EXHIBIT 3

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

IN RE GRAPHICS PROCESSING UNITS ANTITRUST LITIGATION	
This Document Relates To: ALL INDIRECT PURCHASER ACTIONS	**Case No. M-07-CV-01826-WHA**

EXPERT REPORT OF MICHELLE M. BURTIS REGARDING INDIRECT PURCHASER PLAINTIFFS' MOTION FOR CLASS CERTIFICATION

[FILED UNDER PARTIAL SEAL]

I. BACKGROUND AND EXPERIENCE

1. I am a Vice President at Cornerstone Research, an economic and finance consulting firm with offices in Washington, D.C. and Menlo Park, California, where the company is headquartered, in addition to other offices in the United States. I have a Ph.D. in Economics from the University of Texas at Austin and have published in the field of economics. In my work, I have studied and analyzed various forms of business conduct and how that conduct may affect the performance of markets and individual firms. I have analyzed such business conduct in antitrust cases, in other forms of commercial litigation, and in government regulatory proceedings. I have submitted testimony in the courts and in private arbitrations. I have also presented analyses related to the competitive effects of mergers and acquisitions to the United States Department of Justice and the Federal Trade Commission. I have taught undergraduate microeconomics at the University of Texas and graduate economics at George Mason University.

2. A copy of my vitae is included as Exhibit I-1. My current rate is $510 per hour.

II. INDIRECT PURCHASER PLAINTIFFS' ALLEGATIONS

3. At the request of counsel for Defendants, NVIDIA Corporation ("NVIDIA") and ATI Technologies ULC ("ATI") (collectively "Defendants"), I have been asked to review indirect purchaser Plaintiffs' ("Plaintiffs") allegations, the available information and data related to relevant products sold by Defendants and to address issues associated with Plaintiffs' motion for class certification. Specifically, Defendants asked me to address whether common proof can be used to demonstrate that members of the proposed class of indirect purchasers of computers or graphics cards suffered impact from the alleged conspiracy and the issue of whether damages from such claims to individuals in the proposed class can be proven in a common or formulaic manner. I have also been asked to review and opine on the expert reports filed on behalf of the Plaintiffs by Dr. Anna Meyendorff and by Dr. Janet S. Netz.[1]

[1] Declaration of Dr. Anna Meyendorff in Support of Plaintiffs' Motion for Class Certification, April 24, 2008 ("Meyendorff Report"); Declaration of Dr. Janet S. Netz in Support of Plaintiffs' Motion for Class Certification, April 24, 2008 ("Netz Report").

4. Generally, I understand that Plaintiffs claim that NVIDIA and ATI engaged in a conspiracy with respect to two distinct types of products, discrete GPU chips and graphics cards. The conspiracy is alleged to have two dimensions; to fix and maintain supra-competitive prices of these products and to limit competition in innovation by agreeing upon the timing of new product release dates.[2] The putative class is defined as "[a]ll persons and entities residing in the United States who, from December 4, 2002 to the present, purchased indirectly from the Defendants Graphics Processing Units and/or the discrete graphics cards in which they are used or pre-assembled computers that contain such discrete graphics cards for their own use and not for resale."[3]

5. Proposed class members do not purchase directly from Defendants. Many proposed class members purchase products that Defendants did not manufacture or sell.[4] In order to prove that any proposed class member has been injured as a result of the alleged conspiracy, Plaintiffs must demonstrate first that the Defendants' alleged conduct led to an overcharge to direct purchasers. In addition to demonstrating that Defendants conspired and raised prices to their

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[2] Third Amended Consolidated Class Action Complaint by Indirect Purchaser Plaintiffs for Violation of State and Federal Antitrust Laws, State Consumer Protection Laws, and Unjust Enrichment, January 18, 2008 ("TAC"), at ¶¶ 1, 70, 86, 95.

[3] TAC at ¶ 122. There are proposed subclasses that include residents of certain states. For the purposes here, I use the term proposed class members to refer to the various proposed subclasses.

[4] See, for example, these named Plaintiffs that purchased graphics cards from sources other than Defendants: Martin Tr. 33:21-22, 34:7-17, 42:5-8, IPP 001234 (Martin Ex. 4); Martin Tr. 30:18-22, 32:18-33:3, IPP 001233 (Martin Ex. 3); Matson Tr. 25:12-15, IPP 001280, 001328 (Matson Ex. 4); Matson Tr. 21:3-6, IPP 001282, 001329 (Matson Ex. 2); Matson Tr. 26:21-28:5, 31:6-12; IPP 001399-1400; Matson Tr. 22:17-22, IPP 001281 (Matson Ex. 3); Saunders Tr. 26:21-27:12, 30:5-15, 37:4-8, IPP 001314-15 (Saunders Ex. 1); Schindelheim Tr. 18:1-20, 29:7-14, 32:1-2, 35:1-2, 43:13-16, IPP 001252-54 (Schindelheim Ex. 2); Salazar Tr. 34:1-8, 34:14-20, IPP 001250-51 (Salazar Ex. 1). In addition, these named Plaintiffs purchased computers from sources other than Defendants: Hughes Tr. 31:5-11, IPP 001207 (Hughes Ex. 2); Hughes Tr. 52:4-9, 52:14-16, IPP 001208, 001392-93 (Hughes Ex. 3); Jacobs Tr. 80:17-19, 81:4-7, IPP 001212-14 (Jacobs Ex. 6); Jacobs Tr. 172:17-173:12, IPP 001215-17 (Jacobs Ex. 7); Jacobs Tr. 39:1-10, 39:21-40:1, IPP 001218-20 (Jacobs Ex. 4); Jacobs Tr. 219:5-11, 221:19-222:7, IPP 001209-11 (Jacobs Ex. 10); Jacobs Tr. 191:10-13, 193:12-17, IPP 001307-09 (Jacobs Ex. 8); Jacobs Tr. 208:12-209:19, 213:4-7, 213:21-214:4 (Jacobs Ex. 9); Johnson Tr. 40:4-7, 40:19-41:6, IPP 001273 (Johnson Ex. 2); Johnson Tr. 41:15-21, 47:14-48:5, IPP 001274 (Johnson Ex. 2); Johnson Tr. 34:11-35:4, 39:13-40:7, 50:14-16, 51:8-13, 54:10-14, IPP 001275 (Johnson Ex. 2).

direct customers, Plaintiffs here must demonstrate that such an overcharge was passed through to them by firms operating in the various distribution channels between direct purchasers and the proposed class members.

III. SUMMARY OF CONCLUSIONS

6. Based on my analysis, I have concluded that Plaintiffs have failed to offer a methodology showing that common, class wide proof can be used to establish the fact of injury or impact or to measure damages. To reach this conclusion, I have both conducted my own analysis of the relevant data and documents, and also analyzed the methodologies offered by Plaintiffs' two experts.

7. Specifically, I have concluded that:

- Plaintiffs allege a complex and far ranging conspiracy, covering hundreds of highly differentiated products sold at widely varying prices to hundreds of different direct purchaser customers. As indirect purchasers, proposed class members must demonstrate not only that Defendants were able to increase the prices of each of these differentiated products to their direct purchasers, as a result of the alleged anticompetitive conduct; and by how much, but that those price increases were passed on by intermediary firms, who may resell the Defendants' products or who may use the Defendants' products as inputs in the production of a completely different set of products that are also highly differentiated.

- Plaintiffs' expert, Dr. Meyendorff, claims that all direct purchasers were impacted. However, this conclusion is not based on any analysis or examination of prices. The analysis relies solely on her articulation of certain structural characteristics of the "graphics" industry. Even if this analysis of structure was accurate (and it is not), it does not demonstrate class wide impact to direct purchasers using common proof or a common methodology. Dr. Meyendorff has not addressed the considerable complexity in pricing to direct customers of ATI and NVIDIA that is found in the relevant circumstances. She has not addressed the heterogeneity in the pricing, and product release, of the Defendants' different products, offered across different, and independent, business units (or product groups), to different customers in different markets.

- In order to reasonably assess Plaintiffs' claims of injury from the alleged conspiracy, an economic analysis must account for the significant differences in products purchased by proposed class members, including the differences among graphics cards and differences among computers purchased by proposed class members; the numerous and different distribution channels through which an alleged price-fixed product could possibly be traced to the purchase by a proposed class member; as well as the wide variety of different proposed class members, ranging from class members that are relatively insensitive to price changes to those that are highly sensitive. An analysis that determines whether any proposed class member was impacted from the alleged conspiracy must take these factors into account. This analysis cannot be done on a class wide basis but requires a detailed and individualized inquiry.

- Proposed class members purchase numerous different graphics card or computer products that vary across many dimensions. A single price-fixed product may be used in many different products purchased by proposed class members and sold at different prices. Any analysis that attempts to determine the overcharge passed on from the allegedly price-fixed products to the products purchased by proposed class members must take into account the additional product differentiation of the products proposed class members purchase.

- The problem of estimating the amount of a price or cost increase that is passed on by an intermediary firm to a final purchaser is a complicated empirical exercise that requires estimates of relevant demand and supply elasticities for each layer of each possible distribution chain through which Plaintiffs acquired graphics cards, and, separately, through which Plaintiffs acquired computers. Even then, in order to obtain the estimate of the pass-on applicable to any individual proposed class member, the particular distribution path relevant to that class member's purchase would have to be known. This is a highly detailed and individualized exercise that cannot be accomplished with a methodology or a set of facts that is common to all class members.

- The distribution of GPUs and graphics cards involves many firms with varying amounts of negotiating power, including large computer original equipment manufacturers that have the ability to affect the prices of the graphics products that they indirectly purchase. Certain such firms negotiate contracts with Defendants to ensure that Defendants' price increases to direct purchasers will not be passed on through the distribution of those products to them. If those indirect purchasers can insulate themselves from the effect of the alleged overcharge, there is no overcharge from them to be passed down through the distribution layers to proposed class members. Alternatively, if the contracts reduce the overcharge, or alter it in terms of the products or time periods that it affects, then a method of determining the pass-on from those indirect purchasers will be different than the method for others.

