PUBLIC

UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION
OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of	)	
Illumina, Inc., a corporation,	)	
and	)	
GRAIL, Inc., a corporation,	)	**DOCKET NO. 9401**
Respondents.	)	

NON-PARTY OMNIOME INC.'S MOTION FOR *IN CAMERA* TREATMENT

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August 5, 2021

I. INTRODUCTION

Pursuant to Rule 3.45 of the Federal Trade Commission's Rules of Practice, non-party Omniome, Inc. ("Omniome") moves this Court for *in camera* treatment of eight confidential, competitively-sensitive documents identified in Exhibit A, as well as limited portions of the deposition and investigational hearing transcripts of Dr. Ken Song (collectively, the "Confidential Materials"). In support of this motion, Omniome provides the Declaration of Ken Song ("Song Decl."). Counsel for the parties have notified Omniome that they intend to introduce the Confidential Materials as exhibits at the upcoming administrative hearing in this matter. Omniome has conferred with the parties' respective counsel, and neither party intends to oppose this motion.

Omniome is a private company developing a new, state-of-the-art genetic sequencing product that has unique technology and capabilities. Omniome has not publicly launched its product yet, but Omniome expects its product will compete directly with Illumina's genetic sequencing products. In order to maintain the competitive viability of its product, Omniome carefully safeguards its confidential information, and does not disclose the details of its development efforts and internal operations to the public. The Confidential Materials contain Omniome's non-public, highly-sensitive business information and trade secrets, which if disclosed would cause significant financial harm to Omniome, and may prevent or delay the launch of its new genetic sequencer.

Omniome closely reviewed every proposed trial exhibit identified by the parties as containing Omniome's confidential information. Omniome does not request *in camera* treatment for all of its information used in this proceeding. Instead, Omniome limits its request for *in*

camera treatment to only those documents and portions of transcripts that contain competitively-sensitive, nonpublic information.

Consistent with this Court's precedent, Omniome only requests indefinite *in camera* treatment for a subset of the Confidential Materials that contain Omniome's trade secrets, such as specific details about its proprietary technology. *See* Exhibit A. For the remaining Confidential Materials, Omniome only requests *in camera* treatment for a period of five years.

II. LEGAL STANDARD

In camera treatment is appropriate where "public disclosure will likely result in a clearly defined, serious injury to the person, partnership, or corporation requesting in camera treatment[.]" 16 C.F.R. § 3.45(b). An applicant meets this standard by showing that the information in question is secret and material to the applicant's business. *In re General Foods Corp.*, 95 F.T.C. 352, 355, 1980 WL 338997, at *3 (1980). The Court considers:

> (1) the extent to which the information is known outside of the applicant's business; (2) the extent to which the information is known by employees and others involved in the applicant's business; (3) the extent of measures taken by the applicant to guard the secrecy of the information; (4) the value of the information to the applicant and its competitors; (5) the amount of effort or money expended by the applicant in developing the information; and (6) the ease or difficulty with which the information could be properly acquired or duplicated by others.

In re Hoechst Marion Roussel, Inc., 2000 FTC LEXIS 138, at *6 (Sept. 19, 2000). "The likely loss of business advantages is a good example of a 'clearly defined, serious injury.'" *In re Dura Lube Corp.*, 1999 FTC LEXIS 255, at *7 (Dec. 23, 1999).

"Where *in camera* treatment is granted for ordinary business records, it is typically provided for two to five years." *In re 1-800 Contacts, Inc.*, 2017 FTC LEXIS 55, at *6 (Apr. 4, 2017). In contrast, indefinite *in camera* treatment is appropriate where "the need for confidentiality of the material is not likely to decrease over time," including when the materials

reveal trade secrets. *Dura Lube*, 1999 FTC LEXIS 255, at *7-8 (quoting *In re E.I. DuPont de Nemours & Co.*, 1990 FTC LEXIS 134, at *2 (Apr. 25, 1990)). The *DuPont* court granted indefinite treatment where the exhibits at issue "possess[ed] a uniqueness that [ ] extended their competitive sensitivity far in excess" of the typical *in camera* period. 1990 FTC LEXIS 134, at *5. "Examples of trade secrets meriting indefinite *in camera* treatment include secret formulas, processes, other secret technical information, or information that is privileged." *1-800 Contacts*, 2017 FTC LEXIS 55, at *5.

As a policy matter, "[t]here can be no question that the confidential records of businesses involved in Commission proceedings should be protected insofar as possible." *In re H.P. Hood & Sons, Inc.*, 1961 FTC LEXIS 368, at *4-5 (1961). Non-party documents, in particular, are treated with "special solicitude." *In re Kaiser Alum. & Chem. Corp.*, 103 F.T.C. 500, 500, 1984 FTC LEXIS 60, at *2-3 (1984) (noting that *in camera* treatment for non-party materials "encourages cooperation with future adjudicative discovery requests").

III. ARGUMENT

The Confidential Materials meet the criteria for *in camera* treatment. Omniome is currently developing a proprietary genetic sequencer with plans to launch its product in the next few years. Omniome's sequencer would bring much needed competition to Illumina, which currently has a dominant position over genetic sequencing products. The Confidential Materials contain Omniome's trade secrets regarding its technology and Omniome's sensitive business information, including confidential plans to commercialize its product. These materials fall within four categories: (A) Board of Directors information, (B) investor presentations, (C) internal strategic materials, and (D) testimony provided in this proceeding. For the reasons set forth below, public exposure of the Confidential Materials would cause significant financial

harm to Omniome and lessen competition among genetic sequencers. It therefore is in the public's best interest for the Court to preserve the confidentiality of these materials.

A. Board of Directors Materials

Omniome requests indefinite *in camera* treatment for five presentations accompanying calls or meetings of the Omniome Board of Directors that contain trade secrets. *See* Exhibit A. Omniome is a private company that holds confidential meetings with its Board of Directors to have candid discussions about Omniome's proprietary technology and strategy for commercialization. Song Decl. ¶ 6. To facilitate these discussions, Omniome typically prepares accompanying presentation materials, such as the board presentations identified in Exhibit A. These board presentations contain non-public trade secrets, namely the details of Omniome's gene sequencing technology. Song Decl. ¶ 4. Omniome has spent years developing its proprietary gene sequencing technology at great expense. Song Decl. ¶ 3. Indeed, Omniome takes significant steps to safeguard this information to maintain its secrecy. Song Decl. ¶ 6. If the details of Omniome's development process and trade secret technology were revealed, it would cause significant harm to Omniome that likely would impede Omniome's entry. Song Decl. ¶ 2. That is why Omniome does *not* share these board presentations outside of Omniome. Song Decl. ¶ 6. Although two of these five presentations are slightly more than three years old, they contain non-public details of Omniome's proprietary product development, which remains sensitive today. Song Decl. ¶ 8. This Court recognizes that documents containing trade secrets deserve *in camera* treatment even if those documents are more than three years old. *See In re E.I. DuPont de Nemours & Co.*, 1990 FTC LEXIS 134, at *2 (granting indefinite *in camera* treatment to documents that were over twenty years old).

The five board presentations should receive indefinite *in camera* treatment. These documents include specific details of Omniome's development of its proprietary technology,

e.g., engineering plans, testing data, and technical updates. Omniome would never publicly reveal this information, so the harm it would suffer from disclosure is unlikely to diminish over time. Thus, indefinite *in camera* treatment is appropriate for this limited category of documents. *See 1-800 Contacts, Inc.*, 2017 FTC LEXIS 55, at *16 (granting indefinite *in camera* treatment to documents submitted by non-party Google that related to studies and experiments Google conducted to optimize its product).[1]

B. Investor Presentations

Omniome also requests *in camera* treatment for two confidential presentations made to Omniome's investors. *See* Exhibit A. These presentations contain Omniome's competitively sensitive information because they include confidential discussions of Omniome's business strategies and strategic positioning, Omniome's plans to develop and commercialize its technology, and Omniome's internal financial information. This Court has routinely granted *in camera* treatment for documents containing this type of sensitive business information. *See, e.g.*, *1-800 Contacts, Inc.*, 2017 FTC LEXIS 55, at *9 (granting *in camera* treatment for a period of five years to documents "which contain evaluations of market factors, market risks, company advantages, company disadvantages, and company risks, and which also review future strategic plans"; *id.* at *20-21 (granting *in camera* treatment for a period of five years to documents that contain "financial condition, pricing strategies, investment strategies, and techniques for marketing and advertising its products").

Omniome protects this information from public disclosure. Song Decl. ¶ 7. And while Omniome shared these presentations with investors, it did so pursuant to an agreement that the

[1] Should the Court decline to grant indefinite *in camera* treatment to these documents, Omniome requests *in camera* treatment, in the alternative, for a period of ten years.

material in the presentations would remain Confidential. Song Decl. ¶ 7. Indeed, all pages of the presentations are marked as Confidential. *See* Exhibit B at 298-409.

If these presentations were disclosed, they would cause substantial harm to Omniome. One of the presentations is from May 14, 2021, while the other presentation is from April 30, 2018. Although the second presentation is more than three years old, it contains specific details about Omniome's yet-to-be released sequencing product that remain extremely sensitive. Song Decl. ¶ 7. *In camera* treatment for a period of five years is therefore appropriate for these documents. *See 1-800 Contacts, Inc.*, 2017 FTC LEXIS 55, at *15-16, 20-21 (granting *in camera* treatment for five years to competitively sensitive business documents); *E.I. DuPont de Nemours & Co.*, 1990 FTC LEXIS 134, at *2 (granting *in camera* treatment to documents that were over three years old).[2]

C. Omniome Internal Competitive Landscape Assessment

In camera treatment for a period of five years is also appropriate for Omniome's confidential analysis of the competitive landscape for genetic sequencing products. *See* Exhibit A. Omniome prepared this analysis exclusively for internal use. Song Decl. ¶ 9. And the analysis contains Omniome's sensitive business information because it includes Omniome's evaluation of its competitive positioning compared to its competitors, including Illumina. This commercially sensitive business information is entitled to *in camera* treatment. *See 1-800 Contacts, Inc.*, 2017 FTC LEXIS 55, at *15-16, 20-21 (granting *in camera* treatment for five years to competitively sensitive business documents).

[2] Although these documents contain details of Omniome's technology, they contain less sensitive details than the Board of Directors' materials, which were never shared outside of Omniome. The information contained in these documents will be less competitively sensitive after Omniome's product has launched. Omniome accordingly requests *in camera* treatment only for a period of five years for these documents.

D. Omniome Investigational Hearing and Deposition Testimony

Omniome's chairman of the board, Dr. Ken Song, provided testimony twice in this proceeding in the form of an investigational hearing during Part II and a deposition during Part III. The parties have designed both of those transcripts as exhibits. Omniome has reviewed the transcripts and requests *in camera* treatment for a period of five years for a limited portion of these transcripts that includes discussions of Omniome's highly sensitive business information—e.g., information relating to its technology or strategic plans for commercialization.

Omniome provided testimony in this proceeding with the understanding it could prevent the disclosure of its non-public, commercially-sensitive business information. These transcripts contain such sensitive information because they include discussions about Omniome's technology and efforts to commercialize and launch a sequencing product. This type of information warrants *in camera* treatment because its disclosure would significantly harm Omniome and lessen competition among sequencers. Song Decl. ¶ 10. Accordingly, this commercially-sensitive business information is entitled to *in camera* treatment. *See 1-800 Contacts, Inc.*, 2017 FTC LEXIS 55, at *29, 33, 35 (granting *in camera* treatment to portions of depositions and investigational hearing transcripts).

Omniome has limited its request for *in camera* treatment to portions of the transcripts that contain sensitive business information. *See* Exhibit A (identifying the parts of the transcript for which Omniome requests *in camera* treatment). Importantly, Omniome does not seek *in camera* treatment for portions of the transcripts that do not meet the criteria for *in camera* treatment—e.g., Dr. Song's testimony regarding his background or prior experience at Ariosa.

IV. CONCLUSION

For the foregoing reasons, Omniome requests that this Court grant *in camera* treatment to the Confidential Materials for the time periods set forth in Exhibit A.

Dated: August 5, 2021

Respectfully submitted,

/s/ Douglas E. Litvack

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CERTIFICATE OF SERVICE

I hereby certify that on August 12, 2021, I filed a copy of the foregoing using the FTC e-filing system and served the same by electronic mail on the following:

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Secretary's Office:	electronicfilings@ftc.gov
Complaint Counsel:	dnaegele@ftc.gov
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Counsel for Respondent GRAIL, Inc.:	anna.rathbun@lw.com

/s/ Aaron Ross
Aaron Ross

UNITED STATES OF AMERICA

BEFORE THE FEDERAL TRADE COMMISSION

In the Matter of	)	
Illumina, Inc.,	)	
a corporation,	)	
and	)	
GRAIL, Inc.,	)	**DOCKET NO. 9401**
a corporation,	)	
Respondents.	)	

[PROPOSED] ORDER

Upon due consideration of non-party Omniome Inc.'s Motion for *In Camera* Treatment, it is HEREBY ORDERED that the following exhibits or portions of exhibits are to be provided *in camera* treatment from the date of this Order for the specified periods:

Bates	**Name**	**Length of *In Camera* Treatment**
OMNIOME-FTC ILL-00000069	Presentation: Omniome Overview and Update, January 2018	Indefinite
OMNIOME-FTC-ILL-00000001	Presentation: Omniome, Inc. Board of Director's Call, April 23, 2018	Indefinite
OMNIOME-FTC-ILL-00000570	Presentation: Omniome, Inc. Board of Director's Meeting, Sept. 17, 2019	Indefinite
OMNIOME-FTC_ILL-00000773	Presentation: Omniome, Inc.'s Board of Directors Meeting, Dec. 29, 2019	Indefinite
OMNIOME-FTC-ILL-00001001	Presentation: Operational Update: Omniome Board of Directors Call, May 5, 2020	Indefinite
OMNIOME-FTC-ILL-00001216	Presentation: Omniome/Decheng Site Visit, Apr. 30, 2018	5 Years
OMNIOME-FTC ILL-00001469	Presentation: Delivering the World's Most Accurate DNA Sequencing Platform (Company Overview), May 14, 2021	5 Years
OMNIOME-FTC-ILL-00001522	Spreadsheet: Sequencing landscape 2018_01_22_v2-GeneStudio	5 Years

Bates	**Name**	**Length of *In Camera* Treatment**
Dep. Transcript: Ken Song (Omniome), at 13:18-14:6; 15:7-16:17; 18:25-20:3; 20:17-31:1; 31:8-33:1; 33:13-34:11; 37:24-38:18; 39:9-13; 41:12-43:9; 44:23-25; 45:9-47:8; 48:19-49:2; 52:13-53:20; 54:22-55:7; 55:16-56:20; 101:10-21; 102:24-105:13	N/A	5 years
IH Transcript: Ken Song (Omniome) , at 14:6-15:2; 15:21-16:5; 17:22-18:20; 18:23-20:11; 21:9-22:11; 22:22-25:18; 27:1-6; 28:6-29:1; 46:3-6; 46:18-21; 52:11-13; 53:5-56:24; 59:23-64:3; 66:22-67:18; 68:9-20; 69:1-72:1; 72:5-73:3; 73:18-74:5; 74:25-77:1; 77:13-81:22; 82:3-83:22; 84:2-85:23; 86:2-24; 87:3-88:18; 88:22-92:25; 95:21-98:24; 99:14-101:7; 104:6-7; 104:13-22; 105:3-107:23; 109:14-110:20; 137:2-7; 138:4-139:7; 140:16-25; 142:13-143:16; 143:21-145:2; 145:8-15	N/A	5 years

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a corporation,	)	
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GRAIL, Inc.,	)	**DOCKET NO. 9401**
a corporation,	)	
Respondents.	)	

DECLARATION OF DR. KEN SONG IN SUPPORT OF NON-PARTY OMNIOME INC.'S MOTION FOR *IN CAMERA* TREATMENT

I, Ken Song, declare as follows:

1. I am Executive Chairman of the Board of Directors at Omniome, Inc. ("Omniome"). I have personal knowledge of the facts set forth in this declaration and if called as a witness I could and would testify competently to such facts.

2. I am familiar with the documents Omniome produced in the above-captioned matter in response to a civil investigative demand ("CIDs") and subpoenas *duces tecum* ("subpoena") issued by Complaint Counsel and Respondents. I am additionally familiar with the transcripts of my investigational hearing and deposition. Given my role as Chairman of the Board at Omniome, I am familiar with the type of information contained in the materials at issue and their competitive significance to Omniome. I am also familiar with the measures Omniome takes to protect the confidentiality of these materials. I submit that the public disclosure of the materials listed on Exhibit A of Omniome's Motion for *In Camera* Treatment ("Exhibit A") would cause serious injury to Omniome, as discussed below. In addition, the confidentiality of

some of these materials—Omniome's Board of Directors presentations—is not likely to diminish over time.

3. Omniome is a private venture-backed startup attempting to develop and commercialize a genetic sequencing product based on Omniome's proprietary genetic sequencing technology. Omniome has spent hundreds of millions of dollars toward developing a proprietary genetic sequencing product, and carefully guards the details of its technology. Although some of these details are public, for example because they are contained in Omniome's public patent filings, many of the details of the operation of Omniome's sequencing product are not. Keeping Omniome's confidential information and trade secrets non-public is vital to Omniome's goal of successfully launching and commercializing its product.

4. Five of the exhibits the parties intend to introduce into evidence in this matter are presentations accompanying recent meetings of the Omniome Board of Directors. These presentations discuss Omniome's sequencing technology and development efforts at length and in great detail, including providing internal testing data, throughput data, cost comparisons, and other technological detail. These details of Omniome's product are trade secrets that Omniome never intends to make publicly available. Because the documents describe the workings of Omniome's key sequencing technology, the sensitivity of the documents is unlikely to diminish over time.

5. The Board of Directors presentations also contain competitively sensitive information about Omniome's competitive position, including descriptions of Omniome's go-to-market plans, discussions of Omniome's strategic positioning, information on Omniome's valuation and cash positioning, and information comparison with competitors, internal testing data, information on Omniome's strategic positioning, and technical roadmaps.

6. Omniome takes great care to keep all of these materials confidential. Materials distributed to the Board of Directors are marked "CONFIDENTIAL," and Board members are instructed not to forward or share Board materials with others. Omniome's Board of Directors meetings are non-public and I take great care not to share these non-public materials with others.

7. Two of the exhibits for which Omniome requests *in camera* treatment are confidential presentations made to Omniome's investors. From time to time, Omniome will present to investors or potential investors. These meetings are confidential, and Omniome takes care to ensure that all participants will maintain Omniome's information confidentially. Omniome marks all slides presented at such meetings as Confidential—as it did here. Omniome only presents these materials to an investor if that investor agrees to keep the information shared confidential. And Omniome limits the distribution lists to which it sends such presentations in order to minimize the chance a presentation will be accidentally forwarded or sent to others who are not authorized to view its contents.

8. Omniome's investor presentations contain significant detail of and insight into Omniome's current plans, strategies, and technological roadmap. Public disclosure of these presentations would therefore cause significant competitive harm to Omniome, as Omniome's competitors would be able to read the details of Omniome's current plans, current product development efforts, and current product positioning. This is true for Omniome's presentation from April 2018, as well as Omniome's presentation from 2021; Omniome's 2018 presentation contained details regarding Omniome's product which, because the product has not launched, remain nonpublic.

9. One of the exhibits for which Omniome requests *in camera* treatment is an internal spreadsheet showing the competitive landscape for sequencing technology. This

document is the result of internal Omniome competitive analysis and includes details of Omniome's yet-to-be-released product. Disclosure of this information to Omniome's competitors would cause significant harm to Omniome as it would enable Omniome's competitors to determine Omniome's plans and competitive positioning.

10. Finally, Omniome requests *in camera* treatment for portions of my investigational hearing and deposition transcripts. At my deposition and investigational hearing, I discussed Omniome's product plans and product commercialization efforts, and described how Omniome views its product, including its development and launch timeline and how the product compares to sequencing technology offered by Illumina and Grail. Public disclosure of this information would cause significant harm to Omniome, as it would enable Omniome's competitors to understand Omniome's competitive positioning and attempt to mitigate the effects of Omniome's potential entry.

11. Some of the information in my deposition transcript, such as my testimony regarding Ariosa, can be revealed without causing competitive harm to Omniome. Accordingly, I have reviewed the deposition and Investigational Hearing transcript and Omniome requests *in camera* treatment only for limited portions.

12. None of these documents are publicly available or widely disseminated. All of these documents are recent and discuss plans and strategies which are still relevant to Omniome today—especially because our sequencing product has not yet launched. Omniome provided these documents with the understanding that the FTC would afford them confidential treatment. On behalf of Omniome, I request that the FTC do so.

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Dated: August 4 , 2021

DocuSigned by:
F2FFF308A5E1427...

