I have only rarely experienced a merchant who takes American Express ask a customer to use another payment mechanism. I suspect that merchants believe that the loss of customer goodwill would outweigh any savings resulting from asking customers to switch to a different payment mechanism. This suggests a very low cross-elasticity in demand by merchants between debit

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[5] **Note to students**: You may be interested to know that the 2020 Diary of Consumer Payment Choice study by the Cash Product Office of the Federal Reserve Board from the following share of payment instrument usage for 2019:

Instrument	Share
Cash	26%
Checks	6%
Credit	23%
Debit	28%
Prepaid	3%
Electronic	11%
Other	3%

Laura Kim, Raynil Kumar & Shaun O'Brien, Fed. Res. Bank of San Francisco, Cash Payment Office, Findings from the 2020 Diary of Consumer Payment Choice (July 2020), https://www.frbsf.org/cash/files/2020-findings-from-the-diary-of-consumer-payment-choice-july2020.pdf. There is no reason why you should know this for the exam.

card services and other payment services. A quantification of cross-elasticity of demand by merchants between debit card services and pay-by-bank and other payment services, including perhaps through a survey, should be explored as we prepare the defense. In the absence of good quantitative evidence, we should explore the possibility of a merchant survey to examine substitutability. Finally, we should retain an industry expert for an opinion on the substitutability of other payment services for debit card transactions.

Purchasers, on the other hand, do not pay for the use of their debit cards. Unless banks (or merchants) were to begin to impose fees for the use of a debit card, a purchaser who prefers this method of payment has no reason to switch. We should explore whether banks or merchants are considering imposing fees or other impediments on the use of debit cards.

If, however, traditional debit cards and pay-by-bank services are in the same market, then at least credit cards and perhaps other payment mechanisms should be included in the market as well. While the complaint defines the relevant product market as services that enable payments authorized online that are made directly from existing funds in a consumer's bank account to a merchant's bank account, it is not apparent that this feature factors meaningfully into the choice by merchants or purchasers as to which payment instrument they will use.

Merchants should not care whether the money for payment is withdrawn directly from the purchaser's bank account as long as the merchant is guaranteed payment. If so, merchants should prefer that customers substitute credit cards, which guarantee payment, rather than today's pay-by-bank instruments, which do not guarantee payment, if the purchaser chooses not to use a debit card. Moreover, almost all merchants are already equipped to accept credit cards as well as debit cards, whereas accepting pay-by-bank payments would require the merchant to install an additional acceptance system. Merchant willingness to accept pay-by-bank services should be part of the cross-elasticity studies and industry expert analysis.

As for purchasers, if for some reason they want to use something other than their debit card, I suspect that the most likely substitute is a credit card. I suspect that purchasers value merchant acceptance, low or no fees, convenience, and rewards in their choice of payment instruments. If so, then debit cardholders will likely find credit cards (wide merchant acceptance, low fees, convenience, and rewards) a better substitute to pay-by-bank instruments (low merchant acceptance, not convenient to use, no rewards). This may not be true for all purchasers—especially those who do not want or cannot qualify for a credit card—but these may be inframarginal rather than marginal customers. We need to investigate why purchasers use debit cards, the alternative payment mechanisms available for them to use, and the payment mechanisms they consider to be the closest substitutes to traditional debit cards.

Finally, to the extent that—contrary to my suspicion—payments must be made directly from existing funds in a consumer's bank account into the merchant's bank account, then checks are technically the closest substitutes to pay-by-bank services today. Pay-by-bank instruments are essentially electronic checks: rather than use a written document, the purchaser instructs its bank electronically to pay the merchant a certain amount of money. Like written checks, payment is

not guaranteed at the time the electronic "check" is written but instead must wait for processing through the ACH. We should confirm this.[6,7]

