

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF MASSACHUSETTS**

**VEVEO, INCORPORATED,**

**Plaintiff,**

**v.**

**COMCAST CORPORATION;  
COMCAST CABLE COMMUNICATIONS,  
LLC; COMCAST CABLE  
COMMUNICATIONS MANAGEMENT, LLC;  
COMCAST BUSINESS COMMUNICATIONS,  
LLC; COMCAST HOLDINGS  
CORPORATION; COMCAST SHARED  
SERVICES, LLC; COMCAST OF  
MASSACHUSETTS I, INC.; COMCAST OF  
MILTON, INC.; COMCAST OF SOUTHERN  
NEW ENGLAND, INC.; COMCAST OF  
MASSACHUSETTS/NEW HAMPSHIRE, LLC;  
COMCAST OF NEEDHAM, INC.; COMCAST  
OF MASSACHUSETTS/VIRGINIA, INC.;  
COMCAST OF BOSTON, INC.; COMCAST  
OF BROCKTON, INC.; COMCAST OF  
CALIFORNIA/MASSACHUSETTS/MICHIGA  
N/UTAH, LLC; COMCAST OF  
CONNECTICUT/GEORGIA/MASSACHUSET  
TS/NEW HAMPSHIRE/NEW YORK/NORTH  
CAROLINA/VIRGINIA/VERMONT, LLC;  
COMCAST OF MASSACHUSETTS II, INC.;  
AND COMCAST OF MASSACHUSETTS III,  
INC.,**

**Defendants.**

Civil Action No. \_\_\_\_\_

**JURY TRIAL DEMANDED**

**VEVEO'S COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Veveo, Inc. (Veevo) brings this Complaint for patent infringement against Comcast Corporation; Comcast Cable Communications, LLC; Comcast Cable Communications Management, LLC; Comcast Business Communications, LLC; Comcast Holdings Corporation; Comcast Shared Services, LLC; Comcast of Massachusetts I, Inc.; Comcast of Milton, Inc.;

Comcast of Southern New England, Inc.; Comcast of Massachusetts/New Hampshire, LLC; Comcast of Needham, Inc.; Comcast of Massachusetts/Virginia, Inc.; Comcast of Boston, Inc.; Comcast of Brockton, Inc.; Comcast of California/Massachusetts/Michigan/Utah, LLC; Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC; Comcast of Massachusetts II, Inc.; and Comcast of Massachusetts III, Inc. (all defendant entities, collectively, Comcast or Defendants) for infringement of U.S. Patent Nos. 7,779,011 ('011 Patent) and 7,937,394 ('394 Patent) (together, the Asserted Patents). Plaintiff, on personal knowledge as to its own acts, and upon information and belief as to all others based on investigation, alleges as follows:

### **SUMMARY OF THE ACTION**

1. Veveo has long been a leader in providing consumers with new ways to discover video content they want to see. Among other innovations, Veveo revolutionized search functionality for on-screen guides by allowing customers to conduct text searches more easily and quickly using remote controllers with numeric keypads. These searches are called “overloaded key” searches because each numeric key corresponds to multiple letters. The software comprising this invention is protected by the Asserted Patents, housed on cable set-top boxes (STBs), and provides a key benefit to consumers: the ability to quickly search the content available from their cable provider.

2. In 2010, Comcast and Veveo entered into a software license agreement that provided Comcast access to Veveo’s proprietary technology. Veveo engineers spent more than a year working to create search software specially designed for Comcast’s forthcoming next generation X1 interactive program guide (IPG). Comcast incorporated Veveo’s search technology, began customer trials in 2011 (under the name “Xcalibur”), and launched its X1 IPG

nationwide, with great success, in May 2012. Even after launch, Veveo engineers worked closely with Comcast to continue to develop, maintain, and support the search functionality for X1.

3. Then, on April 30, 2013, Comcast abruptly terminated the Veveo software license and replaced Veveo's software with Comcast's "own" virtually identical version with identical features. Veveo learned that, while the parties had been working together, Comcast had secretly tasked an internal team to create the same functionality—using the Veveo product to test its own. All the while, Comcast had full knowledge that Veveo's features were protected by Veveo's patents and yet knowingly and willfully created and released an infringing product. Comcast continues to use and distribute that software to its customers without a license, willfully infringing the Asserted Patents.

#### **THE PARTIES**

4. Plaintiff Veveo, Inc. is a Delaware corporation, with its principal place of business at 300 A St. #500, Boston, MA 02210. Veveo is a wholly-owned subsidiary of Rovi Corporation. Veveo is the owner of the Asserted Patents.

5. Upon information and belief, Comcast Corporation is a Pennsylvania corporation, with a principal place of business at One Comcast Center, 1701 John F. Kennedy Blvd., Philadelphia, Pennsylvania 19103. Through its wholly-owned subsidiaries, Comcast Corporation provides "Comcast" branded services, including Xfinity digital video, audio, and other content services to customers. Subscribers to Comcast's Xfinity television services receive a receiver, such as a STB, that includes infringing software and/or interacts with infringing software on a Comcast Xfinity server. Upon information and belief, Comcast Corporation, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides the infringing receivers to customers.

6. Upon information and belief, Comcast Cable Communications, LLC is a Delaware limited liability company, with a principal place of business at One Comcast Center, 1701 John F. Kennedy Blvd., Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast Cable Communications, LLC is a subsidiary of Comcast Corporation. Upon information and belief, Comcast Cable Communications, LLC, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

7. Upon information and belief, Comcast Cable Communications Management, LLC is a Delaware limited liability company, with a principal place of business at One Comcast Center, 1701 John F. Kennedy Blvd., Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast Cable Communications Management, LLC is a subsidiary of Comcast Corporation. Upon information and belief, Comcast Cable Communications Management, LLC, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

8. Upon information and belief, Comcast Business Communications, LLC is a Pennsylvania limited liability company, with a principal place of business at One Comcast Center, 1701 John F. Kennedy Blvd., Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast Business Communications, LLC is a subsidiary of Comcast Corporation. Upon information and belief, Comcast Business Communications, LLC, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

9. Upon information and belief, Comcast Holdings Corporation is a Pennsylvania corporation, with a principal place of business at One Comcast Center, 1701 John F. Kennedy

Blvd., Philadelphia, Pennsylvania 19103. Upon information and belief, Comcast Holdings Corporation is a subsidiary of Comcast Corporation. Upon information and belief, Comcast Holdings Corporation, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

10. Upon information and belief, Comcast Shared Services, LLC is a Delaware limited liability company, with a principal place of business at 330 N. Wabash Ave. 22, Chicago, IL 60611-3586. Upon information and belief, Comcast Shared Services, LLC is a subsidiary of Comcast Corporation. Upon information and belief, Comcast Shared Services, LLC, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

