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 9 APPLE INC.

10 UNITED STATES DISTRICT COURT
 11 NORTHERN DISTRICT OF CALIFORNIA
 12 SAN JOSE DIVISION
 13

14 **THE APPLE IPOD iTUNES ANTI-**
 15 **TRUST LITIGATION**

Lead Case No. C 05-00037 JW (HRL)
 [Class Action]

16 **EXPERT REPORT OF DR. MICHELLE**
 17 **M. BURTIS**

17 This Document Relates To:
 18 ALL ACTIONS

Date: April 18, 2011
 Time: 9:00 a.m.
 Place: Courtroom 8, 4th Floor

20 **REDACTED PUBLIC VERSION**

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1 **I. BACKGROUND AND EXPERIENCE**

2 1. My background and experience are summarized in my expert report of June 17,
3 2009 in the *Somers* case.¹ My hourly rate is \$595.

4 **II. INTRODUCTION**

5 2. I was the economic expert for Apple in the *Somers* case. The Court denied
6 *Somers*' motion to certify a damages class under Rule 23(b)(3) on July 17, 2009.² Also, I
7 previously filed reports in this case.³ I concluded that Professor Noll had not established that the
8 methodologies he proposed to show impact and damages would work. Further, I concluded that
9 his proposed methodologies would in fact not work.

10 3. I understand that the Court has ruled, after Professor Noll submitted his earlier
11 reports, that the initial interoperability of the iTunes Music Store ("iTS") and iPods resulting from
12 Apple's adoption of its proprietary DRM, FairPlay, was not unlawful.⁴ I further understand that
13 Plaintiffs have filed a new Complaint, now alleging that any market power that Apple lawfully
14 obtained from its launch of iTS and the iTS's interoperability with iPods was improperly
15 maintained through software updates that allegedly blocked Harmony, a program that allowed
16 music from RealNetworks Music Store to be played on iPods. Plaintiffs claim that Apple's
17 conduct caused iPods to be sold to proposed class members at prices "far above those that would
18 prevail in a competitive market for Portable Digital Media Players."⁵ The proposed class is

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20 ¹ Expert Report of Dr. Michelle M. Burtis, Ph.D., *Somers v. Apple Inc.*, Case No. C 07-6507 JW,
21 June 17, 2009 (*Somers* Doc. 74) ("Burtis Indirect Purchaser Report").

22 ² Order Denying In Part Plaintiff's Motion for Class Certification, *Somers v. Apple Inc.*, Case No.
23 C 07-6507 JW, July 17, 2009 (*Somers* Doc. 80) at p. 12.

24 ³ Expert Report of Dr. Michelle M. Burtis, *Apple iPod iTunes Antitrust Litigation*, Case No. C
25 05-00037 JW, August 31, 2009 (Doc. 241) ("Burtis Report") and Reply Expert Report of Dr.
26 Michelle M. Burtis, *Apple iPod iTunes Antitrust Litigation*, Case No. C 05-00037 JW, November
27 9, 2009 (Doc. 286) ("Burtis Reply Report").

28 ⁴ Order Granting Defendant's Motion for Judgment on the Pleadings as to the First Cause of
Action for Violations of Section 1 of the Sherman Act and the Fifth Cause of Action for
Violations of the Cartwright Act, *Apple iPod iTunes Antitrust Litigation*, Case No. C 05-00037
JW, October 30, 2009 (Doc. 274).

⁵ Amended Consolidated Complaint, *Apple iPod iTunes Antitrust Litigation*, Case No. C 05-
(continued)

1 defined as “[a]ll persons or entities in the United States . . . who purchased an iPod directly from
2 Apple between October 1, 2004 and March 31, 2009.”⁶ The proposed class includes both end-
3 user consumers that purchased iPods from Apple’s online and retail stores as well as resellers that
4 purchased iPods from Apple for resale to end-user consumers.

5 **III. ASSIGNMENT**

6 4. Counsel for Apple has asked me to address whether the methodologies and
7 approaches proposed by Professor Noll in this case can be used to determine class-wide impact
8 and to estimate class-wide damages under Plaintiffs’ new theory of liability. For ease of
9 exposition, I will refer to his proposed methodologies as “impact methodologies.”

10 5. A list of material that I considered in preparing this report is attached as
11 Exhibit A.

12 6. I summarize my conclusions in Section IV and describe the basis and reasons for
13 my conclusions in Sections V, VI and VII.

14 **IV. SUMMARY OF CONCLUSIONS**

15 7. Professor Noll has not demonstrated that his proposed methods will work to
16 determine impact and damages on a class-wide basis.

17 8. As an initial matter, Professor Noll has not proposed any method for identifying
18 when the damage period began and therefore which class members, if any, suffered any harm.
19 Professor Noll admits that, if Harmony had any impact, it would “initially” make iPods “more
20 attractive to consumers” by offering an additional source of music downloads for iPods. Under
21 Plaintiffs’ theory, Harmony thus would at least initially have caused iPod prices to go up and
22 blocking it—the alleged unlawful act—therefore would have caused prices to decrease, again
23 under Plaintiffs’ theory. Professor Noll asserts that blocking Harmony caused iPod prices to
24 increase only in some unspecified “long run,” when, absent the alleged misconduct, Harmony
25 allegedly would have caused iPod prices to fall as Apple’s legally obtained “market power” was

26 00037, January 26, 2010 (“ACC”) (Doc. 322) at ¶ 4. *See also* Declaration of Roger G. Noll, filed
27 January 18, 2011 (“Noll Decl.”) (Doc. 479) at p. 9.

