**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

United States of America, *et al.*,	
Plaintiffs,	Case No. 1:20-cv-03010-APM
v.	HON. AMIT P. MEHTA
Google LLC,	███████████████
Defendant.	

**DEFENDANT GOOGLE LLC'S MOTION TO PARTIALLY EXCLUDE THE
<u>OPINION OF PLAINTIFFS' EXPERT MICHAEL WHINSTON</u>**

Pursuant to Federal Rule of Evidence 702, Defendant Google LLC ("Google") respectfully moves to partially exclude the opinions of DOJ Plaintiffs' proffered expert Michael Whinston as set forth below, and any reliance thereon.

INTRODUCTION

As he readily admits, Professor Michael Whinston is not a search engine engineer and he has never previously written about or studied search engines. Yet, among the opinions DOJ Plaintiffs seek to have him present are those involving search engine scale and latency, areas which require deep technical understanding of how search engines work. Professor Whinston likewise strays from his training and experience in offering opinions on data privacy, an area in which he has no expertise. Unsurprisingly, given his lack of expertise, Professor Whinston's "opinions" in these areas are primarily those of a narrator, selectively presenting record evidence from actual search engineers. In the few instances where he conducts analysis on these topics, he is manifestly unqualified, resulting in opinions unhelpful to the fact finder. Professor Whinston's opinions in these three areas should be excluded.[1]

Scale. Professor Whinston offers opinions regarding the impact of the availability of user search data (or "scale") on search engine quality and competition among search engines. Among other things, he opines that "[s]cale is critical for the competitiveness of general search engines" because greater scale "facilitates a better search experience," allows search engines to "better monetize," and "to more accurately and quickly assess the impact" of changes on search quality and monetization. Ex. 1, June 6, 2022 Expert Report of Michael D. Whinston at 387, 391, 427, 444. Those propositions require an understanding of search engineering and how particular search

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[1] In addition, as discussed in Section III, Professor Whinston's opinions that rely on Christine Hammer's opinions must also be excluded for the reasons explained in Google's motion to exclude certain of her opinions.

engines operate—including how search algorithms use various user data for testing and improving search results, and whether increased volumes of such data would meaningfully affect those technical processes. Professor Whinston, however, disclaims having any relevant experience with how the volume (or scale) of data impacts *search engine* quality, relying instead on the general concept of "economies of scale" that has to do with the relationship between output and marginal cost and, of course, varies across actual production processes. Lacking relevant subject matter expertise, Professor Whinston's opinions consist mostly of a selective recitation of statements offered by others with actual technical experience. The only independent analyses Professor Whinston conducts regarding scale are flawed analyses of certain query types which he suggests support the importance of scale to search engines. But those analyses, by Professor Whinston's own admission, require selecting and controlling for other technical factors that might affect search quality, something Professor Whinston has no relevant expertise to do.

Latency. Professor Whinston also opines regarding the degree of latency in Google's presentation of search results—that is, the speed by which Google returns search results in response to a user query. Among other things, Professor Whinston opines that Google has recently "made little progress improving its latency." Ex. 1 at 477. But Professor Whinston has no experience relevant to Google's (or any other search engine's) engineering efforts to strike the right balance between latency and other facets of quality, such as the richness of the features on the search results page, which can simultaneously increase latency. His opinions simply repeat selective documents and testimony from the case, without any expertise that would be helpful to the fact finder in analyzing this evidence.

Privacy. Professor Whinston also opines regarding Google's privacy offerings, arguing Google has "offered only small improvements in privacy protections." *Id*. But, again, Professor

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Whinston is neither a search engine engineer nor a data privacy expert and has no experience in the inherent tradeoffs between data use and other aspects of search quality. He again offers nothing more than selectively repeating certain documents and testimony, for which he has no specialized experience to assist the fact finder's understanding.

Because Plaintiffs have not carried their burden to establish that Professor Whinston's opinions on scale, latency, and privacy are based on specialized knowledge that will help the trier of fact, his testimony on these topics should be excluded.

