

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

GRAVEL RATING SYSTEMS LLC

Plaintiff,

v.

BROADCOM INC.,

Defendant.

Civil Action No. 4:21-cv-329

JURY TRIAL DEMANDED

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Gravel Rating Systems LLC (“Gravel” or “Plaintiff”), for its Complaint against Defendant Broadcom Inc. (referred to herein as “Broadcom” or “Defendant”), alleges the following:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq.*

THE PARTIES

2. Plaintiff Gravel is a limited liability company organized under the laws of the State of Texas, with a place of business at 5850 Waterloo Road, #140, Columbia, Maryland 21045.

3. Upon information and belief, Defendant Broadcom is a corporation organized under the laws of the State of Delaware, with a principal place of business at 1320 Ridder Park Drive, San Jose, California 95131. Upon information and belief, Broadcom sells, offers to sell, and/or uses products and services throughout the United States, including in this judicial district, and

has introduced infringing products and services into the stream of commerce knowing that they would be sold and/or used in this judicial district and elsewhere in the United States.

JURISDICTION AND VENUE

4. This is an action for patent infringement arising under the Patent Laws of the United States, Title 35 of the United States Code.

5. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

6. Venue is proper in this judicial district under 28 U.S.C. § 1400(b).

7. This Court has personal jurisdiction over Broadcom under the laws of the State of Texas, due at least to its substantial business in Texas and in this judicial district, directly or through intermediaries, including: (i) at least a portion of the infringements alleged herein; (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct and/or deriving substantial revenue from goods and services provided to individuals in the State of Texas; and having a principal place of business in Texas, in this judicial district. Venue is also proper in this district because Broadcom has a place of business in this district. For instance, Broadcom has a corporate location at 5465 Legacy Drive, Plano, Texas 75024. (*See, e.g.*, <https://www.broadcom.com/company/contact>.)

BACKGROUND

The Invention

8. Michael Carl Heumann and Keith Cooley are the inventors of U.S. Patent No. 7,590,636 (“the ’636 patent”). A true and correct copy of the ’636 patent is attached as Exhibit A. The ’636 patent resulted from the pioneering efforts of Messrs. Heumann and Cooley (hereinafter “the Inventors”) in the area of a network-based knowledge sharing system and

interface that allows every member of a knowledge sharing group to benefit from aggregate knowledge, experience and opinions of other members of the group.

9. These efforts resulted in the development of a method and apparatus for a “Knowledge Filter” in the late 1990s. At the time of the pioneering efforts of the Inventors, the most widely implemented technology used to address network-based knowledge sharing among members of a group was called threaded discussion. In a threaded discussion scheme, a forum was provided where one person could “post” a communication (start a “thread”) and others could reply to that post or start a new thread. “There were three main problems with such prior systems: (a) there was no way of knowing how useful or accurate a given contribution or ‘posting’ was; (b) there was no easy way to organize the postings into a logical knowledge structure; and (c) once a large number of postings were added to the system, it became unwieldy and very difficult to find the useful information among the many unedited posts.” (*See* ’636 patent at 1:37-51). The Inventors conceived of the inventions claimed in the ’636 patent as a way to resolve at least these problems.

10. For example, the Inventors developed a system and method that allows an individual member of a network-based knowledge sharing group to easily locate and rate information from a collectively generated knowledge base that is most consistent with that individual member's personal measure(s) of value in the information. More particularly, the present invention “relates to a system and apparatus for allowing groups of individuals connected to a computer network such as the Internet to collaboratively build a self-organizing knowledge base that uses ratings and commentary provided by a plurality of users to rank, sort and deliver the information from the knowledge base which best matches each individual user’s personal criteria for value in information.” (*See* ’636 patent at 1:15-22). In one instance, the present

invention “includes a graphic user interface for providing information concerning a subject which is disclosed. The interface comprises a first area that shows the subject and contributor name, and a second area that shows the content of the information item. The interface includes a third area that shows ratings related to the subject; and a fourth area that allows users to submit ratings for the information item.” (*See* ’636 patent at 3:53-61).

Advantage Over the Prior Art

11. The ’636 patent provides many advantages over prior systems and, in particular, improved the operations of network-based knowledge sharing by providing a “self-organizing system that is easy to navigate, easy to contribute content and opinions to, and that automatically presents the information that is most meaningful or useful to an individual user to that user’s attention without discarding the rest of the information in the database,” as well as providing “easy to interpret visual symbols and rating data for a number of information contributions in a way that allows them to be simultaneously displayed on a computer screen before they are selected and viewed by a user,” and further providing “the framework for such a system that can easily be adopted to a number of subjects that may have varying rating criteria and subject organization parameters.” (*See* ’636 patent at 3:4-18).