- A GPU is one component, among many, used in a computer. The cost of a GPU is a relatively small portion of the total cost of a computer. This characteristic makes it even more difficult to trace an increase in the price of a GPU through the various distribution channels to determine whether the price increase affects the price of a computer.

- Dr. Netz assumes that all firms involved in all stages of all industries associated with the distribution of GPUs, graphics cards and computers operate in "very competitive" markets and that, as a result, a conclusion from the theoretical model of "perfectly competitive" markets can be applied to those firms. The conclusion is that all of those firms pass on 100 percent of every cost increase as they incur. This claim is flawed. First, Dr. Netz's claim that the industries are "very" competitive is not based on any economic analysis and therefore has no economic meaning or analytic content. Second, markets that are "very" competitive do not have the requisite characteristics of "perfect competition" such that conclusions based on the model of perfect competition can be applied to them. Third, the markets at issue have numerous characteristics that conflict with the model of perfect competition.

- Dr. Netz offers three empirical estimates of pass-on. None of these estimates addresses the relationship between the cost of a GPU and the price of a graphics card or the price of a GPU or graphics card and the price of the computer. In fact, none of the regressions relates in any way to the prices of computers. Each of the three estimates is based on only a subset of available data, are average relationships that restrict the estimated pass-on coefficient to be the same, the average, for all transactions, make no attempt to test the

very proposition that she claims, and do not control for any market factors that may affect the price – cost relationship that she estimates. In each case, Plaintiffs' expert recognizes that prices of the graphic cards at issue vary, but neglects to test whether pass-on estimates vary. Alternative regressions, based on her broad categories of products, indicates that pass-on coefficients do vary across those categories, and for some broad categories are zero.

- In two of the three regressions Dr. Netz estimates, she excludes certain data that do not fit her claim of pass-on, explicitly recognizing that no one model can be used for all indirect purchaser transactions.

- Examination of the data that Dr. Netz uses to estimate the regressions indicate that costs of particular products to particular customers change, but the prices to those customers do not change. That is, the data indicate that there are customers where the pass-on of cost changes is zero. Dr. Netz's regression method, which generates nothing more than an average pass-on coefficient, has no capacity to locate those instances of zero pass-on and therefore her method cannot be used to determine which indirect purchasers may have been impacted and which were not.

- Examination of the price of an individual GPU and the retail prices of cards manufactured with that GPU indicate that different cards made with the same GPU have different prices that change over time in different ways. Therefore, the relationships between the GPU price and the graphics cards' prices would be different and pass-on is likely to be different, as well. Those data also indicate that relationships would likely vary across different GPUs. Finally, the data indicate no obvious relationship between the price of a GPU and the retail graphics card made with the GPU.

- An analysis of computer retail prices indicates that computers, sold in the same time period, under the same brand name, and containing the same graphics card are sold to consumers at highly variable prices. These data indicate that any relationship between a GPU chip cost or a graphics card cost is highly complex, requiring analysis of the costs of the many different components included in the computer purchased by each proposed class member.

8. Section IV describes background information, Section V describes the Plaintiffs' alleged theory or conspiracy and theory of class wide impact, and Section VI includes an analysis of Plaintiffs' claims of class wide injury.

9. A list of material that I considered in preparation of this Declaration is included as Exhibit I-2. My work in this matter is ongoing. If asked, I can augment my opinions as I perform more analysis, or as more relevant information is made available to me. Also, I can respond to any further analysis and opinions put forward by Plaintiffs' experts, if asked.

IV. INDUSTRY BACKGROUND

10. The following section describes certain background information that is, in my opinion, relevant to the issues of possible impact and alleged damages in this matter. In

particular, the differentiated nature of the products, prices, customers, and complex distribution channels is relevant to Plaintiffs' claim that a common method or a model based on a common set of facts can be used to determine or measure injury from the alleged conspiracy.

A. The Products Included In The Case Are Highly Differentiated

1. Graphic Processing Units "GPUs"

11. The term Graphics Processing Unit ("GPU") is typically used to describe a type of computer "chip," that is, a tiny slice of silicon semiconducting material that has on it a series of electronic circuits, gates and transistors.[5,6] GPU chips are designed to render graphics images generated by a computer.[7] The process of creating and displaying an image begins with the GPU chips, working together with the software to construct a wire frame of the image. Once that frame is created, the GPU chip fills in pixels of the image into the frame, and adds lighting, texture and color. This process can be repeated dozens of times per second for fast-paced video games viewed on a computer monitor. As the image is being created by the GPU chip, information about each pixel's color and location is stored in memory. The memory is connected to a converter that translates the image into an analog or digital signal that can be used by the computer's monitor.[8] These calculations can be extremely complex and GPU chips can be faster and more sophisticated than the central processing unit ("CPU") in a computer.

12. A particular type of GPU chip is called "discrete." The term discrete is commonly used to refer to a chip that has its own source of memory while "integrated" GPU chips share memory with the CPU. Discrete GPU chips are found in a wide range of computers and

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[5] Declaration of Mathew Skynner, In Re Graphics Processing Units Antitrust Litigation ("Skynner Declaration") at ¶4.

[6] http://www.futuremark.com/community/hardwarevocabulary/2/#C.

[7] According to NVIDIA, the world's first GPU was its GeForce 256 product; the first to feature "an Integrated Transform Engine, Integrated Lighting Engine and a 256-bit Rendering Engine on a Single Chip." ("NVIDIA Launches the World's First Graphics Processing Unit: GeForce 256," *NVIDIA press release,* August 31, 1999)

[8] http://www.extremetech.com/article2/0%2C2845%2C9722%2C00.asp

electronic products, including desktop computers, notebook computers, workstation computers, handheld or mobile electronic devices (like PDAs and cell phones), video game consoles (like the Xbox or Playstation), and other more specialized products.[9] In this litigation, the relevant GPU chips are those discrete GPU chips sold to be eventually used in computer applications, including desktop, notebook and workstations. Applications such as cell phones and consoles are excluded.[10] Over the period December 2002 through 2007, [redacted][11]

13. Defendants sell numerous and differentiated GPU chips. ATI's and NVIDIA's transaction data shows that, for desktop, notebook and workstation applications, over the period December 2002 through 2007, NVIDIA, worldwide, directly sold 261 different discrete GPU chips and ATI, worldwide, directly sold 145 different discrete GPU chips.[12] And within these

[9] NVIDIA 2006 10-K at 1.

[10] TAC at ¶5.

[11] ATI and NVIDIA transaction data. The total number of discrete GPUs, that is, not limiting the number to desktop, workstation, and notebook, is 146 for ATI and 272 for NVIDIA.

[12] It is important to note that there is even more diversity than these statistics suggest. The product counts presented are based on data at the "product name" level. For both ATI and NVIDIA there are multiple part numbers (or SKUs) associated with each product name. These different SKUs can refer to differences like the number of data paths on the chip, the number of "pipes," the silicon revisions, non-leaded status, and package size. [Based on conversation with Michael Turley, Manager of GPU Business Operations at NVIDIA.] These create differences in the shipped GPU chips and can be related to performance specifications and pricing. Different SKUs can also represent customer-specific part numbers (this is common in the ATI data). Product name is a field in the NVIDIA transaction data. ATI's transaction database includes the data field "p_line" which in some cases, appears to be close to a GPU product name, for example, Radeon X800 Pro. In some cases, however, the "p_line" field does not include sufficient information to identify a particular GPU chip product, but includes only information related to line of products, like Radeon X800. When the "p_line" field does not include sufficient information to identify a GPU chip product, additional information about the product is obtained from the data field, "material" which contains more detailed information. In order to validate this method of identifying GPU chip products, I confirmed the method with ATI personnel Trung Nguyen, Senior Business Analyst in the Business Systems & Support Department, and Amelia Lam, Operations Manager, Revenue and Accounting Department and compared the results of our method to ATI documents that identify products, for example, see "AMD/AIB Partner Marketing Memo (PMM0004, Rev 20), January 16, 2008.

Plaintiffs claim that Defendants conspired to raise the prices of GPU chips, graphics cards, or both. As described in the following section, indirect purchaser Plaintiffs are consumers who have purchased either a graphics card or a computer for their own use and not for resale. Indirect purchasers do not purchase GPU chips. Defendants' position in the GPU chip business is much different than their position in the graphics card business. Defendants compete with many other graphics card suppliers, and Plaintiffs do not claim or offer any theories or evidence that such competitors participate in any alleged conspiracy. [23] If the conspiracy is that Defendants conspired to fix the prices of GPU chips, then proposed class members should be those that purchase graphics cards or computers that contain a Defendants' GPU chip.[24] However, if the conspiracy is that Defendants conspired to fix the prices of graphics cards, then proposed class members should be limited to those consumers who purchased a graphics card sold by Defendants and those consumers that purchased computers that contain graphics cards sold by Defendants. Consumers that purchase graphics cards made by third parties as well as consumers that purchased computers that contained graphics cards made by third parties would be excluded.

20. Proposed class members purchased either graphics cards or computers that include as an input, a graphics card.[25] Graphics cards purchased by proposed class members could be

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graphics card prices when she describes collusion in the "market at issue" as "coordination of launch dates" which are "publicly announced." And claims, "[i]f both firms raised prices in a coordinated fashion, customers would be hard pressed to find other Graphics Cards to buy." See Meyendorff Report at ¶¶49, 42. But Dr. Meyendorff also contends there was a conspiracy in the "graphics solutions industry" which apparently includes NVIDIA, ATI and Intel, although she describes only the actions of NVIDIA and ATI as anticompetitive. Meyendorff Report at ¶¶46-51.

Dr. Meyendorff also cites market shares based on GPUs. See Meyendorff Report, Exhibits1 and 2. Plaintiffs' expert Dr. Netz apparently contends the conspiracy related to GPU when she states, "NVIDIA and ATI/AMD set the price at the top of the distribution chain without facing significant competition when they are colluding." Netz Report at ¶63.

[23] Plaintiffs apparently do not contest that there are numerous independent sellers of graphics cards. See Netz Report at ¶29.

[24] Plaintiffs have not offered any theory related to a conspiracy to fix the price of GPUs, except to note that the market is concentrated and that ATI and NVIDIA are the major competitors. See TAC at ¶66. Plaintiffs' theory rests on the coordination of graphics card introductions.