BACKGROUND

A.   **Fact Discovery on Scale, Latency, and Privacy**

Fact discovery in this case on the issues of scale, latency, and privacy was extensive. Documents regarding these topics were sought and produced, and the parties deposed a number of search engineers from various companies, including Google, Microsoft, Apple, DuckDuckGo, and Neeva, regarding these issues.

On scale, those witnesses testified regarding the various ways user data is utilized, the amount of user data needed to serve useful results and conduct experiments, and how technological advances greatly decreased the amount of user data needed to offer quality search results and compete effectively.

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On latency, discovery showed the difficult technical balance between latency and other quality factors. ██

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████   As a senior Google search engineer, and Ph.D. computer scientist, explained, latency is affected by multiple technical components, such as the structure of the Search Engine Results Page (SERP), algorithm programming, the amount of data that needs to be downloaded to the client, resources devoted to new features or quality improvements, and server loads. Ex. 10, Excerpts of the Deposition of Google 30(b)(6) by P. Pandurang Nayak (Apr. 7, 2022) at 182:7–185:14.

Similarly, on privacy, documents and testimony from search engineers and others knowledgeable about search engine privacy discussed the trade-offs between data privacy and the quality and efficacy of search engines and search advertising products. Google search engineers

testified about how Google "rel[ies] on data collection and data tracking to provide quality search results to users," including the technical "trade-offs [ ] in the kind of search experience you can get based on the data we have available to us." Ex. 11, Excerpts of the Deposition of Benedict Gomes, Ph.D., former Senior Vice President of Search at Google, (Dec. 10, 2021) at 246:13–247:6; *see also* Ex. 12, Excerpts of the Deposition of Catherine Edwards, Vice President of Engineering at Google (May 4, 2022) at 206:4–9 ("I am aware that we have had ongoing considerations of how much data we should log. Balancing the fact that many users view that data as valuable with the fact that some users view that as not valuable."). ███████████████████████████

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B.   The Parties Have Engaged Other Experts on Scale, Latency, and Privacy

In addition to fact discovery on these issues, the parties have retained other experts on the issues of scale, latency, and privacy. Google has retained:

- Professor Ophir Frieder, a professor of Computer Science at Georgetown University, to "assess, from a technical perspective, the principal elements of search quality, and whether there are factors other than large volumes of query data (beyond that already accessible to other search engines) that are important determinants of overall search quality." Ex. 14, Excerpts of June 3, 2022 Expert Report of Ophir Frieder at 3, 6.

- Professor Edward Fox, a professor in the Computer Science Department at Virginia Polytechnic Institute and State University, "to test the extent to which Google's search quality is affected by the volume of user interaction data available to train its ranking algorithms." Ex. 15, Excerpts of June 3, 2022 Expert Report of Edward A. Fox at 1, 5.

- Professor Catherine Tucker, a Professor of Management Science at MIT with an academic focus on "digital economics, and especially questions of how the increasing use of digital technologies has transformed advertising and questions of privacy," to assess various topics regarding search engine privacy. Ex. 16, Excerpts of June 6, 2022 Expert Report of Catherine Tucker at 1–2.

And DOJ Plaintiffs have retained:

- Professor Douglas Oard, a professor at the College of Information Studies and the Institute for Advanced Computer Studies (UMIACS) at the University of Maryland, College Park, to provide a rebuttal to Professor Frieder and Professor Fox.

- Professor Kirsten Martin, a professor of Technology Ethics and of IT, Analytics, and Operations at the University of Notre Dame, to provide a rebuttal to Professor Tucker.

C.   Professor Whinston's Opinions

Professor Whinston is an economist by training. He admits that he is "not a technical expert on search." Ex. 4, Excerpts of the Deposition of Michael D. Whinston (Nov. 9–10, 2022) at 432:15–20. On June 6, 2022, Plaintiffs served Professor Whinston's Opening Report, which discloses his opinions regarding scale, latency, and privacy.