28 ⁶ ACC at ¶ 31.

1 eroded over time. Professor Noll has not expressed an opinion about the length of time required
2 for the “long-run” to materialize and has not described any method to determine this period of
3 time. Yet, it is critical to his theory, because before then, under his own theory, consumers would
4 have paid *lower* prices as a result of the allegedly wrongful conduct—the opposite of Plaintiffs’
5 theory of impact and damages.

6 9. In addition, each method Professor Noll proposes is inadequate because each
7 depends on the existence of an appropriate benchmark—*i.e.*, a benchmark period or product that
8 shares the characteristics of the but-for world hypothesized by Plaintiffs’ new theory of liability
9 and harm. Professor Noll has not identified any such benchmark.

10 10. Under his proposed “before-and-after” methodology, Professor Noll proposes to
11 use the period prior to the introduction of iTunes in April 2003 as the benchmark “before” period.
12 As I discussed in my prior declarations, this benchmark period is inappropriate for several reasons
13 including the lack of sufficient price changes in the pre-iTunes period and the numerous and
14 significant changes in iPod models between the pre-iTunes period and the alleged damage period.
15 Under Plaintiffs’ new theory, the pre-iTunes period is even less appropriate as a benchmark because,
16 in addition to the problems I previously identified, the pre-iTunes period has no logical connection to
17 the “long-run” described by Professor Noll. Plaintiffs’ but-for world is one in which they claim
18 that Apple would hold legally obtained “market power” that was decaying over time. In the pre-
19 iTunes period, however, no company is alleged to have had any market power. This fundamental
20 difference precludes use of the pre-iTunes period as a “before” period in this case.

21 11. Professor Noll’s proposed before-after model is also inconsistent with Apple’s
22 pricing strategy.

23 [REDACTED]
24 [REDACTED]
25 [REDACTED] Dr. Noll does not explain how his model will account
26 for Apple’s pricing strategies.

27 12. Professor Noll’s proposed “yardstick” method is likewise unworkable. Even under
28 Plaintiffs’ previous theory of harm, Professor Noll admitted that this method may not be workable

1 due to lack of comparable benchmark products and difficulty in obtaining data from third-parties.
2 These problems are more pronounced with respect to Plaintiffs' new theory. Professor Noll has
3 not identified any yardstick product that was sold in a market in which a seller possessed lawfully
4 acquired "market power" that was decaying over time.

5 13. The same is true of Professor Noll's proposed "mark-up" method. This method,
6 like the others proposed by Professor Noll, requires the existence of a product sold in a market
7 that shared the characteristics of the but-for world Plaintiffs hypothesize. Professor Noll has not
8 identified any such market. In addition, Professor Noll's claims that third-party data would be
9 available to implement this method are unfounded. The data he claims exists does not. Moreover,
10 the data he admits would be difficult to obtain to implement the "yardstick" method is the same
11 data he claims is publicly available to use in the "mark-up" method.

12 14. Finally, Professor Noll describes several other different types of alleged
13 competitive harm. Each form of impact would require individualized analysis, and/or is not
14 impact felt by the putative class. Professor Noll claims that "dead-weight" loss could occur.
15 Dead-weight loss, or the "loss of welfare arising from the reduction in output,"⁷ to the extent it is
16 present, would be a loss felt by consumers who did not actually make iPod purchases. It is not a
17 loss felt by putative class members, who all purchased iPods. Similarly, Professor Noll claims
18 that the prices of other firms in the market may have been higher. Again, these are prices of
19 products not purchased by the putative class, or at least no claim is at issue here for those
20 purchases. Professor Noll further claims that proposed class members could be impacted from
21 reduced choice or slower technological growth, but whether or not a consumer is harmed in these
22 ways depends on individual consumer's preferences and an individualized analysis of those
23 preferences.

24 **V. PROFESSOR NOLL'S THEORY OF INCREASED IPOD PRICES**

25 15. Professor Noll's theory of anticompetitive harm is based on the claim that Apple's
26 software updates beginning in October 2004 led to the improper maintenance of legally obtained

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28 ⁷Noll Decl. at p. 64.