Dr. Ken Song

Exhibit A

Exhibit A

Bates	Name	Exhibit No.	Request
Group A: Board of Directors Materials			
OMNIOME-FTC ILL-00000069	Presentation: Omniome Overview and Update, January 2018	RX____ (not provided)	Indefinite
OMNIOME-FTC-ILL-00000001	Presentation: Omniome, Inc. Board of Director's Call, April 23, 2018	PX8519	Indefinite
OMNIOME-FTC-ILL-00000570	Presentation: Omniome, Inc. Board of Director's Meeting, Sept. 17, 2019	PX8509	Indefinite
OMNIOME-FTC_ILL-00000773	Presentation: Omniome, Inc.'s Board of Directors Meeting, Dec. 29, 2019	RX____ (not provided)	Indefinite
OMNIOME-FTC-ILL-00001001	Presentation: Operational Update: Omniome Board of Directors Call, May 5, 2020	PX8510	Indefinite
Group B: Confidential Investor Presentations			
OMNIOME-FTC-ILL-00001216	Presentation: Omniome/Decheng Site Visit, Apr. 30, 2018	RX____ (not provided)	5 Years
OMNIOME-FTC ILL-00001469	Presentation: Delivering the World's Most Accurate DNA Sequencing Platform, May 14, 2021	RX____ (not provided)	5 Years
Group C: Omniome Internal Analysis			
OMNIOME-FTC-ILL-00001522	Spreadsheet: Sequencing landscape 2018_01_22_v2-GeneStudio	PX8511	5 Years
Group D: Testimony			
Dep. Transcript: Ken Song (Omniome) at 13:18-14:6; 15:7-16:17; 18:25-20:3; 20:17-31:1; 31:8-33:1; 33:13-34:11; 37:24-38:18; 39:9-13; 41:12-43:9; 44:23-25; 45:9-47:8; 48:19-49:2; 52:13-53:20; 54:22-55:7; 55:16-56:20; 101:10-21; 102:24-105:13	N/A	PX7071; RX____ (not provided)	5 years (limited portions)
IH Transcript: Ken Song (Omniome) at 14:6-15:2; 15:21-16:5; 17:22-18:20; 18:23-20:11; 21:9-22:11; 22:22-25:18; 27:1-6; 28:6-29:1; 46:3-6; 46:18-21; 52:11-13; 53:5-56:24; 59:23-64:3; 66:22-67:18; 68:9-20; 69:1-72:1; 72:5-73:3; 73:18-74:5;	N/A	PX7096	5 years (limited portions)

Bates	Name	Exhibit No.	Request
74:25-77:1; 77:13-81:22; 82:3-83:22; 84:2-85:23; 86:2-24; 87:3-88:18; 88:22-92:25; 95:21-98:24; 99:14-101:7; 104:6-7; 104:13-22; 105:3-107:23; 109:14-110:20; 137:2-7; 138:4-139:7; 140:16-25; 142:13-143:16; 143:21-145:2; 145:8-15			

PUBLIC

Exhibit B

PUBLIC

OMNIOME-FTC ILL-00000069

Presentation: Omniome Overview and Update, January 2018

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC-ILL-00000001

Presentation: Omniome, Inc. Board of Director's Call, April 23, 2018

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC-ILL-00000570

Presentation: Omniome, Inc. Board of Director's Meeting, Sept. 17, 2019

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC_ILL-00000773

Presentation: Omniome, Inc.’s Board of Directors Meeting, Dec. 29, 2019

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC-ILL-00001001

Presentation: Operational Update: Omniome Board of Directors Call, May 5, 2020

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC ILL-00001216

Presentation: Omniome/Decheng Site Visit, Apr. 30, 2018

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC ILL-00001469

Presentation: Delivering the World's Most Accurate DNA Sequencing Platform
May 14, 2021

Confidential – Redacted in Entirety

PUBLIC

OMNIOME-FTC ILL-00001522

Spreadsheet: Sequencing landscape 2018_01_22_v2-GeneStudio

Confidential – Redacted in Entirety

Deposition of:

Kenneth Song

June 2, 2021

In the Matter of:

Illumina, Inc. and GRAIL, Inc. (In the Matter of)

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UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION
OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of:	)
	)
ILLUMINA, INC.,	)
a corporation,	)
	) DOCKET NO. 9401
and	)
	)
GRAIL, INC.,	)
a corporation.	)
	)

ZOOM VIDEO-RECORDED DEPOSITION
UPON ORAL EXAMINATION OF
KENNETH SONG, M.D.

CONFIDENTIAL

8:14 A.M.
JUNE 2, 2021
WITNESS LOCATION: SAN DIEGO, CALIFORNIA

REPORTED BY: VICKY L. PINSON, RPR-CCR Washington 2559
California No. 9845; Oregon No. 16-0442

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San Diego, California, Washington; June 2, 2021
8:14 a.m.
* * *

(This deposition is being taken via videoconference, and all parties, the witness, the videographer and the court reporter are appearing remotely.)

THE VIDEOGRAPHER: We're going on the record at 8:14 a.m. Pacific Time on June 2nd, 2021. This deposition is being conducted using virtual technology, and all participants are attending remotely. Audio and video-recording will continue to take place unless all parties agree to go off the record.

This is Media Unit 1 in the video-recorded deposition of Kenneth Song in the matter of Illumina, Inc., and GRAIL, Inc., filed in the United States of America before the Federal Trade Commission Office of Administrative Law Judges, Docket No. 9401.

My name is Lori Talbot from the firm Veritext. I am the videographer. The court reporter is Vicky Pinson from the firm Veritext. I am not related to any party in this action, nor am I financially interested in the outcome. If there are any objections to proceeding, please state them at the time of your appearance, and we'll begin with the noticing attorney,

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please.
MR. NAEGELE: Vicky, would you please swear in the witness?
(The witness was sworn by the Court.)
MR. NAEGELE: My name is Dylan Naegele, and I represent the Federal Trade Commission.
MR. PFEIFFER: This is Al Pfeiffer of Latham and Watkins. I represent GRAIL. And with me is my colleague, Marcus Curtis, also of Latham and Watkins.
MS. STAMELL: Kate Stamell. I am from Cravath, Swaine & Moore, representing Illumina.
MR. LITVACK: Doug Litvack, from Davis Wright Tremaine, representing the witness and Omniome.
And I'd like to put on the record an objection to the deposition being taken by video, and any use of the dep -- of the video during any proceeding in this matter. The subpoena issued to us in the administrative proceeding didn't notice a deposition by video; and, thus, we are only proceeding to move the matter along, but we preserve our right to move to exclude the video from use at trial or any other proceeding in this matter.
MR. ANDERSON: Garrett Anderson, representing the -- Ken Song and Omniome.

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MR. NAEGELE: And I'm joined by my colleague, Susan Musser, also from the Federal Trade Commission.
* * *

KENNETH SONG, M.D.,
sworn as a witness by the Certified Court Reporter, testified as follows:

EXAMINATION
BY MR. NAEGELE:
Q. Dr. Song, would you please state your full name for the record?
A. Kenneth Song.
THE WITNESS: I do want to make just one quick comment. I have multiple screens, and so if you see my eyes shifting, it's because I'm -- if there's -- especially if there's an exhibit, I have to look away from where the camera is. So it's not that I'm being distracted. It's just I have different screens up.
MR. PFEIFFER: Understood. Thank you.
Q. What is your current position with Omniome?
A. I'm the Executive Chairman of the Board.
Q. What is your current location?
A. San Diego, California.

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Q. And what address are you at?
A. Currently I'm at 9880 Campus Point Drive, San Diego, California 92121.
Q. Is there anyone else in the room with you?
A. No.
Q. What device are you using for this deposition today?
A. A ThinkPad laptop.
Q. Do you have any other programs or applications running on your laptop, such as instant messaging or emails?
A. No.
Q. Will you tell me if anyone tries to communicate with you while I'm asking questions?
A. Yes.
Q. Do you understand that you're testifying today under oath?
A. Yes.
Q. Is there any reason that you cannot give full and accurate testimony today?
A. No.
Q. Do you understand that you're appearing today in response to subpoenas, a tested condom issued by the Federal Trade Commission, and the Respondents in the matter of Illumina and GRAIL?

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A. Yeah.
Q. Thank you, Dr. Song. As I mentioned earlier, my name is Dylan Naegele, and I'm an attorney with the Federal Trade Commission. I am going to ask you some questions today about Illumina and its proposed acquisition of GRAIL. Everything confidential will be covered by the protective order issued by the Federal Trade Commission's Part 3 Court.
So I'd like to start by going over some ground rules for the deposition. Throughout the deposition we should both try our best not to talk over each other. Do you understand?
A. Yes.
Q. Please respond orally with "yes" or "no" rather than nods or the shake of the head because it's difficult for the court reporter to capture gestures. Do you understand?
A. Yes.
Q. If you do not hear a question, please say so and I will repeat it. If you do not understand a question, please say so and I will rephrase it. From time to time the Respondents may object to one of my questions. The objection will be noted by the court reporter. After the Respondent states his objection, you are -- or her objection, you are to answer the

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question unless you would otherwise reveal privileged information.

At times I will be showing you documents on the exhibit share platform and directing you to specific pages or portions. If you need more time or help in navigating the document, please let me know, and you can have more time or I can try to assist you.

I also want to remind you again that you are under oath. Even though we are speaking via computer screen, your answers should be as truthful as if you were in front of a judge and jury.

If at any point you realize you've answered a question incorrectly or you remember something else that would make your answer more complete, please let us know and we can add to your answer right then and there while it's on your mind.

We will plan on taking a short break about every hour or so. Please let me or my counterpart, Al, know if you need a break, and I'm sure we'll be happy to accommodate as long as there's no question pending.

Now, while we are on the record, please refrain from communicating with anyone unless you're using -- unless it's via Zoom. Please also refrain from using a chat, email messages, or text messaging platform while we're on the record. And

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lastly, please let me know if anyone tries to communicate with you through any other platform.

And before I begin, a few other things. When I say NGS, I mean Next-Generation Sequencing. When I say NIPT, I mean noninvasive prenatal testing. And when I say IVD, I mean in vitro diagnostic.

Dr. Song, I'd like to show you a exhibit now. You should see it on your screen momentarily. Do you see it?

A. Not yet.

Q. Okay.

MR. PFEIFFER: Yeah, I'm not -- I'm not seeing anything yet either.

MR. LITVACK: Me, neither.

MR. NAEGELE: All right. My computer is being slow. Does anyone see the exhibit now?

THE WITNESS: I still don't have anything.

A. Let me open it up.

Q. (By Mr. Naegele) So this exhibit is marked for identification as PX7071. Do you see this exhibit on your screen, Dr. Song?

A. Yes.

Q. Please take a minute to read over and review this document, and let me know when you have done so.

Have you had a chance to review the document?

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A. Yeah, I'm just sort of scrolling through it. I didn't read the -- obviously I'm not reading the entire document because it's long.

MR. PFEIFFER: Please don't.

THE WITNESS: I know -- yeah.

A. So I've -- I've looked at it.

Q. Is this a transcript of your testimony that you gave on March 24th, 2021?

A. Yes.

Q. Is everything that you said in the investigational hearing accurate to the best of your knowledge?

A. So based -- you know, not having reviewed the entirety of what's been shown in front of me, assuming that this is the same as what was shared with me through the testimony, it would be, assuming that's -- this is the same document, then, yes.

Q. Yes, this is the same document. Thank you.

Dr. Song, I'd like to show you another exhibit marked for identification as PX8519. Could you please let me know when you see it on your screen? It will take a minute.

MR. NAEGLE: All right. The file should be available to everyone now.

Q. Dr. Song, can you see the -- the exhibit?

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A. I'm just clicking on it right now, yes.

Q. Would you please take a minute to read over and review this document and let me know when you've done so.

A. I reviewed the document.

Q. What is this document?

A. Sorry, can you repeat the question?

Q. Certainly. What is this document?

A. This is -- it looks like it's a presentation that was put together for a call with the Board of Directors.

Q. Was this document presented on April 23rd, 2018?

A. I would -- I would assume so. I can't recall if this actually was the exact date and if it was on that date particularly; but based upon the date of the cover, that -- that's what I would assume.

Q. Is the -- to your knowledge is the date approximately accurate?

A. To the best of my knowledge, it would be.

Q. Would you please turn to page PX8519-019? You'll see the page numbers in the bottom right corner.

A. Oh, I see. Okay. You said 019?

Q. 019.

A. Okay.

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Q. Please let me know when you're at the page.
A. I'm at the page.
Q. Do you see where it says Scenario 1?
A. Yes.
Q. What was Scenario 1?

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Q. What would the advantage of -- sorry, let me strike that.
Was there an advantage to outsourcing certain engineering aspects?
A. Part of that would have been to see if there was certain expertise or capabilities that might be external that we could leverage. And I believe there's also some considerations as to whether or not that could have an impact on both timelines as well as overall spending.
Q. What would the impact on the timelines be?
A. I don't remember.
Q. Do you recall what the impact on spending would have been?
A. I think that's outlined on slide PX8519-019. So I don't recall the specifics of that, but I believe that information is outlined on the slide.
Q. Thank you.

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Q. Did Omniome commercially launch its sequencer at the end of Q2-2020?
A. No.
Q. Thank you.
Dr. Song, I'd like to show you another exhibit marked for identification as PX85019 [sic]. Please let me know when you can see the exhibit.
MR. PFEIFFER: What was the exhibit number again?
MR. LITVACK: Yeah, I'm not seeing it.
MR. NAEGELE: It's PX8509. It currently says it's distributing file, and it's got a progress bar that's moving very slowly.
Q. (By Mr. Naegele) All right. Dr. Song, do you see the file now?
A. Yep. I just opened it up.
Q. Yes. Please take a moment to read and review the document, and let me know when you've done so.
A. I'll scroll to the, towards the end of it. Takes a little time to upload.

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(The Reporter requested the witness speak up.)
(Off the record.)
Q. (By Mr. Naegele) Have you had a chance to review the document, Dr. Song?
A. Yes.
Q. What is this document?
A. This is a board of directors' presentation for the Omniome Board of Directors.
Q. Was this presentation given on September 17th, 2019?
A. I assume so, again, based upon the date on the front cover. But I can't say with certainty that it was actually on that date.
Q. To the best of your knowledge, was this given on or around that date?
A. Yes.
Q. Would you please turn to page PX8509-055? Please let me know when you have the page up in front of you.
A. I have it in front of me.
Q. What does this page depict, Dr. Song?

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21 Q. Did V1 of the instrument launch in Q1-2021?
22 A. No.

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12 Q. Thank you.
13 Dr. Song, I'd like to show you an exhibit now
14 called -- entitled PX8510. Would you please let me
15 know when you see that document on your screen?
16 A. I have the document up on my screen.
17 Q. Great. Would you please take a minute to
18 review the document and let me know when you've had a
19 chance to do so?
20 A. I've had a chance to flip through it.
21 Q. Would you please -- what is this document?
22 A. This is a -- another document that was
23 prepared to provide the Board of Directors an update.
24 Q. Was this presentation made on or around
25 May 5th, 2020?

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1 A. That's my -- to the back of my -- to the best
2 of my knowledge, yes.
3 Q. Would you please turn to page PX 8510-004.
4 A. I'm there.
5 Q. Do you see the first bullet point where it
6 says -- it begins: "After recent detailed, bottoms-up
7 analysis"?
8 A. Yes.

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12 Q. Would you please turn to page PX 8510-010, and
13 let me know when you've reached that page.
14 A. I'm there.
15 Q. What does this page depict?
16 A. It's putting out different scenarios around
17 the timing of the commercial launch of the instruments
18 using different assumptions.
19 Q. Do the blue arrows on this page represent
20 timelines?
21 A. Yes.

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Page 23

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19 Q. What is Instrument Control Software?
20 A. As I understand it, it's basically the
21 software that is written to ensure that all of the
22 different components within the instrument -- there's a
23 lot of fluidics and optics and mechanics that are
24 moving around within that, and they all need to be
25 coordinated. So it's about having the software written

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to ensure that all of those pieces are functioning properly and communicating with each other.
Q. Does the software need to be written for a specific instrument?
A. To my knowledge, yes.
Q. And what does Systems Integration mean in this context?
A. It's -- it involves multiple things, the full details of which I'm not really under -- I don't know the details of it -- of -- but I think from a basic level, it's about having all the different components coming together, which is both within the instrument as well as the consumables, like the reagents, the flow cell. And ensuring that all those things are working together. And also even the software and the informatics, to make sure that all those are communicating and functioning together as one system, so systems integration.
Q. What does "production" mean in this context?
A. I think my -- to my -- to my recollection, production is around producing the instruments. Once you've sort of gone through and verified that it's working, then the time it takes to actually start making the instruments to the final specifications for delivery.

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[redacted]
Q. Thank you.
Dr. Song, will you please turn back to your IH transcript, PX7071?
A. Okay.
Q. Would you please turn to page PX7071-007?
A. I'm there.
Q. All right. Sorry, PX7071-008.
A. I'm there.
Q. Do you see the quadrant of the page marked 28?
A. Yes.
Q. And do you see about halfway down in that quadrant the bold text that says: And when does Omniome anticipate the commercial launch of its sequencer?
A. Yes.
Q. Will you please just take a minute to familiarize yourself with the, the page?
A. Yes.
Q. You gave this testimony on March 24th, 2021.

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Correct?
A. Yes.
Q. And that testimony was accurate?
A. It was accurate based upon my understanding on March 24th, 2021 of, of what I knew of the company at
[redacted]

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[redacted]
Q. Thank you.
MR. NAEGELE: We've been going for about an hour now. Let's take a break.
And, Dr. Song, is five minutes good for you?
THE WITNESS: Yep, that's fine. I'm going to switch over to phone audio in the break, and that might work better. So let me do that.
THE VIDEOGRAPHER: One moment, please, and I'll take us off the record. We're going off the record at 8:59.
(Recess taken 8:59 a.m. - 9:13 a.m.)
THE VIDEOGRAPHER: We are back on the record. The time is 9:13. Please proceed.
Q. (By Mr. Naegele) Dr. Song, during your IH you testified that when you were CEO of Ariosa, Ariosa changed its Harmony NIPT test from Illumina NGS to affymetrix microarrays. Is that correct?
MR. PFEIFFER: Objection. Leading.
A. Yes.
Q. What types of applications are microarrays best suited for?
A. Traditionally, microarrays had been originally developed for genotyping and gene expression analysis.
Q. Why are microarrays -- strike that.

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Are microarrays well-suited for those applications?
A. For which application? The genotyping and the gene expression, or --
Q. Yes.
A. I mean, when they -- I mean, they were -- they were commonly -- yeah, they were designed and they were mostly used, to my knowledge, for those applications, and then over time they've been sort of replaced with sequencing.
Q. Why have they been replaced with sequencing?
MR. PFEIFFER: Object to the form of the question. Lacks foundation.
A. I mean, to my knowledge, I mean, with sequencing you're generally able to do things at a higher throughput. And potentially, you know, you could also do things, depending on the application, sometimes at a lower cost depending upon the platform.
Q. To your knowledge, is the throughput of a microarray comparable to the throughput of a sequencer?
A. I think it depends on the application that you're looking at and the -- it really depends upon the sequencing platform and the microarray platform that you're comparing.
Q. At the time that you -- at the time that

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Ariosa switched its test to microarrays, was the throughput comparable to the sequencers that you were using?
A. At the time, yes.
Q. To your knowledge, is the throughput of a microarray comparable to a sequencer like the NovaSeq?
MR. PFEIFFER: Object to the form of the question. Lacks foundation.
A. The NovaSeq would have higher throughput for most applications than you would be able to do on a microarray-based platform.
Q. When you say "most applications," what do you mean?
A. I mean, I can't -- it's always hard to say extremes of all or none. I would say that if you're comparing a NovaSeq to microarray technology, at least based on what I can think about, I don't really see -- you know, I believe the NovaSeq would be able to give you more throughput and more information based upon the applications I can think about than you would be able to accomplish with an array-based readout.
Q. What applications are you thinking about?
A. Gene expression -- you know, gene expression analysis, genotyping, you know. And then as it related to Ariosa, the NovaSeq instrument did not exist at the

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time. But you would be able to get much more throughput or number of patients analyzed with the NovaSeq than you would have been able to do with what we were doing at the time with an array-based readout.
MR. NAEGELE: Great. Well, I will reserve the rest of my time and pass the table over to my counterpart, Mr. Pfeiffer.
MR. PFEIFFER: Thank you.
* * *

EXAMINATION
BY MR. PFEIFFER:
Q. Dr. Song, we met briefly earlier this morning, but my name is Al Pfeiffer, and I represent GRAIL. And I'm going to ask you some questions now. You all set? Need any breaks or anything? You good?
A. I'm good.
Q. Okay. So you understand you're here in connection with the FTC trying to block the merger between GRAIL and Illumina. Is that right?
A. Yes.
Q. What -- what's your general understanding about what that lawsuit's about?
A. My understanding is that the FTC has competition concerns around Illumina's acquisition of

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GRAIL and how that could potentially lead toward, you know, possible anticompetitive behavior in the marketplace.
Q. Did you ever review the Complaint that the FTC filed?
A. Not in detail, no.
Q. But -- but you looked at it?
A. I'm trying to -- I mean, I'm trying to remember. If I looked at it, it was very -- I am under oath, so I'm trying -- I believe I may have opened it, but I don't -- it would have been a while ago, and, again, I don't, I would not recall any of the specifics within that Complaint.
Q. How did you come to even open it and look at it, in general?
MR. LITVACK: I'm just going to interject and caution the witness not to reveal any privileged information.
A. Again, I don't -- I can't -- I mean, I honestly cannot recall if I've actually seen the complaint. I've seen a lot of things through this, you know, because I've been under testimony, et cetera. So I can't say with actually any certainty that I've actually seen the Complaint. I'm just trying to recall. It's possible that I could have seen it. If

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it is, I'm not sure how I would have seen, and if I did, I don't recall any of the specifics. Because if I did review it, of which I'm not certain, it would -- I don't have any recollection of any details within it.

Q. Now, you mentioned earlier in connection with Ryan's questioning that you remembered having testimony taken at the investigative hearing process. We looked at that exhibit. Right?

A. The March 24th testimony?

Q. Yes.

A. Yes.

Q. Apart from that testimony itself, did you speak with anyone at the FTC at any time during the time they've been investigating or suing GRAIL and Illumina?

A. There was -- aside from that testimony, there was, from what I recall there was a brief conversation where the FTC had reached out. And then that's when I -- I believe I had sort of contacted the counsel that I have here representing -- or not -- or helping me out.

Q. When was that brief conversation?

A. Probably a couple of months ago or a few months ago. It would have been before the -- the March -- the testimony.

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Q. And who did you talk to? Do you remember?

A. I can't say with certainty. I don't want to guess nor -- yeah.

Q. What did you talk about?

A. It was, I think it was just, um -- it was so -- I think they, I think they had just reached out to me. I don't -- again, I don't remember any of the specifics. It was, it was nothing that I can recall -- there was, from my recollection, there was nothing that was discussed of any specifics or of substance. It was just reaching out to see if they could sort of connect with me. That's the best I can recall. At which point I then contacted legal counsel to understand what we should do in terms of -- because I didn't know in terms of what context that I was being specifically reached out to.

Q. Okay. Did -- did the FTC --

A. But then I had --

(Simultaneous cross-talking.)

(The Reporter requested clarification.)

A. Then I had the testimony in March that we have the exhibits on.

Q. (By Mr. Pfeiffer) So when the FTC reached out to you before your investigative hearing testimony, did they explain at all why they were calling you?

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A. I honestly don't remember the details.

Q. You don't remember it even being in the context of, "Hey, we have a reason why we're reaching out to you"?

A. I, I don't, actually.

Q. And have you spoken to anyone from the FTC after your investigational hearing? After your March testimony?

A. I -- no. I don't believe so. I can't, I can't recall having any interaction with them until today.

Q. And how long have you been the Executive Chairman of the Board at Omniome?

A. About four years.

Q. And just at a high level, what is the business that Omniome is in?

A. Developing a sequencing -- next-generation sequencing system.

Q. So -- and that's what Illumina does, too. Right? They sell next-generation sequencing systems?

A. Yes.

Q. So you're at least at some level intending to be competing with Illumina. Right?

A. Yes.

Q. And when was Omniome actually founded?

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A. I don't know the exact date. It was probably a few years before I got -- I believe it was a few years before I got involved officially.

Q. And one of the founders of Omniome was someone who used to work at Illumina. Is that right?

MR. NAEGELE: Objection. Leading.

A. The founder and original CEO was a gentleman who, to my understanding, was employed by Illumina prior to him founding Omniome.