Scale. Professor Whinston offers the overarching opinion that "[s]cale is critical for the competitiveness of a general search engine." Ex. 1 at 3; *see also id.* at 387–463. Professor Whinston also offers several subsidiary opinions, including:

- Search Quality: Prof Whinston opines that "[g]reater scale facilitates a better search experience." *Id.* at 391. For this proposition, he largely quotes from documents and testimony that he asserts demonstrate "widespread agreement among industry participants and observers that scale is critical" to search engine quality. *See id.* at 392–97. Professor

Whinston "outline[s] evidence" that he says shows that "[s]cale is an important input into the development and improvement of search algorithms" and that "Google's most impactful ranking algorithm components . . . are reliant on user interaction data at scale to provide high-quality search results." *Id.* at 408. Professor Whinston also offers an analysis of "empirical evidence" regarding the performance on "head, torso, and tail queries" which he says "suggests that scale improves the ability of general search engines to provide high-quality search results." *Id*. at 414, 418; *see also id.* at 414–26. He admits that "the differences in Google's head, torso, and tail query performance could be due to factors other than differences in the number of queries." *Id.* at 421.   Professor Whinston "estimate[s] a regression model that controls for device type, vertical categories separately for each month, and subvertical categories."[2] *Id.*

- Monetization: Professor Whinston also offers the subsidiary opinion that "[g]reater scale allows a general search engine to better monetize." *Id.* at 428–44. To support this opinion, Professor Whinston "describe[s] evidence from industry participants" on the topic. *Id.* at 429–34.   And he again presents "empirical evidence," including a regression model analyzing monetization of head, torso, and tail queries which attempts to control for other factors beyond scale that may impact search query monetization. *Id.* at 435–45.

- Testing of Search Changes: Professor Whinston also offers the subsidiary opinion that "[g]reater scale allows a general search engine to more accurately and quickly assess the impact of SERP and algorithm changes on search quality and ad monetization using

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[2] Professor Whinston's Reply report includes regression analyses that attempt to control for an additional measure: "query complexity[.]" Ex. 3, September 26, 2022 Expert Reply Report of Michael D. Whinston at 181.

experiments." *Id*. at 444. For this, Professor Whinston relies entirely on documents and testimony, and does not conduct any independent analyses. *See id.* at 444–51.

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In his second report, Professor Whinston also discloses a rebuttal opinion on scale responding to Professor Fox's data reduction experiment discussed above. In particular, he seeks to opine that "Prof. Fox's data reduction experiment measures only the impact of reduced training data on search quality for a search engine with Google's current technology and does not measure the overall impact of additional scale." Ex. 2, August 5, 2022 Expert Rebuttal Report of Michael D. Whinston at 174.

Latency.   Professor Whinston opines that "Google has lagged in improving its latency," and that this is "consistent" with "muted incentives" resulting from Google's high market share. Ex. 1 at 477. Relying solely on testimony and documents, he suggests that that Google has "lack[ed] . . . progress" in improving GWS (Google Web Server) latency, and that "Google has made only modest improvements in total latency." *Id*. at 479.

Privacy.   Like latency, Professor Whinston opines that "[c]onsistent with its muted incentives," Google "has decided to make only small improvements in privacy." *Id.* at 477. He describes "surveys" and testimony from Google, ██████████████ that he interprets as suggesting that users "want increased privacy protections." *Id*. at 483 & nn.1494–96. And he describes documents and testimony regarding technical implementations of privacy (including

implementations by Google, such as incognito mode for the Chrome browser) that he says

"demonstrate[] that rival search engines offer greater privacy" than Google and that "Google has

recently implemented only a limited set of measures for user privacy." *Id.* at 484 & n.1502, 489.