1 market power. According to Plaintiffs and Professor Noll, following the launch of the iTunes in
2 April 2003, Apple obtained market power in the alleged market for digital audio files and the
3 alleged market for portable digital media players.⁸ Professor Noll concedes that whatever market
4 power Apple may have had from the introduction of iTunes and Apple's adoption of FairPlay was
5 not the result of anticompetitive conduct.⁹

6 16. According to Professor Noll, as certain iPod owners built their music libraries with
7 purchases of music from iTunes, those consumers became "locked in" to the iPod¹⁰ which reduced
8 the incentive for those consumers, if and when they decided to purchase a new portable digital
9 media player, to switch to a competitive player. In July 2004, RealNetworks introduced Harmony,
10 a technology that allowed music available from RealNetwork's Music Store to be played on iPods
11 (as well as other portable digital media devices).¹¹ According to Professor Noll, the "initial"
12 effect of Harmony's introduction was to make iPods relatively more attractive to consumers,
13 increasing the demand for iPods and inferentially their prices.¹² However, Professor Noll asserts
14 that, if Harmony had continued to operate, it would have weakened the alleged "lock-in" as iPod
15 owners would have built music libraries that were not solely from iTunes.¹³ He theorizes that at least
16 some of those consumers would then consider and possibly purchase competitive portable digital
17 media players.¹⁴ This "long-run" effect, according to Professor Noll, would be to increase
18 competition in the market for portable digital media players, eventually reducing Apple's market
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20 ⁸ Noll Decl. at p. 73.

21 ⁹ Noll Decl. at pp. 7-8, 51.

22 ¹⁰ Noll Decl. at p. 57 ("The extent to which an iPod user is locked in is determined by the number
of audio recordings in the user's library that are protected by Fairplay.")

23 ¹¹ "RealNetworks breaks Apple's hold on iPod," CNET News, July 26, 2004.
24 http://news.cnet.com/RealNetworks-breaks-Apple's-hold-on-iPod/2100-1027_3-5282063.html
RealNetworks sold individual digital music tracks and albums through RealPlayer Music Store.
25 See RealNetworks, Inc., Form 10-K, 2004, p. 3. <http://investor.realnworks.com/secfiling.cfm?filingID=950124-05-1417>

26 ¹² Noll Decl. at p. 54.

27 ¹³ Noll Decl. at pp. 54, 57.

28 ¹⁴ Noll Decl. at p. 58.

1 power and resulting in lower prices of iPods.¹⁵ Professor Noll claims that, beginning in October
2 2004 when Apple issued version 4.7 of iTunes,¹⁶ Apple acted to preserve its market power and
3 stop this chain of events by updating certain software on iPods and iTunes, which resulted in songs
4 downloaded from RealNetwork's Music Store not being directly playable on iPods.¹⁷

5 17. In short, Plaintiffs' theory is fundamentally different from more typical antitrust
6 cases in which a direct purchaser claims that as a result of price-fixing or another antitrust
7 violation, a defendant raised prices at a particular time and that prices from that point until the
8 end of the conspiracy were unlawfully elevated as a result. By contrast, in this case, the allegedly
9 pro-competitive conduct by a rival (the Harmony launch) is claimed to have caused prices at issue
10 to increase (or not decrease as quickly as they would have absent the pro-competitive conduct)
11 and the allegedly anti-competitive conduct (the software update that incidentally blocked
12 Harmony) caused the prices at issue to decrease, thus benefiting consumers, at least until the
13 opposite effect is reached sometime off in the distance, the "long run."

14 18. Because the ultimate merit of Plaintiffs' claim that stopping Harmony had an
15 impact on iPod prices is not at issue at this class certification stage, Apple has not asked me to
16 express an opinion on that issue in this report. However, Professor Noll has not shown that the
17 existence or not of Harmony—which allowed access to just one of multiple sources of music for
18 iPods—would have had any impact on actual iPod prices for any time period, and given all the
19 other factors affecting demand for iPods and Apple's strategy of changing prices only
20 infrequently and only using certain price points, there is no reason to presume Harmony had any
21 measurable impact, one way or the other. In fact, the next price changes following the October
22 2004 updates were in January 2005, when Apple introduced the iPod shuffle, and in February
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25 ¹⁵ Noll Decl. at pp. 54-55.

26 ¹⁶ "Apple Introduces iPod Photo," Apple Inc. Press Release, October 26, 2004,
27 <http://www.apple.com/pr/library/2004/oct/26ipodphoto.html>.

28 ¹⁷ Noll Decl. at pp. 53, 57.

1 2005, when Apple introduced new iPod photo and iPod mini models. Each of the changes for
2 existing models was a price reduction, by as much as \$120 for some models.¹⁸

3 **VI. PROFESSOR NOLL HAS NOT PROPOSED A METHOD FOR IDENTIFYING**
4 **WHEN THE ALLEGED DAMAGE PERIOD BEGAN OR ENDED, AND THUS HE**
5 **CANNOT IDENTIFY WHICH CLASS MEMBERS WERE IMPACTED AND**
6 **WHICH WERE NOT**

7 19. According to Professor Noll, the decline in iPod prices in the but-for world—
8 which provides the basis for the alleged overcharge—would have occurred only in some
9 unspecified “long run,” after a sufficient number of consumers became sufficiently less “locked-
10 in” to iTS that they would start buying enough products competitive to iPods that Apple would
11 respond by reducing iPod prices. Only those consumers who purchased their iPods after this
12 claimed but-for-world price reduction would have paid any overcharge under Professor Noll’s
13 theory.