[25] A strict reading of the Plaintiffs' description of proposed class members indicates that the class does not include purchasers of notebook computers. The description in the TAC

branded ATI cards sold by ATI to some other seller or sellers or another brand of graphics card that contains a GPU chip sold by one of the Defendants.[26] Computers purchased by proposed class members contain either a graphics card sold by one of the Defendants or a graphics card that contains a GPU chip sold by one of the Defendants. These products, graphics cards and computers, are highly differentiated products sold at widely different prices through complex distribution channels. The differentiated nature of the products reflects the differentiated nature of demand and is relevant to the discussion of whether the pass on of an alleged overcharge on GPU chips or graphics cards sold by Defendants can be determined or measured with a method common to all indirect purchasers.

21. Plaintiffs' expert, Dr. Netz, agrees with many of the observations about the graphic cards and computer products and prices described below. She agrees that products are highly differentiated, that retailers that sell products to proposed class members engaged in different selling strategies and that as a result, prices of products purchased by proposed class members are highly variable. The disagreement between Plaintiffs' expert and myself is not on the market facts, but on how those facts relate to whether impact to each class member can be demonstrated on a class wide basis. As will be discussed in the following section, Dr. Netz's theory of injury is based on a premise that 100 percent of an overcharge to direct purchasers is passed on through distribution channels to consumers when firms in those distribution channels operate in "perfectly competitive" markets. Again, Dr. Netz and I do not disagree. In the textbook model of perfect competition with a perfectly elastic industry supply, 100 percent of an industry-wide cost shock will be passed on by all firms. Dr. Netz also agrees that "perfectly competitive"

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includes purchasers of computers "that contain discrete graphics cards." That is, notebook computers generally do not contain graphics cards.

[26] See for example, Clofine Tr. 94:14-22, 96:12-15, IPP 001312-13(Clofine Ex. 5) (purchased ASUS V7100 graphics card that contains NVIDIA GeForce2 MX GPU); Crawford Tr. 35:22-36:4, IPP 001301-05 (Crawford Ex. 1) (purchased MSI Starforce graphics card that contains NVIDIA GeForce FX 5200 GPU); Hartshorn Tr. 40:8-11, 53:5-8, IPP 001201 (Hartshorn Ex. 1) (purchased MSI graphics card that contains NVIDIA GeForce 6600GT GPU); Martin Tr. 32:18-33:3, IPP 001233(Martin Ex. 3) (purchased ASUS graphics card that contains NVIDIA GeForce N6800 GPU); Schindelheim Tr. 18:1-20, 29:7-14, 35:1-2, 43:13-16, IPP 001252-54 (Schindelheim Ex. 2) (purchased Gigabyte graphics card that contains NVIDIA GeForce 7600GT GPU)

markets are a "textbook condition and not evident in the real world."[27] Yet, she continues to rely on this result and the model from which it is generated as a theoretical basis for claiming that pass-on in the markets at issue in this case will always be 100 percent. Clearly, the industries at issue here are not examples of the textbook "perfectly competitive" markets from which this result is derived. They are characterized by substantial product differentiation, competition along more dimensions than price, and firms with different cost structures. Perfect competition is characterized by homogeneous products, identical firms with identical cost structures, free entry and exit, and many other heroic assumptions. Once such assumptions are relaxed and we evaluate the reality of markets for GPU chips, graphics cards, and computers, as well as the markets for the distribution of those products, one cannot simply assume that each reseller will pass on any overcharge at all, let alone that pass on will be the same for all firms and be 100 percent.

1. Graphics Cards Purchased by Proposed Class Members

22. Proposed class members purchase graphics cards for desktop and workstation computers. The graphic cards, available at a variety of different retail outlets, can be purchased by consumers and inserted into a desktop computer or a workstation computer. Consumers can purchase new graphics cards for existing computers to upgrade the computer's graphics capabilities. Like the GPU chips that they contain, graphic cards are also highly differentiated products, with varying performance characteristics, manufactured by numerous different companies and sold under various brand names. [28]

23. One differentiating factor among graphics cards is the GPU chip. As discussed above, there are numerous and highly differentiated GPU chips used in both desktop and workstation applications. In addition to the diversity across graphics card products due to the various GPU chips that may be used as inputs, there are a number of other product characteristics

[27] Netz Report at ¶¶61-62.

[28] Exhibit I-11 is a list of selected graphics cards available over the period 2004 through 2006. This list was compiled from Sharky Extreme's monthly price guide. The guide provides information on a variety of graphics cards and searches to find lowest price for graphic cards.

from Hewlett Packard, and a $15,000 computer.[49]

33. The named Plaintiffs purchased highly diverse computers from a variety of different retail outlets. Michael Brooks purchased a "Mac mini" for $624 from The Apple Store.[50] Good Sense Financial Services purchased a Compaq computer for $917 from Burtt PC Consulting, Dan Perkel purchased a Apple Powerbook for $2,139 from The Scholar's Workstation, and Daniel Yohamen purchased a Compaq D530 for $1,175 from Santa Fe Computer Works while Ron Davison purchased a "Power Mac" for about $3000 dollars.[51]

34. Computer retailers include retail stores owned and operated by brand name OEMs, such as Sony and Apple; chain electronics stores such as Best Buy, Fry's Electronics, and Circuit City; mass-marketers such as Wal-Mart, Kmart, and Target; office supply stores such as Staples and Office Depot; as well as smaller, local outlets such as those from whom some of the named Plaintiffs purchased. In addition, high-end computer sellers, like Falcon Northwest, may offer custom designed products and sell directly to consumers through on-line distribution. These various retailers and system builders have different sales and pricing strategies and may target entirely different segments of computer purchasers. [52]

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[49] For example, the HP a6410t desktop computer, with a 128 MB GeForce 8400 DVI-I, VGA graphics card is available at $419.99 while a custom built Falcon Northwest computer with two NVIDIA 9800GX2 1024 MB graphics cards is available for $15,938.

[50] Brooks Tr. 43:16-22, 68:2-6, IPP 001148 (Brooks Ex. 2).

[51] See Preve Tr. (Good Sense Financial) 21:4-12, 25:14-26:21, 31:5-10, IPP 001199-2000 (Preve Ex. 1) (where the price of $917.58 apparently included 3 items: on-site PC work, the computer, and virus protection software. Mr. Preve did not know how much the items would cost separately; and the receipt reflects as a "bundle" 1GB free Ram.) Perkel Tr. 98:18-99:2, 103:4-9, 106:12-15, IPP 001310 (Perkel Ex. 3), Yohalem Tr. 42:5-43:5, 45:22-46:2, IPP 001268 (Yohalem Ex. 2), and Davison Tr. 39:19-40:11, 49:10-14, 86:20-21, IPP 001152-53 (Davison Ex. 1). A list of the named Plaintiffs' computer purchases is provided in Exhibit I-20. The Exhibit provides information on the type of computer, the graphics card or GPU in the computer, the price of the computer, as well as the date and location of the computer purchase.

[52] See Exhibit I-21. See also, Erdmann Tr. 13:13-14:13, 19:22-20:2, 34:5-13, IPP 001177 (Erdmann Ex. 1) (purchased a Vista Matrix machine with NVIDIA GeForce 7600GT graphics card from Big Bear Tech in Yamouth, Maine); Preve Tr. (Good Sense Financial) 21:4-5, 21:11-12, 24:2-5, 31:5-10, IPP 001199-2000 (Preve Ex. 1) (purchased a refurbished Compaq computer with ATI Radeon 7500 graphics card from Burtt PC Consulting, Inc., in Concord, NH); Perkel Tr. 98:18-99:2, 106:12-15, IPP 001310 (Perkel Ex. 3) (purchased an Apple PowerBook computer with ATI Mobility Radeon 9000 graphics card from the Scholar's Workstation store in Berkeley, CA); Stewart Tr. 27:17-29:3, IPP 001263-64

35. Computer suppliers' marketing strategies vary in terms of whether they offer consumers the options of configuring the computer, including selecting from among certain graphics card options for a given computer, or whether the computer options are "packaged" and no options are offered. Sony and Apple, for example offer packaged computers.[53] The method for determining whether or not a GPU chip price increase or a graphics card price increase is passed through in the form of a higher computer price will be different for computer suppliers who offer a customized product versus those suppliers that offer a packaged product. In the latter case, determining whether a particular supplier passed on an unjustified price increase would require examination of all of the other components in the computer, the costs of those components and an analysis of how a change in the price of a GPU chip or graphics card affected the price of computer, holding constant the cost of the other components. In the former case, the analysis would focus on the cost of the GPU chip or the graphics card and the price at which the graphics card option was offered to the consumer. Dr. Netz describes a potential method for estimating whether the price of a customizable computer's increased when the price of a graphics card increased. The method is based on the assumption that she can "observe the price of a given PC system and then how the price of the system changes as the user chooses to purchase an additional (or different) discrete GPU or Graphics Card."[54] Dr. Netz offers no method for determining whether any alleged overcharge would be passed through in the price of a packaged computer.[55]

36. Analyzing whether a supplier passes on an alleged overcharge to consumers who

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(Stewart Ex. 2) (purchased an Apple MacMini desktop computer with ATI Radeon 9200 graphics card from the NYU bookstore in New York City, NY); Yohalem Tr. 42:5-43:5, IPP 001268 (Yohalem Ex. 2) (purchased an HP/Compaq D530 desktop computer with NVIDIA Quadro 4 NVS graphics card from Santa Fe Computer Works, Santa Fe, NM).

[53] http://www.bestbuy.com/site/olspage.jsp?skuId=8764465&type=product&id=1203815206548; http://www.bestbuy.com/site/olspage.jsp?skuId=8763386&productCategoryId=abcat0501005&type=product&tab=1&id=1203815902826#productdetail Davison Tr. 82:15-83:15, 88:5-7, 100:3-14 (for purchase of Apple 17-inch MacBook Pro with ATI Radeon x1600, purchaser did not have a choice of which GPU came with computer).

[54] Netz Report at ¶89.

