

Exhibit 88

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

NETWORK-1 TECHNOLOGIES, INC.,

Plaintiff,

vs.

GOOGLE LLC and YOUTUBE, LLC,

Defendants.

Case No. 14-cv-2396

Case No. 14-cv-9558

SUPPLEMENTAL EXPERT REPORT OF MICHAEL MITZENMACHER, PH.D.

**CONFIDENTIAL OUTSIDE COUNSEL ONLY –
PROSECUTION/ACQUISITION BAR MATERIALS**

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1. INTRODUCTION

1.1. Retention

1. I have been retained as an independent expert witness by the law firm of Russ August & Kabat on behalf of Network-1 Technologies, Inc. to testify as a technical expert in the following lawsuits concerning U.S. Patent Nos. 8,010,988 (“the ’988 patent”); 8,205,237 (“the ’237 patent”); and 8,904,464 (“the ’464 patent”) (collectively, the “Asserted Patents”):

Network-1 Technologies, Inc. v. Google LLC and YouTube, LLC, 14-cv-2396 (S.D.N.Y)
Network-1 Technologies, Inc. v. Google LLC and YouTube, LLC, 14-cv-9558 (S.D.N.Y)

I refer to Google LLC and YouTube, LLC as “Defendants” or “Google” in this report.

2. In this expert report, I provide opinions regarding the Asserted Patents, and opinions relating to Defendants’ infringement of the currently asserted claims of the Asserted Patents. I expect to testify at trial on these issues, as set forth in this report, my prior December 20, 2019 and February 14, 2020 reports in these cases, and in any other supplemental reports or declarations that I may prepare for this litigation in the future. I also expect to testify at trial with respect to the matters addressed by any expert testifying on behalf of Defendants, if asked about these matters by the Court or by the parties’ counsel. I may also testify on other matters relevant to this case, if asked by the Court or by the parties’ counsel.

3. To ensure that my opinions are complete and accurate, I reserve the right to supplement or amend this report if additional facts and information that affect my opinions become available. Such information may include, for example, materials produced in this litigation, and information and documents relevant to this case that Defendants has not yet disclosed. I may also supplement or amend my report or opinions in response to additional discovery or other events, and may rebut expert reports submitted by Defendants.

4. My work in this case is being billed at my standard rate of \$850 per hour, with reimbursement for actual expenses. My payment is not contingent upon my testimony or the outcome of the case. I have no personal interest in the outcome of the case.

1.2. Qualifications

5. My Curriculum Vitae, attached as **Exhibit B**, is a true and accurate listing of my qualifications. I summarize some of these qualifications below.

6. I am currently employed as a Professor of Computer Science at Harvard University. Specifically, I am the Thomas J. Watson, Sr. Professor of Computer Science in the School of Engineering and Applied Sciences. I joined the faculty of Harvard as an Assistant Professor in January 1999. I was promoted to Associate Professor in 2002 and to Professor in 2005. In 2010, I began a three-year term as Area Dean, which is essentially equivalent to what other schools call Department Chair, of Computer Science, and held that position through June 2013. I served as Area Co-Chair of Computer Science for the 2018-2019 academic year. My work address is 150 Western Avenue, Sci&Eng 3.310, Boston, MA 02134. My primary research

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interests include design and analysis of algorithms, networks and data transmission, and information theory.

7. I received my undergraduate degree in Mathematics and Computer Science from Harvard College in 1991. I received a Certificate of Advanced Study in Mathematics from Cambridge University in 1992. I received a Ph.D. in Computer Science from the University of California at Berkeley in 1996. From August 1996 to January 1999, I was employed as a Research Scientist at Digital Systems Research Center, where my work included projects on algorithms for the Internet.

8. I am listed as an inventor or co-inventor on 19 issued patents, and am the co-author of a textbook entitled “Probability and Computing” published by Cambridge University Press. I am a Fellow of the Association for Computing Machinery (ACM).

9. I regularly serve on program committees for conferences in networking, algorithms, and communication. For example, I have served on the program committee multiple times for the SIGCOMM conference, which is the flagship annual conference of the ACM Special Interest Group on Data Communication (SIGCOMM). I have also served on numerous program committees related to algorithms, including the ACM Symposium on the Theory of Computing, the International Colloquium on Automata, Languages, and Programming, and the International Conference on Web Search and Data Mining.

10. The field of endeavor at issue in this case is identification of electronic content (such as video or audio content) using algorithmic search techniques. I have published over 200 research papers¹ in computer science and engineering conferences and journals, many of which have explored algorithms and data structures for algorithmic search techniques, including both mathematical analysis and applications.

1.3. The Asserted Patents

11. I described the Asserted Patents in detail in Section 1.3 of my December 20, 2019 expert report (“Infringement Report”). That description is equally relevant here, and is incorporated by reference.

12. I understand that the following are the Asserted Claims:

- U.S. Pat. No. 8,010,988 (“the ’988 patent”), claim 17;
- U.S. Pat. No. 8,205,237 (“the ’237 patent”), claims 33-35; and
- U.S. Patent No. 8,904,464 (“the ’464 patent), claims 1, 8, 10, 16, 18, 25, 27, and 33.

¹ I note that in several comments in the source code Google produced in this case related to the [REDACTED] I describe in detail below, there is reference to one of my publication on this topic. *See, e.g.*, GOOG-NETWORK-SC-00000564; GOOG-NETWORK-SC-00000607.

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