14 20. The importance of this for class certification is that, under Plaintiffs’ theory, some
15 proposed class members would not have been impacted and some may have benefited from the
16 challenged conduct. The class period proposed by Plaintiffs begins on October 1, 2004. That is
17 obviously too early because the first allegedly anticompetitive software update did not occur until
18 October 26, 2004.¹⁹ More significantly, according to Professor Noll, impact did not occur until
19 some undetermined “long-run” after an initial period of increased demand for iPods. Proposed
20 class members that purchased iPods before whatever time the long-run effect allegedly occurred
21 could not have suffered any adverse impact from the alleged conduct. Indeed, under Professor
22 Noll’s theory, those customers benefited from the challenged conduct. According to Professor
23 Noll, the demand for iPods in the but-for world initially would have been higher, which (under
24 Professor Noll’s logic) would mean that iPod prices during that time period would have been

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26 ¹⁸ Apple iPod Price Spreadsheet (attached as Exhibit 1 to Declaration of David C. Kiernan,
27 February 28, 2011).

28 ¹⁹ “Apple Introduces iPod Photo,” Apple Inc. Press Release, October 26, 2004.

1 higher than they actually were. Under Plaintiffs' theory, consumers who purchased during that
2 period thus paid a lower price for their iPads than they would have paid in the "but-for" world.

3 21. Professor Noll's theory also implies that certain proposed class members at the end
4 of the class period may not have been impacted. The proposed class period ends on March 31,
5 2009, when all of the record labels permitted Apple to sell their music without DRM.²⁰ But some
6 record labels allowed competing sellers to sell their music DRM-free beginning no later than
7 August 2007, and Professor Noll acknowledges that by March 2008 all of the major labels
8 permitted Apple's competitors to sell without DRM.²¹ At that time, iPod users were free to
9 purchase DRM-free music and play it on their iPods, which (if Plaintiffs' theory were valid)
10 would have reduced the extent of the alleged "lock-in," causing Apple's market power to decay
11 and potentially resulting in lower prices even before March 31, 2009.

12 22. Professor Noll has not described a method to determine the length of time
13 necessary for the "long-run" impact on pricing of iPods he hypothesizes, and thus has not
14 identified any method to determine which class members were impacted and which were not.
15 Professor Noll has not described any method to determine whether or at what point an iPod user
16 became "locked-in" or any method to find the point at which a "locked-in" user became
17 sufficiently less "locked-in" that the user would consider a competitive device. Professor Noll
18 does not describe how to determine when his hypothesized "long-run" period begins and
19 consumers would have paid the claimed lower prices of iPods. Professor Noll claims that
20 switching, even without "lock-in," can be costly and time-consuming and the extent of "lock-in"
21 depends on the number of FairPlay-protected songs in the individual iPod user's library.²² This
22 critical part of determining impact, including determining which proposed class members may
23 have been harmed by the alleged conduct, is not addressed by Professor Noll.

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²⁰ Noll Decl. at p. 60.

27 ²¹ Noll Decl. at p. 60.

28 ²² Noll Decl. at pp. 55, 57.

1 23. Determining when the “long-run” impact might have occurred, if ever, is made
2 much more complex when the actual events at issue and facts of the marketplace referred to in the
3 next paragraphs are considered.

4 24. The allegedly anticompetitive software updates did not affect all iPod users at the
5 same time. It is my understanding that the software updates that blocked Harmony in October
6 2004 were initially included only in new versions of the iPod photo and U2 iPod, introduced on
7 October 26, 2004.²³ Updates were offered, but not required, for pre-existing models on a rolling
8 basis beginning at that time.²⁴ It was not until March 2005 that the update was required—and
9 even then it was required only for those customers who wished to purchase from the iTunes.²⁵ Later
10 updates offered by Apple similarly affected only certain iPod users.²⁶

11 25. RealNetworks continued to operate Harmony after Apple’s October 2004
12 updates.²⁷ According to CNET News, RealNetworks’ Music Store was available to iPod users in
13 April 2005²⁸ and, according to RealNetworks’ SEC filing, it was apparently working in August
14 2005, and possibly later.²⁹

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16 ²³ “Apple Introduces iPod Photo,” Apple Inc. Press Release, October 26, 2004 and “Apple
17 Introduces the U2 iPod,” Apple Inc. Press Release, October 26, 2004,
<http://www.apple.com/pr/library/2004/oct/26u2ipod.html>.

18 ²⁴ Declaration of Jeffrey Robbin, January 18, 2011 (“Robbin Decl.”) at ¶ 40 (Doc. 468).

19 ²⁵ Eddy Cue Deposition (“Cue Deposition Tr.”), December 17, 2010, Exhibit 62, at pp. 2-3.
20 (Apple_AIA00090868-9). *See also* Robbin Decl. at ¶ 66. At the time of the iTunes 4.7 release,
21 customers with iTunes 4.2 or earlier (approximately 5% of iTunes customers) were required to
22 update to iTunes 4.7 in order to make purchases from the iTunes.