ARGUMENT

In deciding a motion to exclude expert testimony, the Court acts as a "gatekeep[er]" to

ensure that the requirements of Rule 702 are met. *See Daubert v. Merrell Dow Pharms., Inc.*, 509

U.S. 579, 597–98 (1993).   Plaintiffs bear the burden of establishing Professor Whinston's

qualifications and the admissibility of each of his opinions. *Sykes v. Napolitano*, 634 F. Supp. 2d

1, 6 (D.D.C. 2009). Under Rule 702, an expert must have "scientific, technical, or other specialized

knowledge [that] will help the trier of fact to understand the evidence or to determine a fact in

issue[.]" Fed. R. Evid. 702(a). Moreover, the testimony must be "the product of reliable principles

and methods," and be "based on sufficient facts or data[.]" Fed. R. Evid. 702(b)–(c).

Plaintiffs fail to meet their burden with respect to Professor Whinston's opinions on scale,

latency, and privacy.

I.   Professor Whinston's Opinions About Search Engine Scale Should Be Excluded.

Professor Whiston's opinions regarding search engine scale fail Rule 702 for multiple

reasons. First, Professor Whinston is an economist, not an engineer or computer scientist, and he

has no relevant experience regarding scale in the highly-technical search engine industry. Second,

even if Professor Whinston were qualified, his opinions consist mainly of improper narration of

documents and testimony from actual industry participants that is not helpful to the fact finder.

Third, Professor Whinston's only independent analyses of scale are not helpful to the fact finder

because his lack of relevant expertise regarding the other technical factors that impact search

quality and monetization renders the analyses flawed. For these reasons, Professor Whinston's scale opinions should be excluded.

A.   Professor Whinston is not qualified to opine on search engine scale.

"The burden is on the proponent of the testimony to show by a preponderance of the evidence that the proffered expert witness is qualified." *Sykes*, 634 F. Supp. 2d at 6 (citing *Meister v. Med. Eng'g Corp.,* 267 F.3d 1123, 1127 n.9 (D.C. Cir. 2001)). Expert testimony needs "a reliable foundation," *Daubert*, 509 U.S. at 597, and must be "'properly grounded, well-reasoned and not speculative before it can be admitted,'" *Estate of Gaither v. District of Columbia*, 831 F. Supp. 2d 56, 62 (D.D.C. 2011) (quoting Fed. R. Evid. 702 advisory committee's note to 2000 amendment). Moreover, if an expert relies "primarily" on his "experience" as the alleged basis for his qualification to testify, the expert's qualifications must be closely related to the subject matter in question. *See id.* at 68–69.

Plaintiffs cannot point to any training, education, or experience as the basis for Professor Whinston's opinions on scale in the search engine industry. Professor Whinston is an economist by training, Ex. 1 at 1, unlike many of the deponents and computer science experts cited above, who have Ph.D.s or other graduate degrees in a relevant field, such as computer science. He is "not a search engineer." *E.g.*, Ex. 4 at 173:2–3, 175:3–4, 463:13. He admits that he is "not a technical expert in exactly how scale technically ends up improving quality." *Id.* at 433:9–11. He has never "worked or consulted for a search engine." *Id.* at 428:8–432:14. He has never written about search engine scale. *Id*. at 427:2–10. He has never taught a class about search engine scale. *Id*. at 428:3–7. He has never conducted any analyses or studies of search engine scale. *Id*. at 427:11–20. And before this case, he has never even "thought about" scale "in the specific context of search engines." *Id*. at 427:21–428:2.

He therefore has no relevant experience in computer science to support his affirmative opinions, and certainly no experience that would allow him to provide a rebuttal opinion to actual computer science experts like Professors Frieder and Fox. Take, for example, his main opinion that "[s]cale is *critical* for the competitiveness of general search engines." Ex. 1 at 3 (emphasis added); *see also id.* at 387–463. This opinion goes to the question of whether Microsoft or another search engine needs more user data to compete with Google on search quality. But when asked directly whether Microsoft could develop a competitive mobile search service by investing in their mobile search quality alone (rather than gaining additional scale), Professor Whinston demurred, stating:

> I'm not a search engineer, but I imagine that, you know, maybe yes; I -- maybe no. I don't know. But gaining traffic -- the ability to gain traffic, A, matters for -- to what extent how big that investment has to be, because if you will -- you know, can you gain traffic as you improve. If you can, that's going to reduce how much you have to invest. And, B, is it economically sensible for you to invest if you can't gain traffic.