[55] Netz Report at ¶89.

purchase customized computers may be different depending on what options are offered and how the options are offered. Dell enables consumers to customize certain components of the computer, including for at least some computers, the graphics components. Dell generally offers a "default" graphics card included in the system, but at some point in the transaction, the consumer is provided an opportunity to select another graphics card from among a set of graphics card options Dell offers for that computer. For example, a consumer might choose from among Dell's computer models, the XPS 630 Desktop.[56] That computer model, with the default graphics card, GeForce 8800 GT 512 MB, as well as other components, is available at a retail price of $1,199. According to Dell, the cost of the default graphics card is "included" in the computer price. Five other graphic cards are offered and selection of one of those options will change the price of the computer, with the selection of some options leading to a higher overall price and others to a lower price. That is, Dell does not provide prices of the various options, but does provide the difference between the default card and other graphics card options.[57]

3. Product Differentiation and Establishing Class Wide Impact

37. The discussion above establishes that a) products purchased by proposed class members are highly differentiated b) computers purchases by proposed class members are different than purchases of graphics cards and c) prices of computers and graphics card products are highly variable and reflect product differentiation, varying consumer preferences, as well as differences among OEMs, system builders, or other sellers.

38. The implications for determining impact or injury to indirect purchasers on a class wide basis are that, first, any model designed to measure the effect of the conspiracy on indirect

[56] The transaction options can be seen in Exhibit I-22.

[57] Dr. Netz claims that prices of the graphics components are observable in Dell computer transactions. But this is not the case. Only the difference between the default graphics option and other available options are observable. As discussed below, Dr. Netz's method is to match data on the prices of graphics cards (and, according to her GPUs) and prices of computers. This is substantially more complex if those prices are not observable, and instead price differentials between one particular graphics card and another graphics card are observed. See Netz Report at ¶89.

elasticities of supply and demand can vary depending upon location, time, product, as well as other variables. Determining whether and to what extent a price increase may be passed from a manufacturer through a single distribution channel to a consumer, given the assumptions of these models, requires estimates of such elasticities for particular buyers and sellers at particular points in time for particular products.

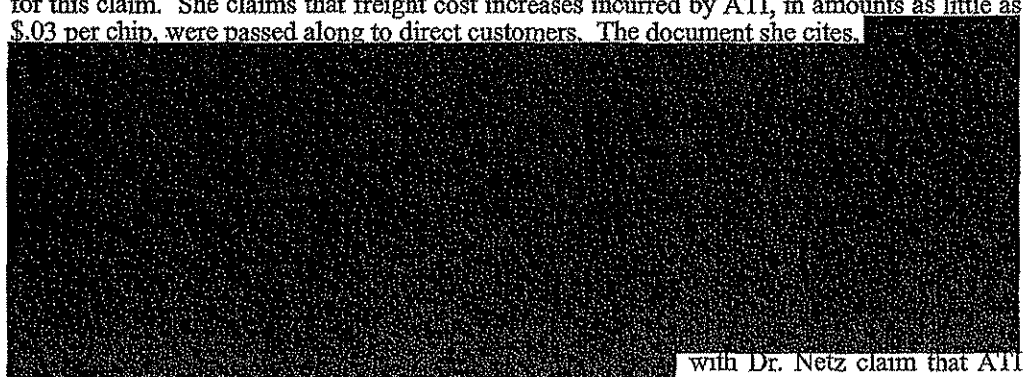
62. Determining whether or to what extent an alleged overcharge on a GPU chip or a graphics card is passed on through the various distribution channels to an indirect purchaser of a graphics card or computer is clearly a more complex problem than the one described above. First, it should be clear that none of the markets at issue have characteristics of a perfectly competitive market with a perfectly elastic industry supply curve that results in 100 percent pass-through for all firms. Also, there are a number of other observable characteristics about the relevant products and industries that indicate pass-on rates will vary and determining pass-on will be highly individualized. For example, there are many layers of distribution between the allegedly price-fixed product and the indirect purchaser, rather than a single layer, and there are many different possible paths among these layers that potentially trace the path from a GPU chip to an indirect purchaser (or a graphic card to an indirect purchaser). Determination of pass-on for an individual proposed class member requires identifying the particular channel of distribution relevant to that class member's purchase and tracing the overcharge from the Defendants through the distribution paths to the indirect purchaser. Such paths involve different kinds of firms, as well as different firms of a given type. The market conditions, including the degree and extent of competition faced by firms within these different channels vary. There are also different and complex relationships between some firms at different points within these channels of distribution. These conditions affect the supply and demand elasticities relevant to determining whether a price increase is passed on from one level of distribution to another and whether any portion of the price increase will be ultimately passed on to the indirect purchaser.

63. Complicating the issue of pass-on further is the fact that a discrete GPU chip is a component of a graphics card and a graphics card is a component of a computer. The cost of a

GPU is only one portion of the cost of a card and a smaller portion of the cost of a computer. The fact that the alleged price-fixed product may be a small portion of the cost of the product purchased by the indirect purchaser makes it difficult to estimate whether an overcharge on that product is passed on and the amount of the overcharge that is passed on.[87]

64. In the following section, I first describe certain chains of distribution that begin with an alleged price-fixed product and end with the purchase of what may be some other product by a proposed class member. The discussion shows that there are many circuitous possible routes through which a GPU chip or a graphics card sold by a Defendant could make its way into a product ultimately purchased by an indirect Plaintiff. I then describe some of the market conditions and characteristics relevant to firms that operate in the various distribution chains and discuss why such conditions would matter to the Plaintiffs' theory of pass-on. Finally, I evaluate Plaintiffs' claims related to an empirical relationship between changes in cost for certain firms and changes in the prices those firms charge. As one would expect, given the complexities of this business, these relationships vary across products and for some products, indicate that pass-on does not occur.

65. Before moving on, however, "perfectly competitive" markets in which pass-on is 100

[87] Dr. Netz agrees that the cost of graphics card amounts to a small amount of the cost of a computer. She finds examples where the graphics cards accounts for 2.9 percent and 27.3 percent of the cost of a computer. Netz Report at ¶ 83, fn. 117 (AMD054_00016640-42). Obviously, if the cost of the graphics card accounts for a small amount of the cost of a computer, the cost of a GPU chip accounts for an even smaller amount. Dr. Netz argues that a cost increase, no matter how small, would be passed on and cites "documentary evidence" for this claim. She claims that freight cost increases incurred by ATI, in amounts as little as $.03 per chip, were passed along to direct customers. The document she cites,  with Dr. Netz claim that ATI passed through a $.03 cost increase to its customers.

percent for all firms should be distinguished from markets or industries that characterize themselves as "highly competitive" or "intensely competitive." It is the latter that forms the basis of Plaintiffs' expert's conclusion that pass-on in the present case is 100 percent. Dr. Netz collects various passages quoted from various industry participants and market analysts that describe the businesses in which various firms involved in the distribution of GPU chips, graphics card, and computers operate as "competitive."[88] These quotes form the basis of her conclusion that all such firms operate in "very competitive" industries and that, as a result she expects "the pass-through rate to be close to 100%."[89]

66. An economist evaluating whether or not or the degree to which a market is competitive typically engages in some type of economic analysis. That analysis may involve identification of the participants and measurement of concentration statistics, collection of price or margin data, evaluation of entry and exit conditions, or any number of economic characteristics that may be relevant. Dr. Netz has not performed any economic analysis related to this issue, but has simply taken certain passages from firms' 10-K filings, annual reports or other company descriptions. This information is not sufficient for an economist to reach conclusions about the competitive nature of a market and may be wholly irrelevant. Indeed, if this information indicates that markets are competitive, then Plaintiffs here should drop their claims of conspiracy. NVIDIA and AMD (ATI's parent company) both report operating in "intensely competitive" markets.[90] Moreover, the information that is contained in Dr. Netz's quotes is inconsistent with the conclusion that the firms are operating in markets similar to perfectly competitive markets.[91]

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[88] Netz Report, fn. 89-101.

[89] Netz Report at ¶ 63.

[90] See for example NVIDIA 10-K, filed April 25, 2003 at 7 and AMD 10-K for the year ended December 31 2006 at 13. Dr. Netz's own quotes indicate that ATI was a participant in these intensely competitive markets. See Netz Report, fn. 92

[91] For example, there are numerous quotes included by Dr. Netz, that indicate competition occurs over various non-price dimensions. [One, among many, is found in Netz Report, fn. 89 where Sanmina SC Corp states that its "primary competitive strengths include our ability to provide global end-to-end services, our product design and engineering resources, advanced technologies, high quality manufacturing assembly and test services, customer

B. Analysis Of Pass-On Requires Identifying And Analyzing Multiple And Different Distribution "Chains"

67. Plaintiffs allege Defendants conspired to raise the prices of GPU chips and graphics cards through the manipulation of new product introductions, and as a result, proposed class members paid higher prices for graphics cards and computers. Plaintiffs also claim that when the "GPUs and graphics cards are purchased by consumers as part of a computer purchase, they are distinct, physically discrete hardware elements of the computer that are traceable throughout the chain of distribution to the end user and do not undergo any significant alterations in their transit through that chain." [92]

68. Plaintiffs, while recognizing the importance of being "traceable throughout the chain," mischaracterize and oversimplify the numerous chains through which the GPU chip or graphics card makes its way to the proposed class member's computer purchase. Similarly, there are different, but still numerous and complex, chains through which a GPU chip makes its way into a proposed class member's graphics card purchase. These "chains," which begin with either a GPU chip or a graphics card sold by a Defendant and end in either a graphics card or a computer sold by an entirely different entity involve numerous transactions and many different types of firms engaged in different manufacturing and selling activities at different levels.[93]

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focus, expertise in serving diverse end markets and an experience management team."] Other quotes indicate firms have varying cost structures, which is also inconsistent with the assumption of perfect competition. [See for example in Netz Report, fn.89 where Flextronics states, "Our segment and business unit strategy offers OEMs the economies of scale of centralized core services..." and Netz Report, fn. 90 where Inventec states that it "moved production to mainland China to lower costs" and Netz Report, fn. 92 where PNY compares itself to competitors who "have the ability to manufacture competitive products at lower costs as a result of their vertical integration."] Other quotes indicate that the number of competing firms is small, certainly relative to the number one would expect in a perfectly competitive market [See Netz Report, fn. 93 where Ingram Micro states, "The three largest broadline distributors are battling for PC market share..."]