23 ²⁶ Augustin Farrugia Declaration, January 18, 2011 (“Farrugia Decl.”) at ¶ 32 (Doc. 471), and
24 Cue Deposition Tr. at 130:13-131:11.

25 ²⁷ Professor Noll refers to Harmony and RealNetworks Music Store as an “example,” (Noll Decl.
26 at p. 22) implying that there were other competitors, but Plaintiffs do not allege and have offered
27 no evidence that any other competitor would have entered the market absent Apple’s alleged
28 conduct.

²⁸ “RealNetworks rekindles iPod tech tussle,” CNET News, April 26, 2005,
http://news.cnet.com/RealNetworks-rekindles-iPod-tech-tussle/2100-1027_3-5685286.html

²⁹ RealNetworks, Inc., Form 10-Q, 2nd Quarter 2005, filed August 9, 2005, at p. 36,
<http://investor.realnworks.com/secfiling.cfm?filingID=950124-05-4817>. *See also*
RealNetworks, Inc., Form 10-K 2005 filed March 16, 2006 at pp. 3, 14,

(continued)

1 26. These facts are relevant to determining if and when Professor Noll's "long-run"
2 would occur. Given that Harmony continued to operate well into 2005 (and possibly later) and
3 that the updates did not impact all iPod users at once, it is possible that Harmony remained
4 available to iPod users until the update included on new iPod models (but not any existing models)
5 beginning in September 2006.³⁰ Given Professor Noll's theory of impact, it is plausible that there
6 was not sufficient time between when Harmony was effectively blocked and when DRM-free
7 music became available for Professor Noll's "long-run" impact to have occurred at all. Indeed,
8 Professor Noll appears to recognize as much. He states that it is significant that Harmony was
9 blocked in October 2004 because that meant an alternative source of music existed "for over three
10 years before" DRM-free music became available.³¹ But he does not account for the fact that
11 Harmony was back in operation in a later period much closer to the time that DRM-free music
12 became available.

13 **VII. PROFESSOR NOLL'S CLAIMED METHODOLOGIES ARE FLAWED FOR**
14 **ADDITIONAL REASONS.**

15 27. In addition to his failure to propose a means for identifying which proposed class
16 members were impacted, Professor Noll has not shown that any of the specific "competitive
17 benchmark" methods he proposes will work. Professor Noll refers to "three basic approaches"
18 that he asserts economists use to estimate damages: "before-after," "yardstick," and "mark-up."³²
19 These are the same methods that Professor Noll relied on in his earlier declaration.³³ My prior
20 declaration described the reasons why Professor Noll's methodologies would not work as applied
21 to Plaintiffs' original theory.³⁴ His methodologies are even more problematic and unworkable
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24 <http://investor.realnworks.com/secfiling.cfm?filingID=891020-06-64>, indicating that Harmony
25 was operating in 2005, and possibly into 2006.

26 ³⁰ See Farrugia Decl. at ¶¶ 7-29 and Errata (Doc. 506).

27 ³¹ Noll Decl. at p. 57-58.

28 ³² Noll Decl. at p. 71.

³³ Declaration of Roger G. Noll, July 15, 2008 ("Noll 2008 Decl.") at pp. 54-55 (Doc. 166-1).

³⁴ Burtis Report at ¶¶ 8-35.

1 with respect to the new and much more complex theory of anticompetitive harm that Plaintiffs
2 now allege.³⁵

3 **A. Professor Noll's "Before-After" Method Will Not Work**

4 28. As he did in his original declaration, Professor Noll proposes that a "before-and-
5 after" method can be used to determine and measure impact. According to Professor Noll, the
6 method is based on a comparison of prices "before and/or after the occurrence of the
7 anticompetitive acts with prices during the damage period."³⁶

8 29. Although Plaintiffs' theory of harm has changed since his last report, Professor
9 Noll proposes to use the same "before" period that he previously proposed—*i.e.*, the time
10 between the launch of the iPod (2001) and the launch of iTunes (April 2003).³⁷ Professor Noll
11 opines that this period reflects a time when iPods were "not dominant in the market for portable
12 digital media players."³⁸

13 30. In my original declaration, I explained why the pre-iTunes period does not work as a
14 competitive benchmark for all iPod prices after iTunes. Most of the iPod models in the post-iTunes
15 period were not even sold during the earlier period, the differences among the models are vast,
16 and pricing in the industry was affected by too many complex factors that cannot be measured.³⁹

17 31. Under Plaintiffs' new theory of harm, this proposed pre-iTunes "before" period is
18 inappropriate for additional reasons. As discussed above, Professor Noll's theory of harm is that
19 iPod prices would have declined over some "long-run" as iPod users purchased RealNetworks
20 music and switched to competing devices when they replaced their iPods. Thus, in Professor
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23 ³⁵ Professor Noll claims that these are "standard" methods used in antitrust and cites a number of
24 articles to support this claim. (Noll Decl. at p. 71 and fn. 86.) However, the articles he cites do
25 not describe a theory of impact like the one he asserts in this case.

26 ³⁶ Noll Decl. at p. 72.

27 ³⁷ Noll 2008 Decl. at p. 55 and Noll Decl. at p. 9, 18, 28.