11. Upon information and belief, Comcast of Massachusetts I, Inc. is a Massachusetts domestic profit corporation, with a principal place of business at 181 Ballardvale St., Wilmington, MA 01887. Upon information and belief, Comcast of Massachusetts I, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Massachusetts I, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

12. Upon information and belief, Comcast of Milton, Inc. is a Massachusetts domestic profit corporation, with a principal place of business at 950 Hyde Park Ave., Hyde Park, Massachusetts 02136. Upon information and belief, Comcast of Milton, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Milton, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

13. Upon information and belief, Comcast of Southern New England, Inc. is a Massachusetts domestic profit corporation, with a principal place of business at 440 Myles Standish Blvd., Taunton, Massachusetts 02780. Upon information and belief, Comcast of Southern New England, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Southern New England, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

14. Upon information and belief, Comcast of Massachusetts/New Hampshire, LLC is a Delaware limited liability company, with a principal place of business at 26 Tremont St., Lynn, Massachusetts 01902. Upon information and belief, Comcast of Massachusetts/New Hampshire, LLC is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Massachusetts/New Hampshire, LLC, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

15. Upon information and belief, Comcast of Needham, Inc. is a Delaware corporation, with a principal place of business at 330 Billerica Rd., Chelmsford, Massachusetts, 01824. Upon information and belief, Comcast of Needham, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Needham, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

16. Upon information and belief, Comcast of Massachusetts/Virginia, Inc. is a Virginia corporation, with a principal place of business at 160 Old Farm Rd., Amherst, Massachusetts 01002. Upon information and belief, Comcast of Massachusetts/Virginia, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of

Massachusetts/Virginia, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

17. Upon information and belief, Comcast of Boston, Inc. is a New York corporation, with a principal place of business at 426 East 1st St., South Boston, Massachusetts 02127. Upon information and belief, Comcast of Boston, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Boston, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

18. Upon information and belief, Comcast of Brockton, Inc. is a Delaware corporation, with a principal place of business at 200 Westgate Drive, Brockton, Massachusetts 02301. Upon information and belief, Comcast of Brockton, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Brockton, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

19. Upon information and belief, Comcast of California/Massachusetts/Michigan/Utah, LLC is a Delaware limited liability company, with a principal place of business at 1316 Commonwealth Ave., Allston, Massachusetts 02134. Upon information and belief, Comcast of California/Massachusetts/Michigan/Utah, LLC is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of California/Massachusetts/Michigan/Utah, LLC, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

20. Upon information and belief, Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC is a Delaware limited liability company, with a principal place of business at 181 Ballardvale St., Wilmington,

Massachusetts 01887. Upon information and belief, Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC, jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

21. Upon information and belief, Comcast of Massachusetts II, Inc. is a Delaware corporation, with a principal place of business at 300 Commercial Street, Malden, Massachusetts 02148. Upon information and belief, Comcast of Massachusetts II, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Massachusetts II, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

22. Upon information and belief, Comcast of Massachusetts III, Inc. is a Delaware corporation, with a principal place of business at 181 Ballardvale St., Wilmington, Massachusetts 01887. Upon information and belief, Comcast of Massachusetts III, Inc. is a subsidiary of Comcast Corporation. Upon information and belief, Comcast of Massachusetts III, Inc., jointly with the other Defendants, developed the infringing Xfinity services and equipment and provides infringing receivers to customers.

23. Upon information and belief, Defendant Comcast Corporation is the direct or indirect parent of each of Comcast Cable Communications, LLC; Comcast Cable Communications Management, LLC; Comcast Business Communications, LLC; Comcast Holdings Corporation; Comcast Shared Services, LLC; Comcast of Massachusetts I, Inc.; Comcast of Milton, Inc.; Comcast of Southern New England, Inc.; Comcast of

Massachusetts/New Hampshire, LLC; Comcast of Needham, Inc.; Comcast of Massachusetts/Virginia, Inc.; Comcast of Boston, Inc.; Comcast of Brockton, Inc.; Comcast of California/Massachusetts/Michigan/Utah, LLC; Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/ Vermont, LLC; Comcast of Massachusetts II, Inc.; and Comcast of Massachusetts III, Inc.

24. Upon information and belief, Comcast owns, operates, and provides cable television products and services throughout the United States, including its XFINITY TV products using the X1 Platform system.

#### **JURISDICTION AND VENUE**

25. This is an action arising under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.* Accordingly, this Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 (federal question) and 1338(a) (action arising under an Act of Congress relating to patents). Venue is proper in this judicial district under 28 U.S.C. §§ 1391 and 1400(b).

26. More specifically, this action for patent infringement involves Defendants' manufacture, use, sale and/or lease, offer for sale and/or lease, and/or importation into the United States of infringing receivers, including set-top boxes (and their peripheral devices, such as remote control units), having hardware and software components, including, in particular, IPG software, alone or in conjunction with Comcast servers and/or mobile applications (the Accused Products) that are used in and with Comcast's Xfinity video services.

27. This action also involves Comcast's attempts and offers to license, distribute, or otherwise provide to other service providers, which are not licensed to the Asserted Patents, Comcast's X1 IPG Product (an Accused Product), which is designed to practice one or more claims of the Asserted Patents.

28. The Accused Products include Comcast digital video receivers and related hardware and software, including at least the associated IPG software. Such Accused Products include *at least* the Comcast Xfinity receivers with the following model numbers: ARRIS XG1v1 MX011ANM, ARRIS XG1v3 AX013ANM, ARRIS XG1v1 MX011ANC, ARRIS XG1v3 AX013ANC, ARRIS XG1v4-A AX014ANM, ARRIS XG1v4-A AX014ANC, Pace RNG150 PCRNG150BNMD, Pace RNG150 PCRNG150BNCD, Pace RNG150 PR150BNM, Pace RNG150 PR150BNC, Pace XG1v1 PCX001ANMD, Pace XG1v1 PCX001ANCD, Pace XG1v3 PX013ANM, Pace XG1v3 PX013ANC, Pace XG2v2-P PX022ANC, Pace XG2v2-P PX022ANM, Pace XiD-P PXD01ANI, Pace Xi3v2 PX032ANI, Pace Xi5-P PX051AEI, Cisco RNG150N, Cisco XiD-C CXD01ANI, and Humax Xi3-H HX003AN. Accused Products also include Comcast X1 remote controls, such as Remote Solution Co., Ltd. XR11v1 RC38A, Universal Electronics Inc. XR11v2 4350, and Universal Electronics Inc. XR15 4352. Accused Products also include Comcast's X1 Remote App and streaming TV apps.<sup>1</sup>