Q. Did you overlap with him?

A. Briefly.

Q. So when did -- when did that original founder then cease being involved with Omniome?

A. Once I became executive chairman of the company, he left the company, I believe, within the first -- we separate -- we transitioned him, I believe, within the, within several months after I became executive chairman.

Q. So then would it be fair to say you think he left sometime in 2017?

A. Yes.

Q. Okay. In your role as executive chairman, what interactions, if any, do you have with Omniome's existing and potential investors?

A. With a subset of the investors, they have

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board representation. So with them there's interactions during board meetings and -- and potentially at other times.

With some investors, I have little to no contact with them.

Q. And how about with potential investors? What role, if any, do you have with identifying and communicating with potential investors?

A. That's been variable over my time as executive chairman. In certain times I've interacted with potential investors, and -- and in other times I've had, again, little to no interaction with potential investors.

Q. So as part of that responsibility, then, when you do have interactions with investors, do you keep yourself apprised of the company's general business strategies?

A. Yes.

Q. And do you sometimes review materials that Omniome prepares for either existing or potential investors?

A. Yes.

Q. Now, you were asked a couple of questions earlier that related to Ariosa. And I just want to, in terms of your background, ask about that. When were

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you at Ariosa?

A. I was at -- I first became involved with Ariosa, I believe it was in late 2009 when we first identified the opportunity. And then I became the CEO in 2010 and served as a CEO until its acquisition in early 2015.

Q. Did you stay on some period of time after Roche acquired Ariosa in that acquisition?

A. Yes.

Q. How long?

A. It was a little bit more than a year.

Q. In what capacity?

A. I continued on -- I believe my official title became General Manager post the acquisition, and Site Head also, of the location that continued post the acquisition.

Q. Now, I want to come back to Omniome and your work there. You mentioned earlier that Omniome is currently developing an NGS-based device. Is that right?

A. Yes.

Q. Okay. Would you please just describe that -- that sequencer system at a high level?

A. It is a short-read sequencing technology that uses a novel sequencing biochemistry that we call

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sequencing by binding.

Q. Yeah. And --

MR. PFEIFFER: Where did it go? I wanted to show you a document, and my screen just went blank. Hang on.

Marcus, would you -- would you please post to the Marked Exhibits folder the Omniome web page screenshot?

There we go. It should be at the top of the list. It'll say Exhibit 01, Omniome website.

(Exhibit 01 was marked for identification.)

Q. (By Mr. Pfeiffer) Do you have that on your folder?

A. Yes.

MR. PFEIFFER: Okay. And I will represent for the record this is a document that -- marked Exhibit 01 that we screenshotted and converted to PDF in the course of this proceeding. From Omniome's website.

Q. (By Mr. Pfeiffer) And you'll see there -- well, first of all, have you visited the company's website?

A. I have, in the past.

Q. Does this appear to you to be a page from your website?

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A. This is actually the first time I've seen this particular page. So.

Q. Any reason to believe this is not what you currently have posted in your website?

A. No.

Q. And you'll see there, it does -- it says, "Sequencing by binding from Omniome," right across the sort of center of the page. Correct?

A. Correct.

Q. And that sequencing by binding is distinct -- distinct from a different type of next-generation sequencing. Right?

MR. NAEGELE: Objection. Leading.

A. It refers to the biochemistry of the sequencing reaction.

Q. Are you also familiar with a type of chemistry called sequencing by synthesis?

A. Yes.

Q. And you're not using sequencing by synthesis, are you?

A. No.

Q. Again, at a high lay level, how do the two technologies differ?

A. The technologies differ in the way that the different individual nucleotides or bases are

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synthesized as you're trying to determine the DNA sequence of a sample.

Illumina's sequencing by synthesis uses fluorescently-labeled nucleotides that become covalently incorporated into a growing DNA strand. And they do both what we call a incorporation and an interrogation step at the same time, using a fluorescently-labeled nucleotide.

Sequencing by binding actually decouples the incorporation and the interrogation steps. And ultimately what gets put into the sequenced DNA strand is a natural nucleotide that's not modified. Whereas with sequencing by synthesis from Illumina, you are adding in engineered or modified nucleotides into the synthesized DNA strand.

Q. Thank you.

In the interest of not tripping over my tongue all day here, will it be okay with you if I refer to sequencing by binding as SBB and sequencing by synthesis as SBS?

A. That's fine.

Q. And if I understood you correctly, a moment ago you said that Illumina's NGS system is based on an SBS chemistry?

A. Yes.

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Q. And Omniome's technology is based on an SBB chemistry?

A. Yes.

Q. Okay. Which do you consider to be superior?

A. I mean, "superior" is relative. Um, there are -- are differences between the two, so I think that's more of a judgment call.

Q. Okay. Well, why did you choose SBB at Omniome? It wasn't because you thought it was worse, was it?

A. No. There are -- there are advantages with using SBB in terms of being able to have higher accuracy of sequencing as compared to SBS.

Q. Are there other advantages that you have also identified between the SBB chemistry that you use and the SBS chemistry that Illumina uses?

A. We believe that with SBB you have the potential to also get longer sequence read as compared to SBS. And because of the way the particular steps are done with SBB, the reagent costs could also be less than what is being done with SBS.

MR. PFEIFFER: Marcus, will you please put up to the marked file Tab 1?

Q. (By Mr. Pfeiffer) You should see shortly hopefully what will be marked as Exhibit 02. Not yet.

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There we go.

(Exhibit 02 was marked for identification.)

Q. Do you see Exhibit 02, Omniome press release, January 9th, 2020?

A. Yes.

Q. And you may want to --

A. Zoom in on it.

Q. Yeah, I was going to suggest zooming in. That would probably help.

MR. PFEIFFER: For the record, what has been marked as Exhibit 02 is a press release on the Omniome website that we downloaded and converted to PDF in the course of preparing for this proceeding.

Q. Let me know when you've had a chance to look that over, please, Dr. Song.

A. I've looked it over.

Q. Do you recognize this document?

A. Not this exact document, but the press release, the content of it, yes.

Q. Yes. Yeah, you're familiar with the press release even if not in this PDF form?

A. Yes.

Q. And do you see, if you look down toward the bottom of the page, there's a quote attributed to you. A couple of sentences there?

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A. Yeah.

Q. Would you look that over, please? You see that?

A. Yes.

Q. And is it your practice to review press releases that contain quotes from you before they're released?

A. Yes.

Q. Do you have any reason to believe that this is not a true and accurate press release issued on or about January 9th, 2020?

A. No.

Q. Now, right under the title, there, it says: Company raises $145 million in 18 months to complete development and early commercialization of breakthrough DNA sequencing platform.

Do you see that?

A. Yes.

Q. Was that an accurate statement?

A. At the time, that was our understanding. So, yes.

Q. And mainly it was accurate that you had raised $145 million in 18 months. Correct?

MR. NAEGELE: Objection. Leading.

A. That's correct.

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Q. Have you raised any additional capital since January 2020?

[redacted]

Q. Okay. And how many rounds of financing were involved in that $145 million that was raised over 18 months? Do you recall?

A. I don't know the exact number because there was a Series B financing, and I don't remember if there was an extension or second part to that or not.

Q. Does it ring a bell that this $60 million financing is, was a Series C financing?

A. Yes.

Q. Okay. So it sounds like you would have had an A, a B, and a C?

[redacted]

Q. If you look down within the press release, you'll see a quote before yours that is -- it's right about the middle of it, attributed to Dave Mullarkey, president and CEO at Omniome. Do you see that?

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A. Yes.

Q. The quote reads: Our product development efforts are advancing rapidly and shifting toward delivering our first beta prototype instruments.

And was that an accurate statement at the time it was made?

A. I would -- that's a statement from Dave Mullarkey, so I can't speak on his behalf, but he was the former CEO of Omniome, and that quote would be attributed to him.

Q. And you were at the time the executive chairman of the company. Correct?

A. Yes.

Q. You wouldn't have wanted the company to be putting out a press release related to a financing that contained inaccurate information, would you?

A. No.

Q. Okay. So as far as you knew, it was accurate at that time?

A. Yes.

Q. Now, so Mr. Mullarkey is no longer the CEO. Is that correct?

MR. NAEGELE: Object to form.

A. That is correct.

Q. When did he leave?

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A. Um, it was -- well, I think we had, um, asked him to transition late summer, early fall of 2020. But he had a continued sort of consulting arrangement with the company until, I think through the end of 2020.

Q. Just to make sure I understood, did you say he transitioned out of being CEO in approximately mid-2020?

A. It was, it was more, I think -- I think it was sort of in the September 2020 timeframe, give or take several weeks. I can't remember the formal separation date, but it was around then.

Q. And who's your current CEO?

A. We don't have one.

Q. Okay. Who is -- who is fulfilling the functions of a CEO?

A. It depends on what you consider a CEO's functions to be. We have a president of the company currently.

Q. Who's the president?

A. Richard Shen, S-h-e-n.

Q. Did you mention also that you hired a chief product officer?

A. That was Richard Shen, who we hired, that then was promoted to president.

Q. Okay. And if I understood what you were

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saying earlier this morning, it sounded like you thought that the company's development skills were good. Is that fair?

MR. NAEGELE: Object to form. Leading.

A. I -- earlier this morning, I would say depending upon what timeframe you looked at Omniome's history, Omniome has always had very strong research in early development, and the product development discipline did not come really until Richard Shen joined.

Q. And would the product development that you're referring to then be something necessary to achieve commercialization?

A. Yes.

MR. NAEGELE: Objection. Lack --

Q. (By Mr. Pfeiffer) And would you have preferred if you'd had that -- well, actually, let me ask you to what extent did Mr. Shen bring that expertise that you thought you were lacking before?

A. I think when Richard joined the company to actually have the responsibility to drive towards product development, that was a pretty significant addition to the company; to be able to have a leader who had the authority to help drive activity forward. Prior to Richard, we didn't have that.

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Q. Would you have liked to have had that sooner?
MR. NAEGELE: Object to form.
A. Hindsight's always 20/20. So I would say, you know, if we had to replay history, it would have been nice to have someone like Richard in the company earlier.
Q. Would you be further along in the development process, do you think, if you had had someone with skills like Richard in the company earlier?
MR. LITVACK: Objection. Calls for speculation.
THE WITNESS: I just have a -- I just have a process question. When someone objects, am I supposed to wait for someone to sort of comment on that, or --
MR. PFEIFFER: No. No judge is -- yeah, no judge is going to rule on them. You go ahead and answer them. The objection is made and preserved for the record.
THE WITNESS: All right.
A. I think it's hard to -- I think it's hard to say because there was still a lot of technology development that was going on at the company. I think we would have had better visibility and a, and more discipline and an understanding of what resources and

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organization would be needed to get a product out. Whether that would have shifted the timelines in one direction or the other is really difficult to say because, you know, even since Richard's come on board as chief product officer, we have made some modifications to the product specification.
Q. And, again, would you have preferred to have had that greater visibility and discipline earlier?
MR. NAEGELE: Object to form.
MR. LITVACK: Asked and answered.
MR. NAEGELE: Speculation as well.
A. That would have -- yes, that would have been preferred.
MR. PFEIFFER: And just for the record, there are two lawyers here representing Mr. -- Dr. Song and the company. You actually -- since you're representing the same people, you don't get to both object, if you were. I don't know if you both were because I can't see.
MR. LITVACK: So the FTC is objecting as a party in the case. And this is Doug Litvack, who represents the witness who is also objecting on behalf of the witness.
MR. PFEIFFER: I couldn't tell if anybody else objected because I can't see all the screens.

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Thank you.
MR. LITVACK: No problems.
MR. PFEIFFER: That's so we're all on the same page.
MR. LITVACK: Yeah, We're all on the same page.
Q. (By Mr. Pfeiffer) Are you familiar -- you mentioned a prototype earlier. Do you recall that discussion earlier this morning?
A. Yes.
[redacted]
Q. Is that sometimes also referred to as a "beta" or do you guys not use that terminology?
MR. NAEGELE: Object to form.
A. Some people -- some people use that terminology. I have come to appreciate people use different terms -- alpha, beta, prototype -- without always having clear distinction between those.
(The Reporter clarified speaker identification for previous objection.)
MR. NAEGELE: That was me. I objected to form.
Q. (By Mr. Pfeiffer) So is "prototype" how you

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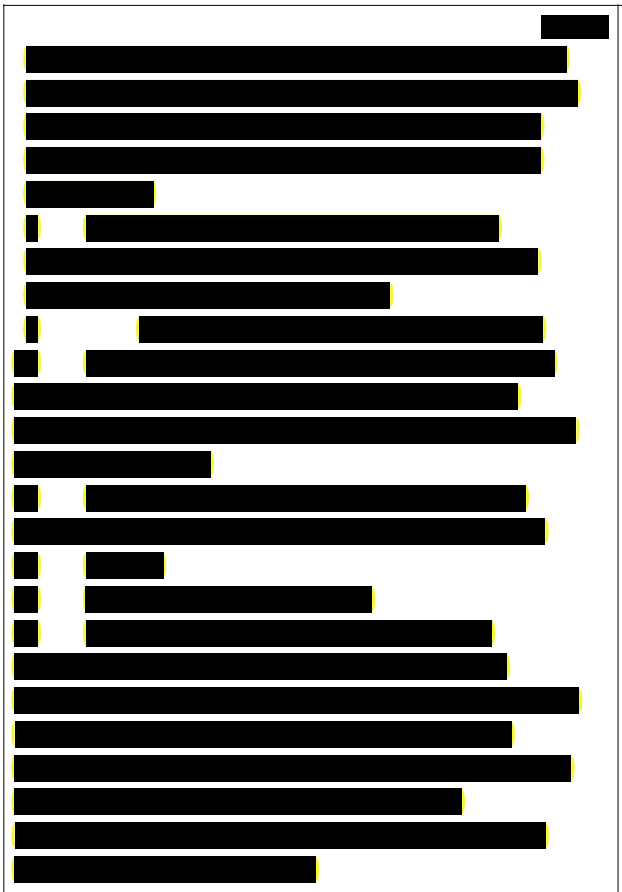
would refer to it? Is that what would be most comfortable for you if I refer to it that way rather than a beta?
A. Either one is fine for me.
[redacted]



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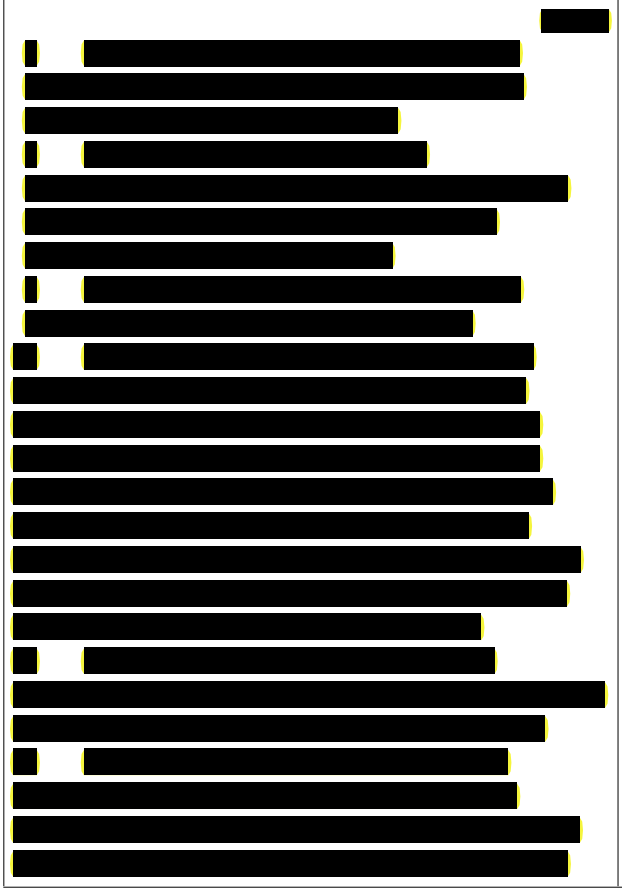
25 Q. If you -- if you turn back to the press



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1 release, please.
2 A. Okay.
3 Q. If you go down to the quote that's attributed
4 to you, you'll see that there's a quote that comes
5 before your name, and then there's the rest of the
6 quote.
7 A. Yes.
8 Q. If you look at the second part of the quote,
9 it says: The goal and vision have always been to
10 develop a disruptive sequencing technology, taking into
11 account accuracy, speed, throughput, and cost. The
12 team's success in advancing product development across
13 these dimensions has attracted considerable interest
14 from top-tier investors.
15 Was that an accurate statement at the time you
16 made it?
17 A. Yes.
18 Q. To your understanding, what was it about
19 Omniome and its technology that was -- had attracted
20 considerable interest from top-tier investors?
21 A. I think probably one of the most notable
22 features was the improved accuracy of SBB over SBS.
23 Q. And when you refer to accuracy, what do you
24 mean?
25 A. Sequencing error. And we refer to it as

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actual single raw-read error.
Q. And to your understanding, which technology, which chemistry is more accurate? The SBB that you use or the SBS that Illumina uses?
MR. NAEGELE: Object to form.
A. Based on what we've been able to evaluate and study, we believe that the SBB chemistry has higher accuracy.
MR. PFEIFFER: Marcus, would you put up the next Tab 2 document, please?
THE WITNESS: Is this Exhibit 03?
MR. PFEIFFER: Exactly, Exhibit 03.
And, for the record, Exhibit 03 is a PowerPoint deck entitled "Omniome Overview and Update," dated January 2018, the first page of which bears the Bates label Omniome FTC_ILL-00000069.
(Exhibit 03 was marked for identification.)
Q. (By Mr. Pfeiffer) Do you have that document?
A. I do.
Q. What is this document?
A. Oh, sorry, I was just -- I was -- hold on. It's refreshing. I'm trying to go back to the first screen.
Q. Sure.
A. It's a Omniome presentation providing an

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update.
Q. And in your role as executive chairman, did you tend to see business overviews and updates?
A. I did. Not all the time.
Q. Any reason to believe you didn't see this one?
A. I'd say that the -- I would have seen likely the content of this. Whether or not I would have seen this particular presentation, I'm not sure.
Q. And was it part of the regular course of operations at Omniome to prepare and then retain documents of this type?
A. It was -- depending on who -- yeah, it was pretty common to prepare it. I'm not sure what you mean by "retain."
Q. Oh, just this came to us from your files. And I assume that you have a computer system where you keep documents. Right?
A. Yeah.
Q. Okay. Okay. I want to ask you just about a few slides in particular. If you would scroll down to the page that at the bottom ends in 074.
A. I'm there.

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Page 62

[redacted]

Page 63

[redacted]

Page 64

[redacted]

Q. So is that the type of product that GRAIL is developing? A liquid biopsy cancer testing base product?

MR. NAEGELE: Object to form.

A. That's my --

MR. NAEGELE: Object to foundation.

A. That's my understanding.

Q. And this market opportunity that's being discussed in these slides, was that something that you see as limited to just GRAIL and its gallery test, or do you think there are others who are going to be participants in that market?

MR. NAEGELE: Object to form.

A. There are other com- -- there are other companies also in the liquid biopsy cancer space.

Q. How many potential customers do you see in that space?

A. I've never gone to quantify it. I think we focused on some of the known companies that are already out there.

Q. You mentioned the known companies. Are there other startups that you, perhaps you don't even know

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about yet in this space?

A. There -- there could be.

Q. Of the people, including GRAIL, who are out there, do you know which ones are going to be successful as you sit here today?

MR. NAEGELE: Object to form. Object to foundation.

A. I think it's hard for me to say who's going to be successful and how to quantify that, but there are tests that are available today in this space.

Q. What tests do you know that are available today in this space that are -- that are blood-based cancer screening tests?

A. I don't know the product names. I know more of the companies that are offering those types of tests.

Q. Okay. Sure. Why don't you give it to me that way.

A. So Guardant would be a company. Natera would be another company. Invitae. There's others like Freenome and Thrive and Personal Genome Diagnostics. I believe Freenome and Thrive might have both been acquired, though. I think Exact Sciences might have acquired one of them. I can't remember which one. Those are kind of top of mind for me.

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Q. In terms of those companies you've just been discussing, how many of them, to your knowledge, are offering a blood-based early detection cancer screening test today that people can actually go out and ask their doctor to get for them?

MR. NAEGELE: Object to form.

A. Well, you inserted the word "screening." So I don't know how many are offering -- there's definitely use of liquid biopsy tests for patients who already have cancer and for monitoring.

For screening of an asymptomatic population, there may be. I -- again, I'm not as deeply involved in this field as I used to be. I don't know if there's any bona fide blood-based screening tests for cancer that one can easily access. There might be. I just, I personally don't know.

Q. So would you consider both the symptomatic population-based test and the asymptomatic screening test to both be target customers for NGS sequencing machines?

A. Yes.

[redacted]

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[redacted]

Q. And are you aware of other companies who, like Omniome, are in the process of developing alternative sequencers?

A. Yes.

Q. Who else is out there as potential competitors?

A. Singular Genomics is a company, as well as

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another company that's in the development stage would be considered Element Biosciences. And then there is a company called MGI, which is a spin -- some relationship to BGI from China, which also has a sequencing system.

Q. Okay. What about Oxford Nanopore? Are you familiar with them?

A. Yes.

[redacted]

Q. Thank you.

Would you go next to the slide ending in 082? It says: Core Enabling Technology Sequencing By Binding, SBB.

A. I'm there.

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[redacted]

PUBLIC

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Q. Would you go to the next slide, please, the one that ends in 083?

A. Yes.

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Q. So someone then doesn't have to use any specific type of library consumables?

A. Yeah. You could design -- you could work with -- you could -- the chemistry could work with a multitude of different types of, different sort of library prep processes.

Q. Are those sometimes referred to as "library prep kits"?

A. Yes.

Q. And are there different manufacturers of library prep kits out there?

A. Yes.

Q. Not just Illumina; right?

A. That's correct.

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Q. Okay. Thank you.
Mr. Pfeiffer: I think we've been going about an hour. Why don't we take another short break?
THE WITNESS: Okay.
THE VIDEOGRAPHER: We are going off the record at 10:22.
(Recess taken 10:22 a.m. - 10:36 a.m.)
THE VIDEOGRAPHER: We are back on the record. The time is 10:36. Please proceed.
Q. (By Mr. Pfeiffer) Dr. Song, I wanted to ask you to turn back to an exhibit that you looked at earlier this morning. It'll be in the folder with the number PX8509. It's that September 17th, 2019 board deck.
A. I have it open.
Q. Oh, great. Okay. Within that, if you would turn to the slide ending in, it's PX8509-018. It has the Bates number ending in 0586.
A. Okay.