28 ³⁸ Noll Decl. at p. 73.

³⁹ See Burtis Report at ¶ 9.

1 Noll's but-for world, Apple would have lawfully possessed market power but that power would
2 be decaying at some unspecified rate.

3 32. The pre-iTS period has none of the characteristics of this claimed "but-for" world.
4 Plaintiffs do not assert that Apple had any market power at all in the period before the iTS was
5 launched—let alone market power that was decaying over time. Prices charged in that period are
6 thus not an appropriate measure of what prices would have been years later in a world in which
7 Apple lawfully possessed market power that was being eroded. For this reason, using pre-iTS
8 prices as a baseline would overstate the impact, if any, from the inability of RealNetworks' music
9 to play on iPods. That is because the difference in pre-iTS prices compared to post-October 2004
10 prices may be attributed to market power lawfully obtained by Apple after the iTS launch, and not
11 to the impact of RealNetworks.

12 33. Professor Noll appears to recognize this problem with his theory. He states that
13 the but-for world "is not necessarily an intensely competitive market. Instead, it represents the
14 degree of competition that would have been present had the anticompetitive acts not occurred,
15 which in some circumstances is an oligopoly. Thus, a valid damage analysis must take into
16 account that in the absence of the anticompetitive acts, Apple still may have enjoyed some market
17 power in iPods."⁴⁰ Although identifying the problem, Professor Noll offers no solution for it. He
18 does not describe how he will "take into account" that Apple would have enjoyed some lawful
19 (but allegedly decaying) market power in the but-for world that was absent in the purported
20 "before" period.

21 34. Professor Noll appears to consider and reject the period after the introduction of
22 DRM-free music as a potential benchmark period.⁴¹ He claims this period is "likely to exhibit a
23 slow transition to the new price regime."⁴² Apparently, Professor Noll considers this period an
24 inappropriate benchmark for the period of decaying market power he claims would have occurred
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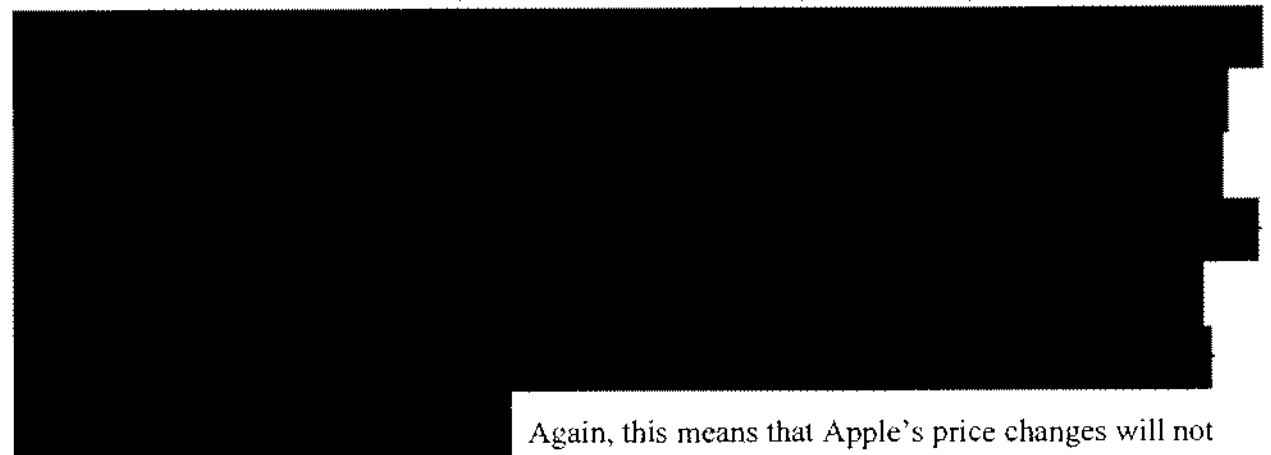
26 ⁴⁰ Noll Decl. at p. 69.

27 ⁴¹ Noll Decl. at p. 73.

28 ⁴² Noll Decl. at p. 73.

1 but-for Apple's conduct in late 2004. A "slow transition" would not yield much erosion in iPod
2 prices. This more recent period is also different from the class period in terms of the products
3 sold and the competitive conditions. In particular, in this period competition existed between
4 many providers of DRM-free music, including iTunes, Amazon.com, WalMart.com and others,
5 rather than competition between iTunes and RealNetworks in DRM-protected music. Because of
6 these differences, Professor Noll has not demonstrated that the period after introduction of DRM-
7 free music, starting in 2007, is an appropriate baseline period for ascertaining or measuring
8 whether the blocking of Harmony had any impact on iPod pricing.

9 35. Professor Noll's proposed method is also unworkable because it fails to take into
10 account Apple's iPod pricing strategy. Professor Noll's model assumes that Apple's prices in the
11 but-for world would fluctuate with, and reflect, even relatively small changes in demand for iPods.