29. Upon information and belief, each of the Defendants, directly or indirectly through another Defendant and/or agent, is involved in operating 41 Xfinity stores physically located in the District of Massachusetts. Upon information and belief, each Defendant conducts its regular, established business at these locations. These Xfinity stores provide infringing products to customers in this District. Comcast lists these Xfinity stores on its website and holds

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<sup>1</sup>See *Setting Up the XFINITY Remote App*, XFINITY, <https://www.xfinity.com/support/articles/setting-up-the-cable-tv-app> (last visited Jan. 2, 2018); *Turn Every Device Into a TV Screen*, XFINITY, <https://www.xfinity.com/get-stream> (last visited Jan. 2, 2018).

them out as a place where customers can obtain infringing products.<sup>2</sup> Upon information and belief, one or more of the Defendants owns and/or leases the premises where these Xfinity stores are located. Upon information and belief, these Xfinity stores are staffed by persons directly employed by a Defendant, many of whom live in this District. Upon information and belief, one or more of the Defendants has engaged in regular and established business at physical places such as its 41 Xfinity stores for decades.<sup>3</sup>

30. This Court has general and/or specific personal jurisdiction over Comcast Corporation, and venue is proper, in part because Comcast Corporation, directly and/or in combination with its subsidiaries and/or through its agents, has at least one regular and established place of business in this district, and does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. In addition, upon information and belief, Comcast Corporation, directly or through its subsidiaries, places infringing products within the stream of commerce, which is directed at this district, with the knowledge and/or understanding that such products will be sold, leased, or otherwise provided to customers within this district. Upon information and belief, Comcast is “the largest provider of cable television services in the

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<sup>2</sup> See *All Locations in MA*, XFINITY, <https://www.xfinity.com/local/ma.html> (last visited Jan. 2, 2018).

<sup>3</sup> See, e.g., *City of Springfield v. Department of Telecommunications And Cable*, 457 Mass. 562, 564 (2010) (noting that Comcast has “provided cable television services to the city [of Springfield] since at least 1997” and “does not face ‘effective competition’ for cable television services in the city”).

Commonwealth.”<sup>4</sup> In addition, upon information and belief, Comcast Corporation, directly or through its subsidiaries, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here. As of 2015, upon information and belief, Comcast “employ[ed] more than 5,000 people in Massachusetts who collect[ed] more than \$336 million in salary and benefits.”<sup>5</sup> Comcast Corporation, directly or through its subsidiaries, operates highly commercial websites through which regular sales and/or leases of products and/or sales of services are made to customers in this district, including products and services that, upon information and belief, infringe the Asserted Patents. Upon information and belief, Comcast Corporation’s presence in the District of Massachusetts reaches so far as to include naming rights to one of the nation’s top-grossing amphitheaters, the Massachusetts-based Comcast Xfinity Center.<sup>6</sup>

31. This Court has general and/or specific personal jurisdiction over Comcast Cable Communications, LLC, and venue is proper, in part, because Comcast Cable Communications, LLC, directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products

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<sup>4</sup> *Id.*

<sup>5</sup> *DIRECTV, LLC v. Dep’t of Revenue*, 470 Mass. 647, 662 (2015).

<sup>6</sup> See *Outdoor Arena Known as the Comcast Center Marks 25th Birthday*, THE PROVIDENCE JOURNAL (Mar. 23, 2010, 1:00 AM), [https://web.archive.org/web/20110628184423/http://www.projo.com/music/content/ARTSUN-COMCAST\\_CENTER\\_05-23-10\\_SDIGBTD\\_v18.10dd1ea0.html](https://web.archive.org/web/20110628184423/http://www.projo.com/music/content/ARTSUN-COMCAST_CENTER_05-23-10_SDIGBTD_v18.10dd1ea0.html) (stating that “Billboard magazine named the venue the top-grossing amphitheater not only of 2009 but of the decade”); *Comcast Center in Mansfield Renamed Xfinity Center*, THE BOSTON GLOBE (Dec. 11, 2013), <https://www.bostonglobe.com/business/2013/12/11/that-outdoor-concert-place-mansfield-has-yet-another-name-xfinity/1YtavaJY0ZECK7z5DgbpoN/story.html> (noting that Comcast renamed the Comcast Center to the “Xfinity Center” in 2013 in “a nod to the company’s television and Internet business”).

and services to residents of the District of Massachusetts by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast Cable Communications, LLC maintains regular and established places of business in this district, including 41 Xfinity store locations. In addition, upon information and belief, Comcast Cable Communications, LLC, directly or through its subsidiaries, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here. Comcast Cable Communications, LLC, directly or through its subsidiaries, operates highly commercial websites through which regular sales and/or leases of products and/or sales of services are made to customers in this district, including products and services that, upon information and belief, infringe the Asserted Patents.

32. This Court has general and/or specific personal jurisdiction over Comcast Cable Communications Management, LLC, and venue is proper, in part because Comcast Cable Communications Management, LLC, directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast Cable Communications Management, LLC maintains regular and established places of business in this district. For example, upon information and belief, Comcast Cable Communications Management, LLC is a directly licensed cable television provider to at least five Massachusetts cities and towns. Upon information and belief, Comcast Cable Communications Management, LLC offers cable services and products to residents of these

cities and towns through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast Cable Communications Management, LLC, directly or through its subsidiaries, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here. Comcast Cable Communications Management, LLC, directly or through its subsidiaries, operates highly commercial websites through which regular sales and/or leases of products and/or sales of services are made to customers in this district, including products and services that, upon information and belief, infringe the Asserted Patents.

33. This Court has general and/or specific personal jurisdiction over Comcast Business Communications, LLC, and venue is proper, in part, because Comcast Business Communications, LLC, directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast Business Communications, LLC maintains regular and established places of business in this district, including 41 Xfinity store locations. In addition, upon information and belief, Comcast Business Communications, LLC, directly or through its subsidiaries, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here. Comcast Business Communications, LLC, directly or through its subsidiaries, operates highly commercial websites through which regular sales and/or leases of products and/or sales of services are made

to customers in this district, including products and services that, upon information and belief, infringe the Asserted Patents.

34. This Court has general and/or specific personal jurisdiction over Comcast Holdings Corporation, and venue is proper, in part, because Comcast Holdings Corporation, directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast Holdings Corporation, directly or through its subsidiaries maintains regular and established places of business in this district, including 41 Xfinity store locations. In addition, upon information and belief, Comcast Holdings Corporation, directly or through its subsidiaries, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here. Comcast Holdings Corporation, directly or through its subsidiaries, operates highly commercial websites through which regular sales and/or leases of products and/or sales of services are made to customers in this district, including products and services that, upon information and belief, infringe the Asserted Patents.