2. The relevant market is competitive today and will remain so postmerger

Visa's acquisition of Plaid can violate Section 7 only if the effect of the acquisition "may be substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. § 18. A common defense is to argue that the relevant market is competitive today and that the forces that make the market competitive premerger will ensure that the market remains competitive postmerger. We should certainly explore this argument, but it may be a difficult one to sustain. If the market is limited to debit card services or includes all online debit transactions as alleged by the DOJ, given Visa's high market share of around 70%, together with MasterCard's share of around 25%. Given the highly concentrated nature of the market, it is likely that the court will presume that the market is operating noncompetitively premerger. Even if the market were expanded to include credit card services, Visa and MasterCard again account for the bulk of these services. The resulting concentration in the broader market is likely .to be high enough for a court to presume that the market is operating noncompetitively premerger. Still, we should at least explore with the economists whether there is an argument that the relevant market—even as defined by the DOJ in the complaint—is competitive today and will remain so postmerger.

The Elimination of Potential Competition

The complaint does not allege that Plaid is currently a provider of online debit transactions. Rather, it only alleges that Plaid, in the absence of its acquisition by Visa, would develop a new pay-by-bank debit service by the end of 2021 that "would compete against Visa's online debit services." The theory of competitive harm here is that the acquisition would eliminate actual potential competition. The idea is that, in the absence of the acquisition, the potential entrant would have entered the market and its entry would improve the competitive performance of the marketplace.

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[6] One problem with including checks in the relevant market with debit card services is that debit card services are a two-sided platform, while check services may be deemed to be a one-sided platform. In *Amex*, the Supreme Court held in a nonprice vertical restraints case involving restrictions imposed by Amex on merchants accepting American Express cards that "[o]nly other two-sided platforms can compete with a two-sided platform for transactions." *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2287 (2018). In *United States v. Sabre Corp.*, 452 F. Supp. 3d 97, 137 (D. Del. 2020), *vacated*, No. 20-1767, 2020 WL 4915824 (3d Cir. July 20, 2020), the district court applied this rule to reject, as a matter of law, the inclusion of a one-sided service in the same relevant market as a two-sided service. Debit cards, by an easy analogy with credit cards, are a two-sided platform. If checks are found to be a one-sided service and the *Sabre* reasoning applies, then checks would be excluded from the relevant market containing debit card services.

[7] **Note to students:** Some of you sought to challenge the DOJ's relevant product market on the grounds that Visa and Plaid did not offer services that compete with one another. By itself, that is not sufficient. A relevant product market in which the anticompetitive effect allegedly will occur is required in all Section 7 claims, including those against potential competition and vertical transactions (where the merging parties do not compete against each other).

Although the Supreme Court has reserved judgment on the elimination of actual potential competition, see *United States v. Marine Bancorporation, Inc*., 418 U.S. 602, 625, 639 (1974); *United States v. Falstaff Brewing Corp*., 410 U.S. 526, 537-38 (1973), lower courts, the FTC, and the 1984 DOJ Merger Guidelines recognize the elimination of actual potential competition as a viable theory of anticompetitive harm under Section 7. In addition to the acquired firm having decided to enter the market, the lower courts have created five additional requirements on an acquisition for it to give rise to the requisite anticompetitive effect for eliminating potential competition:

1. The relevant market must be operating noncompetitively prior to the acquisition. If the market is operating competitively, new entry cannot improve the market's competitive performance.
2. The putative actual potential entrant must be uniquely positioned to enter the market.
3. The putative potential entrant must have an "available feasible" means of entering the market.
4. But for the acquisition, the putative potential entrant would have entered the market "in the near future."
5. Assuming entry occurred, it must materially improve the competitive performance of the market.

Here, challenges to Plaid's decision to enter, uniqueness, timeliness, and competitive effect all are fruitful avenues of defense to pursue.

3. Even assuming that the relevant market is online debit transactions as the DOJ alleges, Plaid is not an actual potential entrant into this market

One requirement of the actual potential competition theory is that actual entry must occur "in the near future." There is no modern case law on when entry is sufficiently imminent, but if the firm has decided to enter the market and is currently executing plans to do so, that appears to be sufficient to satisfy the "near future¨ requirement regardless of when entry would actually occur. (This explains the prescription drug cases, where the firm is in Phase III clinical trials but actual entry remains some years away.)