Id. at 171:3–12. Similarly, when discussing whether Microsoft could improve its search monetization through investment, Professor Whinston again resisted answering because he is "not a search engineer. It may be just impossible to do that no matter how much money you spend, if you don't have more traffic, or maybe it is. I'm not -- I'm not sure." *Id.* at 173:2–6. This testimony makes clear that Professor Whinston's opinion that scale is *critical* for a search engine to compete requires understanding technical aspects of search for which he has no experience.

Although Professor Whinston's credentials as an economist may qualify him to serve as an expert on certain economic matters, there is nothing in his educational or professional background that would qualify him to serve as an expert on the issue of how search engine quality and performance is impacted by additional user data. *See Arias v. DynCorp*, 928 F. Supp. 2d 10, 17 (D.D.C. 2013) ("Although Dr. Wolfson has impressive credentials, the plaintiffs have not

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demonstrated how his academic and professional experiences make him qualified to testify" about one of the issues before the court.). In his deposition, Professor Whinston attempted to bolster his credentials regarding search engine scale by conflating his experience regarding the general economic concept of "economies of scale" with expertise in the ways additional user data impacts the performance of a modern search engine. *See, e.g.*, Ex. 4 at 432:15–433:15. He testified that "some of [his] most significant papers are about scale economies" and that he considers himself an "expert in thinking about the -- you know, looking at evidence concerning [scale] and thinking about what the implications are for competition." *Id.* at 427:14–20, 433:12–15. That one is an economist does not make one expert in anything that touches commerce. *See United States v. Second Chance Body Armor, Inc.*, 289 F. Supp. 3d 145, 177 (D.D.C. 2018) (warning against experts "without any experience working in or studying the particular industry at issue"). This principle is of particular importance here, where fact witnesses with technical understanding of the industry have testified that the impact of scale is highly dependent on the technology being employed. *Supra* at pp. 3–4; *see also S.E.C. v. Tourre*, 950 F.Supp.2d 666, 678 (S.D.N.Y. 2013) (rejecting expert that "does appear to have expertise in the general area of structured finance" because "that is so broad a category as to become meaningless when particularized here to synthetic CDOs, a very specific type of security"). Indeed, Professor Whinston acknowledges in his report that "it is helpful to understand how search engines use clicks and other user data" in order to understand the effects of scale on search engines. Ex. 1 at 397. But he has no relevant experience in the use of such data and instead simply parrots depositions and documents from ▮▮▮▮▮▮ Google engineers. *See id.* at 398–414.

Judge Friedman's opinion in *Second Chance Body Armor* is instructive. There, the court excluded a proffered safety expert's opinions in their entirety because the expert failed to explain

how his experience in the tire industry, another "safety-related industry," supported his opinions in the ballistics industry. 289 F. Supp. 3d at 176. Given his lack of experience, the expert relied "solely on documents and testimony from this case." *Id*. The court held that the expert could not offer "opinions about standards generally applicable to the 'safety-related industry' without any experience working in or studying the particular industry at issue." *Id*. That principle is all the more applicable here. While Professor Whinston may understand how scale economies work in general—such as how, theoretically, the 1000th widget produced might have a lower marginal cost than the first—this does not make him an expert on how search query volume actually impacts search engine results quality and competitiveness in the highly technical search engine industry.

Because Professor Whinston lacks the relevant expertise regarding how scale impacts quality in the search engine field, his opinions on this topic should be excluded.