12. Another advantage of the ’636 patent is that the method and system receives information input into a database, organizes in the database, and then “further includes collecting ratings and comments associated with each item of information and allow[s] users to access and sort items of information according to selected rating criteria in order to find the most reliable and/or valuable information from the database.” (*See* ’636 patent at 3:44-52).

13. A further advantage of the '636 patent is that it includes a "system of tracking rating submissions that prevents any one user from voting on a given content submission more than one time." (*See* '636 patent at 5:47-50).

14. Yet another advantage of the '636 patent is that the knowledge base comprises "a hierarchically organized category structure." In that regard, the patent states that a "category can contain either sub-categories or items. The example embodiment of the knowledge base system used for descriptive purposes in this discussion is implemented as a Cookbook, containing categories of food with recipes for cooking food items, in the common meaning of the word 'cookbook.' Items contain the knowledge entries as database records which depend on the particular application; for the CookBook an Item is a recipe." (*See* '636 patent at 7:12-23).

FIG. 2 of the '636 patent shows how the knowledge base is organized as a hierarchical structured category system, and the patent states that it "is mapped into a database management software such as MySQL, which manages the storage, retrieval, and editing of the database records." (*See* '636 patent at 7:24-28). FIG. 6 of the '636 patent illustrates the patented invention's advantageous "display of the hierarchy of categories of the knowledge base. In the case of the present embodiment this display is a hierarchical list of recipes. Any item in this list can be clicked, bringing detailed information to the user in the form of the Knowledge Navigation Console 302 with the appropriate level of content displayed, such as a list of items 514." (*See* '636 patent at 11:34-40). This illustrates the invention's feature of "an extensible hierarchy of information categories" that advantageously permits a user to navigate through each category in the hierarchy at the selection of that user.

15. Because of these significant advantages that can be achieved through the use of the '636 patent, Gravel believes that the '636 patent presents significant commercial value for

companies like Broadcom. Indeed, Broadcom has numerous locations throughout the U.S. and in this district, where it has offered for sale and sold products and services for which it then solicited comments and comment ratings on its website, and/or computer systems hosting its website, that operated an infringing method. In this manner, Broadcom used the patented method to allow consumers to exchange information and ratings and thereby drive sales, support, and improvement of its products and services.

Technological Innovation

16. As the '636 patent explains, limitations of the prior art with regard to threaded discussions included that “(a) there was no way of knowing how useful or accurate a given contribution or ‘posting’ was; (b) there was no easy way to organize the postings into a logical knowledge structure; and (c) once a large number of postings were added to the system, it became unwieldy and very difficult to find the useful information among the many unedited posts.” (See '636 patent at 1:37-51). The '636 patent resolves such technical problems related to network-based knowledge sharing groups, particularly through the use of a “hierarchically organized category structure” to provide efficient and effective searching, and by ensuring that a given user is not permitted to submit more than one rating on any particular item of information in the knowledge base. A user of the patented invention can easily locate and rate information from a collectively generated knowledge base that is most consistent with that user’s personal measures of value in the information.

17. A number of additional approaches have been used to try to increase the value of information in threaded discussion forums in the prior art, such as deleting older messages, which has disadvantages. “Some such systems allow users to specify the age of messages that appear on their screen. In such systems older messages are lost, regardless of their value. Other

systems move the older messages to an archive where they can be retrieved only if the user already knows what he or she is searching for so that search terms can be used to locate relevant messages.” (See ’636 patent at 1:54-60).

18. Another type of system in the prior art relies on a moderator to edit messages for value before they are posted. “Moderated discussion forums or Usenet ‘newsgroups’ are generally favored over un-moderated ones that can quickly become clogged with redundant messages, turn into shouting matches or commercial solicitations.” However, some of the problems with such moderated discussion forums are that: a) “[t]he editorial process is placed in the hands of one person who may have personal biases that control the content of the system;” and b) the “moderator’s criteria for value in information may not match that of individual users.” Groupware systems allow individuals to contribute to, or to comment on a shared document or database. “These systems generally allow an authorized person or persons to accept or reject contributions made by others. Groupware systems tend to be inter-active, but not democratic.” (See ’636 patent at 1:62-2:17). That is, they do not allow the free flow of comments and ratings engendered by the ’636 patent.