35. This Court has general and/or specific personal jurisdiction over Comcast Shared Services, LLC, and venue is proper, in part, because Comcast Holdings Corporation, directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts by providing infringing products and services that it

knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast Shared Services, LLC, directly or through its subsidiaries maintains regular and established places of business in this district, including 41 Xfinity store locations. In addition, upon information and belief, Comcast Shared Services, LLC, directly or through its subsidiaries, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here. Comcast Shared Services, LLC, directly or through its subsidiaries, operates highly commercial websites through which regular sales and/or leases of products and/or sales of services are made to customers in this district, including products and services that, upon information and belief, infringe the Asserted Patents.

36. This Court has general and/or specific personal jurisdiction over Comcast of Massachusetts I, Inc., and venue is proper, in part because Comcast of Massachusetts I, Inc. directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Massachusetts I, Inc., a Massachusetts domestic profit corporation, maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Massachusetts I, Inc. has a principal place of business at 181 Ballardvale St., Wilmington, MA 01887. Furthermore, for example, upon information and belief, Comcast of Massachusetts I, Inc. is a directly licensed cable television provider to at least 74 Massachusetts cities and towns. In addition, upon information and belief, Comcast of Massachusetts I, Inc., directly or through

related Comcast entities, employs individuals within the District of Massachusetts including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

37. This Court has general and/or specific personal jurisdiction over Comcast of Milton, Inc., and venue is proper, in part because Comcast of Milton, Inc. directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Milton, Inc., a Massachusetts domestic profit corporation, maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Milton, Inc. has a principal place of business at 950 Hyde Park Ave., Hyde Park, Massachusetts 02136. Furthermore, for example, upon information and belief, Comcast of Milton, Inc. is a directly licensed cable television provider to at least the town of Milton. In addition, upon information and belief, Comcast of Milton, Inc., directly or through related Comcast entities, employs individuals within the District of Massachusetts including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

38. This Court has general and/or specific personal jurisdiction over Comcast of Southern New England, Inc., and venue is proper, in part because Comcast of Southern New England, Inc. directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing

products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Southern New England, Inc., a Massachusetts domestic profit corporation, maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Southern New England, Inc. has a principal place of business at 440 Myles Standish Blvd., Taunton, Massachusetts 02780. Furthermore, for example, upon information and belief, Comcast of Southern New England, Inc. is a directly licensed cable television provider to at least six Massachusetts cities and towns. In addition, upon information and belief, Comcast of Southern New England, Inc., directly or through related Comcast entities, employs individuals within the District of Massachusetts including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

39. This Court has general and/or specific personal jurisdiction over Comcast of Massachusetts/New Hampshire, LLC, and venue is proper, in part because Comcast of Massachusetts/New Hampshire, LLC directly, and/or in combination with other Comcast entities and/or through its agents, has at least one regular and established place of business in this district, and does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Massachusetts/New Hampshire, LLC maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Massachusetts/New Hampshire, LLC has a principal place of business at 26 Tremont St., Lynn, Massachusetts 01902. Furthermore, for example, upon information and belief, Comcast of

Massachusetts/New Hampshire, LLC is a directly licensed cable television provider to at least 25 Massachusetts cities and towns. Upon information and belief, Comcast of Massachusetts/New Hampshire, LLC offers cable services and products to residents of these cities and towns through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast of Massachusetts/New Hampshire, LLC, directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

40. This Court has general and/or specific personal jurisdiction over Comcast of Needham, Inc., and venue is proper, in part because Comcast of Needham, Inc., directly and/or in combination with other Comcast entities and/or through its agents, has at least one regular and established place of business in this district, and does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Needham, Inc., LLC maintains a regular and established place of business in this district. For example, upon information and belief, Comcast of Needham, Inc. has a principal place of business at 330 Billerica Rd., Chelmsford, Massachusetts, 01824. Furthermore, for example, upon information and belief, Comcast of Needham, Inc. is a directly licensed cable television provider to the town of Needham. Upon information and belief, Comcast of Needham, Inc. offers cable services and products to residents of Needham through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast of

Needham, Inc., directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

41. This Court has general and/or specific personal jurisdiction over Comcast of Massachusetts/Virginia, Inc., and venue is proper, in part because Comcast of Massachusetts/Virginia, Inc., directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Massachusetts/Virginia, Inc. maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Massachusetts/Virginia, Inc. has a principal place of business at 160 Old Farm Rd., Amherst, Massachusetts 01002. Furthermore, for example, upon information and belief, Comcast of Massachusetts/Virginia, Inc. is a directly licensed cable television provider to at least 13 Massachusetts cities and towns. Upon information and belief, Comcast of Massachusetts/Virginia, Inc. offers cable services and products to residents of these cities and towns through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast of Massachusetts/Virginia, Inc., directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

42. This Court has general and/or specific personal jurisdiction over Comcast of Boston, Inc., and venue is proper, in part because Comcast of Boston, Inc. directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Boston, Inc. maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Boston, Inc. as a principal place of business at 426 East 1st St., South Boston, Massachusetts 02127. Furthermore, for example, upon information and belief, Comcast of Boston, Inc. is a directly licensed cable television provider to the city of Boston. Upon information and belief, Comcast of Boston, Inc. offers cable services and products to residents of Boston through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast of Boston, Inc., directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

43. This Court has general and/or specific personal jurisdiction over Comcast of Brockton, Inc., and venue is proper, in part because Comcast of Brockton, Inc., directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business

from residents of this district. Upon information and belief, Comcast of Brockton, Inc. maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Brockton, Inc. has a principal place of business at 200 Westgate Drive, Brockton, Massachusetts 02301. Furthermore, for example, upon information and belief, Comcast of Brockton, Inc. is a directly licensed cable television provider to the city of Brockton. Upon information and belief, Comcast of Brockton, Inc. offers cable services and products to residents of Brockton through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast of Brockton, Inc., directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

44. This Court has general and/or specific personal jurisdiction over Comcast of California/Massachusetts/Michigan/Utah, LLC, and venue is proper, in part because Comcast of California/Massachusetts/Michigan/Utah, LLC, directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of California/Massachusetts/Michigan/Utah, LLC maintains regular and established places of business in this district. For example, upon information and belief, Comcast of California/Massachusetts/Michigan/Utah, LLC has a principal place of business at 1316 Commonwealth Ave., Allston, Massachusetts 02134. Furthermore, for example, upon information and belief, Comcast of

California/Massachusetts/Michigan/Utah, LLC is a directly licensed cable television provider to at least the town of Brookline, Massachusetts. Upon information and belief, Comcast of California/Massachusetts/Michigan/Utah, LLC offers cable services and products to residents of Brookline through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast of California/Massachusetts/Michigan/Utah, LLC, directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