Here, we should investigate whether Plaid has decided to enter the market. The complaint summarily alleges that Plaid will enter the market with a new pay-by-bank service by the end of 2021 but contains no detail about what decisions have been made, the contours of the product design, the state of development of the new product, what funds have been expended on development so far, what funds are committed to the product's future development, the product's anticipated release date, and Plaid's expectations for the product's penetration into the market. We should investigate what decisions have been made regarding the alleged new product to determine whether Plaid, in fact, is sufficiently committed to the project for it to be deemed an actual potential entrant.

Moreover, given the exclusion of online ACH services from the DOJ's relevant market, to qualify as an actual potential entrant into that market the Plaid product must have the following attributes: (a) enables payments authorized online that are made from directly existing funds in a consumer's bank account to a merchant's bank account; (b) does not require the entry of the purchaser's bank information for each merchant, and (c) quickly informs the merchant that payment has been made or guarantees payments upon authorization. If Plaid is considering creating a pay-by-bank service, we should investigate whether the product will have these qualifying attributes.

We should also explore the possibility that any claim Plaid might have made to create a new pay-by-bank service was simply a ruse to induce Visa to pay a higher acquisition price and did not reflect a serious effort to create such a service.[8]

4. Plaid is not uniquely situated to enter into an online debit transaction service

For courts to recognize the elimination of a firm as an actual potential entrant as anticompetitive, the potential entrant must be one of only a few firms equally capable of entering the market. In its 1984 Merger Guidelines, the DOJ stated:

> The Department is unlikely to challenge a potential competition merger if the entry advantage ascribed to the acquiring firm (or another advantage of comparable importance) is also possessed by three or more other firms. 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 nonadvantaged firms increases.

U.S. Dep't of Justice, Merger Guidelines § 4.133 (rev. 1984). Although the FTC did not join the DOJ in either the 1982 guidelines or its 1984 revision, the uniqueness requirement—including the three-firm threshold—is consistent with the earlier case law and is likely to be followed today. The idea is that if other firms are similarly situated to the acquired firm as an actual potential entrant, then the acquisition will not reduce likely future competition because—if entry is profitable—another firm will enter the market in place of the target firm.

Here, Plaid is a financial data aggregator. We should explore what other financial data aggregators exist that also have an ability to create a pay-by-bank service similar to the one the DOJ alleges Plaid

[8] **Note to students:** Some of you argued that Visa and Plaid were not currently in the same relevant market. *See supra* note 1. As I noted earlier, the DOJ did not allege that Visa and Plaid currently are in the same market. The DOJ did allege, however, that Plaid would enter the alleged online debt transactions market by the end of 2021. In Point 3, I suggest that Visa explore an argument that even if Plaid did create a pay-by-bank service it would not be in the DOJ's relevant market because it would lack one or more of the defining characteristics of the DOJ's market. One argument that probably will not work is that Visa's product is a two-sided platform and Plaid's pay-by-bank product is one-sided, and hence under *Amex* the two cannot compete with one another as a matter of law. If Plaid develops a product of the type the DOJ alleges, it will almost surely be deemed to be a two-sided platform.

would create in the absence of the acquisition. If there are more than three, as I suspect is the case, then we have the beginnings of a challenge to the uniqueness requirement.

Moreover, Plaid's technology—which is simply software—should be relatively easy for good programmers to emulate. The DOJ does not allege any unique or intellectual property-protected attributes to Plaid's software that other financial data aggregators do not or cannot emulate. We should investigate to confirm that this is the case. If there is ease of entry into Plaid's technology, this should also negate the uniqueness requirement.