B.   Professor Whinston's scale opinions consist mainly of improper narration.

Professor Whinston's opinions should be excluded for the further reason that they consist mostly of improper narration of evidence in the case. Courts have consistently held that it is "inappropriate for experts to become a vehicle for factual narrative." *See, e.g.*, *Tourre*, 950 F. Supp. 2d at 675. That is because the fact finder "is entirely capable of reviewing the testimony of [ ] witnesses and drawing conclusions" themself. *United States ex rel. Landis v. Tailwind Sports Corp.*, 2017 WL 5905509, at *15 (D.D.C. Nov. 28, 2017) (citing *United States v. Mitchell*, 49 F.3d 769, 780 (D.C. Cir. 1995)). And "[a]cting simply as a narrator of the facts does not convey opinions based on an expert's knowledge and expertise; nor is such a narration traceable to a reliable methodology." *Tourre*, 950 F. Supp. 2d at 675; *see also Highland Cap. Mgmt., L.P. v. Schneider*, 551 F. Supp. 2d 173, 183 (S.D.N.Y. 2008) (excluding "factual narrative of events" by expert where expert had "no personal knowledge of these facts and they are lay matters that the [fact finder] is capable of understanding and deciding without [expert] testimony"); *In re Rezulin*

Prods. Liab. Litig., 309 F. Supp. 2d 531, 551 (S.D.N.Y. 2004) (expert should not be permitted to provide a "narrative of the case" which is "properly presented through percipient witnesses and documentary evidence").

The vast majority of Professor Whinston's "opinions" on search engine scale consist of him purporting to interpret documents and testimony from industry participants, without applying any scientific expertise in connection with such narrations. Throughout the scale section of his Opening Report, Professor Whinston states that he is "outlin[ing] evidence from industry participants, including Google's top executives, on the relationship between a search engine's scale and its ability to provide a quality search experience . . . ." Ex. 1 at 392; *see also id.* at 403, 408, 428, 434, 444 (similar). This is not surprising given Professor Whinston's lack of expertise regarding search engine scale. He has no personal experience that would allow him to recite these facts himself or conduct meaningful analysis. And he certainly has no expertise that would allow him to evaluate the factual accuracy of the recited testimony or documents. *See Second Chance Body Armor, Inc.*, 289 F. Supp. 3d at 158 (excluding opinions on "quality control procedures," where expert "has not established any specialized expertise in quality control procedures beyond reading internal [party] documents"). The only additional "analysis" that Professor Whinston provides is Plaintiffs' gloss on the documents and testimony, which is not helpful to the Court. *See In re Rezulin Prods. Liab. Litig.*, 309 F. Supp. 2d at 551 (rejecting expert narration of facts where "the glosses that [expert] interpolates into his narrative are simple inferences drawn from uncomplicated facts that serve only to buttress plaintiffs' theory of the case"); *Sykes,* 634 F. Supp. 2d at 8 (expert not qualified under Rule 702 where expert did "not offer 'expert' testimony based on his years of experience" but instead "advocate[d] for the Plaintiff rather than providing expertise to the fact-finder").

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Worse still, Professor Whinston's lack of expertise often resulted in him incorrectly interpreting the documents and depositions he chose to recite. ████████████████████████

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████████████   But again, the Court does not need Professor Whinston's gloss on what those executives said.   The Court should reject such opinions, and instead hear directly from the witnesses themselves.

Professor Whinston's narration opinions should therefore be excluded.

C.   Professor Whinston does not have the experience necessary to conduct his only independent scale analyses.

Professor Whinston's scale opinions include two instances of independent analysis of search engine scale that go beyond a recitation of the testimony, data, and documents in the case. In particular, Professor Whinston offers various models attempting to analyze the effect of scale

on the quality and monetization of "head, torso, and tail queries." *See* Ex. 1 at 422–23, 438–39. However, as Professor Whinston acknowledges, "the differences in Google's head, torso, and tail query performance could be due to factors other than differences in the number of queries received for each query term." *Id.* at 421. This is why Professor Whinston attempts to control for certain factors of his choosing—"device type, vertical categories separately for each month, and subvertical categories"—through regression analyses. *Id.*