45. This Court has general and/or specific personal jurisdiction over Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC, and venue is proper, in part because Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC, directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC has a principal place of business at 181 Ballardvale St., Wilmington, Massachusetts 01887. Furthermore, for example, upon information and belief, Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New

York/North Carolina/Virginia/Vermont, LLC is a directly licensed cable television provider to at least 16 Massachusetts cities and towns. Upon information and belief, Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC offers cable services and products to residents of these cities and towns through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast of Connecticut/Georgia/Massachusetts/New Hampshire/New York/North Carolina/Virginia/Vermont, LLC, directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

46. This Court has general and/or specific personal jurisdiction over Comcast of Massachusetts II, Inc., and venue is proper, in part because Comcast of Massachusetts II, Inc., directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Massachusetts II, Inc. maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Massachusetts II, Inc. is a directly licensed cable television provider to at least 28 Massachusetts cities and towns. Upon information and belief, Comcast of Massachusetts II, Inc. offers cable services and products to residents of these cities and towns through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief,

Comcast of Massachusetts II, Inc., directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

47. This Court has general and/or specific personal jurisdiction over Comcast of Massachusetts III, Inc., and venue is proper, in part because Comcast of Massachusetts III, Inc., directly and/or in combination with other Comcast entities and/or through its agents, does continuous and systematic business in this district, including by providing infringing products and services to residents of the District of Massachusetts, by providing infringing products and services that it knew would be used within this district, and/or by participating in the solicitation of business from residents of this district. Upon information and belief, Comcast of Massachusetts III, Inc. maintains regular and established places of business in this district. For example, upon information and belief, Comcast of Massachusetts III, Inc. is a directly licensed cable television provider to at least 32 Massachusetts cities and towns. Upon information and belief, Comcast of Massachusetts III, Inc. offers cable services and products to residents of these cities and towns through physical Xfinity stores and also maintains cable infrastructure and service centers in the District of Massachusetts. In addition, upon information and belief, Comcast of Massachusetts III, Inc., directly or through related Comcast entities, employs individuals within the District of Massachusetts, including employees who provide infringing products and services to customers here, and maintains offices and facilities here.

48. Venue is further proper in this Court because the Plaintiff was founded and maintains its principal place of business in Massachusetts, and events at issue transpired here.

49. Venue is further proper in this Court because key witnesses, Murali Aravamudan, founder of Veveo and an inventor of the Asserted Patents, and Michael Koenig, Veveo's former Vice President of Sales, currently reside within this District.

### **FACTUAL BACKGROUND**

50. Veveo is a technology company that developed proprietary search technology to be used in cable television systems. The company was founded in October 2004 by Murali Aravamudan and Ajit Rajasekharan in Andover, Massachusetts.

51. Veveo's mission was "to be a leading provider of network-based solutions that simplify access to content and information across any input/display constrained and connected device." Among other innovations, Veveo pioneered a system that allows for incremental, network-based searches on cable set-top boxes (STBs) and other devices. A key feature of this system is covered by the Asserted Patents.

52. Cable customers watch content on their televisions from a wide variety of sources, including network channels, cable channels, premium channels, previously-recorded shows, and movies on demand. Customers access this content through a visual interface known as an "on-screen guide." As more and more content is accessible from the on-screen guide, search has become an important feature used by cable providers to distinguish their products and services.

53. Veveo's innovations revolutionized search functionality for on-screen guides, in part by allowing customers to conduct text searches more easily and quickly using remote controllers with numeric keypads. These searches are called "overloaded key" searches because each numeric key corresponds to multiple letters.

54. Before Veveo developed the technology in the Asserted Patents, users were unable to effectively search using overloaded key interfaces found on TV remotes. Spelling out

the full name of a TV show or movie was cumbersome. For example, a user might have to press the “1” key three times simply to type the letter “C.” Among other things, Veveo’s technology displays relevant results even if a user pushed the button only once for each letter, so that “1” could mean “A”, “B”, or “C.” This innovation reduced the amount of user input required, making remote-control searching of TV content significantly easier.

55. Veveo’s technology was successful. Before Veveo was acquired by Rovi, Veveo products and services had been deployed worldwide through leading device OEMs and major Pay-TV providers, including Verizon, AT&T, Nokia, and DirecTV. By 2013, 45 million TVs in the US and Canada had access to Rovi search technology.<sup>7</sup>

56. In or around late 2005, Veveo and Comcast contemplated working together to develop enhanced search capabilities for Comcast’s cable television platform using Veveo’s technology. On December 20, 2005, Comcast Cable Communications Management, LLC and Veveo executed a Mutual Confidentiality and Nondisclosure Agreement. In several meetings over the next five years, Veveo provided demonstrations and presentations to Comcast about Veveo’s network-based search, proprietary search modes, and various best practices. Comcast elicited Veveo’s technical know-how and experience by holding out potential business collaborations as inducement.

57. In 2009, Veveo provided Comcast with technical engineering documents for supporting communications on a network-based search system. The documents included specifications for implementing technology covered by Veveo’s intellectual property and were

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<sup>7</sup> See, e.g., *Veveo Awarded Two New Patents for Its Semantic Search, Discovery and Personalization Technologies*, MARKETWIRED (May 13, 2013), <http://www.marketwired.com/press-release/mise-jour-alerte-lallergie-presence-non-declaree-de-moutarde-et-ou-de-sulfites-dans-1790018.htm>.

provided pursuant to a nondisclosure agreement such that the information was subject to contractual confidentiality restrictions. The documents also described Veveo's patents and patent applications by name, including the application of Asserted U.S. Patent No. 7,779,011.

58. In 2010, after years of reviewing Veveo's confidential and proprietary information, Comcast entered into discussions with Veveo to develop a network-based cable search system—the Xcalibur system—the precursor to Comcast's X1 Platform.

59. On June 10, 2010, Comcast Cable Communications Management, LLC and Veveo executed a license agreement (the License), whereby Veveo would adapt its software especially for Comcast's network, and Comcast, subject to the terms and conditions of the License, could use Veveo search software to provide services to its customers and distribute the software in its STBs.

60. Pursuant to the License, Veveo provided Comcast with engineering support and proprietary Veveo technology that Comcast integrated into Xcalibur. The License made clear that this technology was covered by Veveo intellectual property, including the Asserted Patents. Again, Veveo shared confidential and proprietary engineering documents for supporting communications on a network-based search system that Veveo marked as "Veevo Proprietary and Confidential" to ensure Comcast understood that the material contained Veveo proprietary information, may be protected by intellectual property including the Asserted Patents, and was subject to contractual confidentiality restrictions.