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Q. If you turn within the same slide deck, then, to the slide -- it's Slide 26 of the slide deck, and it ends in the Bates No. 596.
A. Wait. Slide 20 -- wait.
Q. Only -- only some of the slides have numbers. Apparently only the odd pages have numbers on the slides themselves the way this is depicted. But if you go to, it's, the Bates number ends in 596 and the PX number ends in 028.
A. Oh, yeah, yeah, yeah, I see that. Yeah. Okay.

Page 78

[redacted]

Page 80

[redacted]

Page 79

[redacted]

Page 81

[redacted]

Q. Yeah. But you're still placing the bet that you are going to be viable and will attract demand?

MR. NAEGELE: Object to form.

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A. I mean, we obviously are going forward and still planning on developing a product, yeah.

[redacted]

Page 84

A. Yes.

[redacted]

Page 83

[redacted]

Q. If you go to -- it's a couple forward now. It'll be Slide 40. And the page has a Bates number ending 610 and the PX number ending in 042.

Page 85

[redacted]

Q. And -- and Omniome considers its sequencers to be more accurate than Illumina's. Right?

Page 86

A. Yes.

[redacted]

Q. If you'd, if you'd turn to Slide 46, so ending

Page 87

in Bates No. 616 and PX048?

A. Yeah.

[redacted]

Page 88

[redacted]

Q. If you'd go next to Slide 53, which ends in Bates 623 and PX055.

A. Yes.

[redacted]

Page 89

[redacted]

Page 90

[redacted]

Page 92

[redacted]

Page 91

[redacted]

Page 93

Okay. Why don't we go back to the folder.
MR. PFEIFFER: And, Marcus, if you would please put up Tab 4.
Q. (By Mr. Pfeiffer) You should now have a document titled Exhibit 04, Omniome FTC? Do you see that?
A. Yes.
(Exhibit 04 was marked for identification.)
Q. Okay. If you'd open that for me, please.
MR. PFEIFFER: And for the record, I'll state while this is coming up that this is a PowerPoint document entitled "Delivering the World's Most Accurate DNA Sequencing Platform, Company Overview." And it says "David Mullarkey, president and CEO" under that. It was produced to us from Omniome's files, and it bears the Bates label from Omniome ending in 01469 on the first page.
Q. (By Mr. Pfeiffer) Do you have that document in front of you?
A. I do.
Q. Okay. What is this document?
A. Just looking through it, it's actually the first time I've seen this template, actually. So this would be --
Q. Okay.

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A. -- the first time I'm actually seeing this document because I don't, I don't recognize the template. But just flipping through it, the contents, it's -- I'm familiar with the content. Or if I, if I saw the template, it's not -- it's not really ringing a bell. So -- but the content is, it just looks like it's been formatted differently than what I've seen.

Q. If you'd take a look at the slide ending in 471. It's entitled "Leadership." Do you have that slide?

A. Yeah, it's just refreshing it right now.

Q. Oh, okay.

A. I'm scrolling around. Yes, I'm at that slide.

Q. Does that help you place approximately when this leadership team would have been in place?

A. Yeah.

Q. What does it tell you?

A. I would say -- I mean, this was definitely before -- it's interesting. This would have been -- yeah, because I'm looking at Kathy. I think she left in the summer of last year. So this would have been before the summer of 2020. So I would -- you know, I'm trying to see if there's other points, and I see the number of employees. This is probably, like, an

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early -- if I had to take my best-educated assumption, I would say that -- I could probably hone it in better. But I would say it's maybe first half 2020, late 2019.

Q. Okay.

A. Just based upon the leadership. I'm sure there might be other clues in the deck that could --

Q. Yeah. And feel free if you see other clues that help pin that down any further.

If you turn to the seventh slide in the deck, there are some smaller numbers at least on some of the slides, but it's the page ending in 475.

A. Yeah.

Q. It's entitled "Our Cost" -- or our, rather, "Our Competitive Advantage."

A. Yes.

Q. And then next to it, it says: Next-generation sequencing, NGS, system with leading accuracy, cost and flexibility.

Do you see that?

A. Yes. Yes.

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Page 97

[redacted]

25 Q. As you sit here today in June of 2021, how

1 much growth potential do you see in the sequencing
2 market? How much market opportunity do you see out
3 there that you might capture?
4 MR. NAEGELE: Object to form.
5 A. I don't -- I have not looked at the sequencing
6 overall landscape to look at growth trajectory in this
7 sort of iteral space. I do believe that it's still
8 growing at maybe low double digits from a pretty strong
9 base of at least a few billion dollars. And so it, to
10 us, represents still an attractive market.
11 Q. If you turn next to Slide 12 in this deck,
12 which should end in the Bates No. 480.
13 A. Yes.

[redacted]

[redacted]

[redacted]

8 MR. NAEGELE: Object to form.
9 Q. (By Mr. Pfeiffer) Would you turn next to the
10 Slide 487?
11 A. Yeah.
12 Q. It says: Sequencing By Binding (SBB)
13 Overview.
14 And then, actually, sequencing by binding is
15 trademarked. And I noticed that on your website, as
16 well. Is that a trademarked phrase or is there a
17 trademark application?
18 A. I don't know for certain.
19 Q. Would you expect so, given that it says "TM"
20 there?
21 A. I believe -- I believe -- I've heard -- I've
22 been in conversation where I've heard that there was
23 plans to get it trademarked. I don't have confirmation
24 as to whether or not we were successful in getting that
25 done. But I have seen the TM next to it in various

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documents.
Q. Do you know approximately how many patents you have that relate to the various components of your eventual NGS sequence you're offering?
A. I don't know how many are directly related. We have a lot of patents that we have filed. I don't know what proportion of those are directly related to the configuration that we would go to market with.
Q. Well, let's start with just how many patents do you know that you have at this point that you've applied for? Let's -- let's --
A. So, yeah, so --
Q. Let me start over so that's a clearer question. Sorry.
Approximately how many patents do you understand you have applied for at Omniome?
A. Yeah, so both pending and issued, still in progress, you know, in all different countries and jurisdictions, I believe we have over 200.
Q. Why did you apply for those patents?
A. One, because there was innovation that happened at the company. So if there was novel inventions, and so we wanted to credit that.
And then I think ultimately as we think about both our core product and there's a lot of innovation

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that happens in the field, we wanted to make sure that we built a robust patent state to, (a), protect our product, but also ensure that we protect any new ideas, whether or not they be relevant to our products, that might be potentially relevant to what other people are doing in this space or beyond.
Q. I think that's it for this document.
MR. PFEIFFER: Marcus, would you please put up Tab 5?
Q. (By Mr. Pfeiffer) There it is. Do you have it yet? You should see Exhibit 05.
A. I have it.
(Exhibit 05 was marked for identification.)
Q. And for the record, this is a PowerPoint document that is entitled "Omniome, Inc., Board of Director's Meeting, December 2nd, 2019," produced from Omniome's files, with the Bates number ending in 0773 on the first page. Is that the document you have in front of you?
A. Yeah.
Q. And to the best of your understanding, was this a board deck presented in connections with a board meeting in December of 2019?
A. Yes.
Q. If you'd go within this document to Slide 21,

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please.
A. 21. What is the --
Q. Sorry. Yeah, it doesn't have the Bates numbers at the bottom. It should say 795 at the bottom. My apologies.
[redacted]
A. I'm almost -- it's just taking a little bit of time to load.
Q. Yeah, no worries. Just let me know when you have it.
A. Yep, I'm there.
[redacted]
Q. All right. Well, I'm not going to ask you more about that if it's not being actively pursued. Why don't we go ahead within this to the slide ending

Page 105

in 811.
A. Okay.
[redacted]

Page 106

[redacted]

Page 107

[redacted]

24 MR. PFEIFFER: Marcus, would you please
25 put up Tab 6?

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1 A. I have this.
2 Q. Great. If you would open that, please.
3 MR. PFEIFFER: And for the record, I'll
4 note that what's been marked as Exhibit 6 is a document
5 entitled Omniome/DeCheng site visit --
6 A. Yes.
7 (Exhibit 06 was marked for identification.)
8 Q. -- April 30th, 2018, produced from Omniome's
9 files with the Bates number ending in 1216.
10 Do you have that document?
11 A. Yes.
12 Q. Can you tell me what this document is?
13 A. It appears to be a PowerPoint that was made in
14 preparation for Decheng, which is one of our investors.
15 And I, I recall they did visit. I think it's as
16 part -- I can't remember in connection with which
17 financing it was, but, but this would have been made
18 for them.
19 Q. Does it ring a bell that Decheng led Omniome
20 Series B funding round?
21 A. Yes.
22 Q. And in terms of a site visit, what's that
23 referring to?
24 A. I believe this is when they came to visit us
25 in person.

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1 Q. So in connection with that fundraising?
2 A. That would be my assumption, although I'm not
3 certain. But that would most -- that would make sense.
4 Q. If you'd turn, please, to Slide 38, which is
5 the page ending in 1264, so it's quite a -- it'll take
6 a while to get you there.
7 A. 1264, you said?
8 Q. Yeah, the Bates number at the bottom should
9 say 1264. I'm actually still waiting for it to open
10 myself. At the top it should say: Omniome up to 10x
11 lower price per giga base.
12 Do you see that?
13 A. Yes.

[redacted]

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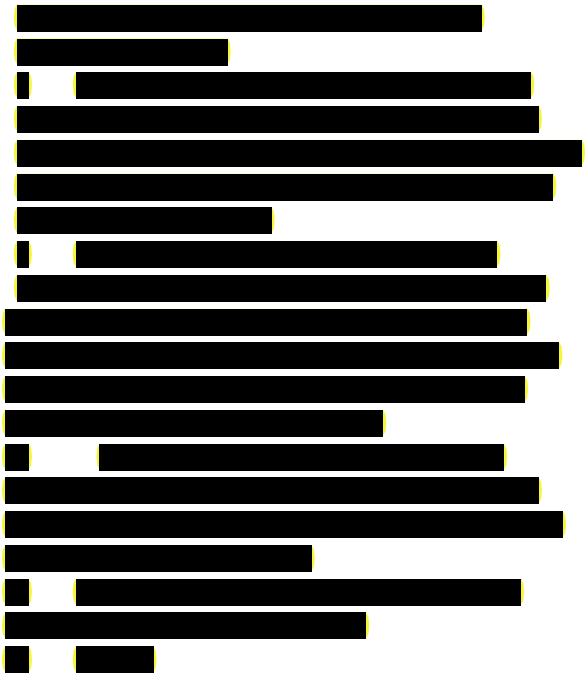

MR. NAEGELE: Object to form.
MR. PFEIFFER: Let's take a break. We've been going again about -- about an hour. I'm about to change topics. And let's take a short break, if that works for you. And since you're yawning, I think that

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probably works for you.
THE WITNESS: Okay. Sorry about that.
MR. PFEIFFER: No worries.
THE VIDEOGRAPHER: We are going off the record at 11:31.
(Recess taken 11:31 a.m.- 11:43 a.m.)
THE VIDEOGRAPHER: We are back on the record. The time is 11:43. Please proceed.
Q. (By Mr. Pfeiffer) Dr. Song, I wanted to change topics a bit and discuss your time back at Ariosa, which you may recall there were -- there were a number of questions directed to you about your time at Ariosa in your March testimony. Do you recall generally that topic area?
A. Yes.
Q. So I want to follow up on some of what was discussed there. One of the things that was discussed there was a patent infringement lawsuit that Illumina filed against Ariosa in 2014. Do you recall that general subject?
A. Yes.
Q. And there was particularly some testimony about the relationship between that lawsuit and a potential IPO that Ariosa had been considering. Do you recall that?

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A. Yes.
Q. So do you recall when Ariosa announced its intention to -- to proceed with an IPO?
A. I don't recall the exact dates. It was sometime in 2014, though, I believe.
Q. And you did at Ariosa actually file a Form S-1 registration statement with the SEC, didn't you?
A. Yes.
Q. Does March 26th, 2014 sound about right for that S-1?
A. Yeah, pro- -- that seems like a reasonable time period.
Q. Let's see if we can pin that down anymore.
MR. PFEIFFER: Marcus, would you put up Tab 6, please -- or seven. Tab 7.
Q. (By Mr. Pfeiffer) There we go.
A. Okay. I have it up.
Q. I'll represent to you and for the record what's been marked as Exhibit 7 is an article from the GenomeWeb website dated "NIPT Firm Ariosa Diagnostics Files for IPO," dated March 26, 2014.
(Exhibit 07 was marked for identification.)
Q. Are you familiar with GenomeWeb?
A. Yes.
Q. Who are they?

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A. They're an industry trade publication. I believe they're mostly online.
Q. And you'll see that this article refers to Ariosa as having filed for an IPO?
A. Yes.
Q. Does that refresh your recollection that it was at least on or around March 26th, 2014?
A. Yes.
Q. Okay. Now, in your testimony back in March, you had referred to Illumina suing Ariosa for patent infringement, but that came well after you filed your Ariosa S-1, didn't it?
MR. NAEGELE: Object to form.
A. I remember it just because it occurred on the day that we were supposed to launch our IPO road show.
Q. Okay. Had you disclosed to Illumina that you were launching your road show for your IPO?
A. No. But a press release from NASDAQ, I believe, with a pricing range was released publicly on the eve before Illumina filed its patent infringement lawsuit against us.
Q. Oh, so -- so you think the night before Illumina filed its patent infringement lawsuit is when NASDAQ issued its press release about your IPO pricing?
A. I -- that's what I recall, is that there was a

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formal -- because we filed the IPO. There's some period of time that transpires before an IPO road show would start. And it's really once that road show starts with a pricing range that then I would say it's pretty well-known in the industry that you'll be then trading as a public entity. At least back in 2014 it was about two weeks after that date.

Q. You're not suggesting that -- that Illumina put together a complaint overnight and filed it the next day because you were going to be going out with your pricing road show, are you?

MR. NAEGELE: Object to form.

MR. LITVACK: Objection. Mischaracterizes his testimony. Unnecessarily argumentative.

Go ahead and answer, Ken.

A. I, so, I mean, this is -- I don't know, obviously, exactly for certain what they did or did not do. My -- I'm left with the impression that they had already prepared that and they were waiting for the opportune time to release it, which, to me, seems that it occurred the day after there was a -- they would've well -- I believe it -- I believe it was well known that we would begin our road show and start pricing two weeks later. I don't think that's a mystery to anyone. So that's at least -- to me, it seemed like it was more

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than just a coincidence. I don't believe that they prepared it overnight. I believe that it had already been prepared in advance.

Q. But you don't know when -- why they filed it when they filed it. You're speculating. Right?

MR. NAEGELE: Object to form.

A. That's -- yes.

Q. Now, if -- if you look at this web -- GenomeWeb article, Exhibit 7, if you turn to the paragraph, I guess, fourth up from the bottom that begins "In addition." Do you see that paragraph?

A. On the first -- on the first page?

Q. Yes. Sorry, on the first page, fourth paragraph up from the bottom, beginning with the words "In addition."

A. Yes.

Q. It says: In addition to being highly competitive, the NIPT space has been -- has been highly litigious.

Do you see that?

A. Yes.

Q. And then next to that it says that in 2011 Ariosa actually sued Sequenom to invalidate a patent. Is that right?

MR. LITVACK: Objection on foundation.

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This argument -- this article wasn't written by Ken Song, so I'm not sure what you're asking him.

MR. PFEIFFER: You really have to stop with the speaking objections. That's going to be very problematic. You can object to the form of the question, and then we'll go on from there.

Q. (By Mr. Pfeiffer) Sir --

MR. NAEGELE: I also object on the foundation as well.

Q. (By Mr. Pfeiffer) It's consistent with your understanding, having been at Ariosa as its CEO, that it sued Sequenom in 2011. Is that right?

A. Yes.

Q. Okay. And then it also says in early 2012 Sequenom returned volley and sued Ariosa, alleging patent infringement. Is that also correct to your understanding?

A. It was -- I believe it's on the same patent matter between us sort of doing a declaratory judgment and then them coming back and suing us on that specific patent.

Q. And the last sentence in that paragraph says: Later that year, Verinata and Stanford University also took Ariosa to court accusing it of patent infringement.

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Is that also consistent with your recollection that in 2012 Verinata and Stanford sued Ariosa for patent infringement?

A. Yes.

Q. And that was prior to Illumina acquiring Verinata, wasn't it?

A. I believe so.

Q. And that Verinata/Stanford case wasn't resolved by the time you filed your S-1 in 2014, was it?

A. It was not.

Q. But there had been a claim construction hearing that supported the view that Ariata -- Ariosa, rather, had infringed the Verinata and Stanford patents. Is that right?

MR. NAEGELE: Objection. Foundation.

A. Yeah, I don't recall the details of timing around -- it's, like, I don't know what the claim construction and this and that and what the outcomes. I don't recall the dates around that in relation to the IPO.

Q. Okay. We'll let that speak for, I guess -- there'll be other records of that.

Are you suggesting that Illumina's 2014 infringement suit after it bought Verinata was not

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well-founded?
MR. NAEGELE: Object to form.
A. Yeah, I think our -- yeah, our belief is that that infringement lawsuit that they filed against us was not -- that there was no credible basis for that.
Q. In fact, didn't a federal jury ultimately find for Illumina on that patent claim and award it millions in damages?
MR. NAEGELE: Objection. Leading.
A. So, you know, I know that they're -- at least during our, my tenure at Ariosa, and shortly thereafter through my involvement with Roche, there was multiple patent matters in dispute with multiple appeals going back and forth.
I think we've been very consistent, at least my view, and the company, Ariosa's view has been very consistent throughout, that we did not have, we did not infringe on any patents that were being accused against us.
Q. Were you not aware that a federal jury did find for Illumina on the patent infringement claim against Ariosa and award it millions in damages?
MR. NAEGELE: Objection. Leading.
A. No, I'm aware of that, but I also -- I don't recall whether -- again, I just stopped following the

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back and forth. I don't know if that was -- I can't recall if that was formally appealed or whatnot. And then I -- I do believe I saw something recently that there was ultimately some type of settlement, again. But I don't know what patent matters and what the outcome of that was. It was just something that was published, I think, just a few weeks ago, actually.
Q. And we may come to that. Were you aware that the federal circuit affirmed that jury verdict in Illumina's favor of infringement by Ariosa on appeal after it was appealed?
A. On which patent -- again, which patent?
Q. The patent suit under, in the 2014 Illumina lawsuit that you talked about being close in timing to your road show.
A. Again, I, that sounds familiar. Again, I -- it is, I literally just did not -- it was the different lawsuits. I don't -- I don't know ultimately the final fate of what happened and all the back and forth. Particularly since post our being acquired in 2015 and my departure from Roche in 2016, I definitely did not keep as close tabs on this as I had when I was at Ariosa.
Q. Let's take a look --
MR. PFEIFFER: Marcus, would you put up

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Tab 10, please?
Q. (By Mr. Pfeiffer) You should see now what's Exhibit 08.
A. Okay.
Q. Would you open that, please?
A. Yes.
Q. I think you may have just referred to this. This is a GenomeWeb article from May 26, 2001, entitled "Illumina, Roche Agree to Settle NIPT Patent Lawsuits."
(Exhibit 08 was marked for identification.)
Q. Is that the article you thought you saw recently?
A. Well, I don't -- yeah, I just saw the tag line. I don't know that I saw the actual GenomeWeb article because I don't have a subscription to GenomeWeb.
Q. Okay. If you take a look within this, I guess it's the fourth paragraph in Exhibit 08, it says, "Verinata Health, acquired by Illumina in 2013, initially filed suit against Ariosa Diagnostics in 2012" at the beginning of it. Do you have that?
A. Yes.
Q. You'll see there in the next to last sentence, it says: In June 2018, a jury awarded Illumina $26.7 million in damages for patent infringement

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stemming from the 2014 lawsuit.
Do you see that?
A. Yes.
Q. Do you have a basis to dispute what's said in that GenomeWeb article?
A. No.
Q. Okay. Than it subsequently says: Ariosa appealed, and in April 2020 the U.S. Court of Appeals for the federal circuit affirmed the lower court's decision.
Do you have a basis to dispute that statement?
A. Nope.
Q. Now, did Ariosa ultimately complete the IPO that it submitted the S-1 for in March of 2014?
A. No.
Q. And Ariosa ultimately was acquired by Roche, you said. Right?
A. Yes.
Q. And Ariosa actually ended up raising more money by Roche buying it than it had planned to raise through an IPO, didn't it?
MR. NAEGELE: Object to form. Leading.
A. I don't know by "raised." I mean, Roche ended up acquiring the company outright, and so, you know, it became part of Roche. Whereas the IPO process would

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have, you know, brought in funds into the company to continue operations obviously as an independent entity. So I think -- they're a little bit different.

Q. That's fair. The dollar value of the IPO was substantially less than the purchase price that Roche paid for the company. Fair to say?

A. I think because we never did -- I think the projec- -- I don't remember the projected terms of what the IPO would have valued the company at. Obviously we don't know what the value would have been because we never completed the IPO process.

Q. Does it ring a bell that the figures were discussed in the range of the IPO raising between 56 and $69 million?

A. I don't know the exact numbers, but that -- that seems to be a reasonable ballpark based upon what I recall and what I think IPOs were sort of doing, you know, back then.

Q. And Roche acquired Ariosa in 2015. Is that right?

A. Yes.

Q. Do you recall approximately how much Roche paid to acquire Ariosa?

A. There was an upfront payment. I can't remember. It was like 400 or 425. Somewhere between

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four and 450 upfront. And then there was contingencies of milestones that was about I think around another 200 or so.

Q. So approximately around $600 million total?

A. Yes.

MR. PFEIFFER: And, Marcus, would you put up Tab 8, please?

Q. (By Mr. Pfeiffer) You should have now in your folder what's marked as Exhibit 09. Would you please open that, sir?

A. Yes.

Q. And Exhibit 09 is a document reduced to a PDF from a web page. It is a Roche press release from December 2nd, 2014, entitled "Roche Acquires Ariosa Diagnostics and Enters the Noninvasive Prenatal Test, NIPT, and Cell-Free DNA Testing Services Markets."

(Exhibit 09 was marked for identification.)

Q. Do you have that document in front of you?

A. Yes.

Q. This is another one you might want to zoom in on just a little bit. There is a quote attributed to you, I guess, just -- just above the "About Ariosa Diagnostics" line. It starts with the words, "We are thrilled."

A. Yes.

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Q. It says: We are thrilled to join forces with Roche to continue in our commitment to bringing forward high quality and affordable genetic testing that positively impacts the medical care of patients around the world.

And then it says: Said Ken Song, M.D., CEO of Ariosa.

And that was an accurate quote of you, wasn't it?

A. Yes.

Q. And did Roche, in fact, help develop and commercialize Ariosa's Harmony test after the acquisition?

A. I don't know by, I mean, develop? When they acquired the company, our tests had already been on the commercial market. There was -- I think there was one addition to it over time in terms of test content, but most of the development had already been completed by us.

