UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

NETWORK-1 TECHNOLOGIES, INC.,

                    Plaintiff,

    v.

GOOGLE LLC and YOUTUBE, LLC,

                    Defendants.

14 Civ. 2396 (PGG)

14 Civ. 9558 (PGG)

DECLARATION OF PROFESSOR MICHAEL D. MITZENMACHER IN SUPPORT OF
PLAINTIFF NETWORK-1 TECHNOLOGIES, INC.'S
OPENING CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

I. INTRODUCTION

1. I have been retained as an expert in the above-captioned case by counsel for Plaintiff Network-1 Technologies, Inc. I understand that Network-1 is currently asserting three patents in this case: 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 "patents-in-suit").

2. These patents relate generally to systems and methods for identifying media content and performing actions associated with the identified content. All three were invented by Professor Ingemar J. Cox and all claim their priority to a provisional patent application filed on September 14, 2000.

II. QUALIFICATIONS

3. 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 am currently serving as Area Co-Chair of Computer Science for the 2018-2019 academic year. My work address is 33 Oxford Street, Cambridge, MA 02138. My primary research interests include design and analysis of algorithms, networks and data transmission, and information theory.

4. 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.

5.   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).

6.   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.

7.   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 papers 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.

8.   A copy of my curriculum vitae is attached as Exhibit A to this Declaration. It contains a more complete listing of my professional activities and background.

III.   MATERIALS CONSIDERED

9.   In forming my opinions set forth in this declaration, I have reviewed, considered, and/or had access to the patent specifications and claims and their prosecution histories. I have also considered the parties' respective proposed claim constructions. In addition, I have relied

upon my professional and academic experience, as well as a number of references (including academic papers, other patents, and other publications) identified in the body of this declaration. I reserve the right to consider additional materials or information as I become aware of them and to revise my opinions accordingly in light of such additional information.

IV.   LEVEL OF ORDINARY SKILL IN THE ART

10.   It is my understanding that analysis of claim interpretation is to be undertaken from the perspective of a person of ordinary skill in the art to which the patents are directed at the time of the invention, here in September 2000. The patents-in-suit are directed to the field of identification of electronic content (such as video or audio content) using algorithmic search techniques. In my opinion, a person of ordinary skill in this art would have a Bachelor's degree in computer science, mathematics, or a similar discipline and two to three years of relevant experience, or a graduate degree in the same area.

V.   LEGAL PRINCIPLES INVOLVED IN MY ANALYSIS

A.   Claim Construction

11.   I have been informed that in connection with patent claim interpretation, a Court's analysis begins with the language of the claims themselves and that the words of a claim are generally given their ordinary and customary meaning, i.e., the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.

12.   I have further been informed that the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification and its prosecution history.

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