61. Veveo then worked alongside Comcast to incorporate Veveo search technology into Comcast's Xcalibur project.

62. In or around August 2010, Comcast asked Veveo about expanding the License to bring the innovative capabilities of Veveo's software to all devices, including mobile devices.

63. In April 2011, Comcast launched the Xcalibur system and deployed STBs utilizing Veveo's search capabilities to approximately 125,000 customers, with success.

64. Then, in June 2011, Comcast CEO Brian Roberts showcased Xcalibur's new and improved search engine. Roberts specifically highlighted the system's ability to search using overloaded keys.

65. Upon information and belief, despite the successful launch using Veveo's proprietary search capabilities, Comcast sought to have its internal team, StreamSage, develop search software with the same functionalities and capabilities of the Veveo system. And Comcast did this with full knowledge that the technology was protected by the Asserted Patents.

66. During this time, Comcast nonetheless assured Veveo that its technology would be used in new markets and that Veveo would have the opportunity to collaborate on additional projects with Comcast.

67. However, a Comcast employee inadvertently revealed to Veveo that StreamSage was creating a replacement search engine. In or around February 2012, Veveo received an email discussing Comcast's testing of the new search engine, REX, against Veveo search.

68. On April 30, 2013, Comcast terminated the License and immediately replaced Veveo's search functionality in X1 with REX. REX was designed to include Veveo's patented features—even though Comcast knew full well that those features were covered by the Asserted Patents.

69. On August 7, 2013, two months after the termination of the contract, Veveo brought Civil Action No. 1:13-cv-11885 in the District of Massachusetts for patent infringement asserting the Asserted Patents, breach of contract, trade secret misappropriation, and unfair business practices.

70. On October 10, 2013, after assurances from Comcast that it would negotiate additional business collaborations with Veveo, Veveo voluntarily dismissed its claim before Comcast filed its Answer. Comcast, however, never did reach another business deal with Veveo.

71. In February 2014, Rovi Corporation purchased Veveo, and Comcast became temporarily licensed to the Asserted Patents through its patent license with Rovi Guides (another Rovi Corporation subsidiary). But Comcast's license to Rovi's patent portfolio expired on March 31, 2016, and Comcast refused to renew it.

72. On April 1, 2016, Rovi Guides and Veveo filed a patent-infringement suit against Comcast asserting U.S. Patent Nos. 8,433,696 and 8,122,034, which are owned by Veveo, and various Rovi Guides' patents that are not at issue in this Complaint. That case is currently stayed pending the outcome of *inter partes* review of the '696 Patent and the Rovi Guides' patents. *See generally* Op. & Order, No. 1:16-cv-09278-JPO, ECF No. 365 (S.D.N.Y. Oct. 27, 2017).

73. On April 6, 2016, Rovi Corporation and Rovi Guides brought an enforcement action at the International Trade Commission (ITC) for patent infringement. Just in November 2017, the ITC issued orders in favor of the Rovi Complainants barring Comcast from importing and distributing Comcast's infringing set top boxes (STBs) in the United States. *See generally In re Certain Digital Video Receivers & Hardware & Software Components Thereof*, Inv. No. 337-TA-1001, Comm'n Op. (Dec. 6, 2016) (Final Public Version). And in response, Comcast has now disabled valuable features in an effort to avoid infringement of the patents asserted in that ITC action, drawing complaints from Comcast's subscribers on public forums.

74. Yet still, notwithstanding the ITC result, Comcast continues to refuse to renew its license to the patent portfolios, including the Veveo Asserted Patents, owned by Rovi Corporation and its subsidiaries. Comcast willfully and knowingly continues to use its patented

technology. Knowing full well of the Asserted Patents in particular, Comcast continues to offer search functionalities incorporating Veveo technology to its customers without a license—search functionality that Comcast knows full well infringes the Asserted Patents.

75. Indeed, Comcast is the lone holdout. Every major Pay-TV provider in the United States renewed its license to Rovi’s portfolio of IPG patents (including the Veveo Asserted Patents) in 2016 and 2017, including AT&T, Charter / Spectrum, DISH and Verizon—except Comcast. So while every one of its competitors pays a fair price for Rovi’s innovative technology, Comcast alone attempts to use it for free. Veveo is forced, then, to bring this additional infringement suit asserting additional patents in order to enforce its patent rights.

**FIRST CLAIM FOR RELIEF**

**INFRINGEMENT OF U.S. PATENT NO. 7,779,011**

76. Plaintiff realleges and incorporates by reference the allegations of paragraphs 1-75 of this Complaint.

77. The ’011 Patent is valid and enforceable under United States Patent Laws.

78. Veveo, Inc. owns, by assignment, all right, title, and interest in and to the ’011 Patent, including the right to collect for past damages.

79. A copy of the ’011 Patent is attached hereto as Exhibit A.

80. The ’011 Patent claims priority to U.S. Provisional Patent Application No. 60/716,101, filed on September 12, 2005, and U.S. Provisional Patent Application No. 60/711,866, filed on August 26, 2005.

**THE ’011 PATENT**

81. The ’011 Patent is directed to a method, system, and computer program product for processing unresolved keystroke entries by a user from a “text input interface with

overloaded keys.” ’011 Patent at Abstract. Overloaded keys are those with a fixed association with both a number and at least one alphabetic character. ’011 Patent at FIG. 1. For example, the key “1” may also indicate the letters “A”, “B,” and “C.” The ’011 Patent discloses, among other things, identifying and displaying matching search items in response to each of a user’s unresolved keystrokes and the characters present that caused the displayed items to be associated with the unresolved keystrokes so as to illustrate to the user how the unresolved keystrokes match information associated with the displayed items. This display guides users toward faster and more precise searches with overloaded keys. The ’011 Patent further discloses ordering the displayed items “in accordance with given criteria.” ’011 Patent at Abstract.

82. Figure 2 of the ’011 Patent is a schematic diagram depicting one or more embodiments of the invention and the equipment on which the patented invention may function.