Q. So I'll reframe my question, then. Did Roche actually continue to expand the commercialization of your Harmony -- or Ariosa's Harmony test?

A. Yes.

Q. You also had mentioned in your testimony back in March that Ariosa had switched from an NGS-based

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approach to a microarray-based approach for its Harmony test. Is that right?

A. Yes.

Q. And you did succeed in making that conversion, didn't you?

MR. NAEGELE: Objection. Leading.

A. Um, yeah, I mean, it probably depends on how you define "succeeding." We -- we were able to convert the current test content we had at the time over to the array-based format, but in terms of the plans that we had, had we stayed on an NGS platform, we were not able to further make those development efforts on the array-based platform.

Q. The Harmony test did ultimately go to the commercial marketplace after you switched to microarray technology. Right?

MR. NAEGELE: Objection. Leading.

A. Yeah, I would say that it continued. I mean, we continued to offer the Harmony test first through use of the Illumina sequencing HiSeq platform. And while we still had it on the marketplace, we transitioned to an array-based readout format while we were a commercial product.

Q. And after you transitioned to the microarray technology, you continued to offer the Harmony test

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commercially?
A. Yes.
Q. On basically a global basis. Right?
MR. NAEGELE: Object to form.
A. Yes.
Q. And is -- Ariosa's Harmony test is still being sold by Roche as an NIPT test option today, isn't it?
MR. NAEGELE: Objection. Leading.
A. I believe so. I haven't actually checked to see where it's still offered, but my understanding is that it is still available.
Q. And is it the case you don't know where it's currently available?
A. That's correct.
Q. Okay. Have you checked? Have you tried to keep track of where it's available?
A. No.
Q. Is it fair to say that at least -- at least at some point you understood that the Harmony test had been commercialized in more than 100 countries around the world?
MR. NAEGELE: Objection. Leading.
A. It was -- while we were still at Ariosa, yeah, we were offering it in, I think we said 100 countries and territories because I think some of them were not

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necessarily countries but recognized territories or regions.
Q. And do you know what the state of the commercial availability is today? Whether it's larger or smaller than those hundred countries and territories?
A. I don't know.
MR. NAEGELE: Object to form.
Q. (By Mr. Pfeiffer) Didn't Ariosa at least publicly state that the switch to microarray both lowered cost and sped up turnaround times?
MR. NAEGELE: Objection. Leading.
A. I don't, I don't know if we made -- I don't know in what form or if we made, and how we made those statements. Did it lower costs? I can't -- I can't -- I don't know if it lowered costs based upon projected cost or if we had a slight cost advantage. Because I think the array pricing that we got was slightly below what we might have been paying on a, on the sequencing cost.
Probably -- as I go back, I'm trying to recall. It cost us probably on a per sample basis, I think, yeah, even with the array it was a little bit less than -- I think it was about like a few dollars or something compared to our per sample sequencing cost.

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Q. And --
A. But our sequencing costs were low to begin with.
Q. So is it the case, then, switching to the microarray lowered costs and increased turnaround -- or decreased turnaround time?
MR. NAEGELE: Objection. Form.
A. Yes, we had slightly lower costs and our turnaround time improved.
Q. Now, I think you also mentioned in your March testimony, and I wanted to just ask you briefly, that there came a time before you switched to the microarray technology where Illumina wanted to charge Ariosa a higher, I guess, license fee. Does that sound familiar?
A. There is multiple conversations that took place post the announcement of their acquisition by Verinata as it related to our supply agreement. In some instances the idea of a license fee did come up.
Q. And do you recall having heard that Illumina and others, including Sequenom, had a patent pool that applied to some of the NIPT-related technology?
MR. NAEGELE: Object to form.
A. There was -- I do recall a patent pool. That terminology being used. I can't recall exactly when

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that came about because I do know that there was some discussions between Illumina, Verinata, and Sequenom. I don't know when they sort of combined their, the patents or whatever they did to put in that patent pool.
Q. And were you aware that the patent pool charged basically all licensees the same fee? It didn't differentiate among individual users?
MR. NAEGELE: Objection. Leading.
A. I don't -- I don't know the details of how they construed the pricing for their other customers, but it wasn't relevant to us. And so the way it was is that if someone was using Verinata's methods or Sequenom's methods, which was a massively parallel shotgun sequencing, and needed those patents to practice, then, yes, the patent will apply.
In our case where we used a completely different approach, even when we were on sequencing, the patent pool was not relevant.
Q. And so you don't know, then, in answer to my question, whether the patent pool was charging everybody the same price?
MR. NAEGELE: Object to form.
A. That is correct.
Q. Okay. Do you know approximately how many

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companies were -- were competing in the NIPT marketing space before Illumina acquired Verinata in 2013?
A. In the U.S. I could point to that because we had a very good understanding and visibility.
Q. Okay. Whom did you understand to be in the NIPT space in the U.S. before Illumina acquired Verinata?
A. So the way the market worked in the U.S. was there was a handful of laboratories that could actually do the testing, you know, Ariosa, Verinata, Sequenom, and Natera. And then there were multiple other laboratories that would forge relationships with one of those four companies to effectively serve as a distributor of the test. So entities like Labcorp and Quest and ARUP and a whole bunch of other smaller regional labs.
And so depending upon how you looked at it, you know, you could say there was a lot of laboratories that were offering the tests. But some of them were offering it via a distribution arrangement with one of the four main labs that were performing the test.
Q. Didn't some additional companies enter the NIPT testing market after Illumina's acquisition of Verinata in 2013?
MR. NAEGELE: Objection. Leading.

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A. I think that what we saw in the NIPT landscape was it developed very quickly. You had sort of the first four entrants, and it was relatively complex technology. And then you started seeing other entrants coming in, I believe even before Illumina acquired Verinata. I think particularly overseas.
But then I think you just -- that that just -- that market continued to evolve with more and more entities starting to offer the test themselves by performing the test themselves.
Q. So -- so more companies were at that first level of the market rather than being distributors. Is that fair to say?
MR. NAEGELE: Object to form.
A. When you say -- what do you mean by "first level"?
Q. Yeah, that wasn't a great question. Let me try that again.
You described the original four participants in the marketplace as companies that were actually the -- above the distributor level labs. Right?
A. Okay, Yeah.
Q. And there are more -- there were more such companies after 2013 then there -- and Illumina's acquisition of Verinata than there were before 2013?

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MR. NAEGELE: Object to form.
A. Yeah, a number of companies doing the testing themselves. Yes. That -- that continued to grow.
Q. And there are still a number of companies in that space today, in the NIPT space, doing the testing themselves, aren't there?
MR. NAEGELE: Object to form.
A. (Inaudible.)
(The Reporter requested the answer be repeated.)
THE WITNESS: I said yes.
MR. PFEIFFER: I am -- I am going to pass the questioning and reserve my remaining time for questioning after counsel for the FTC questions you again.
MR. NAEGELE: Great. I think we've been going for almost another hour, and I think it's time for a lunch break, if that's okay with everyone.
MR. LITVACK: How much more -- are we off the record? Let's go off the record.
THE VIDEOGRAPHER: Okay. Thank you. One moment, please. We are going off the record at 12:15.)
(Recess taken 12:15 p.m.- 12:52 p.m.)
THE VIDEOGRAPHER: We are back on the record. The time is 12:52. Please proceed.

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MR. LITVACK: Dylan, you're on. I think we're back on the record. It's your turn to ask questions.
MR. NAEGELE: Okay. Yeah, I think I had some technical -- technical issues.
* * *

EXAMINATION

BY MR. NAEGELE:
Q. Dr. Song, have there been any leadership changes at Omniome recently?
A. Yes.
Q. What leadership changes have happened at Omniome recently?
A. Could you specify a timeframe, and I can walk you through the changes that have happened?
Q. In the last year.
A. Okay. So in the last year we've had some changes at the CEO level. So in the sort of late summer, early fall time frame, I think this was sort of around September or so, we had a transition of the former CEO, Dave Mullarkey. And -- and then there was a gap in the -- and then, actually, at the same time that Dave Mullarkey was transitioning from the company, we brought in Richard Shen as the chief product officer

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full-time for the company. And that happened almost sort of contemporaneously.

And then we actually brought in a new CEO named Robert Wicke, W-i-c-k-e. I believe he officially started in November of 2020, but that didn't quite work out that great for either of us, and so he transitioned from the company just in the end of April of this year. So about six or so weeks ago. And with that, we promoted Richard Shen from chief product officer to president.

Q. After Mr. Wicke's departure, has Omniome continued to look for a CEO?

A. We just actually kicked off that process recently.

Q. When does Omniome anticipate hiring a CEO?

A. That's always difficult to say because we definitely want to find the right type of individual. I would say that the phenotype of the individual that we're looking for is -- is someone that really could be more externally-facing for fundraising purposes, primarily. And we hope to be able to bring that individual into the company, you know, generally it takes about three to six months.

Q. What benefit -- strike that.

Is there a benefit to Omniome of having a CEO?

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A. Yes, I would say there is.

Q. What is the benefit to Omniome of having a CEO?

A. I think most organizations have a CEO. So I think just in terms of that, just from sort of what's standard and conventional, that's -- that's one. And I think that does have some relevance for the employees.

But I really believe that, for us, a CEO is someone that could guide the company's overall sort of strategy, I would say. Particularly as it relates to capitalization strategy. So, financing and things like that.

The type of individual we're looking for is not someone that really has much technical or product development expertise because Richard, as president, you know, really has that capability to lead the organization. So someone who's more financially savvy and obviously can understand the overall product development attributes, et cetera. But it's more someone who's financially savvy and can -- and can interface with investors, bankers, analysts eventually, and even potential, you know, strategic partners and things like that. Someone with a stronger finance business background.

Q. Have the leadership changes over the last year

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impacted Omniome's plans for commercialization?

A. Well, I would say that the -- there's, I mean, there's been some impact. I would say that different leaders would have different perspectives on sort of how to commercialize and what type of product it is that we'd want to get out into the market.

So there has been some differing views, but I don't think that they were overall material. There were other factors at play, from, from my perspective, that really have sort of influenced and guided the product development timeline.

Q. In your opinion has not having a CEO impacted Omniome's timeline for commercialization?

A. Interestingly, in a way having Richard be president probably has been a big positive and has probably really helped the company towards getting towards a -- visibility on both the product and the timeline. And so oddly, the, the absence of the CEO, particularly recently, has been, actually been -- been fine. And -- and actually, if anything, having Richard be president has been an overall positive as it relates towards product development, timelines, et cetera.

Q. I want to change gears and ask some more questions about the instrument that Omniome is developing. What is the throughput of the instrument

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that Omniome is developing?

[redacted]

So depending on which instrument, I can talk to its anticipated throughput.

Q. So I guess taking a step back, what is throughput?

A. Throughput really refers in the next-generation sequencing space around output or amount of data generation, which is normally measured in a unit of giga bases. So it's the number of bases that ultimately you can sequence. And that is derived from looking at the number of individual sequencing reads multiplied by the average read for each of those reads. And so that's how throughput or output is normally viewed.

Q. Is throughput a metric that you would track?

A. Yes.

Q. Why?

A. Well, for users of next-generation sequencing, throughput matters because they have a certain amount

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of data that they're expecting to generate for their application, with some applications requiring a lot more data generation relative to others.

[redacted]

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[redacted]

Q. So what phase comes after the feasibility stage?

A. We call -- I mean, different organizations call it something different, but it's product -- we call it product -- I think it's called, we're calling it product development stage.

Q. And what does that stage entail?

A. That stage really entails a very detailed timeline and set of activities to get to the final commercializable product being shipped out the door. So it's not as much exploration of different technical aspects. It's more integrating them and making them sort of more robust as it comes to repeatability and reliability, et cetera.

Q. What comes after product development?

A. Commercial launch, which may or may not entail beta programs and early access programs. That's more of a company-specific decision.

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Q. Moving back to product development, is product development a iterative process?

A. It still is, yeah. Because you're -- you're still putting everything together, and you're learning. And you -- you may still be making some adjustments and modifications along the way. But not to the degree that you would during the feasibility and planning stage.

Q. What kind of changes might you make during product development?

A. You might figure out how much -- I mean, there's a whole host. And I'm, you know, I could just cite a couple examples I'm aware of, but I'm probably not the best person to lay out all the details of what could be there.

[redacted]

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Q. You testified earlier that there's only one NGS on the market. Is that correct?

MR. PFEIFFER: Object to the form of the question.

A. Yeah, there's more than one NGS manufacturer, you know, depending how loosely you want to define next-generation sequencing. There's -- I would say there is -- I think people recognize that there's one clearly dominant player in the market.

Q. And what company is the dominant player in the market?

A. Illumina.

Q. How many sequencer models does Illumina offer, to your knowledge?

MR. PFEIFFER: Object to form. Lacks foundation.

A. There's the, I think there's the iSeq, the MiniSeq, the MiSeq, the NextSeq, the HiSeq, which may or may not be getting phased out, and then the NovaSeq. So those are different models, and within them they might have -- even within each one of those there might be some slight differences. Like there's a MiSeq DX instrument, which is a diagnostic version of the instrument. So but at least -- I would say at least five if not six sort of core models upon which each

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core there may be other additional systems.
Q. Are you familiar with the capabilities of these models?
MR. PFEIFFER: Object to form of the question.
A. To a certain extent.
Q. Dr. Song, would you mind repeating your answer?
A. I said to a certain extent.
Q. Are you familiar with the throughput capabilities for these models?
A. Roughly.

[redacted]

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[redacted]

Q. Has Omniome had to make any changes to the design of its instrument since it began development?
A. Yes. Quite a bit.
Q. What changes has Omniome had to make?

[redacted]

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[redacted]

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[redacted]

Q. Are you familiar with the term "early access customer"?
A. Yes.
Q. Does Omniome plan on offering a version of its instrument to early access customers?

[redacted]

Q. Do early access customers typically provide feedback on the product that they're develop -- sorry. Strike that.
Do early access customers typically provide feedback on the product that they are provided?
MR. PFEIFFER: Object to the form of the question. Lacks foundation.
A. That -- that is generally the, yes, that is generally the arrangement; is they're getting access earlier than normal with the intent to provide feedback

on a multitude of different factors back to the company.

Q. In your experience, how is that feedback used?

A. It could be used to help with the ultimate commercial launch. It could be everything from installation, service. You know, if it's a relatively minor -- if the feedback is something that could be relatively quickly modified into the instrument, then I believe companies would look to try and make that change. But obviously if there was something that was -- required a significant effort, you know, the company would need to think about whether or not they want to delay the launch to incorporate those or whether they'll just move forward and -- and perhaps incorporate that into a later upgrade or something else.

MR. NAEGELE: Thank you. Those are all the questions that I have.

MR. PFEIFFER: I do not believe I have any further questions.

MR. LITVACK: Nothing from me. So I think we can go off the record.

MR. NAEGELE: Great. Thank you. Before we go off the record, I just wanted to thank Dr. Song for taking the time to talk to us today.

MR. PFEIFFER: Very much so. Thank you, Doctor.

THE VIDEOGRAPHER: All right. Thank you everyone. One moment please. This concludes today's testimony given by Dr. Kenneth Song. The total number of media units used was four. All media will be retained by Veritext on a local secured drive and redundantly stored in the Veritext-managed Amazon S3 cloud services for preservation purposes. We're going off the record at 1:15. Thank you.

(Deposition concluded at 1:15 p.m.)

(Signature was reserved.)

* * *

CORRECTION & SIGNATURE PAGE

RE: Illumina, Inc. vs. GRAIL, Inc.
Federal Trade Commission Docket No. 9401
KENNETH SONG, M.D.; TAKEN JUNE 2, 2021
REPORTED BY: VICKY L. PINSON, RPR-CCR

I, KENNETH SONG, M.D., have read the within transcript taken June 2, 2021, and the same is true and accurate except for any changes and/or corrections, if any, as follows:

PAGE/LINE	CORRECTION	REASON
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Signed at _____, Washington, on this date: _____.

_____
KENNETH SONG, M.D.

REPORTER'S CERTIFICATE

I VICKY L. PINSON, RPR-CCR, the undersigned Certified Court Reporter, authorized to administer oaths and affirmations in and for the states of Washington, Oregon and California, do hereby certify:

That the sworn testimony and/or proceedings, a transcript of which is attached, was given before me at the time and place stated therein; that the witness was duly sworn or affirmed to testify to the truth; that the testimony and/or proceedings were stenographically recorded by me and transcribed under my supervision.

That the foregoing transcript contains a full, true, and accurate record of all the testimony and/or proceedings occurring at the time and place stated in the transcript; that a review of which was requested.

That I am in no way related to any party to the matter, nor to any counsel, nor do I have any financial interest in the event of the cause.

WITNESS MY HAND this 3rd day of June, 2021.

_____
VICKY L. PINSON, RPR-CCR
Washington Certified Court Reporter, No. 2559
Oregon State Certified Court Reporter, No. 16-0442
California State Certified Court Reporter, No. 9845

Garrett H Anderson,Esquire
garrett@ghanderson-iplaw.com
June 3, 2021
RE: Federal Trade Commission v. Illumina/Grail
6/2/2021, Kenneth Song (#4595722)
The above-referenced transcript is available for review.
Within the applicable timeframe, the witness should read the testimony to verify its accuracy. If there are any changes, the witness should note those with the reason, on the attached Errata Sheet.
The witness should sign the Acknowledgment of Deponent and Errata and return to the deposing attorney. Copies should be sent to all counsel, and to Veritext at cs-midatlantic@veritext.com

Return completed errata within 30 days from receipt of testimony.
If the witness fails to do so within the time allotted, the transcript may be used as if signed.

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

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In the Matter of:

Illumina, Inc. and Grail, Inc.

March 24, 2021
Ken Song

Condensed Transcript with Word Index

For The Record, Inc.
(301) 870-8025 - www.ftrinc.net - (800) 921-5555

FEDERAL TRADE COMMISSION

ILLUMINA, a corporation, and GRAIL, a corporation) Matter No. 2010144

Wednesday, March 24, 2021

Remote Investigational Hearing
Federal Trade Commission

The above-entitled matter came on for remote investigational hearing, pursuant to notice, at 11:00 a.m., Eastern Time.

APPEARANCES:

ON BEHALF OF THE FEDERAL TRADE COMMISSION:
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I N D E X

WITNESS: EXAMINATION:
KEN SONG
BY MR. NAEGELE 3

EXHIBITS DESCRIPTION FOR ID
NONE

OTHER EXHIBITS REFERENCED PAGE
NONE

P R O C E E D I N G S
- - - - -

STIPULATION:
ALL COUNSEL PRESENT STIPULATE
THAT THE WITNESS SHALL BE SWORN REMOTELY
BY THE COURT REPORTER
* * *

Whereupon--

KEN SONG

a witness, called for examination, having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. NAEGELE:

Q. Good morning, Mr. Song. Thank you for appearing here today. My name is Dylan Naegele, and I am an attorney with the Federal Trade Commission.

Before we begin, I would like to ask the other persons with us today to introduce themselves for the record.

MR. LITVAK: Doug Litvak from Davis Wright Tremain on behalf of the witness and Omniome.

MR. ANDERSON: Garrett Anderson, solo practitioner, on behalf of the witness and Omniome.

MR. STEBINGER: Nick Stebinger from the Federal Trade Commission.

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MR. NAEGELE: Thank you.
BY MR. NAEGELE:
Q. Dr. Song, can you please state your name for the record?
A. Ken Song.
Q. Who is your current employer?
A. Well, my full-time employer is a company called RayzeBio, R-A-Y-Z-E-B-I-O, but I also serve as the chairman of the board at Omniome.
Q. Are you currently employed by anyone else?
A. No.
Q. Do you understand that you are appearing here today pursuant to a subpoena?
A. Yes.
Q. Do you understand that you will be testifying under oath today?
A. Yes.
Q. How did you prepare for today's hearing?
A. So I reviewed the subpoena for different areas that required some looking into -- you know, I went back and looked at some company documents just so that I was prepared for myself in case any specifics or details were going to be required. And then, you know, I also discussed things with counsel.
Q. Is there any reason why you would not be able

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to fully and accurately testify today?
A. No.
Q. I am going to ask you some questions today about Illumina, Inc. and Illumina, Inc.'s proposed acquisition of Grail, Inc. I will refer to them as "Illumina" and "Grail." If for any reason that's confusing, please let me know, and I can answer or sort of modify the term that I'm using appropriately.
So let me start off by asking, have you ever given testimony by deposition before?
A. Yes.
Q. How many times?
A. Deposition, once.
Q. And what was that matter?
A. That was with -- in regards to a company that I was priorly -- prior involved in, and that was in a litigation case that involved my prior company as well as with Illumina.
Q. What was that prior company?
A. That prior company was Ariosa, but at the time that the deposition was done, I was doing it on behalf of Roche, because Roche had acquired Ariosa, and so the suit was still ongoing at that time.
Q. Did the suit involve competition matters?
A. Well, it was -- it was patent-related, it was

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IP-related, and so competition, yes, because we both had similar products in the marketplace.
Q. Thank you.
Before we get into substantive questions, I'd like to explain a little bit about how today's investigational hearing will be conducted. All of my questions and your answers will be recorded by the court reporter. Please understand that you need to speak up and answer my questions orally so that the court reporter can record your answers. She will not be able to record a nod or a shake of your head.
To make the questions and answers easier to record, we should both do our best not to speak at the same time. If you do not understand one of my questions or if you cannot hear a question, I'd be happy to clarify it, rephrase it, or do whatever is necessary so that you and I understand each other. This is particularly important because we're conducting this hearing over Zoom.
I do want to remind you that you are under oath, so if at any point you realize that you've answered a question incorrectly or if you remember something else that would make your answer more complete, please just let me know, and we can add to your earlier answer right then while it's still on your

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mind.
If you need a break at any point, just let me know and we can take one. I only ask that you not request a break while we have a question pending.
Do you understand everything that I've told you?
A. Yes.
Q. Excellent.
You are currently accessing Zoom, correct?
A. Yes.
Q. Is Zoom working for you as far as you can tell at this time?
A. Yes.
Q. What is the full address of your current location?
A. 9880 Campus Point Drive, Suite 360, San Diego, California, 92121.
Q. Is there anyone else in the room with you?
A. No.
Q. What device are you using for this hearing?
A. I'm using a Thinkpad laptop.
Q. Do you have any form of communication with your attorney at your disposal?
A. I don't know what you mean by that. What does that mean? I mean, they're on the Zoom with us here,

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obviously, so that's a form of communication, and there is -- you know, if needed, we have the option to -- you know, during a break or whatever, we do have a separate breakout room virtually to be able to discuss things.

Q. Do you anticipate anyone trying to contact you while I'm asking you questions during the hearing?

A. No. I mean, my cell phone might ring, but that is not related to this. I can't help that from happening, so I won't pick it up.

Q. Thank you.

Will you tell me if anyone tries to communicate with you while I'm asking questions?