19. The claims of the ’636 patent do not merely recite the performance of some well-known business practice from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the ’636 patent recite inventive concepts that are deeply rooted in engineering technology, and overcome problems specifically arising out of implementing a system and method that allows individual members in a network-based knowledge sharing group to easily locate and rate desired and helpful information from a collectively generated knowledge base.

20. In addition, the claims of the '636 patent recite inventive concepts that improve the functioning and efficiency of a network-based knowledge sharing system, by providing “a hierarchically organized category structure” for the user of the system to search and comment upon. The patent states that a “category can contain either sub-categories or items,” which is an improvement that allows ratings and commentary provided by a plurality of users to rank, sort and deliver information from a knowledge base that best matches each individual user’s personal criteria for value in information in light of those categories. (*See* '636 patent at 7:12-23).

21. Moreover, the claims of the '636 patent recite inventive concepts that are not merely routine or conventional use of computers in a network-based knowledge sharing system. Instead, the '636 patent provides a new and novel solution to specific problems related to improving the reliability of such systems. For example, the '636 patent includes a “system of tracking rating submissions that prevents any one user from voting on a given content submission more than one time.” (*See* '636 patent at 5:47-50). Thus, the '636 patent addresses a problem unique to the Internet in the sense that it precludes, for example, the use of computers and algorithms divorced from an actual person using the system, to automatically inundate the system with positive or negative ratings intended to artificially influence other members of the group as to the relative worth of a given item of information.

22. Finally, the subject matter disclosed and claimed in the '636 patent does not preempt all the ways that such a knowledge sharing system and method can be used, wherein an interface is provided that allows every member of the knowledge sharing group to benefit from aggregate knowledge, experience and opinions of other members of the group, and individual members can easily locate and rate desired information. Nor does the '636 patent preempt any other well-known or prior art technology.

23. Accordingly, the claims in the '636 patent recite a combination of elements sufficient to ensure that the claim in substance and in practice amounts to significantly more than a patent-ineligible abstract idea.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 7,590,636

24. The allegations set forth in the foregoing paragraphs 1 through 23 are incorporated into this First Claim for Relief.

25. On September 15, 2009, the '636 patent was duly and legally issued by the United States Patent and Trademark Office under the title “Knowledge Filter.”

26. Gravel is the assignee and owner of the entire right, title and interest in and to the '636 patent, including the right to assert all causes of action arising under said patent and the right to any remedies for infringement of it.

27. Upon information and belief, Broadcom has directly infringed at least claims 4-5 and 8-9 of the '636 patent through Defendant's website, and/or computer systems hosting Defendant's website, that practiced an infringing method, wherein user comments and ratings were collected and stored regarding products and services that Broadcom has sold, offered for sale, made, used, provided and/or caused to be used by others, which by way of example include such websites and/or systems relating to such products and services (*see, e.g.*, <https://community.broadcom.com/symantecenterprise/communities/community-home/digestviewer?communitykey=1ecf5f55-9545-44d6-b0f4-4e4a7f5f5e68&tab=digestviewer&Page=&ContributionType=1&ResultsPerPage=10&SortBy=1>) (the “Accused Instrumentalities”).

28. Upon information and belief, the Accused Instrumentalities perform an infringing network-based knowledge sharing method for collecting and storing ratings and comments

associated with each item of information in the knowledge base, and allowing users to access and sort such items of information according to selected rating criteria in order to find the most reliable and/or valuable information from the database.

29. The Accused Instrumentalities directly infringed at least claims 4-5 and 8-9 of the '636 patent during the pendency of the '636 patent. Exemplary infringement analysis showing such direct infringement of claims 4-5 and 8-9 of the '636 patent is set forth in Exhibit B. This infringement analysis is necessarily preliminary, as it is provided in advance of any discovery provided by Broadcom with respect to the '636 patent. Gravel reserves all rights to amend, supplement and modify this preliminary infringement analysis. Nothing in the attached chart should be construed as any express or implied contention or admission regarding the construction of any term or phrase of the claims of the '636 patent.

30. Gravel has been harmed by the infringing activities of Broadcom.

JURY DEMAND

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Gravel demands a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Gravel demands judgment for itself and against Broadcom as follows:

- A. An adjudication that Broadcom has infringed the '636 patent;
- B. An award of damages to be paid by Broadcom adequate to compensate Gravel for the past infringement of Broadcom of the '636 patent, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;

C. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of Gravel's reasonable attorneys' fees; and

D. An award to Gravel of such further relief at law or in equity as the Court deems just and proper.

Dated: April 23, 2021

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