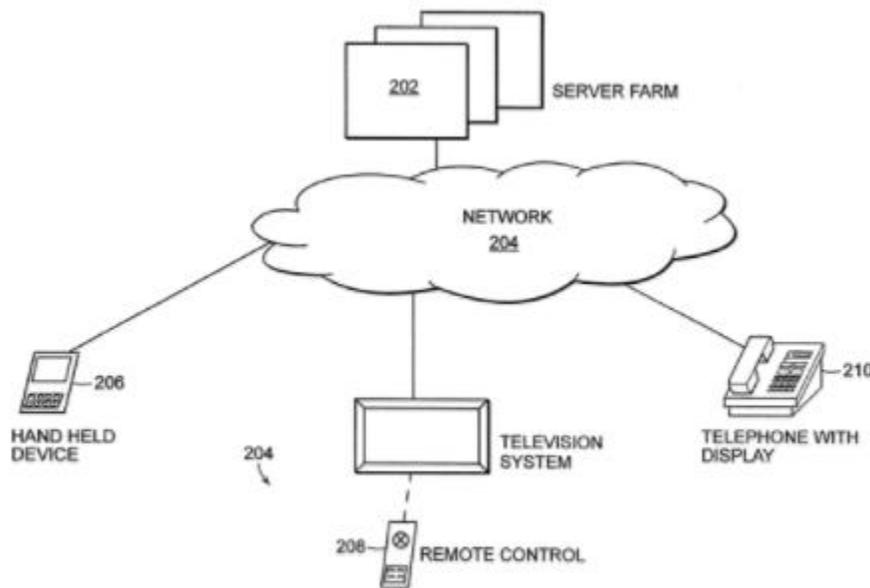


FIG. 2

As the ’011 Patent describes:

FIG. 2 schematically illustrates an overall system for performing searches with reduced text entry using various devices in accordance with one or more

embodiments of the invention. The system includes a server farm or system **202**, a network **204**, and a variety of devices **206**, **208**, **210** operated by users with text input interfaces. In accordance with one or more embodiments of the invention, the server **202** processes search queries received from the user devices **206**, **208**, **210**. In other embodiments, the search queries are processed on the devices themselves. As discussed below, the server **202** can be the source of search data and relevance updates. If part of a television system, the server **202** can also be the source of or be linked to a source of at least some of the available television content (e.g., a cable or satellite television operator) from which the user can obtain content associated with search results.

The network **204** functions as the distribution framework for transmitting data from the server **202** to the devices operated by the users. The distribution network **204** could be wired or wireless connections or some combination thereof. Examples of possible networks include computer networks, cable television networks, satellite television networks, IP-based television networks, mobile communications networks (such as, e.g., wireless CDMA and GSM networks), wired telephone networks, and IP-based wired and wireless networks. The search devices could have a wide range of interface capabilities. A device, e.g., could be a hand-held mobile communications device **206** such as a cellular phone or PDA having a limited display size and a reduced keypad with overloaded keys. Another type of search device is a television system **204** with a remote control device **208** having an overloaded keypad. Another possible search device is a desk telephone **210** with a reduced keyboard and a small display screen.

'011 Patent at 4:17-51.

83. Figure 4 of the '011 Patent is a flow chart illustrating a search process in accordance with one or more embodiments of the invention.

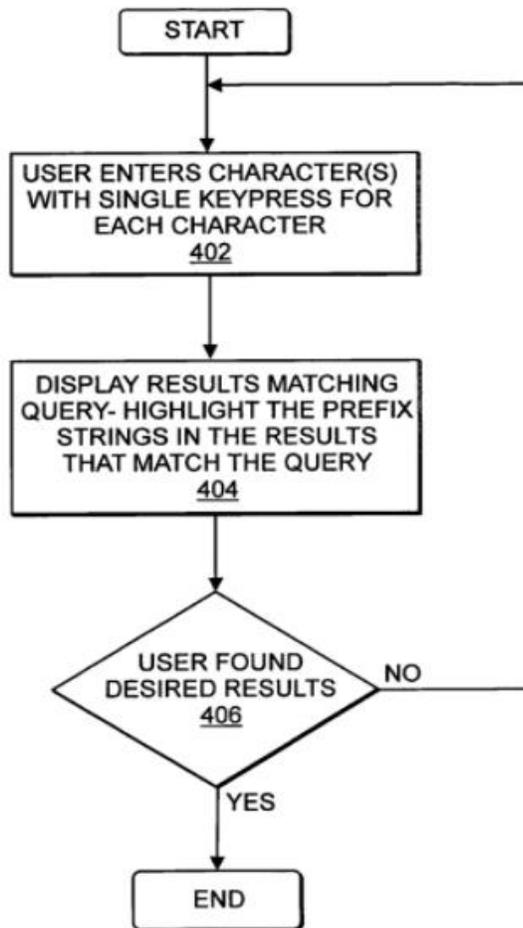


FIG. 4

As the '011 patent describes:

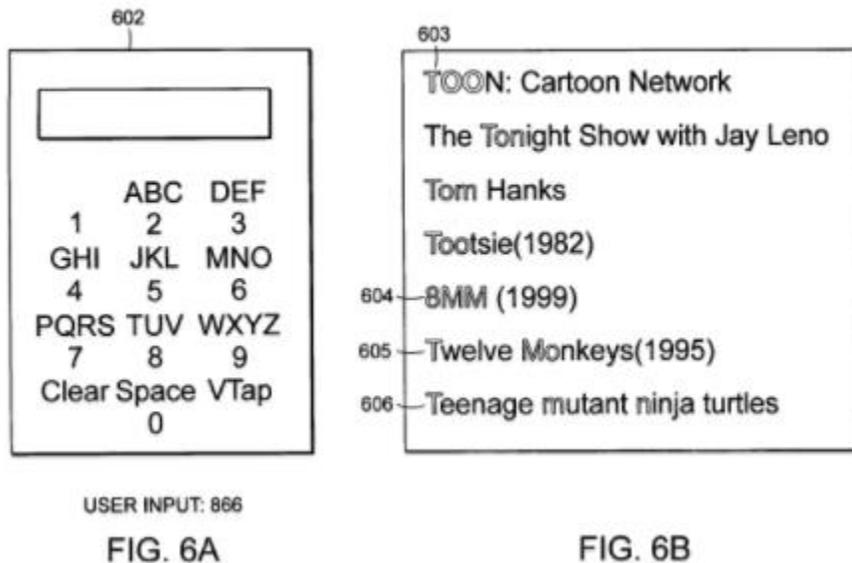
At step **402**, the user enters a character using an ambiguous text input interface, e.g., using a keypad with overloaded keys where a single key press is performed for each character entered. At **404**, an incremental search system determines and displays at least some of the results that match the input character entered at **402**. Since the input is ambiguous, the match of results would include the matches for all the ambiguous input characters represented by the single key press (including those not of interest to the user). To address this increased set of matches, an ordering scheme is preferably used to order the results to improve accessibility to results expected to be more of interest to the user. The ordering of results can be based on a variety of criteria including, e.g., temporal relevance, location relevance, popularity and personal preferences (that may have been determined implicitly or explicitly) or some combination of these criteria. (In a television

application, temporal relevance can be used to favor programs whose timing may be more of interest to the viewer. For example, if the user entered NBA, then the system would list the games in order of temporal relevance. Such as those in progress or are scheduled to begin in the near future are listed at the higher on the list. The popularity criterion can be used to favor programs or channels that are more popular than others. The personal preference criterion can be used to favor programs or channels that the user has indicated preference for in prior user selections. For example, if a user frequently scrolls down to “CNBC and selects it, the system would over time place CNBC higher in the list of results over a more generally popular channel such as CNN. Furthermore, identity independent time-based usage pattern learning algorithms can be applied in conjunction with personalization to apply the results ordering rules in an appropriate context. Also, e.g., when using a PDA or cell phone to search for a business, the system may use location relevance as part of the ordering criteria.)