A. I will.

Q. To the extent that you do get some kind of contact, if you could let me know, I would be happy to take a break if you need to respond to something, but it is important that, you know, you not be involved in reading or responding to either text messages or emails while we're conducting the IH.

A. Okay, understood.

Q. If at any point our line of communication breaks down, I take it you do have a way to contact your attorneys?

A. Yes.

Q. Excellent.

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Dr. Song, would you please briefly describe your educational background, starting with college.

A. I was an undergraduate at the Massachusetts Institute of Technology, where I studied biology and was a premed major. I graduated in 1996. Then I went to medical school, the University of California, San Francisco, where I received my medical degree, M.D., in the year 2000.

Q. Thank you.

Would you now please give a brief overview of your career after receiving your M.D.?

A. After receiving my M.D., I went to work for McKinsey & Company, a management consulting firm in San Francisco, where I was an associate for two years. Then I left McKinsey and actually returned back to medicine, where I completed a residency in internal medicine at the University of California, San Francisco.

And then I completed a fellowship in gastroenterology, as well as a research fellowship, up at the University of Washington Medical School and also was doing my research at the Fred Hutchinson Cancer Research Center.

In 2007, I left medicine again and joined Venrock, a venture capital firm, and moved back down to

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California, the San Francisco Bay area, and I was vice president of Venrock, which invested in early-stage healthcare companies, from 2007 to 2010.

In 2010, I took up the position of chief executive officer at a company called Ariosa Diagnostics -- actually, at the time of founding, it was called Tandem Technologies, but we renamed the company eventually. There I served as CEO for approximately five years. This was a molecular diagnostics company where we ultimately developed a sequence of -- where we ultimately developed a diagnostic product for maternal-fetal health.

That company was then acquired by Roche in 2015, at which point I then joined Roche as part of -- where I became part of Roche and stayed there for a little bit over a year. In 2016 I left Roche and then took about six or so months off and moved down to San Diego, and in the fall of 2016, I joined Metacrine, which is a biotechnology company working on drug discovery, as their president and chief executive officer. So that was in -- I think in the fall of 2016.

And then in the spring of 2017, I took on the executive chairman role at Omniome. Then in June of 2020, I left Metacrine as president and CEO, and then

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later that month, in June of 2020, I joined RayzeBio as president and CEO, where I continue to serve in that function, and I also have continued service as the chairman of the board at Omniome since 2017.

Q. Other than your work at Omniome, did any of the work that you mentioned involve DNA sequencing?

A. At Omniome, yes.

Q. Sorry.

Would you please read that question back.

(The record was read as follows:)

"QUESTION: Other than your work at Omniome, did any of the work that you mentioned involve DNA sequencing?"

THE WITNESS: Oh, other than.

Yes. So at Ariosa we were pretty significant users of DNA sequencing technology for our diagnostic tests, including the use of the Illumina sequencing platforms.

BY MR. NAEGELE:

Q. Thank you.

Would you please describe Omniome at a high level?

A. So Omniome is a life science tools company. So that means that the company was founded with a goal of making life science instruments that would be useful

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for research as well as, you know, potentially clinical and other uses.

The focus for Omniome has been on developing -- and ultimately what it hopes to commercialize -- a DNA sequencing system. So that would include a sequencing box or piece of hardware that would physically be sold, and then there would be, you know, reagents and other things like that that would also be sold to a company so that that sequencing box or -- you know, could be used.

Q. When was Omniome founded?

A. So Omniome was founded actually back in 2013.

Q. And where is Omniome located?

A. In San Diego, California.

Q. How many employees does Omniome have?

A. It has about 160 or so. I don't know the -- I don't recollect the exact number, but in that range.

[redacted]

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[redacted]

Q. And what products is Omniome developing?

A. So we're developing a DNA sequencer. So this is a system that would be able to sequence -- you know, not just DNA, but also any type of genetic material, like RNA, et cetera.

The focus of our technology is to provide, in industry terms, a reasonably mid to high throughput system, meaning that we would be able to generate a fair amount of data each time a customer would want to actually perform a sequencing run. And by "sequencing run," that means, you know, start to stop to doing an analysis, right, or a running of samples.

THE REPORTER: I'm sorry, a running of?

THE WITNESS: Samples.

THE REPORTER: Thank you.

BY MR. NAEGELE:

Q. How is throughput measured?

A. Throughput is usually measured by number of bases that you can provide through your sequencing

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reaction. That's probably conventionally the way people look at it. So they talk about -- you know, there's a term called gigabases, and sometimes people will just say Gs, so how many gigabases of output can you generate in a sequencing run, which would consume, like, one kit, right, and one sort of finite period

[redacted]

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[redacted]

Q. So in your position as chairman of Omniome's board, what are your responsibilities?

A. So there's, you know, standard board member responsibilities in terms of just governance, making sure that the -- that we're having appropriate board meetings, that there's appropriate disclosures and information that's being shared, you know, voting matters as they relate to shareholders and board

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consents, et cetera.
I'd say one of the big things is obviously ensuring that we have the proper management in place, but, you know, for me, I also -- you know, I'm in close contact with the CEO as well as some other senior executives just to sort of get updates in between board meetings and when they happen. I would say, you know, I'm in touch pretty much on a weekly basis, you know, with members inside the company to understand what's going on and will provide, you know, strategic input.
I don't want to use the word "direction," because my job is not to run the company, but I do try to provide input based upon information that's shared with me.
Q. How often does Omniome's board meet?
A. Quarterly.
Q. Do you have any other interactions with the board besides the quarterly meeting?
A. Yeah, there will be communication or contact if there's something going on, such as, you know, if there's a material development, like if there's a financing or if there's perhaps a senior executive employee issue, which can be good and -- or not, I mean like promotions and things like that, or if there's concerns around senior management, then that will also

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be discussed amongst the board members.
There are committees, compensation committees and audit committees that will also meet at separate times outside of the formal quarterly board meetings.
Q. In your role as chairman, do you have any interaction with Omniome's investors?
A. Yes. Some of those investors sit on the board as well.
Q. How often do you interact with Omniome's investors?
A. It varies by the investor. Obviously, if an investor is on the board and also serves on one of the committees that I'm involved with, that -- I'll have more frequent involvement. There are some investors where I have, you know, almost no contact at all.
Q. Shifting gears, I have some questions now about the sequencer that Omniome's developing. What chemistry is Omniome considering using for its sequencer?
A. We're using a chemistry that -- we are using sequencing by binding chemistry, and maybe the simplest way to think about this is it is a base-by-base interrogation and extension that occurs that relies upon imaging to be able to detect the sequences.

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Q. Is the size of the instrument important?
A. To whom?
Q. Sorry. To your knowledge, is the size of a sequencer important to the customer?
A. I think it matters for some. You know, some customers have a limited amount of space in their laboratory, so they don't want a very large footprint, you know, thing that's taking up a ton of space.
In general, you know, my understanding is customers do like to have things that could fit on a standard laboratory bench so that you don't need specialized, you know, equipment or seismic fitting to a room to accommodate it.


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[redacted]

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[redacted]

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[redacted]

Q. When Omniome commercially releases its sequencer, who does it anticipate being its target audience -- target customer?

A. I think our target customer is anyone that's interested in currently doing next-generation sequencing.

[redacted]

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[redacted]

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[redacted]

Q. Would there be a benefit to Omniome in having FDA approval?

A. There's definitely a -- if you have an FDA-approved instrument and FDA-approved reagents and kits, then it makes it easier for diagnostic labs to use that, especially those that, you know, aren't CLIA labs, right, because then they can just use an FDA-approved product. And even for CLIA labs, they would not need to go through their own separate process and internal validation. They could just use an FDA-approved product and start offering the testing.

[redacted]

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[redacted]

Q. If customers are using non-RUO instruments, would that process be the same?

A. Well, by "non-RUO," you mean an FDA-approved instrument?

Q. Yes.

A. So the process could be different. So if there's an FDA-approved instrument and there's already an FDA-approved test kit for that instrument, it should be relatively straightforward for a customer just to use that instrument and buy that test kit.

If there is an FDA-approved instrument but the test itself is not approved, then there could be, you know, cooperation that's needed between a laboratory testing provider and the instrument manufacturer to try

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and see whether or not they can get a test kit or a test approved on an FDA instrument.

Q. What kind of cooperation would that be?

A. I think that can run a pretty broad spectrum of different types of cooperation. It's a question of, I think -- you know, again, I'm not the expert here on this, having -- not having done it, but I think I could contemplate that, you know, a laboratory testing provider might say, I just want to get my test approved just for me, right, or they could say I want to get my test approved as a kit on your instrument that can then become widely available to everyone else.

In that latter situation, I would assume that a laboratory testing provider there might want to, you know, reap some of the economics from the testing kit if they work with a testing kit man -- if they work with an instrument manufacturer to work with them to get that test kit approved. So, again, I think there's different ways of how people want to get FDA approval, if they wanted to get it. So there's not a single way to do it.

Q. You mentioned a kit approach. What would Omniome's involvement be if one of its customers wanted to get an FDA-approved kit?

A. It would -- it would depend, again, on how the

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different components of that testing process wanted to be approved and who wanted to control that approval. So, I mean, Omniome could be involved or any instrument manufacturer could be involved in production of perhaps primers that are specific to the test content, and I guess the question is, who would that manufacturing and production lie upon? Would that be upon the manufacturer, like Omniome or Illumina, or would that rely upon the customer or some other third party through which it could be compatible with your sequencing system?

Q. Would Omniome be involved with any of the interactions with the FDA?

A. If it's off of our instrument and we were involved in the manufacturing of some of the reagents, then I would assume yes.

Q. What would -- what kind of involvement would that be?

A. In what -- I guess I'm just trying to -- like, it depends. In what scenario are we -- I just want to make sure we're talking about the right scenario.

Q. Certainly.

In the event that an Omniome customer wanted to get FDA approval for a kit or a test that ran on an Omniome sequencer, would Omniome have to be involved in

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any interactions with the FDA?
A. I would say if Omniome's manufacturing some of the components of that kit, then most likely yes.
Q. By "components in the kit," do you mean reagents or the instrument or something else?
A. Well, if the instrument's already approved by the FDA and there is no further modifications that are needed on any aspect of the instruments or the reagents that are used on those instruments, if those are all FDA-approved, then I don't know that there would need to be much more on the instrument portion.
But if there are -- you know, obviously if there's any things that need to be even modified or slightly changed, then I would assume -- again, I'm not a regulatory expert -- I assume that there would need to be some direct involvement from the company on those matters.
MR. NAEGELE: So we've been going for about an hour now. Let's take a short break. Let's come back at 9:03 Pacific time. Does that work for you?
THE WITNESS: Yes.
(A brief recess was taken.)
BY MR. NAEGELE:
[redacted]

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[redacted]
Q. And what is the difference between long-read technology and the technology that Omniome is using?
A. So people typically talk about short-read verse long-read technology, and that usually is distinguished by whether or not you're sequencing hundreds of bases or if you're sequencing many, many thousands of bases.
And there's fewer applications for the longer

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read technology that's out there, and so it's really been more of a niche application. There is some potential for overlap if you're trying to sequence, like, a human genome or something like that, but the reality is that the shorter read technology applications, which we fall into and Illumina and Thermo Fisher, would be more broadly applicable for the sequencing market.
[redacted]
Q. To your knowledge, is BGI currently selling instruments in the United States?
A. I -- I honestly don't know whether or not they are right now.
Q. I'd like to shift gears and ask some questions now about intellectual property and next-generation sequencing. Earlier in our conversation you mentioned that your position involves engaging with some of Omniome's investors. Have any of Omniome's investors required due diligence related to Omniome's intellectual property before investing in the company?
A. Yes.

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Q. And why do you think that investors have required due diligence into Omniome's intellectual property before investing in it?
A. Intellectual property -- well, first, intellectual property diligence is fairly standard for any type of investment that's made, but I think that in this particular instance, there's probably more attention on it given Illumina's fairly aggressive litigious sort of aspect of how they've just behaved in the marketplace.
Q. Would you mind explaining a little more what you mean by Illumina's litigiousness?
A. So Illumina has been -- I think it's -- it's perceived by the marketplace that Illumina is very aggressive in how they go after different companies and even customers in regards to intellectual property. You know, they've -- they've amassed a fairly large IP estate, but, you know, I think they -- they will use that, you know, sometimes -- and I've experienced this directly as Ariosa, that they will use it almost as a weapon, actually, to try and ensure that they maintain their dominance in the sequencing space.
And it's actually a bit intimidating, you know, because I think the expectation is that even if you have complete freedom to operate around Illumina, which

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we believe we do, that it's almost an expectation that Illumina is going to come after you and sue you, regardless of whether or not there's any merit to the intellectual property case, if it threatens their, you know, business or revenue, and I think that's pretty widely known, so -- and they have done it, right? They have filed a lot of lawsuits. They're out there quite a bit.

Q. What actions has Omniome undertaken to ensure that it has freedom to operate with its intellectual property?

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[redacted]

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[redacted]

Q. To your personal knowledge, how does Illumina do that?

A. So I'll speak based on my prior experience at Ariosa Diagnostics, where we were in situations where we were trying to sell our system, which ended up being a nonsequencing-based option, where Illumina would go to our customers or our prospective customers and tell them, well, you know -- you know, that's -- that either doesn't have adequate patent protection or if you do that, you know, not only is the company infringing, but you're potentially liable for infringing as well.

So, you know, they're not saying that they're going to sue their customer, but they're definitely insinuating that that's a possibility, and I think they also use that to perhaps threaten the customer -- the customer might still need to use Illumina's sequencing

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products for other applications, right, not just specific to -- in my case of Ariosa, on behalf of Ariosa, in the case of NIPT, that was just one application.

But if a customer needs Illumina for, like, 80 percent of their other tests, you know, I think Illumina indirectly sort of said, well, you know, if you need to be reliant upon us for that other stuff, you should really use us for everything.

So, look, I mean, they have been around. They're super smart. They're super successful. I think they have an army of lawyers there. So they know kind of -- I would anticipate they kind of know what they might be able to get away with, but it's -- but I would -- I would say it's sort of a -- you know, they're kind of the big bully, and I remember I thought of this back in my Ariosa days, that they literally do -- I believe they literally use their IP as a weapon to try and control the marketplace, and people are scared of them because of that, because they're really the only solution that's out there in a pretty large and expanding NGS market.

[redacted]

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Q. Does this threat of IP litigation -- has this threat of IP litigation reduced the number of investors that would be willing to invest in Omniome?

A. I would say that -- yes, but I think it does give some investors pause and concern. One investor or some investors are likely to say I don't know how you're going to be able to go up against the giant, because everyone knows they're very aggressive.

[redacted]

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[redacted]

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[redacted]

Q. What is the process for changing the adaptors in an assay?

A. You would need to redesign your primer. So you would need to remove those P-5/P-7 adaptors, and then you would need to put in new adaptors into that. It's not that trivial because sometimes customers may have already made a big investment in securing sufficient supply of those primers or have supply agreements with third-party manufacturers, et cetera.

And also, for companies that provide those primer kits, it's a level of investment for them on their manufacturing line, obviously their oligo synthesis, to change the primer -- there's a level of investment in production that would need to be made in order to make that happen, and how many of those suppliers would be willing to do that in advance before another sequencing technology was out there and well

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adopted is TBD.

It's sort of like the chicken and the egg, right? I mean, we would need, you know, like Agilent or Roche or others to invest in building these adaptors that could be compatible for us to be able to get our sequencer out, but they might be, like, well, why are we going to invest in changing these processes in the adaptor design if you yet don't have a footprint in the marketplace for your sequencer? So it is like a chicken and egg problem.

Q. Are there any other challenges in changing adaptors?

A. Ah, there's -- depending upon the adaptor sequences, that could or could not interfere with the other aspects of the primer in terms of causing aggregation or primer dimers or things like that, but, again, that's why you need to invest in studying that, to make sure that you don't run into those problems.

[redacted]

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[redacted]

Q. Is there anything else that a laboratory would need to do in order to run an existing assay on an Omniome sequencer?

A. Well, you mean -- aside from having to change out their entire primer design, I mean, I'll say that up front, but, you know, we would be able to -- I think we would be able to -- you know, again, maybe there's some other smaller things, but that's sort of the big one I would say.

Q. Does Omniome --

A. Oh, there is another thing where -- I'm just trying to -- I'm just thinking through. Depending on how they're doing their sequencing -- again, when you're sequencing, there's this concept of sequencing the DNA that you want, and then sometimes you'll sequence a second read, and sometimes people have adapted their work flow and even their primers and their flow to do this sort of second read. That could be a sample tag or that could be reading the DNA the opposite way again.

So they might need to change that because there is some -- there is some intellectual property out there that would require them -- that requires them to

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do -- that they're doing where they could -- they could utilize an alternative method, but they would need to change their work flow a bit to accommodate for that as well.

All of these things are easily solvable, right, and a lot more I think easier to implement if you didn't have the adaptor issue or the second-read issue. Then it would be very simple for the customers to adopt another sequencing technology, at least operationally, but those two are posing some -- those two elements do pose barriers to adoption.

Q. What is the reason for a second read process?

A. What is the --

Q. Let me rephrase that.

Why would a company do a second read?

A. There's several reasons. One is you might -- the way you've constructed your sample, you might want to -- some people have this thing called a sample tag or another tag on the DNA in their primer, and they might not want to sequence the entirety of the DNA. They might want to just sequence part of it, and then they might just want to see a tag that they've put on the other end of the primer to sort of associate and understand what that sample -- where that sample belongs to, because sometimes you will mix a whole

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bunch of samples together, and so you need to be able to sort of bin those. So that would be a common use of a second read, is in order to read that sample tag rather than having to read through the entirety of the DNA insert sequence.

Sometimes they might do a second read because you might want to read both a top and the bottom strand of a DNA template, because you want to maybe ensure that there's fidelity in your sequencing, because sequencing is subject to some errors. So those would be probably two of the more common uses of a second read.

Q. And you mentioned that there was intellectual property related to second reads. Who owns that intellectual property?

A. Illumina owns some of the second-read IP. I don't know if others own others, but -- but I do know that Illumina owns a second-read IP technology that is being widely practiced by customers today.

Q. Other than the adaptor issue and the second-read issue, does Omniome anticipate any other challenges for a company that wants to move an existing assay onto Omniome's instrument?

A. Like, technically, those are probably two of the big ones. I mean, if you put -- if you put those

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aside, it probably really streamlines the ability to switch, you know, from an Illumina sequencer to like an Omniome or to anyone else's sequencer, right, for that matter. Anyone that's developing a sequencing instrument is going to face this same problem, you know, this stranglehold on these P-5/P-7 adaptors where the entire marketplace has sort of designed their primers to incorporate those, and then the second-read aspect, which becomes used by a lot of users out there.

But you take those two things away and you probably really open up the options that become available for customers in terms of what they can use.

[redacted]

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[redacted]

Q. For clinical customers, will they need to design their own tests to run on Omniome's sequencer?

A. For a clinical customer that's using an Illumina sequencer today, they can't just immediately switch over and start running our system without some

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investment in modifying their up-front work flow, if -- because of the P-5/P-7 adaptor issue. If that -- if the P-5/P-7 adaptor issue wasn't there, for instance, if we could just -- if we could actually use P-5/P-7 adaptors in our clustering process or something like that, then there would be -- then the customer would not need to worry about that, and so they would have more flexibility, right, without requiring that level of investment to be able to utilize, you know, our sequencer or someone else's sequencer if it were to come to market.

I mean, I guess theoretically it's possible that an instrument manufacturer could just ignore the P-5/P-5 ID, but they're obviously subjecting themselves to potential intellectual property issues.

Q. To your knowledge, if a laboratory buys an Illumina sequencer today, does it need to develop any tests that -- all tests that it runs on it or are there commercially available tests that it can purchase to run on it?

A. Yeah, my understanding is there's commercially

[redacted]

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[redacted]

Q. Is having multiple kits available for your instrument important for launching?

A. It definitely helps with ease because some customers don't have the sophistication or the wherewithal to design their own primers, and so, you know, they're literally just a consumer of -- and purchaser of multiple different components to do a sequencing run.

[redacted]

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[redacted]

Q. Are there any other challenges that Omniome anticipates facing in obtaining broad acceptance of its instrument?

A. So there's several. I mean, we have already touched upon some of the issues practically with some

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of the adaptors and the secondary just challenges. There's the -- I would say overall just concerns that, you know, that's out there just for litigation in general. You know, regardless of the adaptor or regardless of the second read or whatever, I mean, those are clear things that Illumina -- like, right now, people use the Illumina P-5/P -- like the customers use the P-5/P-7 adaptor without really having -- I'm not sure if they have a license or what to use it, but Illumina could obviously use that to go after their customers, right?

Essentially, they don't care right now and they don't care with the -- with the suppliers of this. Like, I don't think this -- I don't know that the sequencing library kit providers will necessarily have a license from Illumina, right, to be able to make these, because it works for Illumina. They're like, oh, of course, you're developing this. They sell these kits, and it helps obviously Illumina's sequencing products to be utilized.

You know, if there's -- if there's a landscape where the -- the -- like a sequencing library supplier all of a sudden starts making kits that are compatible with our instrument or someone else's, you know, Illumina could go to them and be, like, oh, wait, you

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need a license now for our P-5/P-7, and put those sequencing suppliers at a disadvantage to others who aren't working with us. You know what I mean? It's like they haven't yet exerted that power, but that's definitely something that's theoretically possible that could be done. So that's on the sequencing library providers.

But just in general, Illumina doesn't really need -- you know, they can just sue you if they wanted to or file an infringement against somebody, regardless -- they can just point towards a patent that may not be directly related or they could use -- you know, I have a concern that, you know, Illumina, which is providing their sequencing solution to a lot of customers, I don't know if they have exclusive -- there might be some -- again, I don't know, you could check with others -- but there might be supply agreements that kind of require customers to predominantly use Illumina's reagents or whatever for specific applications. So customers might be locked in on a supply agreement or -- so that's a concern.

Yeah, it's just like the supply agreements or even the -- if a customer started using our instrument as well, would that -- would that -- would Illumina use that knowledge to perhaps still supply that customer

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but perhaps -- again, very discretely -- you know, modify their supply agreement terms or perhaps their service response time is a little bit slower.

Again, these things are very difficult to sort of say they are being deliberate about it, but I think that gets -- that gets customers nervous, is they're relying upon the Illumina system still for other things, or if they're running a clinical test, it's not like they can just snap their fingers and switch the instrument over, because they need to validate that.

But there are -- there are things that -- tactics and other things that can be done by Illumina that can -- I think customers are nervous about this, right, because they've seen it. So that's a concern for us as a barrier to adoption.