[92] Plaintiffs claim that product tracing is possible because GPUs retain a logo and are identifiable by part or serial number. Plaintiffs are apparently suggesting that "tracing" should be done on the basis of individual parts, and that the tracing cannot be done class wide. See TAC at ¶61.

[93] The prices charged by Defendants at the first stage of these various chains vary by product and customer; the prices can be affected by rebates, discounts, price protection programs,

Moreover, at the end of the various chains, proposed class members purchase graphic cards or computers that are significantly and meaningfully differentiated from a wide variety of different firms at a wide array of different prices. Below, I attempt to describe some of the ways a desktop GPU chip, sold by one of the Defendants, could end up in a desktop computer purchased by an individual class member.

69. Importantly, the possible transactions described below, involved in the sale of a desktop GPU chip that is ultimately part of a desktop computer, are potentially different from the possible transactions involved in the sale of a GPU chip that is ultimately part of a notebook or workstation computer. Direct customers that purchase discrete desktop GPU chips can be different from the customers that purchase discrete notebook GPU chips. The reasons for this are the differences in the way the GPU chip is used in the different types of computers, that is, desktop GPU chips are typically used as an input to a graphics card while notebook GPU chips are not. So, the firms that specialize in graphic cards will not play the same role in the various distribution chains for notebook computers as they do for desktop computers. Similarly, workstation computers are typically specialized, high performance, expensive computers relative to desktop computers.

1. Possible Transactions From a Desktop GPU Chip to a Desktop Computer

70. As described above, a discrete desktop GPU chip is designed and sold to be used as an input in a desktop computer. Defendants collectively have sold numerous different desktop GPU chips during the Class Period to many different direct buyers. For example, ATI sold 95 different Desktop GPU chips to 192 different customers at prices ranging from about [redacted]. That is, the product considered here is not a single, homogeneous product, but a large group of differentiated products with various performance characteristics, purchased by various

incentive programs; the price of the initial purchase may be a GPU, a bundle of GPUs, or a "kit" where the GPU is bundled with memory. The price may be determined by individual negotiations between a Defendant and a particular customer and those negotiations may be affected by whether the GPU is sold to the customer to be used in a branded computer, such as Dell or Hewlett-Packard.

customers at different prices reflecting not only those different performance characteristics, but also the different demand characteristics of buyers.

71. Defendants sell desktop GPU chips directly to a number of different types of customers that engage in different activities, sell to different customers themselves, and have different types of relationships with the customers to which they sell.[94] Discrete GPU chips used in desktop computer applications are sold by the Defendants to Add-In-Board manufacturers ("AIBs") who make and sell graphics boards (as well as other products), Original Design Manufacturers ("ODMs") who design, manufacture and sell components and computers, Original Equipment Manufacturers ("OEMs") who may manufacture, assemble, market and/or sell computers or who contract with ODMs or other contract manufacturers for the production of these products, and distributors who repackage and sell the GPU chips to AIBs, ODMs, OEMs, and other distributors, among others.[95]

72. Each of these groups of direct buyers of GPU chips engages in different activities with respect to the GPU chip purchased from the Defendant and sell to various other types of firms. Consider an AIB who buys a GPU chip from one of the Defendants. There are numerous AIBs that purchase GPU chips designed to be used in desktop computers from Defendants, including PNY, BFG, eVGA, Sapphire, Palit, Gigabyte, Sparkle, and Leadtek, among others.[96] An individual AIB may manufacture a graphics card, or a number of different graphics cards, using the same GPU chip purchased from a Defendant. The graphics cards may be "branded" and sold to a "systems integrator," such as Alienware or Falcon Northwest, an ODM who manufactures computers for OEMs or to an OEM. Alternatively, the AIB may sell the graphics

[94] Dr. Netz agrees that Defendants sell to a wide variety of different direct purchasers and even that categories of companies can be "somewhat nebulous. Many companies fall into multiple categories, depending on which client they are servicing and many companies have evolved from one category to another over time." See Netz Report at ¶25. As with the case of highly differentiated products, Dr. Netz agrees that these complex conditions exist in the distribution of products, but brushes the complexity aside, with the assumption that all industries are "very" competitive and therefore pass on will be complete.

[95] See Skynner Declaration at ¶¶33-38, Fisher Declaration at ¶¶ 25-30.

[96] Exhibit I-16 presented a list of some AIBs.

card to a distributor who resells the cards to smaller computer manufacturers that may want to purchase a variety of computer components from one source.[97]

73. A distributor that purchases a GPU chip from a Defendant repackages the product and may sell to sub-distributors, AIBs, ODMs, and OEMs. Distributors who purchase GPU chips directly include EDOM and Atlantic Semiconductor. Direct sales to distributors "add" a transaction to the chain of transactions from the Defendant to an indirect purchaser.

74. Component manufacturers or computer manufacturers that purchase GPU chips from a Defendant use the GPU chip to produce a graphics card or a computer. Some ODMs or other contract manufacturers produce products for Tier One computer OEMs, such as Hewlett Packard or Dell. The prices of GPU chips sold by a Defendant to the ODM can be affected by contractual relationships between the Defendant and the OEM for which the ODM is producing computers. ODMs also produce generic, or "white box" computers that other OEMs or computer sellers purchase off-the-shelf. In this case, the GPU chip (or graphics card purchased from an AIB) may be purchased by the ODM under different contractual terms than the GPU chip (or graphics card) purchased pursuant to a contract with an OEM. That is, the "chain" of transactions from the direct purchase of the GPU chip by a Defendant to an indirect purchaser can be affected by certain and varying relationships between the various firms involved in the chain.

75. At this point, while the discrete desktop GPU chip is no longer sold as a separate product but resides in a graphics card within a computer, there can be at least several transactions between the product and an individual class member. Computer manufacturers or sellers may sell to resellers, distribution partners, independent distributors, mass merchandiser brick and mortar stores or online stores, office supply stores, company owned and operated retail outlets, or directly to consumers in other ways.

76. Complicating this picture further, Defendants sell graphics cards as well as GPU

[97] [redacted]

chips. NVIDIA and ATI sell desktop graphics cards to ODMs and OEMs, who use the graphics card as an input in the computers they manufacture or market, to distributors who resell the graphics cards to ODMs and OEMs, and to system integrators.[98]

77. As this discussion illustrates, there is no single, traceable "chain" that links a GPU chip, or graphics card, sold by one of the Defendants to a computer purchase by a proposed indirect class member that purchases a computer. There are multiple possible chains, traceable only by determining first, what computer was purchased, from what retailer outlet and when, then determining where that retailer obtained the computer, and if, the retailer obtained the computer directly from the manufacturer, who that manufacturer was, from whom the manufacturer obtained the graphics card in the computer, what firm manufactured the graphics card, and where that firm obtained the GPU chip. Exhibit I-28 is a schematic that attempts to display the transactions from a GPU chip to the named Plaintiffs' purchases of computers. As the Exhibit shows, even among the named Plaintiffs, there are different chains and the actual chain, from the GPU chip to the individual named Plaintiffs is not traceable beyond knowing from which retailer the named Plaintiff purchased. In the least complex chain, one of the Defendants may have sold a graphics card to an OEM, who manufactured its own computers and who then resold the computer to a named Plaintiff. However, it is possible that the chain is much more complex, involving the sale of a GPU chip, the sale of graphics card and the sale of a computer involving possibly distributors, an AIB, an ODM, an OEM, and a retailer.

78. In addition, as noted above, the "chains" that potentially describe the path from a GPU chip or a graphics card to a proposed class member's computer purchase are likely to be different than the "chains" that potentially describe the path of a GPU chip or graphics card to a proposed class member's purchase of a graphics cards. Exhibit I-29 is a list of one AIB's customers. The Exhibit shows the numerous different types of customers to whom this AIB sells.

79. Plaintiffs' theory of pass-on simply ignores the existence of these multiple chains and

[98] See Skynner Declaration ¶¶52-56, Fisher Declaration at ¶46.

the pricing decisions of each intermediary that all sellers and resellers would pass on any overcharge to direct purchasers through 100% to indirect purchasers. While clearly convenient for indirect purchasers, this assumption contradicts all of the authorities cited by Dr. Netz related to appropriately determining whether and to what extent a seller or reseller passes on a price increase. The assumption also eliminates the need of developing a common method to estimate the pass-on rate. That is, tracing the overcharge from the direct purchaser to the proposed class member and estimating (or at least recognizing the existence of) relevant supply and demand elasticities are clearly important to determine whether and to what extent sellers pass-on overcharges. Yet, Plaintiffs offer nothing on either of these two issues, except to assume that they are irrelevant.

C. Analysis Of Pass On Given Differences In Pricing Across Firms

80. Whether or not an alleged overcharge on a GPU chip used as an input in the production of a computer can be passed on to a proposed class member in the form of a higher computer price depends on whether the overcharge can be passed on to the computer supplier. As described above, among the ways a GPU chip can be traced to a proposed class member's computer purchase, a GPU chip can be sold to an OEM, who produces and sells computers, or to an ODM, who produces computers for an OEM, who then brands and sells the computers. The terms and conditions under which the ODM and OEM operate can affect whether an alleged overcharge to an ODM direct purchaser can be passed on to the OEM and then through the distribution chain to the proposed class member.