The DOJ is likely to argue that Plaid is uniquely situated to enter into a pay-by-bank service because of the large number of Plaid's connections to user accounts and fintech companies. We should investigate the number of connections other financial aggregators have. Even if Plaid has a uniquely large number of connections, we can argue that the ability to grow into pay-by-bank services will depend on the service's attractiveness to merchants and purchasers. If a third-party financial data aggregator or fintech company were to create an equally attractive product, it should be able to grow at the same pace.

5. Even if Plaid is an actual potential entrant, its entry is too uncertain in timing, magnitude, and competitive effect to predicate an anticompetitive elimination of actual potential competition

Even if Plaid is an actual potential entrant, its entry is too uncertain in timing, magnitude, and competitive effect to predicate an anticompetitive elimination of actual potential competition

Section 7 of the Clayton Act prohibits mergers and acquisitions where the effect of the transaction "may be substantially to lessen competition, or to tend to create a monopoly." 15 U.S.C. § 18. This requirement has two implications that are important here.

First, the Supreme Court has interpreted the "may be" language to require that there is a "reasonable probability, appear[ing] at the time of suit" that the putative anticompetitive effect will occur in the relevant market. *United States v. du Pont & Co.*, 353 U.S. 586, 589 (1957); *accord Brown Shoe Co. v. United States,* 370 U.S. 294, 325 (1962) (holding that the government must show a "reasonable probability that the merger will substantially lessen competition"). While the government need not prove anticompetitive effects with "certainty," *FTC v. H.J. Heinz Co.*, 246 F.3d 708, 719 (D.C. Cir. 2001), "proof of a mere possibility of a prohibited restraint or tendency to monopoly will not establish the statutory requirement that the effect of an acquisition 'may be' such restraint or tendency." *du Pont*, 353 U.S. at 598; *accord FTC v. Consol. Foods Corp.*, 380 U.S. 592, 598 (1965).

Second, the threat must be to lessen competition *substantially*. 15 U.S.C. § 18. If the likely effect on competition is only minor, the anticompetitive effect requirement is not satisfied. In considering the effect of the entry of an actual potential entrant, the court must consider the minimum scale of entry required for a new entrant to have a material procompetitive effect, and how quickly, if at all, the putative actual potential entrant likely would achieve this scale. More

generally, the standards courts use in determining whether an entry defense exists should be equally applicable in determining whether entry would have a substantial (procompetitive) effect on competition under the actual potential competition theory of anticompetitive harm.

Taken together, Section 7 requires that Plaid not only have a reasonable probability of entering into a pay-by-bank service in the near future, but also that this entry—if it were to occur—must have a reasonable probability of substantially increasing competition in the relevant market.

Here, the complaint is silent on both the likelihood and magnitude of the DOJ-predicted procompetitive effect of Plaid's entry. But the complaint indicates that even substantial firms in the market–notably MasterCard—have been unable to take significant share away from Visa. This suggests that there are barriers to expansion in the market even for firms with a virtually identical product to Visa. The DOJ's complaint posits that a new firm that has not previously participated in the space, with a new product based on technology that has yet to be widely accepted by either merchants or purchasers, will be able to penetrate the market significantly and predictably.

In Point 1 above, I addressed whether merchants and purchasers would find pay-by-bank products sufficiently substitutable to be in the same relevant market as debit card transactions. The same information we gather there should also be probative of the ability of Plaid to penetrate the market if it were to create a product. We should investigate how much share Plaid would have to gain to improve competition in the relevant market substantially and how quickly Plaid will be able to gain this share.