To be sure, regression analyses are within the general toolkit of economic experts. For a regression analysis to be reliable and relevant, however, it must account for all "major" factors and variables that could affect the modeled issue. *Coward v. ADT Sec. Sys.*, 140 F.3d 271, 274 (D.C. Cir. 1998) (explaining that *Bazemore v. Friday*, 478 U.S. 385 (1986), "[does not] require acceptance of regressions from which clearly major variables have been omitted") (alterations in original); *see also, e.g.*, *Thor Equities, LLC v. Factory Mut. Ins. Co.*, 2022 WL 4139846, at *6 (S.D.N.Y. Sept. 13, 2022) (when statistical analysis fails to account for "major factor" it "simply does not determine the question it purports to solve"). Courts determine the "'[m]ajor factors' that a regression analysis must include" based on "the facts and theory of the particular case.'" *Coward v. ADT Sec. Sys.*, 140 F.3d at 274. For instance, in *Coward*, the D.C. Circuit affirmed exclusion of an expert's regression analysis addressing employment discrimination that "failed to account for job title or any other variable representing type of work performed." *Id.* at 274. The court noted that the party's "own theory of the case" was that the discriminated employees "should be compared to employees in other job categories who perform similar work but who earn more than they." *Id.* The court therefore held that a regression analysis that did not control for work similarity was "so incomplete as to be inadmissible as irrelevant." *Id.* (internal quotation marks omitted).

Here, Professor Whinston's regression analysis attempts to show a causal relationship between query volume and search quality. But his analyses leave out numerous major factors that affect search quality and monetization. Among other factors, Professor Whinston's analyses fail to control for important differences in indexing, search features, ranking systems, and latency. Regarding indexing, ███

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████████████████   And Professor Whinston's (and Plaintiffs') theory of consumer harm acknowledges that latency is a major factor of search quality. *See supra* at p. 8. Yet Professor Whinston fails to account for differences in indexing and latency (as well as other major factors affecting search quality), leading to an opinion that is unreliable and unhelpful to the Court.

Professor Whinston's failure to consider major variables impacting search quality reflects his utter lack of expertise in this highly technical field. He has no experience that would allow him to assess which "major factors" need to be controlled for. Professor Whinston, by his own admission, does not have any prior experience with what factors are important to search engine quality. Indeed, when asked at deposition "[w]hat other factors are important to addressing tail queries?", Professor Whinston was not "able to give . . . a list," but instead pointed to Google's technical expert Professor Frieder's opinions which "talks about various other ways that, you know, search -- things search engines do." Ex. 4 at 455:3–17. On this point, Professor Whinston is correct—Professor Frieder is an actual expert on search engines and opines at length about the various non-scale factors that have resulted in Google's higher quality.

Because Professor Whinston's analyses fail to account for major factors of search quality, and because Professor Whinston lacks the experience to offer an opinion about which factors need to be considered, his analyses of search engine scale should be excluded.

II.   Professor Whinston's Opinions on Latency and Privacy Should Be Excluded.

Plaintiffs cannot meet their burden to show that Professor Whinston has any experience or training relevant to assessing the latency or privacy of Google or other search engines. Unlike Professors Tucker and Frieder, Professor Whinston has no expertise in data privacy and no background in computer science, nor does he have any academic or other writings about latency or privacy. Thus, he has no specialized experience from which to gauge Google's progress in latency or privacy.