81. OEMs that rely on ODMs to manufacture computers sold with their brand names (or parts of the computers) do not always directly purchase the components for the computers, including GPU chips or graphics cards. As described above, some OEMs rely on ODMs to purchase components and assemble the computer products.[99] The OEMs however, can remain

[99] See for example, [redacted]

involved in the selection of components, such as graphics components, and can, through negotiation with suppliers such as the Defendants, affect their cost of the graphics products used in their computers, irrespective of the cost of the graphics components paid by the direct purchaser ODM.[100] For example, an OEM and NVIDIA may engage in negotiations to determine the specifications of the graphics components that will be used in the OEMs computer products.[101] As part of the negotiations, the OEM and NVIDIA may agree on a cost to the OEM of the components. The cost of the component to the ODM, who is the direct purchaser of the component from the Defendant, may or may not be the same as the price negotiated between the OEM and the Defendant. The ODM then manufacturers the computer with the components it purchased and sells the computer to the OEM. If the ODM charges the OEM more than the amount negotiated between the OEM and the Defendant for the graphics components in the computer, the OEM will obtain a rebate in the amount of the difference from the Defendant.[102]

82. The effect of OEM price negotiations can be seen in transaction data and rebate information in the NVIDIA data. Exhibit I-30 shows pricing for the NVIDIA G72M-N notebook GPU chip to a selected group of the direct purchasers. [redacted]

[redacted]. See also, "The Role of Information Technology in Transforming the Personal Computer Industry, " Kenneth L. Kraemer and Jason Dedrick, in Transforming Enterprise, ed. By William H. Dutton, Brian Kahin, Ramon O'Callaghan and Andrew W. Wyckoff at 316-317.

100 [redacted]

101 [redacted]

102 See Skynner Declaration at ¶¶ 39-46 for a description of ATI and prices to OEMs, Fisher Declaration ¶¶9-14. [redacted]

[redacted]

83. The economic rationale for such arrangements is that the OEM, in particular the branded OEM for whom large volumes of purchases is more likely, is the economic agent that selects the component supplier and the particular components. That is, an OEM such as Dell or Hewlett-Packard, is the "important" customer to NVIDIA. Those OEMs sell large volumes of computers (and therefore are responsible for the purchase of large volumes of GPU chips) on a regular basis and are the decision makers regarding which graphics supplier is selected and what products are to be purchased from the graphics supplier for those OEMs' computers. An ODM, on the other hand, is in a much different position. It purchases the components selected by the OEM and manufactures the computer with those components but may not be the decision maker as to which GPU chip supplier is selected. In addition, some ODMs manufacture computers for more than one OEM, smaller computer suppliers, and even for themselves.[106] The GPU chip supplier and ultimate buyer both have an incentive to keep negotiated price information between

[103] [redacted]

[104] 01-2002 to 12-2004 Rebate Activity Report.txt and 01-2005 to 12-2007 Rebate Activity Report.txt.

[105] [redacted]

[106] For example ASUS markets computers under its own brand.

the two of them, and away from the ODM, just as those negotiating parties would have an incentive to keep such information out of the hands of the suppliers' other customers and the OEM's competitors.

D. Analysis Of Pass On Given That GPU Chips And Graphics Cards Are Components Of Products Purchased By Indirect Purchasers

84. Another factor that complicates the tracing of an alleged overcharge on a GPU chip to the purchase of a graphics card or computer by a proposed class member or the tracing of an alleged overcharge on a graphics card to the purchase of a computer is that both the GPU chip and the graphics card, the prices that are alleged to have been fixed, are components of those products purchased by proposed class members.

85. As described above, named Plaintiffs that purchased computers paid a range of prices for the computer. The computers are sold with a wide range of graphics cards included. There is no information regarding the cost of the graphics card, either to the computer seller or to the named Plaintiff that purchased the computer. At least some of the graphics cards are available for sale to consumers at retail. A comparison of those retail prices of graphics cards to the prices of the computers purchased by named Plaintiffs shows that those retail prices are low, relative the price of the computer. For example, Ron Davison purchased a Power Mac computer for about $3,000 on June 23, 2004. The computer contained an ATI Radeon 9600 XT 128 megabyte graphics card.[107] At retail the price of ATI Radeon 9600 XT 128 megabyte graphics card sold on June 30, 2004 $143, or less than five percent of the price of the computer. This amount likely overstates the cost of the graphics card to the computer seller. The cost of the GPU chip contained in the graphics card that is sold with the computer accounts for an even smaller amount of the computer. For example, the price of the GPU chip used in the card in the computer Mr. Davison purchased may have cost about $66, about two percent of the price of the computer.[108] Exhibit I-32 shows the prices of computers purchased by named Plaintiffs, retail

[107] Davison Tr. 39:19-40:11, 49:10-14, 86:20-21, IPP 001152-53 (Davison Ex. 1)

[108] Given that GPU chip prices vary by customer and over time, it is not possible to determine the actual cost of the GPU chip that should be compared to the price of Mr. Davison's computer. This problem is relevant to the Plaintiffs' claim that an overcharge can be traced

prices of the graphics cards contained in the computers, and possible prices of GPU chips that are used in the production of each graphics card, where such identification was possible. The Exhibit demonstrates that graphics card prices account for a small amount of the overall computer price.

86. Similarly, the cost of a GPU chip accounts for a small amount of the retail price of the graphics card. Plaintiffs claim that Defendants conspired to coordinate the retail prices and introduction of certain graphics cards. They identify 22 products, 11 pairs of products, for which they claim Defendants conspired to affect the manufacturers suggested retail price ("MSRP"). A comparison of those MSRPs to the cost of the GPU chips that are contained in the graphics cards demonstrates that the GPU chip cost varies significantly and that the GPU chip cost can be a very small amount of the MSRP for the graphics card. For example, Plaintiffs identify a pair of competing graphics cards, the GeForce 6800 GT for NVIDIA and the Radeon X800 Pro for ATI, that were affected by the alleged conspiracy. Plaintiffs claim that the MSRP for both graphics cards was $399. The prices of the GPU chips contained in the Radeon X800 Pro ranged from [redacted]. The prices of the GPU chips contained in the GeForce 6800 GT ranged from [redacted]. Exhibit I-33 shows a comparison of each of the product pairs identified by Plaintiffs in the TAC, the claimed MSRP of each pair, and the price range of the underlying GPU chips contained in those pairs. The Exhibit shows the range of GPU chip prices for a particular graphics card and that in many instances the GPU chip cost accounts for a very small proportion of the MSRP claimed by Plaintiffs. The Exhibit also shows that for a number of the product

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from the price of a computer to the cost of the GPU chip. In addition, the task of matching a particular GPU chip to a graphics card can be difficult. Neither NVIDIA nor ATI systematically tracks the particular GPU chip, by material or part number, that is used as an input into a card. GPU chips are not named or tracked based on the graphics card "street names." Unless Plaintiffs can establish that the overcharge is the same, in dollar amount, for all GPU chips, tracing the overcharge will require an individual analysis of what card a Plaintiff purchased, what GPU chip was used as an input into that card and what the overcharge was on that GPU chip. This assumes that the overcharge to all customers that purchased that GPU chip was the same. If Plaintiffs cannot establish that, then additional analysis of who purchased the particular GPU chip is required, at what price, and what amount of overcharge.

pairs identified by Plaintiffs, one of the Defendants does not sell a GPU chip for the graphics card product identified for that Defendant. For example, ATI does not sell a GPU chip for the Radeon X1950 Pro graphics card.[109]

E. Summary Of Industry Characteristics As They Relate To Pass On Of An Alleged Overcharge

87. The differentiated nature of the products at issue, the complex distribution patterns, and the component-like nature of a GPU chip (or graphics card) indicate that injury to consumers of graphics cards and computers cannot be determined on a class wide basis. Consider the claim that Defendants conspired to raise the price of GPU chips. In order to determine impact on a proposed class member that purchases a computer, one must first determine whether the direct purchaser paid an overcharge on the particular GPU chip that was used to build the graphics card that is in the computer. As described above, there are hundreds of different GPU products, sold to numerous customers at different prices. Dr. Meyendorff's theory does not provide a method to account for the fact that some direct purchasers did not pay an overcharge.

88. If indirect purchasers are able to establish the direct overcharge on the relevant GPU chip, they still must show that the overcharge to the direct purchaser has been passed on and resulted in higher prices to them. Given that the price of a GPU chip accounts for a very small amount of the overall cost of a computer, any overcharge will be an even smaller amount of the purchase price of the computer to the indirect purchaser if, indeed, there is any of the overcharge left to pass on. This makes determining whether intermediate resellers passed on the overcharge through the distribution channels even more difficult.

89. Finally, the overcharge must be traced from the Defendant through one of numerous different complex distribution paths. The particular path may not be knowable. And the various paths may involve numerous layers of potentially hundreds of different distributors and / or

[109] It is also true that in certain of the product pairs identified by Plaintiffs, one of the Defendants does not sell the graphics card. For example, NVIDIA does not sell a GeForce FX 5800 graphics card. Plaintiffs' theory of conspiracy, as it is alleged in the TAC, is based on the coordination of competing product pairs. If one of the Defendants does not sell a product in a pair identified by Plaintiffs, then Defendants could not have coordinated prices or introduction dates for that pair.

manufacturers that have varied relationships with one another that affect the prices at which transactions between them occur. The same set of considerations exists for tracing an overcharge on a graphics card through various distribution channels to the indirect purchaser.

90. In summary, the steps necessary for Plaintiffs are the following: 1) Establish whether a particular GPU chip sold by Defendants has been affected by the alleged conspiracy and measure the effect of the conspiracy, that is, the direct overcharge on that GPU chip, and determine which direct purchaser paid the overcharge. 2) Determine whether the direct purchaser sold the GPU chip or used it as a component in another product. 3) If the direct purchaser resold the GPU chip, determine whether the direct purchaser passed on the overcharge and if so, by what amount and to whom. 4) If the direct purchaser used the GPU chip as a component in the manufacture of some other product, determine what product was manufactured, who the product was sold to and whether the overcharge was passed on to the buyer. In order to do this, one must control for the costs of the other components. In addition, it must be determined whether and what terms may be negotiated between the Defendant and an indirect purchaser that may affect or eliminate the effect of any overcharge paid by the direct purchaser. 5) If the overcharge, at that stage is not eliminated, the path of the product from the manufacturer to the indirect purchaser must be determined and the overcharge must be traced along that path. The path may include any one of many distributors, retailers or e-tailers. Plaintiffs' experts have done absolutely none of the work that would permit a conclusion that there is a common method that would establish impact on all indirect purchasers.