Finally, even if Plaid were able to take a substantial share from Visa within a short time after Plaid's entry, it is not clear that a reduction in Visa's share would lead to a reduction in the fees Visa charges. The DOJ's complaint alleges that, because of Visa's dominance, "merchants have no choice but to accept Visa-network debit cards." The complaint then alleges that Visa's dominance—in other words, its "must have" quality—enables Visa "to charge merchants supracompetitive network fees, which in turn are passed on to customers in the form of higher prices for the merchant's goods and services." I suspect, however, that the number of merchants that accept MasterCard debit cards is equal to those who accept Visa debit cards. This suggests that MasterCard debit cards have a similar "dominance" and "must have" quality to Visa debit cards even though MasterCard has only a 25% share. We should investigate the extent to which MasterCard, with its much lower share, still has the power to charge debit card fees equivalent to those of Visa. If so, then there is a good argument that the entry of Plaid into the market would not cause a reduction in Visa's fees as the DOJ's theory of harm posits.

Vertical Foreclosure

The elimination of actual potential competition posits that Plaid itself will enter the relevant market. The complaint also contains a second theory of anticompetitive harm: that Plaid possesses a unique product that will enable third-party fintech companies in the future to enter

the relevant market and that, after the acquisition, Visa will foreclose or impede these third-party fintech firms from entering by either refusing to license the Plaid technology or by significantly increasing the license fees.

The DOJ's complaint does not allege that third-party fintech firms have used Plaid services to create pay-by-bank services currently in the DOJ's alleged market. Consequently, this is not a traditional vertical foreclosure theory, but rather a hybrid where the alleged vertically foreclosed firms are actual potential entrants into the relevant market. For this theory to apply here, Visa must have the incentive to foreclosure rivals from using Plaid technology, Plaid's technology must be unique, one or more third-party fintech firms must be reasonably likely to enter the relevant market using the Plaid technology in the near future in the absence of the acquisition, and there must be a reasonable probability that this entry (individually or collectively) would produce a substantial procompetitive effect in the relevant market. As a result, we can use much the same approach to vertical foreclosure as we did for the DOJ's actual potential competition theory:

6. Visa has no incentive to foreclose rivals from using Plaid

The DOJ's vertical foreclosure theory requires Visa to have the incentive to foreclose rivals from using Plaid either by refusing to license Plaid technology to them or by charging materially higher prices for licenses than Plaid would have charged in the absence of Visa's acquisition. Visa's incentive to foreclosure rivals depends on whether Visa can recoup more profits from the diversion of customers from rivals than it would lose in foregone license fees to rivals that Visa could have earned in the absence of foreclosure. To perform this calculation, we need to estimate the license fee Plaid would charge in the absence of the transaction and its resulting margin and then determine the profit-maximizing license fee Visa would charge in light of any profits it might make on the recapture of the customers of rivals if it charged a higher license fee than Plaid would have charged as an independent company. If there is significant recapture of customers by Visa, then Visa is likely to charge a higher price than Plaid would in the absence of the transaction. We should retain an economist to make these estimates and analyze the likely difference, if any, between the price Plaid would charge in the absence of the transaction and the price Visa would charge with the transaction.

7. Plaid is not unique or necessary to provide third-party fintech companies with the technology or connections to create a pay-by-bank service

Other companies offer financial aggregation services similar to Plaid that they could use to enter the market or enable fintech companies to enter the market. We should investigate alternative suppliers of financial aggregation services that fintech companies could use to create a pay-by-bank service and the strengths and weaknesses of these other services compared to Plaid for this purpose.

8. It is speculative whether fintech companies would enter into pay-by-bank services using Plaid even if Plaid remained independent

Even if Plaid is unique, there can be no vertical foreclosure unless one or more third-party fintech companies would have used Plaid to create a pay-by-bank service. We should investigate whether any such companies are currently planning to create a pay-by-bank service using Plaid. Note that Plaid's financial aggregation services have been available for license for several years. We also should investigate whether any fintech company has attempted to create a pay-by-bank service using Plaid to date and, if so, what has been its success and what problems it has encountered. Also, just as the DOJ would press the parties to identify with particularity new entrants if the parties raised an entry defense, we should press the DOJ to identify each fintech company it believes would enter the relevant market with a Plaid-enabled pay-by-bank service in the absence of the transaction. For each such firm, we should press the DOJ to prove the attributes of each firm's new pay-by-bank service, the time of entry into the market, the market share the product will obtain in the first two to five years after entry, and how much, if at all, this entry will result in lower Visa debit card fees or other competitive benefits.