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18 Again, this means that Apple's price changes will not
19 reflect certain changes in market conditions and that the basic premise of the "before-and-after"
20 approach described by Professor Noll does not apply here. Professor Noll recognized at his
21 deposition in 2009 that his approach would not work if he could not model Apple's pricing
22 strategy.⁴⁷ He has not described any method for doing so.

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24 ⁴³ Mark Donnelly Deposition Transcript, December 20, 2010 ("Donnelly Deposition Tr.")
101:12-20.

25 ⁴⁴ Donnelly Deposition Tr. at 20:20-23.

26 ⁴⁵ Donnelly Deposition Tr. at 73:21-74:7.

27 ⁴⁶ Donnelly Deposition Tr. at 72:2-17, 73:6-20.

28 ⁴⁷ Roger Noll Deposition Transcript, October 27, 2009, at 212:13-213:19.

1 **B. Professor Noll's "Yardstick" Method Will Not Work**

2 36. Professor Noll also proposes a "yardstick" approach, where the price or margin of
3 some other product is used as a benchmark. As in his prior declaration, Professor Noll concedes
4 this approach may be costly and difficult to implement.⁴⁸

5 37. In my original declaration I explained why Professor Noll's "yardstick" method
6 would not work under Plaintiffs' original theory of anticompetitive harm.⁴⁹ The conclusions I
7 reached there apply to Plaintiffs' current theory as well. Professor Noll has not shown that any
8 products are actually appropriate benchmarks. He asserts only that "[s]everal products" could
9 "plausibly" be "benchmarks for at least part of the damages period."⁵⁰ But he does not state that
10 any of these products would actually be an appropriate benchmark. Nor does he offer any
11 analysis to show that any of the products he lists have the requisite similarity to iPods in technical
12 features or market structure to be a proper basis for measuring what prices allegedly should have
13 been for iPods. Indeed, one of the articles Professor Noll cites as support for his impact
14 methodologies describes finding a comparable product to use in the "yardstick" approach—that is,
15 a product sufficiently similar to the product at issue but unaffected by the alleged conduct—as a
16 "hopeless task."⁵¹

17 38. Given Professor Noll's current theory of anticompetitive harm, Professor Noll's
18 "yardstick" approach is even more inappropriate than before. As I discuss above, Professor
19 Noll's theory is that in the but-for world Apple would have lawful market power that was

21 ⁴⁸ "For wholesale direct purchasers, the yardstick approach would require extensive third-party
22 discovery of prices, costs and technical features of comparable products, and then a price analysis
23 that isolates the relationship between cost and price. Because of the complexity of the method for
24 highly differentiated products like consumer electronics, the yardstick method is not likely to be
the most cost-effective method for establishing a competitive benchmark for wholesale
purchasers of iPods." (Noll Decl. at pp. 80-81)

25 ⁴⁹ Burtis Report at ¶¶ 23-27.

26 ⁵⁰ Noll Decl. at p. 80.

27 ⁵¹ See John M. Connor, "Forensic Economics: An Introduction with Special Emphasis on Price
28 Fixing," *Journal of Competition Law and Economics*, Vol. 4, No. 1 (March 2008), pp. 31-59 at p.
49. (Noll Decl. at fn. 86.)

1 decaying at some unspecified rate. Professor Noll has not identified any comparable product that
2 was sold under similar complex market circumstances and that thus could qualify as an
3 appropriate benchmark.

4 39. Further, with respect to wholesale direct purchasers, Professor Noll also sees the
5 yardstick approach as requiring extensive discovery, and not likely cost effective.⁵² For retail
6 direct purchasers, Professor Noll suggests that there might be a “competitive fringe” in the
7 portable digital media player market that might work as a benchmark.⁵³ But he has not done
8 anything to assess whether such a competitive fringe exists or explained how it is a valid
9 benchmark for his complex theory of anticompetitive harm.

10 **C. Professor Noll’s “Mark-up” Method Will Not Work**

11 40. Professor Noll’s proposed “mark-up” method is also one of the methods he
12 proposed earlier. My original declaration explains why that method would not work under the
13 Plaintiffs’ original theory of anticompetitive harm. The conclusions I reached there continue to
14 apply. This method, like the others, depends critically on the validity of the competitive
15 benchmark. But Professor Noll does not identify any product or firm that could be an appropriate
16 benchmark. He simply states, “the public financial reports of other consumer electronics firms
17 can be used to produce benchmark estimates of profit margins by product line.”⁵⁴ Similarly,
18 though he states that his proposal of using a game-theoretic model “hinges on accurately
19 estimating market concentration in the but-for world and using a valid theoretical model to
20 characterize the nature of price formation,” he has not developed either.⁵⁵ Professor Noll has not
21 identified any competitive industry benchmark that he could use to calibrate his proposed “game
22 theoretic” model of price determination. Nor has he specified what model he might actually use
23 in the present circumstances.

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⁵² Noll Decl. at pp. 80-81.

26 ⁵³ Noll Decl. at p. 81.

27 ⁵⁴ Noll Decl. at p. 83.

28 ⁵⁵ Noll Decl. at p. 84.