F. Plaintiffs' Empirical Evidence Related To Pass On

91. Plaintiffs' expert claims that all firms involved in the distribution of GPU chips, graphics cards and computers pass on 100 percent of all cost increases to consumers. This conclusion is based, partly, on purported regression estimates of pass-on rates using data from three sources. The regression estimates calculated by Dr. Netz are not relevant to the issue of class wide pass-on because they are averages and a method based on averages is not sufficient to demonstrate actual injury to each class member. Averages mask any differences in such rates

pass-on measure. Similarly, averaging the GPU chip prices may obscure the relationship or simply result in a false relationship. The Exhibit contains a number of similar graphs for different graphics cards and different GPU chips. Comparing the prices and price trends across the graphs shows that these relationships vary. Recall that Dr. Netz's regressions, which did not focus on the relationship of a GPU chip cost and the price of any product purchased by a proposed class member were based on highly aggregated and averaged data. Those regressions could not possibly "pick up" the variation in pass-on that is demonstrated in these graphs. However, in order to determine whether some individual proposed class member was or was not injured, it is these types of price data that must be examined.

107. Similarly, Exhibit I-42 shows the retail prices of computers. The Exhibit shows the prices of Dell branded computers that contain the same graphics card. This data shows that the Dell computer prices vary substantially, depending on many factors, including the various other components that are included in the computer, as well as possible discounts offered by Dell. In addition, two different computers, with two different graphics cards can be sold at the same retail price. [redacted] This indicates that in order to determine whether a proposed class member was injured or to measure such injury, it is not sufficient to obtain information related to the price of the computer, but the particular graphics card must be identified, the cost of the graphics card must be determined and some measure of the overcharge on that graphics card must be obtained.

5/20/08

Michelle M. Burtis, Ph.D.

Exhibit I-2

Materials Considered

Legal Pleadings re: Graphics Processing Units Antitrust Litigation

Direct	
Defendants' Position Statement for May 24, 2007 Initial Conference	May 17, 2007
Direct and Indirect Plaintiffs' Position Statement	May 17, 2007
Direct and Indirect Plaintiffs' Position Statement (Corrected)	May 18, 2007
Consolidated and Amended Class Action Complaint for Violation of Section 1 of the Sherman Act, 15 U.S.C. § 1	June 14, 2007
Defendants' Motion to Dismiss Consolidated Amended Complaint of Direct Purchaser Plaintiffs	July 16, 2007
Declaration of Jeffrey M. Gutkin in Support of Defendants' Motion to Dismiss Consolidated Amended Complaint of Direct Purchaser Plaintiffs	July 16, 2007
Direct Purchaser Plaintiffs' Opposition to Defendants' Motion to Dismiss	August 13, 2007
Declaration of Kevin J. Barry in Support of Direct Purchaser Plaintiffs' Opposition to Defendants' Motion to Dismiss	August 13, 2007
Defendants' Reply Brief in Support of Motion to Dismiss Consolidated Amended Complaint of Direct Purchaser Plaintiffs	September 4, 2007
Declaration of David Steiner in Support of Defendants' Reply Brief on Motion to Dismiss Consolidated Amended Complaint of Direct Purchaser Plaintiffs	September 4, 2007
Second Consolidated and Amended Class Action Complaint for Violation of Section 1 of the Sherman Act, 15 U.S.C. § 1	September 5, 2007
Pretrial Order No. 5 Order Granting in Part and Denying in Part Motions to Dismiss	September 27, 2007
Direct Purchaser Plaintiffs' Motion for Leave to File Amended Complaint; Motion for Limited Discovery	October 11, 2007
Declaration of David Steiner in Support of Defendants' Opposition to Direct Purchaser Plaintiffs' Motion for Leave to File Amended Complaint and Motion for Limited Discovery	October 18, 2007
Defendants' Opposition to Direct Purchaser Plaintiffs' Motion for Leave to File Amended Complaint and Motion for Limited Discovery	October 16, 2007
Direct Purchaser Plaintiff's Reply in Support of Motion for Leave to File Amended Complaint; Motion for Limited Discovery	October 25, 2007
Pretrial Order No. 6 Order Granting in Part and Denying in Part Plaintiffs' Motion for Leave to File an Amended Complaint	November 7, 2007
Answer of ATI Technologies ULC, Advanced Micro Devices, Inc., AMD US Finance, Inc., and 1252986 Alberta ULC to Direct Purchaser Plaintiffs' Third Consolidated and Amended Class Action Complaint	November 28, 2007
Defendant NVIDIA Corp.'s Answer To Direct Purchaser Plaintiffs' Third Consolidated And Amended Class Action Complaint	November 28, 2007
Direct Purchaser Plaintiffs' Initial Disclosure Pursuant to Fed. R. Civ. P. 26(A)(1)	December 3, 2007
Direct Purchaser Plaintiffs' Responses and Objections to Defendant ATI Technologies ULC's First Set of Special Interrogatories	January 16, 2008
ATI Defendants' Responses and Objections to Direct Purchaser Plaintiffs' First Set of Interrogatories to Defendants ATI and AMD	January 22, 2008
Defendants ATI Technologies ULC and Advanced Micro Devices Inc.'s Responses to Direct Purchaser Plaintiffs' First Set of Requests for Production	January 22, 2008
NVIDIA Corp.'s Responses and Objections to Direct Purchaser Plaintiff's First Set of Requests for Production of Documents	January 22, 2008
NVIDIA Corporation's Responses and Objections to Direct Purchaser Plaintiffs' First Set of Specially Prepared Interrogatories	January 22, 2008
Letter from John F. Cove, Jr. to Charles H. Samel	February 29, 2008
NVIDIA Corp.'s Responses and Objections to Direct Purchaser Plaintiff's Second Set of Requests for Production of Documents	March 24, 2008
Direct Purchaser Plaintiffs' Responses and Objections to Defendant NVIDIA Corp.'s First Set of Interrogatories	March 27, 2008
Defendants ATI Technologies ULC and Advanced Micro Devices Inc.'s Responses to Direct Purchaser Plaintiffs' Second Set of Requests for Production	March 31, 2008
Direct Purchaser Plaintiffs' Motion for Class Certification	April 24, 2008
Declaration of Kevin J. Barry in Support of Direct Purchaser Plaintiffs' Motion for Class Certification	April 24, 2008
Direct Purchaser Plaintiffs' Administrative Motion for Sealing Order	April 24, 2008
Declaration of Dean M. Harvey in Support of Direct Purchaser Plaintiffs' Administrative Motion for Sealing Order	April 24, 2008
Declaration of Charles H. Samel in Response to Direct Purchaser Plaintiffs' Administrative Motion for Sealing Order	May 1, 2008
Direct Purchaser Plaintiffs' Responses and Objections to Defendant 1252986 Alberta ULC's First Set of Special Interrogatories to All Direct Purchaser Plaintiffs	May 8, 2008
Direct Purchaser Plaintiffs' Responses and Objections to Defendant ATI Technologies ULC's First of Document Requests to All Plaintiffs	May 8, 2008
Direct Purchaser Plaintiffs' Responses and Objections to Defendant ATI Technologies ULC's Second Set of Special Interrogatories to All Direct Purchaser Plaintiffs	May 8, 2008
Declaration of Jeffrey D. Fisher in Support of Defendants' Opposition to Direct Purchaser Plaintiffs' and Indirect Purchaser Plaintiffs' Motions for Class Certification	May 19, 2008
Declaration of Matthew Skynner	May 20, 2008
Indirect	
Defendants' Position Statement for May 24, 2007 Initial Conference	May 17, 2007
First Consolidated Class Action Complaint by Indirect Purchaser Plaintiffs for Violation of State and Federal Antitrust Laws, State Consumer Protection Laws, and Unjust Enrichment	June 14, 2007