9. If one or more fintech services would enter into pay-by-bank services using Plaid technology in the absence of the acquisition, their entry (individually or collectively) is too uncertain in timing, magnitude, and competitive effect to predicate an anticompetitive harm

As noted in Point 5 above, even if Plaid were a uniquely suitable service and one or more firms would create pay-by-bank services using Plaid in the absence of the transaction, it still remains for the DOJ to show a reasonable probability that this entry—either individually or collectively—would substantially competition in the relevant market. As in Point 5, we should investigate the minimum scale of entry necessary for this entry to improve competition in the market materially and the likely time it would take for entry of this scale to occur in light of barriers to merchant and purchaser acceptance.

Efficiencies

The Horizontal Merger Guidelines recognize an efficiency defense when the efficiencies will negate the anticompetitive effect shown in the proof of the prima facie case. Courts have been more cautious in recognizing the validity of the principle of an efficiencies defense because of statements in earlier Supreme Court cases (*Brown Shoe* and *Procter & Gamble*) that efficiencies will not save an anticompetitive merger. However, most courts have been willing to assume, at least for the purposes of analysis, that the efficiencies defense described in the Horizontal Merger Guidelines is a cognizable defense, although no court has yet to find on the facts that the elements of an efficiency defense were satisfied. As with the entry defense, an efficiency defense is a *negative* defense: the efficiencies must negate the anticompetitive effect the merger otherwise would have. Moreover, to be cognizable, courts and the merger guidelines require the

efficiencies to be merger specific and verifiable in addition to being sufficient to overcome the otherwise anticompetitive effect of the merger.

10. The consumer benefits from the transaction outweigh any possible anticompetitive effect

Here, Visa should develop its arguments and supporting evidence that Visa's acquisition of Plaid will enable the combined company to create better services for merchants and customers faster. These expected benefits should be developed in detail and verified by one or more independent consultants. Visa should argue that these benefits will outweigh any anticompetitive effect reasonably likely to occur due to the acquisition.

Regardless of the benefits, however, it is likely that efficiencies will fail as a defense to a prima facie case. No case to date has found for the defendants on an efficiency defense after the plaintiff has proved a prima facie case. Technically, I suspect that with sufficient investment of time and resources, Visa could develop software that emulates Plaid and, if so, any efficiencies resulting from the transaction would not be merger specific even if verifiable.

That said, it is still important to develop the efficiencies story in detail to the extent supportable. Even if an efficiencies defense is not technically available, an efficiencies story will provide a competing explanation to the DOJ's anticompetitive theory of why Visa is acquiring Plaid (and paying the very high price for it). Moreover, large and verifiable efficiencies from the transaction are likely to motivate a judge to find for Visa, especially as the likelihood, timing, and magnitude of the alleged harms become smaller or more speculative.

More particularly, we should investigate whether output in the relevant market is likely to be greater with the acquisition than it would be without the acquisition. Visa's submits that it will create new and better products faster by acquiring Plaid than it would in the absence of the acquisition. A well-accepted measure of competition and consumer welfare—especially when there are product improvements accompanied by price increases—is to look at the aggregate output in the relevant market: the greater the output, the more competitively performing the market. Here, Visa claims that it will be using Plaid to create new or better services that will increase consumer demand. If some or all of these services are in the relevant market and would generate new demand for online debit transactions, then the acquisition would be procompetitive if this increased demand would be greater than any increase in demand for online debit transactions that would result from any independent pay-by-bank service Plaid might create in the absence of the acquisition. Given the likelihood of significant barriers to merchant and consumer acceptance of a new Plaid pay-by-bank service and nearly ubiquitous merchant and consumer acceptance of Visa debit transaction services, a postacquisition Visa may well be able to increase usage more than an independent Plaid.