1 41. Under the current theory of anticompetitive harm, Professor Noll's "mark-up"
2 approach is even more inappropriate. As discussed above, the current theory requires finding a
3 benchmark product that was sold in a market in which the seller had lawfully acquired market
4 power that would continue to exist in the but-for world but that would be subject to decay over
5 time. Professor Noll has identified no such product or market.

6 42. Finally, Professor Noll claims that "[p]roduct-line financial information is
7 included in Apple's audited financial reports that are submitted to the Securities and Exchange
8 Commission" and that these data can be used to compare Apple's operating margins, by product
9 line, to some benchmark margins, which he claims are available in the public financial reports of
10 other consumer electronics firms.⁵⁶ Professor Noll is mistaken. Apple's SEC filings contain at
11 most, sales information, not operating income information, by "product line." Professor Noll is
12 silent on the particular "other electronics firms" he would use as a benchmark, but many of these
13 companies do not file SEC reports similar to Apple (e.g. foreign companies), and those that do,
14 do not report sufficiently disaggregated information to be used as a benchmark in Professor
15 Noll's method. For example, in some years, Microsoft reports sales and operating income
16 information for its "Entertainment and Devices Division" which includes other products besides
17 Microsoft's Zune media player. The collection of products included in this category also changes
18 over time, which is an additional reason that the use of this operating income information would
19 be unsuitable as a benchmark for the iPod.⁵⁷ Finally, the information Professor Noll contends is

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21 ⁵⁶ Noll Decl. at p. 83.

22 ⁵⁷ For example, in 2009, the category included the Xbox 360 video game console system, Xbox
23 360 video games, Xbox Live, Xbox 360 accessories, the Zune, PC software games, online games
24 and services, an Internet protocol television software, a computing platform, mobile and
25 embedded device platforms, and other devices. (Microsoft Corporation, Form 10-K, 2009, at pp.
26 27-28, <http://apps.shareholder.com/sec/viewerContent.aspx?companyid=MSFT&docid=6718747>)
27 In 2007, the category included "Xbox video game system; PC games; consumer software and
28 hardware products; the Zune digital music and entertainment device; Mediaroom, [an] Internet
protocol television software; and Mobile and Embedded devices (Windows Mobile software
platform, Windows Embedded device operating system and Windows Automotive)." (Microsoft
Corporation, Form 10-K, 2007 at p. 26, [http://apps.shareholder.com/sec/viewerContent.aspx?
companyid=MSFT&docid=5343081](http://apps.shareholder.com/sec/viewerContent.aspx?companyid=MSFT&docid=5343081)). Also, in its 2007 10-K, Microsoft described certain factors
that would affect the profitability of this category, including "console innovation and quality, the

(continued)

1 readily available from public sources to implement this method is at least similar, if not identical,
2 to the information necessary to implement the “yardstick” method. Yet, Professor Noll concedes
3 that the information necessary to implement the “yardstick” method would be difficult to obtain.

4 **VIII. PROFESSOR NOLL’S CLAIMS RELATED TO OTHER TYPES OF IMPACT**

5 43. Professor Noll claims that Apple’s alleged conduct could have led to competitive
6 harm through means other than higher prices of iPods. He asserts that (1) lower sales of iPods,
7 due to higher prices, causes “dead-weight loss”;⁵⁸ (2) the prices of other firms in the market may
8 be higher;⁵⁹ (3) the alleged “lock-in” increased switching costs and reduced consumers’ product
9 choices;⁶⁰ and (4) the alleged “lock-in” could have slowed technological progress.⁶¹

10 44. Each of Professor Noll’s theories of harm would require individualized analysis of
11 impact, and/or is not impact felt by the putative class. Dead-weight loss, or the “loss of welfare
12 arising from the reduction in output”⁶² to the extent it is present, is a loss felt by consumers who
13 did not actually make iPod purchasers; thus it is not a loss felt by the putative class, who all
14 purchased iPods. Similarly, Professor Noll claims that the prices of other firms in the market may
15 be higher. Again, these are prices of products not purchased by the putative class, or at least no
16 claim is made for those purchases here. And any such claim would in any event present
17 individual issues regarding what particular purchase was made and at what price. Similarly,
18 determination of impact due to fewer choices or different choices, due to slower technological
19 change, requires information about individual consumers’ preferences. This can only be obtained

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22 portfolio of video game content for the console, online offerings, and the market share of the
23 console.” Obviously, these factors are not related to the profitability of iPods and therefore any
24 comparison of iPod operating income with Microsoft’s operating income information would have
to be adjusted to account for these factors.

25 ⁵⁸ Noll Decl. at pp. 23, 64.

26 ⁵⁹ Noll Decl. at pp. 23-24, 64.

27 ⁶⁰ Noll Decl. at p. 24, 64-65.

28 ⁶¹ Noll Decl. at p. 24, 65.

⁶² Noll Decl. at p. 64.

1 via individualized inquiry. Consumers do not always want the latest electronic device or prefer
2 the latest technological feature or characteristic.

3 I declare under penalty of perjury that the foregoing is true to the best of my knowledge
4 and belief. Executed on February 28, 2011 in Washington, D.C.

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Michelle M. Burtis, Ph.D.

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