Q. Have customers mentioned any of these concerns to Omniome?

A. Again, I don't know that they have. I can't speak to that just because I haven't been involved in those direct conversations, but, again, speaking on behalf of a big -- of a laboratory that ran an Illumina sequencing product and then it was selling products against Illumina in my first company, I can tell you that it was definitely a concern.

Q. A little while ago you mentioned that companies

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running clinical tests would need to revalidate. What does that mean?

A. So if you tweek any part of your testing process, you need to do some type of validation to ensure that ultimate end results are not materially different. So using like a bridging type study, and the size and the extent of those bridging studies can vary depending upon the testing that you're doing and the degree of the change that's being done and worked through.

Q. To your personal knowledge, how long would that process take?

A. So speaking personally, having had to do this at Ariosa, where we had to switch off of the Illumina platform to a different detection platform, we had to first do research and development on that aspect, and then we had to do the validation. It was all hands on deck for our company for about a year to be able to -- so we basically halted all other development efforts.

Now, ours was much more of a dramatic shift because we were going from sequencing to an Affymetrix array-based readout. You know, had there been -- had there been another sequencing technology available that could meet our throughput, that switchover would have been probably much quicker and much more efficient.

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It would have still required us at Ariosa to have done a redesign of our adaptors, because we would have needed to come off the P-5/P-7, but, again, if we didn't have to do the P-5/P-7 change, that would have been even simpler and even faster there.

So, again, you can see there's different elements of how much are you changing, right? We changed our detection platform, so that was a pretty substantive investment. If we -- if we could have gone to -- if Omniome had existed then, we would have then needed to redesign our primers and our libraries and validated that -- which could have been done, it would have still taken some level of investment -- or we could just use our exact same P-5/P-7 -- because we had P-5/P-7 primers. If we could just use those exact same primers, then actually the switching could have been done pretty quickly, because we would have just, side by side, run the same samples and the exact same sequencing library.

We wouldn't need -- the only thing that's different is the readout, and we could have actually done that pretty fast, and as long as the results were comparable, we could have then switched over to a different sequencing platform.

Q. So I have a somewhat foundational question to

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ask. What is -- you mentioned the term "library." What is a library in this context?

A. A library means when you take any sample, right, so it could be a tissue sample, a blood sample or whatever, ultimately you're taking the -- you're purifying the -- let's, for instance, talk DNA. You purify the DNA fragments out of there. You can't just throw those DNA fragments into the sequencer and say go sequence, right? You have to make a sequencing library, because you have to put, like, tags or things on the ends of those DNA little fragments so that they can then be amplified, because, again, with Illumina's technology and ours, you can't just do single-molecule sequencing. You need to create more copies of it.

And so the only way that you can create more copies of it and then put those copies on a slide that ultimately you can do a sequencing reaction on, you need to put these primers, right, that have these adaptors or these other sequencers on that, and so that process of -- you know, from taking the purified DNA to then creating in solution a mixture of DNA that has these now tags and primers on the end of it, that's what a sequencing library is.

Q. And you mentioned a term "tag" as well. What is a tag in this context?

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A. Well, a tag could be -- again, a lot of times people will mix samples. So they might take ten patient samples and put them into a single sequencing run. You have to have a way to deconvolute, to know whose data belongs to which one of those ten original samples. So as part of that initial design on those primers, you may sometimes put a tag on it, like -- that's called a sample tag, because that could be sequenced and then identified, which of that sequence belongs to which individual or which sample, and that comes into the whole second-read concept, is, you know, you might just need to read the first 30 bases of a sequence to know where it belongs. That's all the information that you want. You don't need to read the rest of the couple hundred. Then you can sort of stop and then say, okay, then we'll just now read that sample tag, which becomes like your second read in the sequencing reaction.

Q. Let's change gears somewhat. You mentioned you previously were CEO of Ariosa. What was Ariosa?

A. Ariosa was a company that we started in I believe late 2009, 2010, with the focus on developing a noninvasive prenatal test for pregnant women, and basically the general concept was to develop a -- first a CLIA-based test offering where we would receive blood

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samples from pregnant women that were taken after their doctor ordered it, and then we could actually look at the fetal DNA, so actually the DNA from the fetus, that was circulating in the mother's blood. So through a maternal blood sample we could actually analyze the fetal DNA and report out on different genetic conditions, such as trisomy 21 or Down's syndrome, and also provide information on the -- you know, whether or not the fetus was a male or female.

Q. Who founded Ariosa?

A. So technically the founders was this husband and wife called the Mitchells, so Mike Mitchell and Aoy Tomita Mitchell, along with their sister, Haley Mitchell, and then I got to meet them when they were still very early stage, when I was at Venrock as an investor, and then I got involved because we provided a little bit of seed financing, and then I became the CEO.

Q. When Ariosa first began -- I guess, when did Ariosa first begin providing NIPT?

A. I think we commercially launched the test in 2012.

Q. And in 2012, when Ariosa first began providing NIPT, what was its relationship with Illumina?

A. It was great. Illumina was an investor in

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Ariosa. I believe we were the first customer -- one of the first, if not the first customer to take the HiSeq, getting installed in our laboratory. So we bought two instruments from Illumina.

We had multiple meetings with their CEO and senior management to update them on our plans, and Jay Flatley, who was CEO at the time, actually was a personal investor himself in Ariosa as well, and so we had very close ties on multiple levels with them as an investor, you know, with them as a partner, with us as a customer, us giving feedback to them on HiSeq, and there were a lot of people that were at our company that were at Illumina previously.

Q. What kind of information did Ariosa provide about its business to Illumina?

A. Because they were an investor and they were an important strategic supplier to us, we provided a fair amount of detail. We shared with them our overall vision of what we wanted to do with the product. We shared with them pretty a detailed cost structure of what we had done to innovate, with the goal of us being able to provide our test to as many women as possible, because we really thought that this was a universal test for all pregnant women.

Q. So shifting back a little bit, I have some more

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foundational questions about NIPT.

When was NIPT first commercialized?

A. I think the first test became available in 2011.

Q. At that time, in 2011, were there other diagnostic approaches that could detect the same fetal abnormalities?

A. Most people working with cell-free DNA. So the first commercialized test that predated us, there was a company called Sequenom, and then I think -- it might have been in early 2012, a company called Verinata that Illumina ended up acquiring also had developed a test looking at the cell-free circulating fetal DNA, but their approaches were very different than ours.

They used something called a shotgun approach or what we called random sequencing, which was much less efficient. They required about ten times more sequencing than we did and, as a result, obviously consumed a lot more of the sequencing reagents from Illumina. We were all using Illumina, by the way.

Q. Were there any ways of detecting fetal abnormalities without using NIPT?

A. People had tried to isolate fetal cells, but that technically became just very difficult. I still think to this day that's not the commercially available

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test. The standard of care at the time had been to do a combination of both ultrasound as well as serum protein-based testing, but the issue with those tests were that they only picked up about -- they were only accurate 70 percent of the time in detecting those conditions of the fetus, but more importantly, they had a 5 percent false-positive rate.

That meant that one in 20 women that would undergo this test would be incorrectly told that they were at high risk of having a fetus with genetic conditions when, in fact, they were not, and the consequence of having that false-positive was that these women would then be recommended to undergo an amniocentesis or another invasive procedure called CVS that would then pose a normal fetus at risk of inadvertent loss secondary to the invasive procedure.

Q. What is amniocentesis?

A. Amniocentesis is a sampling of the amniotic fluid. It involves the insertion of a fairly large needle, you know, externally into the pregnant belly of the mom. It's a -- it's pretty disconcerting. I mean it's a needle like this long (indicating). It gets poked through the skin into the -- into the womb, right, where the fetus is, and then they sample fluid out of that, and then they can take that fluid, send it

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to a specialty laboratory, and there they can directly analyze the genetics of the fetus that way.

But because it's invasive, it carries with it a risk of up to 1 percent of fetal loss secondary to that invasive procedure. So we were trying to avoid -- we were trying to provide a solution that prevented unnecessary invasive procedures due to the high false-positive rate that was currently the standard of care.

Q. At the time that Ariosa first launched this test in 2012, what kind of patients received NIPT?

A. So it was predominantly women that were older age, those who would be considered higher risk women, or women who had received a positive screening result from, you know, one of the serum protein or ultrasound-based tests, but we also had women who didn't fit that category also be interested in our test because we initially marketed our test as a test for all pregnant women, not just a subset of them, and we used -- we wanted to ensure that pricing was established such that it could be affordable to the broad population.

Q. Why did Ariosa target a wider patient set?

A. Because clinically it was the right thing to do, right, and it was a test that was -- that had value

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to every single pregnant woman, not just a subset of them.

Q. How would Ariosa have been able to offer the test to all women?

A. Well, I mean, just through marketing, right, and through talking with physicians.

Q. Was price important for offering the -- offering NIPT to a wider patient set?

A. Absolutely.

Q. Why is that?

A. Well, it was just the realities of our healthcare system and also affordability. So what we launched and that came onto market, the two predecessor tests from us, the ones that were using the shotgun or the random approach from Sequenome and Verinata, they were pricing their tests at about $2,700 to my recollection, and we came to market, I believe, at $795, you know, which was considerably less, obviously by about $2,000, which actually shocked them as well.

But we were able to do that because we had developed a targeted approach where our consumption of Illumina sequencing reagents, again, was tenfold lower. So we had purposefully designed and developed our test to be one that would have a lower cost structure and, in turn, that gave us the flexibility to offer a lower

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price to the marketplace.

Now, I will tell you that that was not well received by Illumina, the fact that we could use less sequencing and provide the same amount of information.

Q. How did Illumina react when it found out that Ariosa planned on doing this?

A. Well, I don't think that they did anything immediately. I mean, you know, we had a supply agreement in place with them. I remember when we first shared this with them, to Jay Flatley, the CEO, and other senior executives, I think like their head of diagnostics, their CFO, et cetera, I do remember we showed them the slide on how much sequencing we needed, and, like, their eyes popped up and were, like, wait, you don't need a football field of sequencers?

And we were, like, no. Like, what other people need, like, a hundred sequencers for, we could get it done with, like, five or eight, and we were very proud of that actually, but they -- I know their eyes popped, and especially I remember Jay just be like, "Ah, that's interesting."

But, yeah, when we first launched -- this was when all of us were independent companies -- we had great adoption of our product. You know, we continued to provide Illumina updates, business updates on how

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things were progressing because, you know, they were an investor in ours, and we continued to have strategic discussions with them.

Q. At that meeting that you mentioned where you showed the slide to Jay Flatley, when was that meeting?

A. That was pretty early on, I think when we were still doing our development. So probably, if I had to guess, it would have either been later 2010 or in 2011.

Q. What was the purpose of that meeting?

A. They had reached out and said, you know, we would love to sort of understand how people are, you know, going to use sequencing. NIPT looks like a great application for it. You know, we were buying instruments from them, and we wanted to sort of share with them our -- you know, they asked, and we also were willing to share with them sort of our long-term vision for what we wanted to do with the products in the prenatal space.

Q. Who was present at that meeting?

A. So we had -- we had several meetings with them, like not just one. You know, Jay Flatley I believe was at -- was he at every single one? He was definitely at the majority, if not all of them. I remember Christian Henry being in the room, who I think might have been CFO at the time. I remember Crane Harris, he was a

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business development person, in the room. I remember Greg Heath, he was a diagnostics person. And in some of those meetings also -- not all, because I remember he wasn't in all -- but Nick Naclerio was in those meetings. He was a business development or corporate development person.

And then I think at one of these other meetings, I think like their chief medical officer at the time was also in one of them. I remember Jay was in that room because we were meeting in the conference room right next to his cubicle at Illumina.

Q. And what was discussed at these meetings?

A. It was like our corporate update, confidential. It was always done under confidentiality, under CDA. So we gave them a confidential update on our progress, what we thought about putting in the tests, the cost structure, launch plans, future product development plans.

Q. Did -- did Illumina make any representations to Ariosa about firewall -- information firewalls between the information obtained from Ariosa and the rest of Illumina?

A. Not -- not to my knowledge. I mean, the people we were negotiating the supply agreement with were in those meetings, so there wasn't a firewall there, so...

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Q. Earlier in our conversation about NIPT, you mentioned Illumina's acquisition of Verinata. Did Illumina's acquisition of Verinata change Illumina's relationship with Ariosa?

A. Absolutely. It was night and day different.

Q. What changed?

A. So I got a call from Jay Flatley on the -- on -- just prior to the release of the press -- of the announcement that Illumina was acquiring Verinata, and I remember it distinctly because I was in the guest bedroom of my house in Sunnyvale on a Sunday when I got the call.

And he said, "Ken, I just want to let you know that an announcement will be coming out later today that we acquired Verinata." I said, "Whoa, that's interesting." He said, "but I want to assure you we're committed to, you know, supplying Ariosa. We want to still see you guys be successful. We don't see this being a conflict of interest," blah-blah-blah-blah-blah.

So I believe right after that I made -- this was right before JP Morgan, so it was January. I had then sent an email to him saying, look, it would be great if we could sort of sit down and meet to discuss what the implications of this are. And so Jay agreed

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to that. So we had a breakfast meeting -- I still remember it well -- in the Westin during JP Morgan with Nick -- with Jay Flatley, Nick Naclerio, and John Sponaugle, who was my chairman, and myself.

And, again, Jay and Nick had given us assurances -- it was really Jay doing the talking, though, saying, like, look, we are committed. Obviously we are investors in you, blah-blah-blah. We want to work with you. We believe we can make this work.

So we then discussed our interest that obviously he has to understand we have some concerns, because now our supplier is our competitor, so what we wanted to do was to ensure that we would have longer term supply, assurance from them, because we were now commercial in offering this testing to patients, and we wanted to have a continuation of the pricing that we had negotiated with them before they acquired Verinata, that they had agreed to.

And we also asked that they provide us with the same field, you know, because we had been inside of a very narrow field, trisomy and all, so we said give us the same field as everyone else and honor the pricing that you have given to us for several more years. And I remember Jay Flatley said, not a problem, we'll take

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care of that. I said great, we're happy to hear that, although I was nervous until we actually could ink it on paper, because I just -- you know, follow up with us and we will give you that assurance.

Coming out of that JP Morgan meeting, I sent a followup email immediately to Nick Naclerio and CC'd Jay Flatley on it and said, great, as per our discussion, this is what we would like, and then things turned the other way. They were like, well, we need to re-assess, we need to re-evaluate. Jay Flatley started excusing himself from the discussions. We started becoming very concerned because the simple ask that we had all of a sudden didn't look like it was going to happen so easily.

I actually reached out to Bill Rastetter, who was chairman of Illumina at the time and also a venture partner at Venrock, to try and intervene, to make sure that we were just being treated as a -- that our requests were being honored that Jay had verbally said would not be an issue, but then this led towards many, many months of back-and-forth with Illumina then coming back to us and basically increasing the cost by a factor of ten in our supply agreement, which obviously was not going to work for us, because they wanted us to have the same cost structure as Verinata and these

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others who had this random sequencing method.

Q. If Ariosa had the same cost structure as Verinata, would it be able to offer its test to average-risk women?

A. No. We would have had to have increased -- our price point would not -- that would not have been sustainable for us.

Q. Earlier you mentioned Ariosa's field. What does "field" mean in this context?

A. Well, just like, you know, for prenatal testing. We had visions of expanding beyond just trisomy to also include the ability to detect infectious disease and all these other things, where literally in a single blood tube a pregnant woman and their doctor could receive a richness of information. And, again, because we were targeted, we would be able to offer a lot of this information still at very low cost.

Q. Is "field" something that would be included in a supply agreement?

A. Yes.

Q. Does -- what purpose does "field" serve in a supply agreement?

A. It tells you that if you're acquiring products from somebody, what you can actually use those reagents

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or those products for for commercialization. So, like, we couldn't buy -- we would have been restricted in our supply agreement to purchase Illumina's sequencing reagents and then use that for, you know, transplant rejection testing, right? We would need to go back and negotiate a separate field extension to do that.

Q. To your knowledge, why did Illumina include that field provision in its supply agreement?

A. Well, my assumption is that they would perhaps want to think about different pricing depending upon what the field is. They might sell you the exact same stuff at a different price, right? So, you know, I could imagine if you're going to do cancer testing where it's many thousands of dollars, they might say, well, okay, in that instance, your supply agreement terms might be a little bit different, even though you're purchasing the exact same thing. It's about maximizing, I think, you know, revenue for them.

Q. At the time that Illumina acquired Verinata, what was Ariosa's field?

A. I can't recall exactly what it was, but I know that we had the ability to at least test for trisomy -- trisomy 21, 18, and 13, which were some of the three more common genetic conditions in the fetus. I believe that's -- yeah, I think that was -- I think it was

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trisomies or copy number variants, something along those lines.

Q. Are there other things that NIPT can test for?

A. Yeah. It can test for a single gene. It could test for potentially single gene mutations. So this would not be a copy number variant, per se. I think that's what we had, like if the copy numbers were different, but, you know, there's mutations. It could detect fetal sex as to whether or not there's a boy or a girl in it. Those would probably be the primary ones.

Q. Were any other companies offering fetal sex detection at the time?

A. They were.

Q. Which companies were those?

A. Sequenome was reporting on it, and I believe Verinata was or did shortly thereafter.

Q. Was Ariosa able to report fetal sex?

A. No, not initial -- well, initially we didn't, and we did eventually report out on X and Y chromosome numbers.

Q. Did Ariosa ask Illumina for the ability to call fetal sex?

A. We did.

Q. What happened when Ariosa asked Illumina for the ability to call fetal sex?

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A. They said that they would modify our field so long as we agreed to the price adjustment that they wanted to put into the agreement.

Q. What price adjustments did Illumina want to put into the agreement?

A. So just to give you a sense, what we were doing at the time was we were just buying reagents from them, and, you know, what that translated into was about a $10 per sample cost to us. Like, Illumina didn't know -- well, they knew it because we shared it with them on the slides, you know, but we only -- it only cost us about $10 in sequencing reagents to be able to perform the testing, 10 or 15, somewhere around there.

I believe in the early iterations -- and I can't remember which ones actually made it into the supply agreement, different drafts -- but I know that $150 test fee was sort of thrown out there from Illumina, which obviously was going to increase our costs by more than an order of magnitude.

I do believe we received at least a couple of different -- a couple of different drafts that had like a per-test fee of like a hundred dollars. You know, there was a lot of different models that were sent back and forth. It was always about a hundred dollars.

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They wanted a per test fee, so they wanted to know how many tests we were running and then charge us a per test fee on top of our sequencing reagents that we were purchasing, which didn't make any sense to us.

Q. What was the -- did Illumina explain why it was charging the -- why it wanted to charge the per test fee?

A. Well, they first said we just want to make it a level playing field for everybody. So, I was, like, what does that mean? We're not using your reagents, because -- because they said, well, others that are doing NIPT, you know, this is how much we're getting from them, so we just want to level the playing field. Like, to me, that was the -- like, I remember that phrase specifically, because I said, how does that level the playing field?

I mean, it levels the playing field for you in terms of the revenue you're getting, but we're -- we're paying more for the reagents and you're punishing us for innovation. They shifted gears and said, well, we have a lot of patents, so let's talk about it as a license fee to our patent. And we said we don't think any of your patents are relevant to this, you know, so why would we pay you this arbitrary per test fee when those patents aren't applicable?

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But they never budged, and we were never able to consummate a supply agreement amendment, despite an enormous amount of back-and-forth, and that forced us to have to switch to a different platform.

Q. Did Illumina explain what it meant by "leveling the playing field"?

A. I just -- I remember Nick saying, well, we think everyone should just, you know, compete along sort of similar cost structures or it should be the same for everybody. I remember this because it didn't make sense to me, like how are you -- why does Illumina have the right to dictate what the cost structure should be for the industry? And they clearly were trying to use their supplier power to do that, which was incredibly disconcerting and concerning to us.

Q. At this time, was Ariosa still offering its tests at a lower cost than the other companies?

A. Yes.

Q. Was it your impression that Illumina was attempting to raise Ariosa's costs to be in line with the other companies?

A. Yeah. They probably didn't care what we sold our test for, but they definitely wanted to get -- they definitely felt like -- I think Jay said this once, like they didn't feel like they were getting their fair

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share. They felt like sequencing was such an integral component to the test, they kind of felt like them getting 10 or 15 bucks wasn't representative of the value of what they were bringing. But then we said, but we've innovated, and I remember asking them, why are you punishing us for innovating?

Q. Who made the statement that Illumina wanted a level playing field?

A. I think it was Nick Naclerio, because Jay's -- it was amazing. Jay quickly tried to disappear into the background after that JP Morgan breakfast that we had, because he said, "Oh, Nick will take care of it." And then we started getting passed around to other people also, Charles Moehle, Crane Harris -- Crane Harris first and then Charles Moehle ultimately.

Q. And who was it who said that Illumina wanted its fair share?

A. I don't remember. I can't remember exactly who -- who said that.

Q. And do you recall who said that Illumina wanted the NIPT companies to have the same cost structure?

A. I think -- they didn't say it that way. I think they just said we believe that, you know, this test fee sort of -- you know, I don't know what the exact words were, but it was sort of like by providing

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this test fee, it sort of provides an equal playing -- an equal level playing field, right? It sort of puts everyone, you know, in the same boat.

Q. And do you recall who it was that said that?

A. I'm pretty sure it was Nick, but, I mean, he was the one who I was dealing with the most in the -- immediately post that JP Morgan meeting.

Q. Did Ariosa ever pay Illumina the fees that it requested?

A. We paid them according to the supply agreement that we had already executed, but we did not -- again, there was no supply agreement amendment that was made that had this concept of a test fee.

Q. At the time that Illumina acquired Verinata, who were Ariosa's largest customers?

A. Well, we had a partnership with LabCorp, so, you know, technically you could consider them maybe a customer, but we also had -- you know, and so in the U.S., most of our business was in collaboration with LabCorp and leveraging their channel, but outside the U.S., we had a lot of different customers.

LabCo in Spain was a big customer. TDL Genetics in the UK was a big customer. And Illumina started going after all of them directly, and actually Illumina ultimately was able to take LabCorp and form a

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separate agreement with them, which really, you know, became an issue for us because we lost our main distribution channel in the U.S.

Q. Did Ariosa attempt to keep its business with Labcorp?

A. We tried. I flew out to North Carolina and met with senior management, said, what can we do? How can we figure this out? But ultimately LabCorp -- Illumina did some type of deal with Labcorp. I don't know what the specifics of that was, but it was definitely -- they wanted to help LabCorp bring up their own NIPT solution on a sequencer, I think with the -- you know, I think with -- with one of the goals for Illumina being to try to hurt us as much as possible.

Again, this is hearsay, but I have heard that inside the board room at Illumina, Ariosa, a small little private company, became their number one target, and their goal was to actually try to drive us out of business, which was kind of scary and flattering at the same time, but I was, like, why is a $10 billion company just trying to pick on us, right?