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First Amended Complaint By Indirect Purchaser Plaintiff James Allee for Violation of State and Federal Antitrust Laws, State Consumer Protection Laws, and Unjust Enrichment	July 3, 2007
Defendants' Notice of Motion and Motion to Dismiss Indirect Purchasers' First Consolidated Class Action Complaint	July 18, 2007
Memorandum In Opposition to Motion to Dismiss Indirect Purchasers' First Consolidated Class Action Complaint	August 13, 2007
Defendants' Reply Memorandum In Support of Motion to Dismiss the Amended Consolidated Indirect Purchaser Complaint	September 4, 2007
Declaration of Amanda P. Reeves In Support of Defendants' Reply Memorandum In Support of Motion to Dismiss the Amended Consolidated Indirect Purchaser Complaint	September 4, 2007
Pretrial Order No. 5 Order Granting in Part and Denying in Part Motions to Dismiss	September 27, 2007
Notice of Motion and Motion of Indirect Purchaser Plaintiffs for Leave to File Second Consolidated Amended Complaint and to Propound Limited Discovery and Memorandum in Support Thereof	October 11, 2007
Defendant's Opposition to the Indirect Purchaser Plaintiffs' Motion for Leave to File Second Consolidated Amended Complaint and to Propound Limited Discovery	October 18, 2007
Declaration of Amanda P. Reeves In Support of Defendants' Opposition to the Indirect Purchaser Plaintiffs' Motion for Leave to File Second Consolidated Amended Complaint and to Propound Limited Discovery	October 18, 2007
Indirect Purchaser Plaintiffs' Reply Memorandum In Support of Motion for Leave to File Second Consolidated Amended Complaint and to Propound Limited Discovery	October 25, 2007
Second Consolidated and Amended Class Action Complaint for Violation of Section 1 of the Sherman Act, 15 U.S.C. § 1	November 7, 2007
Pretrial Order No. 6 Order Granting In Part and Denying In Part Plaintiff's Motion for Leave to File an Amended Complaint	November 7, 2007
Second Amended Consolidated Class Action Complaint by Indirect Purchaser Plaintiffs for Violation of State and Federal Antitrust Laws, State Consumer Protection Laws, and Unjust Enrichment	November 7, 2007
Defendant NVIDIA Corp.'s Answer to Second Amended Consolidated Class Action Complaint by Indirect Purchaser Plaintiffs	November 27, 2007
Answer of ATI Technologies ULC, Advanced Micro Devices, Inc., AMD US Finance, Inc., and 1252986 Alberta ULC to Second Amended Consolidated Class Action Complaint By Indirect Purchaser Plaintiffs	November 27, 2007
Indirect Purchaser Plaintiffs' Initial Disclosures Pursuant to Fed. R. Civ. P. 26(A)(1)	December 3, 2007
Notice of Motion and Motion of Indirect Purchaser Plaintiffs for Leave to Add New Plaintiffs and Related State Law Claims Pursuant to Pretrial Order No. 7, and Memorandum in Support Thereof	January 3, 2008
Declaration of Christopher L. Lebsock in Support of Indirect Purchaser Plaintiffs' Motion for Leave to Add New Plaintiffs and Related State Law Claims Pursuant to Pretrial Order No. 7	January 3, 2008
Indirect Purchaser Plaintiffs' Responses to Defendant ATI Technologies ULC's First Set of Specially Prepared Interrogatories	January 14, 2008
Indirect Purchaser Plaintiffs' First Supplemental Disclosures Pursuant to Fed. R. Civ. P. 26(A)(1)	January 14, 2008
NVIDIA Corp.'s Responses and Objections to Indirect Purchaser Plaintiffs' First Set of Specially Prepared Interrogatories	January 15, 2008
ATI Defendants' Responses and Objections to Indirect Purchaser Plaintiffs' First Set of Specially Prepared Interrogatories to All Defendants	January 15, 2008
NVIDIA Corp's Response and Objections to Indirect Purchaser Plaintiffs' First Set of Requests For Production of Documents	January 15, 2008
Defendants ATI Technologies ULC, Advanced Micro Devices Inc., AMD US Finance, Inc., and 1252986 Alberta ULC's Responses to Indirect Purchaser Plaintiffs' First Set of Requests for Production of Documents	January 15, 2008
Defendants ATI Technologies ULC, Advanced Micro Devices, Inc., AMD US Finance, Inc., and 1252986 Alberta ULC's Responses to Indirect Purchaser Plaintiffs' First Set of Specially Prepared Interrogatories	January 15, 2008
ATI Defendants' Responses and Objections to Indirect Purchaser Plaintiffs' First Set of Requests for Production of Documents to All Defendants	January 15, 2008
Stipulation Regarding Indirect Purchaser Plaintiffs' Motion for Leave to File Third Amended Complaint to Add New Named Plaintiffs and Related State Law Claims	January 17, 2008
Third Amended Consolidated Class Action Complaint by Indirect Purchaser Plaintiffs for Violation of State and Federal Antitrust Laws, State Consumer Protection Laws, and Unjust Enrichment	January 18, 2008
Order Granting Indirect Purchaser Plaintiffs' Motion For Leave To File Third Amended Complaint Pursuant to the Terms of the Parties' January 17, 2008 Stipulation	January 18, 2008
Letter from Whitty Somvichian to John F. Cove, Jr., Henry A. Cirillo and Charles H. Samel	January 28, 2008
Defendant NVIDIA Corp.'s Answer to Third Amended Consolidated Class Action Complaint by Indirect Purchaser Plaintiffs	January 28, 2008
Answer of ATI Technologies ULC, Advanced Micro Devices, Inc., AMD US Financial, Inc., and 1252986 Alberta ULC to Third Amended Consolidated Class Action Complaint by Indirect Purchaser Plaintiffs	January 28, 2008
Letter from Michael Lehmann to Jennifer A. Carmassi	February 27, 2008
Letter from Michael Lehmann to Jennifer A. Carmassi	February 29, 2008
Letter from Michael Lehmann to Jennifer A. Carmassi	March 7, 2008
Letter from Michael Lehmann to Jennifer A. Carmassi	March 13, 2008
Letter from Michael Lehmann to Jennifer A. Carmassi	April 3, 2008
Letter from Michael Lehmann to Jennifer A. Carmassi	April 4, 2008
Indirect Purchaser Plaintiffs' Responses and Objections to Defendant NVIDIA Corp.'s First Set of Interrogatories	April 11, 2008
Indirect Purchaser Plaintiffs' Administrative Motion to Seal Documents Pursuant to Civil Local Rules 7-11 and 79-5	April 24, 2008

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Declaration of Michael P. Lehmann in Support of Indirect Purchaser Plaintiffs' Administrative Motion to Seal Documents	April 24, 2008
Notice of Motion and Motion of Indirect Purchaser Plaintiffs for Class Certification	April 24, 2008
Memorandum of Points and Authorities in Support of Indirect Purchaser Plaintiffs' Motion for Class Certification	April 24, 2008
Declaration of Michael P. Lehmann in Support of Indirect Purchaser Plaintiffs' Motion for Class Certification	April 24, 2008
Request for Judicial Notice in Support of Indirect Purchaser Plaintiffs' Motion for Class Certification	April 24, 2008
Corrected Declaration of Michael P. Lehmann in Support of Indirect Purchaser Plaintiffs' Administrative Motion to Seal Documents	April 28, 2008
Declaration of Charles H. Samel in Response to Indirect Purchaser Plaintiffs' Administrative Motion to Seal Documents	May 1, 2008
Indirect Purchaser Plaintiffs' Responses and Objections to Defendant ATI Technologies ULC's Second Set of Special Interrogatories	May 13, 2008
Indirect Purchaser Plaintiffs' Responses and Objections to Defendant 1252986 Alberta ULC's First Set of Special Interrogatories	May 13, 2008
Indirect Purchaser Plaintiffs' Responses and Objections to Defendant ATI Technologies ULC's First Set of Document Requests to All Plaintiffs	May 13, 2008

Plaintiffs' Expert Reports and Materials

Direct

Expert Report and Exhibits of Dr. David J. Teece and accompanying produced data and materials	April 24, 2008

Indirect

Declaration and Exhibits of Dr. Anna Meyendorff in Support of Plaintiff's Motion for Class Certification and accompanying produced data and materials	April 24, 2008
Declaration and Exhibits of Dr. Janet S. Netz in Support of Plaintiffs Motion for Class Certification and accompanying produced data and materials	April 24, 2008
Corrected Declaration of Dr. Janet S. Netz in Support of Plaintiffs' Motion for Class Certification	April 28, 2008
Corrected Declaration of Dr. Anna Meyendorff in Support of Plaintiffs' Motion for Class Certification	April 28, 2008

Named Plaintiffs Materials (Depositions, Exhibits and Produced Materials)

Direct

Deposition of Jordan Walker	April 1, 2008
Deposition of Karol Juskiewicz	March 20, 2008
Deposition of Michael Z. Bensignor	April 8, 2008

Indirect

Deposition of Andrew Jay Heiling-Doane	March 18, 2008
Deposition of Andrew Wilson	May 2, 2008
Deposition of Angela Roark	April 18, 2008
Deposition of Benjamin W. Stewart	April 3, 2008
Deposition of Bret Lee Johnson	March 10, 2008
Deposition of Bryan Grant Schindelheim	March 19, 2008
Deposition of Christopher C. Crawford	March 27, 2008
Deposition of Cory Wiles	March 17, 2008
Deposition of Daniel Perkel	April 21, 2008
Deposition of Daniel Yohalem	March 31, 2008
Deposition of Heidi Heitkamp, Inc.	March 26, 2008
Deposition of James A. Lawson	April 18, 2008
Deposition of James Matson	April 17, 2008
Deposition of Jeffrey Alvin Hughes	April 9, 2008
Deposition of John Preve	April 22, 2008
Deposition of Joseph Clofine	April 4, 2008
Deposition of Joseph Peirano	April 11, 2008
Deposition of Joseph Salazar	April 11, 2008
Deposition of Judd Eliasoph	April 5, 2008
Deposition of Justus J. Austin, III	April 16, 2008
Deposition of Kathryn Marie Saunders	April 14, 2008

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Deposition of Kenneth Douglas Erdmann	March 18, 2008
Deposition of Michael Brooks	April 15, 2008
Deposition of Paul Richard Smith, Senior	April 16, 2008
Deposition of Robert Schuyler Watson	April 16, 2008
Deposition of Ron Davison	April 4, 2008
Deposition of Roy L. Jacobs	April 7, 2008
Deposition of Scott Richard Hugh Erickson	April 25, 2008
Deposition of Scott Ruth	April 17, 2008
Deposition of Tim Hartshorn	April 3, 2008
Deposition of Vincent Andella	April 25, 2008
Examination of Scott Hector Martin	April 24, 2008

Interviews

Interview with Amelia Lam, Operations Manager responsible for rebate reserves and claims, Revenue and Accounting Department, AMD
Interview with Jeff Brown, General Manager, Professional Solutions Group, NVIDIA
Interview with David Strasser, Architect in the DTV Systems Department, AMD
Interview with Kevin Burgis, AMD
Interview with Matthew Skynner, Marketing, Graphics Product Group for Advanced Micro Devices, Inc., AMD
Interview with Maureen Simmons, Senior Business Analysts in the Business Systems & Support Department, AMD
Interview with Michael Turley, Manager of GPU Business Operations, NVIDIA
Interview with Roman Krychynskyi, Senior Business Manager, AMD
Interview with Tony Tamasi, VP of Technical Marketing, NVIDIA
Interview with Trung Nguyen, Senior Business Analysts in the Business Systems & Support Department, AMD

Data

ATI Data
PN list with graphics.xls
Sales_by_Shipto_Dest_100_111_310_370_Dec07.xls
Sales_by_Shipto_Dest_100_111_310_370_Nov07.xls
Sales_by_Shipto_Dest_100_111_310_370_Oct07.xls
WW Shipment Sales 1999.05.xls
WW Shipment Sales 1999.06.xls
WW Shipment Sales 1999.07.xls
WW Shipment Sales 1999.08.xls
WW Shipment Sales 1999.09.xls
WW Shipment Sales 1999.10.xls
WW Shipment Sales 1999.11.xls
WW Shipment Sales 1999.12.xls
WW Shipment Sales 2000.01.xls
WW Shipment Sales 2000.02.xls
WW Shipment Sales 2000.03.xls
WW Shipment Sales 2000.04.xls
WW Shipment Sales 2000.05.xls
WW Shipment Sales 2000.06.xls
WW Shipment Sales 2000.07.xls
WW Shipment Sales 2000.08.xls
WW Shipment Sales 2000.09.xls
WW Shipment Sales 2000.10.xls
WW Shipment Sales 2000.11.xls
WW Shipment Sales 2000.12.xls
WW Shipment Sales 2001.01.xls