

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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In re *Inter Partes* Review of:  
U.S. Patent No. 6,108,686

For: AGENT-BASED ON-LINE  
INFORMATION RETRIEVAL AND  
VIEWING SYSTEM

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**DECLARATION OF KEVIN C. ALMEROOTH, PH.D.**

**Mail Stop PATENT BOARD**  
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US Patent and Trademark Office  
PO Box 1450  
Alexandria, Virginia 22313-1450

I, Kevin C. Almeroth, hereby declare and state as follows:

1. I have been retained as a technical consultant on behalf of Samsung Electronics Co., Ltd., the petitioner in the present proceeding, and I am being compensated at my usual and customary hourly rate. The petition names Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Telecommunications America, LLC as real parties-in-interest. I have no financial interest in, or affiliation with, the petitioner, real parties-in-interest, or the patent owner, which I understand to be BLACK HILLS

MEDIA, LLC. My compensation is not dependent upon the outcome of, or my testimony in, the present *inter partes* review or any litigation proceedings.

2. I have reviewed each of the following:
  - a. U.S. Patent No. 6,108,686 (“the ‘686 Patent”), including the claims, description and prosecution history (which is identified in the Petition respectively as Exhibits 1001 and 1002);
  - b. U.S. Patent No. 5,740,549 to Reilly (which is identified in the Petition as Exhibit 1003; hereinafter “Reilly”);
  - c. Weiss, “*New Places to Go Online*,” 14(8) *Technology & Learning* 109-115 (1994) (which is identified in the Petition as Exhibit 1004; hereinafter “the Technology & Learning Article”);
3. Upon reviewing the ‘686 Patent, I understand that a non-provisional application was filed on March 2, 1998 (Appl. No. 09/034,773), which issued as the ‘686 Patent. For the purposes of my analysis, I assume the time of the purported invention to be no earlier than March 1998.
4. It is my opinion that a person of ordinary skill in the art at the time of the inventions claimed in the ‘686 Patent would typically have had a M.S. degree in computer science in addition to two or more years of work experience

relating to the field of the provision of information and content over wide area and local area networks. I was a person of skill in this art in March 1998.

5. My background, qualifications, and experience relevant to the issues in proceeding are summarized below. My *curriculum vitae* is submitted herewith as Exhibit 1006.
6. I am currently a Professor in the Department of Computer Science at the University of California, Santa Barbara. At UCSB, I also hold faculty appointments and am a founding member of the Computer Engineering (CE) Program, Media Arts and Technology (MAT) Program, and the Technology Management Program (TMP). I have been a faculty member at UCSB since July 1997.
7. I hold three degrees from the Georgia Institute of Technology: (1) a Bachelor of Science degree in Information and Computer Science (with minors in Economics, Technical Communication, and American Literature) earned in June, 1992; (2) a Master of Science degree in Computer Science (with specialization in Networking and Systems) earned in June, 1994; and (3) a Doctor of Philosophy (Ph.D.) degree in Computer Science (Dissertation Title: Networking and System Support for the Efficient, Scalable Delivery of Services in Interactive Multimedia System, minor in Telecommunications Public Policy) earned in June, 1997.

8. One of the major concentrations of my research to date has been the delivery of multimedia content and data between computing devices. In my research, I have studied large-scale content delivery systems, and the use of servers located in a variety of geographic locations to provide scalable delivery to hundreds, even thousands of users simultaneously. I have also studied smaller-scale content delivery systems in which content is exchanged between individual computers and portable devices. My work has emphasized the exchange of content more efficiently across computer networks, including the scalable delivery of content to many users, mobile computing, satellite networking, delivering content to mobile devices, and network support for data delivery in wireless networks.
9. In 1992, at the time I started graduate school, my research focused initially on interactive functions (*e.g.*, VCR-style functions like pause, rewind, and fast-forward) for near video-on-demand systems in cable systems. This included handling multiple requests using one audio/video stream broadcast to multiple receivers simultaneously. This research has developed into new techniques to deliver on-demand content, including audio, video, web documents, and other types of data, through the Internet and over other types of networks, in a way that scales to a large number of users.

10. In 1994, I began to research issues associated with the development and deployment of multicast in the Internet. Multicast allows scalable transmission from a single source to an arbitrary number of receivers. Some of my more recent research endeavors have looked at how to use the scalability offered by multicast to provide streaming media support for complex applications like distance learning, distributed collaboration, distributed games, and large-scale wireless communication.
  
11. Starting in 1997, I worked on a project called the Interactive Multimedia Jukebox (“IMJ”) to integrate the streaming media capabilities of the Internet together with the interactivity of the web. Users could select content to view from a website, which would then be scheduled for delivery using multicast on one of a number of logical content streams. Delivery would be scheduled according to available communication capacity: if idle capacity existed when a request was made, the requesting user would be able to watch its selection immediately. If the server was fully utilized in streaming previously selected content, the user’s selection would be queued. In the meantime, the user would see what content was already playing, and because of the use of multicast, would be able to join one of the existing streams and watch the content at the point it was currently being transmitted. This service combined the interactivity of the web with the streaming capabilities of the Internet to

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