But I think they saw us as being a threat, but in a single test area, which didn't make sense to me, and it was almost like, why are you picking on me, right?

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Q. How would Ariosa be a threat to Illumina?
A. Well, we were obviously promoting and commercializing our NIPT test at a lower cost, and the bigger market share that we had compared to Sequenome or Verinata or who else would -- you know, at the time, NIPT was regarded as probably the most exciting and maybe the most successful diagnostic test that could be launched, and when you think about the fact that there's 4 million pregnant women in the U.S. or 4 million births in the U.S. every year and then multiples of that outside the U.S., there's actually pretty sizeable revenue that could be realized from that.

And I think Illumina realized that as well, but the more and more we were successful, you know, Illumina was just getting, you know, $10 effectively per test that was run back to them, versus the more that Verinata or -- well, Verinata, they had a different incentive, because now they could get -- they could realize more of the economics because they're getting the test -- the overall test fee, but they liked Sequenom or Natera because they would get a 100 or 150 bucks from them each time.

Q. Did Illumina's changed treatment of Ariosa affect Ariosa's plans to offer NIPT to average-risk

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women?
A. Well, I mean, we still were committed to that, you know, so I don't think it changed our overall strategy. I think Illumina's imposition of this test fee, et cetera, I think as people started innovating -- and sequencing actually started getting cheaper as time went on, because we knew -- you know, as things scaled up, but I think these supply agreements that Illumina was able to essentially come into, I think Sequenom ended up having to have a supply agreement and maybe Natera, and I don't know what the economics were, but I understood they got kind of locked in.

I think what ended up happening is it prevented those other players from being able to lower their cost. So, if anything, it kind of -- I think for us we always maintained our cost, because we switched over to a different platform so that we could make the cost structure work, but I think Illumina's practices may have helped to keep the test price for our competitors still the same without seeing that cost reduction happen over -- that price reduction happen over time, which is really unfortunate because, you know, there were several of us, four players offering NIPT, and there were others that wanted to come into the space.

There's others that wanted to license our

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technology, you know, that had an Illumina supply agreement. This was actually really fascinating. They had an Illumina supply agreement, and then they wanted to license our technology, which we were open to, but then Illumina would not honor their ability to actually continue with the supply agreement if they used our test, to be able to offer it at a lower cost for average-risk women.

So I do think the net effect of this was that, you know, NIPT, while it continued to be a great success, ultimately, the broader adoption of it was probably stifled, you know, with a lot of that likely due to Illumina's actions and what they did post the Verinata acquisition.

So as a result of that, fewer women actually ended up getting tested, which ultimately translated into more unnecessary amniocenteses needing to be done, which ultimately led toward more fetal loss -- completely unnecessary -- of normal babies, and that to us was really upsetting, because that was the goal from our very start of Ariosa, was to make this test available to everybody so we could avoid the unnecessary amniocenteses and invasive procedures and not subject completely normal pregnancies to the risk of fetal loss. I think that is the price that society

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had to pay as a result of sort of all these shenanigans that happened post the acquisition of Verinata by Illumina.

Q. You mentioned that Ariosa had a conversation with a company that wanted to license Ariosa's test. What company was that?
A. There were several. I know Progenity, we had talked to Progenity, you know, we were talking with Quest, you know, we were talking with LabCorp. We talked with ARUP, and then we talked with partners outside the U.S., LabCo, TDL, and it became very clear that Illumina, once they got wind -- especially in the international markets that we were speaking to. Our partners told us that Illumina was making it very difficult for them to actually work with Ariosa, and they -- and that Illumina would send in their sales team, specifically on NIPT, to try and strike some type of different deal and to try to extract those customers away from us.

And what would have been sensible was to allow those customers to just acquire the Illumina reagents as they had already and then license our technology and run the Ariosa test, but Illumina did threaten, you know, litigation against their own customers, saying, well, you know, that might be in violation of some

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patents, et cetera, and -- because those customers told me that that was Illumina's -- I'm not sure that Illumina ever sued them -- they might have sued TDL -- but that became a legitimate fear, and then that spread through the community, right?

And this was another example of them using -- you know, again, the IP -- you know, it was like using IP against -- I think -- because we warned the FTC about this when they acquired Verinata. We wrote and said that this is not good for the industry, and unfortunately, it still went forward, and I think everything that we warned about ended up happening.

You know, it was different back then. Maybe Illumina wasn't as litigious or people didn't think this was going to be that big of a deal, but there were remedies that could have easily been put in to avoid the depth of the fallout from this.

But, yeah, Illumina used -- this is what I still think about. They literally used their position in the marketplace and their acquisition of Verinata and then their posturing of IP as a weapon. It literally was a weapon that they were using to try to annihilate us, Ariosa, as a company, and to try and scare their customers to be working only with them.

Q. After Illumina acquired Verinata, did Ariosa consider switching to another NGS provider?

A. Absolutely. We even bought a SOLiD sequencer from Life Technologies, we had several Ion Torrents, but at that time those technologies were just not suitable for clinical laboratory testing and the throughput that we needed.

Q. Why were they not suitable?

A. They just didn't have the throughput or they were much slower, and so our turnaround times would be much longer. The SOLiD instrument was not reliable in terms of its performance. So that's why we needed to move to a completely different modality.

Q. And what modality was that?

A. We moved over to a gene array from Affymetrix, called a GeneTitan.

Q. And what is a gene array?

A. It's a -- think of it like -- like on a glass surface, there's a lot of different probes or binder sequences that are there, and then when you -- when you bind DNA fragments to it, those DNA fragments you can ultimately attack with a fluorescent-type signal. So you end up reading sort of a fluorescent signal from your DNA sample on the array.

Q. What was the process for switching Ariosa's test to the Affymetrix array?

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A. It required us to halt every single other development project that we had to be able to shift resources to try and make this work, and there was high risk. We weren't sure that it could be done. I think people were doubtful because no one had ever done this before. But, you know, we had phenomenal scientists and developers, and so, you know, it took us about a year.

We started -- I remember -- after that JP Morgan meeting and then I think within the first month, when I could not get a supply agreement -- because, literally, this happened within, like, a week or two -- I remember discussing it internally with my team, and I'm, like, I think we have to fire up this project, because I have got a really bad feeling about this.

And so we pivoted while we were still in the negotiations with Illumina, and it's a good thing that we did, because had we not done that because -- you know, I think we would have been in a really bad situation at that point.

Q. When did Ariosa begin the process of switching to Affymetrix?

A. You mean in our laboratory?

Q. I mean the research and development process.

A. Oh, that was, like, within, you know, a couple of months after Illumina acquired Verinata.

Q. And when did Ariosa begin providing its tests on Affymetrix?

A. I think it was about a little bit more than a year later maybe.

Q. You mentioned that Ariosa paused its other research and development projects in order to make the switch. What were those projects that it paused?

A. We were working on a test to be able to detect something called DiGeorge syndrome. DiGeorge syndrome refers to a deletion of a specific portion of the chromosome that leads to pretty significant cardiac and other defects within a fetus and then ultimately the newborn.

We were -- we had a program there to try to develop a noninvasive way to detect that. Ultimately, it did get launched -- but, like, years later -- but we stopped that project, and there's benefits there, right? It can be detected earlier if there were things in the pregnancy, or you would have the child delivered in a specialized center so that they can be taken care of immediately.

We had projects looking, again, at trying to combine infectious disease screening of the pregnant women, infectious disease that could impact the

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pregnancy, so that was put on hold, and ultimately we just had to stop. We couldn't even develop the product once we moved off the sequencer to an array. It just wasn't possible to do. Yes, but those kind of projects.

Q. Why would it not be possible to do the infectious disease screening on an array?

A. We needed some better level of sensitivity to detect that, and so the array, you know -- it's like when you're counting chromosomes, you have many, many different DNA fragments across the entirety of the chromosome that you can look at, and so you have the power of numbers.

With infectious disease, you know, the genomes are much smaller, and so we weren't sure that the signals would be sufficient, but then also on the array you're kind of limited by the number of different sort of sequence-specific probes that you can analyze. Like, you know, there's scalability that you could do with sequencing, and that's just not possible when you go to an array-based form.

Q. You also mentioned that there was concern about the risk of switching to an array-based test. What would that risk be?

A. Technically we just could not make it work,

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because we're going from a sequencing digital readout to a fluorescent, more analog-based readout.

Q. After Ariosa switched to microarrays, what happened with its relationship with Illumina?

A. Well, it was already pretty bad at that point, so I think we kind of stopped -- we really stopped talking after -- like, we stopped trying to figure things out right after it seemed pretty clear that there wasn't going to be a viable path forward. There was still some back-and-forth trying to make something -- like, because we had not yet switched over to the array, we were still trying to figure out how we could make something work.

We ultimately succumbed to the idea of just paying this arbitrary test fee to them, and I can't remember if we sort of settled on, like, okay, fine, we'll give you another 25 or 30 bucks per test, which basically tripled our cost structure, and we would have gone forward with that, but they did not accept that.

Q. Did Illumina provide an explanation for why they would not accept that?

A. Well, they just felt like it wasn't -- that wasn't the right price, right? They wanted a hundred or whatever.

Q. Did Ariosa's switch to a microarray technology

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have any impact on Ariosa's market share?

A. Ah, it impacted ultimately, yes, our plans for being able to transfer our technology. So what we did is we moved from a CLIA-based offering to being able to actually provide other laboratories the ability to run our test, and I think it definitely impacted our ability in that second phase of our business because people just didn't like using microarrays. It required them to buy a separate instrument, and they weren't as familiar with -- you know, the sequencing was sort of all the rage, so why would you go backwards and use an array instead?

So I think it definitely impacted there, and our competitors that were offering testing tried to talk about the fact that the array-based methodology was not as robust, when in reality we published and we shared data that the methods were comparable, but they used that, you know, to sort of say, oh, sequencing is the newer technology, and so, of course, it's going to be better. So that was being counter-detailed against us out in the field.

Q. You mentioned that labs didn't want to buy a second instrument. Why is that?

A. Well, there's a capital cost, right, of a few hundred thousand dollars to buy an instrument.

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Sometimes there's the space, and then just needing to -- you know, it would have been -- for the array, it would have only been used for NIPT, right, our NIPT test. They wouldn't be able to use it for anything else, whereas with the sequencer, you could use it for NIPT as well as a whole host of other things that they might have been doing.

Q. What ultimately happened to Ariosa?

A. So ultimately we ended up getting acquired by Roche, which was good, but -- we actually had plans to go public before we got acquired, but that was completely derailed.

Q. How did that get derailed?

A. So, you know, we were obviously going back and forth with Illumina. We were still using their sequencer because we had not yet made the complete shift over to an array-based system. So, you know, we were still dependent on them for supply, right, for -- according to our supply agreement. You know, they had made -- they had made allegations that we may have been in breach of the agreement. We don't -- we never saw it that way.

But we had filed to go public. We were ready. I was in New York, and it was the day before we were getting ready to launch our IPO road show. We had just

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released -- NASDAQ had released a press release on the pricing range at 4:00 Eastern, and then five hours later I got a letter from Charlie Moehle at Illumina, business development, a formal letter saying that they were accusing us of breach of our supply agreement and that they had the right to terminate and cut off our supply to our laboratory, which -- and we were testing like a thousand samples a day at that point. So that's a material event.

So we had to put things on pause, and then the next day Illumina filed a patent infringement lawsuit against us on an assay patent, and then there was a press release about that. So that obviously just killed the IPO.

And I remember -- I did have a meeting with Jay Flatley -- I had seen him a few months later -- and I said, "Wow, Jay, that was -- that was pretty sneaky and pretty -- you know, targeted, what you did." He was, like, "What are you talking about? We had no idea you guys were going public. It was just a coincidence."

That's, I'm sure, the stance they are going to take, but that's a really, really interesting coincidence, six hours after the public press release of our pricing, the day before our road show, they file a material breach and then file a patent infringement

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lawsuit against us. Maybe it's coincidence. It didn't look like it to me.

Q. Did that have any impact on Ariosa's planned IPO?

A. Yeah. We couldn't do it. We stopped. The bankers and us, we agreed that there was no way we would have been able to pull it off. And the narrative is, well, you got acquired by Roche at the end of the day. Yeah, we did get acquired. We got acquired for a multiple over what our investors had given us, but had we been able to do the IPO, had we been able to sort of stay on the sequencing platform -- you know, we got acquired, right, for up to $600 million, you know, six months later, but we really were in the pole position.

We were the leading provider of NIPT, and just sort of look at -- and we had plans to go into oncology, et cetera, and look at where Natera and other companies are now, right? Those are $10 billion-plus companies, and I think we easily could have been the leader, right, leading the entire diagnostics field. So, yes, our investors made out fine, but it definitely thwarted our vision of what we thought we could have done.

Q. What oncology plans did Ariosa have?

A. We were looking at self-circulating tumor DNA,

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so this is kind of all the rage now of what Guardant Health and Freenome and others are doing, but we were early on looking and thinking about this and contemplating, you know, how we would do this, but then again, once the -- once we couldn't do sequencing, those things got killed, because the level of detection and sensitivity required sequencing, and it would not be detectable on an array. So we -- that project got killed.

Q. Why wouldn't that be detectable on an array?

A. Just the array doesn't have the level of sensitivity to be able to detect such -- these are such rare events, even more difficult than looking at fetal trisomies, so it was going beyond the technical possibilities of an array system.

Q. Could you have used polymerase chain reaction, or PCR?

A. No.

Q. Why not?

A. PCR, you need to look at the -- we're not just trying to understand the -- we're looking for a single point mutation normally in cancer. So PCR is not going to -- you can try to do allele-specific PCR, but that, again, is not going to give you the same level of sensitivity or detection.

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Q. Could you have used digital PCR?

A. No, because, again, with sequencing, sometimes these mutations are occurring at different parts in the genome, and that's what you ultimately want to detect. You know, with digital PCR and with PCR, you have to be specifically setting yourselves up and then you're reading a very short area, where the sequencing could be across a couple hundred bases or you could design your primers in a way to short of march up and down a gene of interest, and so both technically and also costwise, to try to replicate that in PCR, et cetera, would have been -- I think it would have been prohibitively expensive even if you could do it.

Q. When did Ariosa first consider looking at circulating tumor DNA?

A. I don't remember exactly when that was.

Q. Do you remember what applications Ariosa was considering for circulating tumor DNA?

A. Yeah, and it was for mutation detection, for early detection, or for treatment, and I know it was -- I know that we were -- I know that that's what we were looking at, because after Roche acquired us, Roche had an interest in it, and I remember we were, like, we had already thought about this, right? So we were able to contribute to some of that thinking.

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Q. What kind of earlier detection -- what kind of cancers was Ariosa considering detecting?

A. Well, I mean, it was going to be like a pan-cancer, we could look at multiple different types of cancers.

MR. NAEGELE: Let's take a short break and go off the record.

(A brief recess was taken.)

BY MR. NAEGELE:

[redacted]

Q. Did you have any discussions with Grail at any point?

A. Yeah, we did, but that was a little bit ago.

Q. What was the extent of Omniome's discussions

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with Grail?

A. We had different discussions -- interestingly, with Alex Aravanis, who is now the CEO of Illumina -- and also had a discussion with their prior CEO -- I forget her name, she was a woman -- and then actually had met with Hans Bishop -- I think it was at JP Morgan last year, you know, prior to Illumina's acquisition -- and it actually was -- we had talked to them about them actually looking to bring in a solution such as ours into Grail.

It was interesting because we thought they were using Illumina, but I think they were -- think they actually had a legitimate interest in working with us to improve their cost structure.

Q. How far did those discussions progress?

A. It was mainly discussions. You know, I think there was some understanding technically. We were kind of early at some point -- our technology was still quite early, but there was enough where at least the construct or the idea was entertained of -- and I thought it was interesting that they were open to actually looking at alternative solutions besides Illumina.

[redacted]

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[redacted]

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[redacted]

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Q. Great.

We're off the record.

MR. LITVAK: Could I just put on the record at the end, that the transcript is, like, highly confidential?

MR. NAEGELE: Yes.

THE WITNESS: Back on the record?

MR. NAEGELE: We are back on the record, yes.

THE WITNESS: So maybe just in conclusion, just to share with you some thoughts having been through the deposition, and also -- and being sympathetic towards -- you know, you are probably talking to a lot

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of people.

A couple of observations, having -- me having operated a clinical laboratory and been a user of sequencing and now developing a sequencing technology that's meant to compete against Illumina, it's always interesting to go down memory lane.

I think it's incredibly unfortunate what ended up happening at Ariosa and the relationship with Illumina, and ultimately, through really some Herculean efforts, we were able to get off the Illumina platform, but we were so nervous on whether or not that was going to be possible that really, right up until the end, we were still trying to make something work where we were willing to increase our cost structure by a factor of three or four because the technical risk of switching was so high, and I think most people believed it was virtually impossible, and yet we were able to get that done.

And, you know, now that I sort of see Illumina trying to acquire Grail, I mean, that's definitely going to create some challenges, you know, a customer/competitor/supplier is also a very tricky relationship, but I think the marketplace is a little bit different today than it was five or six years ago, because I think there are credible sequencing

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alternative technologies that could come to the market and could service the needs of these other customers of Illumina today and actually provide a reasonable alternative, but there are still barriers, right, towards that adoption.

Some of them are related to the P-5/P-7 adaptors, because it's not just the customers. There's a whole ecosystem around that, but freeing that up could obviously really open up potential switching and make it less painful for customers.

There's obviously the second read or the Paradigm read type technology that's also a big barrier, particularly for oncology sequencers, and so somehow opening that or not having that become an issue would be -- would be helpful.

But maybe the biggest one is just also how do customers just get protected in a way that they feel like Illumina is not going to come after them, right, with some frivolous lawsuit? It doesn't even have to be, you know, potential infringement. And I think that's where the concern is.

And so I think there's a world where Illumina could acquire Grail and you could still see good competition in the marketplace, but it's going to be with some concessions for Illumina to make, because if

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Illumina just acquires Grail and nothing else changes and that acquisition happens, I think we're going to see exactly what happened in the NIPT space, but probably amplified even more, and ultimately I think that will be a disservice to, you know, the field of medicine, public health, and to patients.

So, I mean, I just wanted to put that on the record. That's my own view, having been in a unique position of having experienced it firsthand and having lived through that, but then also having a pretty front row seat at sequencing technology development and where I think, you know, solutions and competition can still exist.

MR. NAEGELE: Counsel -- actually, Dr. Song, is there anything that you want to clarify while we're still on the record?

THE WITNESS: Ah, I think -- not that I can think of. I guess we'll see a transcript eventually to make sure that things are correct?

MR. LITVAK: Yeah. I can drop in at this point. So we will reserve the right to read and review the transcript and also want to designate the transcript highly confidential because it includes sensitive business information and also Omniome's trade secrets. With that, Dylan, thank you very much. We

can go off the record.
MR. NAEGELE: We're off the record.
(Discussion off the record.)
(Whereupon, at, 2:02 p.m. Eastern Time, the hearing was concluded.)

DISTRICT OF COLUMBIA, to wit:

I, Susanne Bergling, the officer before whom the foregoing remote deposition was taken, do hereby certify that the within-named witness personally appeared before me at the time and place herein set out, and after having been duly sworn by me, according to law, was examined by counsel.

I further certify that the examination was recorded stenographically by me and this transcript is a true record of the proceedings.

I further certify that I am not of counsel to any of the parties, nor an employee of counsel, nor related to any of the parties, nor in any way interested in the outcome of this action.

As witness my hand and notarial seal on March 31, 2021.

_____s/Susanne Bergling
Susanne Bergling
Notary Public

MY COMMISSION EXPIRES:
3/31/2023

CERTIFICATE OF WITNESS

I hereby certify that I have read and examined the foregoing transcript, and the same is a true and accurate record of the testimony given by me.

Any additions or corrections that I feel are necessary, I will attach on a separate sheet of paper to the original transcript.

I hereby certify, under penalty of perjury, that I have affixed my signature hereto on the date so indicated.

DATED:

_____
KEN SONG

WITNESS: KEN SONG
DATE: MARCH 24, 2021
CASE: ILLUMINA/GRAIL
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ERRATA TO DEPOSITION OF DR. KENNETH SONG (June 2, 2021)

CASE NAME: Illumina, Inc., and Grail, Inc., In the Matter of, FTC Dkt. No. 9401

CORRECTIONS

Page	Line	Now Reads	Should Read	Explanation
3	4	FOR OMNIOME	FOR OMNIOME and SONG	Mr. Litvack represented the witness
8	22-24	Do you understand that you're appearing today in response to subpoenas, a tested condom issued by the Federal Trade Commission, and the Respondents…	Do you understand that you're appearing today in response to subpoenas issued by the Federal Trade Commission and the Respondents…	Mistranscription
14	18-19	…how much to do of the engineering internally…	how much of the engineering to do internally…	Mistranscription
19	3-7	…it became understood that the necessary steps to actually get to an instrument that would be available for commercial launch was, required, you know, more integration, more work to get it to that point.	…it became understood that the necessary steps to actually get to an instrument that would be available for commercial launch required more work to get to that point.	Clarification
26	9	…I'm not really under…	…I'm not really aware…	Mistranscription
42	6	…a incorporation…	…an incorporation…	Clarification
53-54	53:24 -54:5	The details of that I'm not aware of in terms of how advanced those discussions have -- have taken place. But I am aware that there have been discussions with some entity around their interest to potentially be a prototype or, you know, an alpha/beta tester in the future.	I'm not aware of the details in terms of how advanced those discussions have been. But I am aware that there have been discussions with some entities around their interest to potentially use a prototype or be an alpha/beta tester in the future.	Clarification
59	6-7	…I would have seen likely the content of this.	…I would likely have seen the content of this.	Mistranscription

Page	Line	Now Reads	Should Read	Explanation
68	15	…the challenges of sequencing.	…the challenges of that sequencing.	Clarification
70	14	…that it could be useful…	…then it could be useful…	Mistranscription
79	21-22	…compatible with the Omniome beta or the Omniome sequencing system.	…compatible with the Omniome sequencing system.	Clarification
86	5	…the costing is still TBD…	…the cost is still TBD…	Mistranscription
88	16-18	…we've had a lot of changes at their leader -- at the, you know, in terms of leadership.	…we've had lots of changes in terms of leadership.	Clarification
90	8-9	…we're talking about now our -- our 2020 -- our early 2023 system?	…we're talking about our early 2023 system?	Clarification
127	17-20	… what we might have been paying on a, on the sequencing cost.	…what we might have been paying on a per sample basis compared to the sequencing cost.	Clarification
128	16	There is multiple conversations…	There were multiple conversations…	Mistranscription
141	5	Yeah, there's more than one NGS manufacturer…	No, there's more than one NGS manufacturer…	Clarification