Given this lack of experience, Professor Whinston's opinions on latency and privacy consist entirely of parroting cherry-picked documents and testimony from the case. *See generally* Ex. 1 at 477–89. That is not the province of expert testimony. *See Tourre*, 950 F.Supp.2d at 675. And it is certainly not the province of an economist who has no expertise in latency or data privacy nor any specialized knowledge about the tradeoffs that search engines must make among latency, privacy, and other search-quality factors. *See* Ex. 10 at 182:9–185:14 (explaining the various technical improvements that can increase latency); ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

The only "analysis" provided by Professor Whinston is his unhelpful "gloss" on the documents and testimony that this evidence supports Plaintiffs' claim that Google's latency and privacy have lagged. *In re Rezulin Prods. Liab. Litig.*, 309 F. Supp. 2d at 551; *see also Sykes,* 634 F. Supp. 2d at 8. Professor Whinston admits that the "point of this evidence" is not to "connect[]" the challenged conduct to Google's "alleged underinvestment" in latency or privacy. Ex. 3 at 224. Instead, his opinion is more "simple" and is limited to opining that the evidence "is an indication

that Google can do better."   *Id*.   But given his lack of experience on these matters, Professor Whinston is in no better position than the Court to evaluate the evidence on Google's latency and privacy (and he certainly is not in a position to rebut actual experts in this area).   Professor Whinston's opinions thus invade the function of the fact finder.   "[I]t is precisely the [fact finder's] function to review the testimony of witnesses and determine what factual conclusions to draw from that testimony."   *Tailwind Sports Corp*., 2017 WL 5905509, at *15.

Because Professor Whinston's opinions on latency and privacy are not based on his expertise and are not helpful to the fact finder, they should be excluded.

III.   Professor Whinston's Opinions Relying on Christine Hammer Should Be Excluded.

Plaintiffs have offered an accounting expert, Christine Hammer, to evaluate the profitability of the search and search advertising businesses of Google.   Professor Whinston, in turn, heavily relies on Ms. Hammer's findings to support his own conclusion that Google's profit margins are "high" and that such profitability is evidence that Google possesses and exercises monopoly power.   Ex. 1 at 207–15.   After describing Ms. Hammer's work over many pages, *id.* at 212–15, Professor Whinston concludes that "[t]hese facts support my opinion that Google has been highly profitable over many years" and, Professor Whinston declares, "are evidence in support of the conclusion that [Google] possesses and profitably exercises monopoly power in its search engine business," *id.* at 215.   Concurrently with this motion, Google is moving to exclude Ms. Hammer's benchmarking opinion as unreliable.   Therefore, for the reasons addressed in that motion, if Ms. Hammer's opinions are excluded, Professor Whinston's opinions regarding Google Search's profitability must be excluded as well.

<div align="center"><u>CONCLUSION</u></div>

For all of the reasons set forth above, Defendant respectfully requests that the Court exclude Professor Whinston's testimony regarding scale, latency, privacy, and profitability.

Dated: December 12, 2022

Respectfully submitted,

WILLIAMS & CONNOLLY LLP

By: _/s/ John E. Schmidtlein_
John E. Schmidtlein (D.C. Bar No. 441261)
Benjamin M. Greenblum (D.C. Bar No. 979786)
Colette T. Connor (D.C. Bar No. 991533)
680 Maine Avenue, SW
Washington, DC 20024
Tel: 202-434-5000
jschmidtlein@wc.com
bgreenblum@wc.com
cconnor@wc.com

WILSON SONSINI GOODRICH & ROSATI P.C.
Susan A. Creighton (D.C. Bar No. 978486)
Franklin M. Rubinstein (D.C. Bar No. 476674)
Wendy Huang Waszmer (D.C. Bar No. 1631078)
1700 K Street, NW
Washington, DC 20006
Tel: 202-973-8800
screighton@wsgr.com
frubinstein@wsgr.com
wwaszmer@wsgr.com

ROPES & GRAY LLP
Mark S. Popofsky (D.C. Bar No. 454213)
2099 Pennsylvania Avenue, NW
Washington, DC 20006
Tel: 202-508-4624
Mark.Popofsky@ropesgray.com

Matthew McGinnis (admitted *pro hac vice*)
Prudential Tower
800 Boylston Street
Boston, MA 02199
Tel: 617-951-7703
Matthew.McGinnis@ropesgray.com

Counsel for Defendant Google LLC

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