’011 Patent 5:26-61.

84. The items for which the user searches can include television content items, such as movies or television shows, and searches for television content items can be performed over many content sources “including, but not limited to, broadcast television, VOD [Video-on-Demand], IPTV, PVR [personal video recorder] (local and network).” ’011 Patent at 4:13-16. Using a text input interface, “the user can enter an ambiguous search query directed at identifying a desired item,” such as a television content item, “by pressing overloaded keys of the text input interface once to form each character of an ambiguous query string.” ’011 Patent at 3:26-27; 3:41-43. The search query comprises a prefix substring, wherein “[a] prefix substring of a word is a variable length string of characters that contains fewer than all the characters making up the word.” ’011 Patent at 3:29-31. In response to the search query, “[t]he system dynamically identifies a group of one or more items from the set of items having one or more words in the names thereof matching said search query as the user enters each character of said search query.” ’011 Patent at 3:32-35. This group of one or more items is displayed “with the characters of the one or more words in the names corresponding to the prefix substring of the search query being highlighted.” ’011 Patent at 3:35-39. Figures 6A and 6B illustrate an

exemplary user text input interface and an exemplary display interface. The display interface in FIG. 6B shows the results of a sample incremental search where “the user has entered a multi-word query in accordance with one or more embodiments of the invention.” ’011 Patent at 3:4-7.



85. Because each key the user presses is overloaded and therefore represents multiple possible search prefixes, simply displaying the text input “866,” as in FIG. 6B, with the results “will not provide the user sufficient information to associate his or her input with the match results.” ’011 Patent at 7:15-16. For example, the “8” character initially entered by the user “matches all items in the search database containing any word which begins with any of the alphanumeric characters ‘8’, ‘T’, ‘U,’ or ‘V.’” ’011 Patent at 7:17-19. Thus, matches to the first character include “8MM and Star Trek.” ’011 Patent at 7:20-21. The “6” character entered by the user next in FIG. 6B further “limits these search results only to items containing words that begin with the alphanumeric characters ‘8’, ‘T’, ‘U,’ or ‘V’ and whose second character is one of the alphanumeric characters ‘6,’ ‘M,’ ‘N,’ or ‘O’ or to items containing words that begin with the alphanumeric characters ‘8’, ‘T’, ‘U,’ or ‘V’ and that also contain subsequent words that begin

with the alphanumeric characters ‘6,’ ‘M,’ ‘N,’ or ‘O.’” ’011 Patent at 7:22-30. With the user’s input of “6,” the earlier match, “Star Trek,” would drop out of the results because the “r” in “Trek” following the “T” matched by the “8” character does not match the alphanumeric characters “6,” “M,” “N,” or “O” (and there are no additional words in “Star Trek” that would follow the sequence of any combination of alphanumeric characters associated with “86”). ’011 Patent at 7:30-34. The next “6” character entered by the user in Figure 6B as the third overloaded character further limits the search results to only items containing words with a third character mapped to the alphanumeric characters associated with “6” that follows two characters associated with “8” and “6,” respectively. ’011 Patent at 7:35-41. The relationship between the unresolved keystrokes of overloaded characters entered by the user and the corresponding match results is thus “complicated and not necessarily intuitive to the user.” ’011 Patent at 7:41-44. Accordingly, “in various embodiments of the invention, the characters in the search result that match the overloaded single-word search prefix characters are highlighted, providing the user with a visual indication of the relationship between the key pressed and the incremental match results.” ’011 Patent at 7:44-48. This feature aids the user in identifying items of interest and in tailoring subsequent keystrokes to maximize search efficiency.

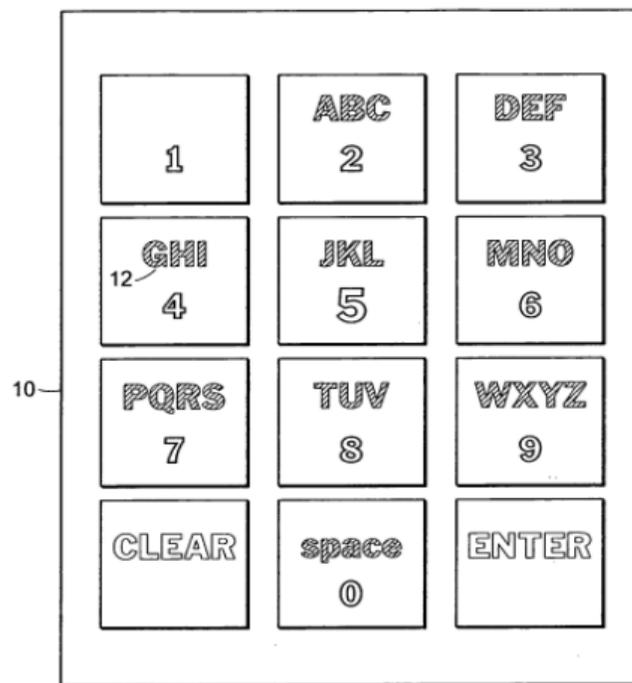
86. In view of the historical context and development of search technology discussed below, a person of ordinary skill in the art would have understood that the ’011 patent’s inventions provided unconventional solutions to search for content.

### **HISTORICAL CONTEXT OF THE ’011 PATENT**

87. Identifying and displaying matching search items in response to each of a user’s unresolved overloaded keystrokes and displaying the specific characters present that caused the displayed items to be associated with the unresolved keystrokes so as to illustrate to the user how

the unresolved keystrokes match information associated with the displayed items is not common or conventional today, let alone at the time of the '011 Patent's inventions. *See* '011 Patent at 1:43-2:7.

88. At the time of the inventions of the '011 Patent, many user-operated devices such as mobile phones and television remote controls showcased overloaded keys, but the potential convenience of the overloaded keys for use in search functions was overshadowed by cumbersome input methods. *See* '011 Patent at 1:34-35. Figure 1 of the '011 Patent illustrates a common twelve-key keypad interface found in many cell phones and some television remote controls at the time of the inventions.



PRIOR ART  
FIG. 1

89. In this common twelve-key interface, for example, the “2” key can be used to enter the number “2” but also the letters “A,” “B,” and “C,” '011 Patent at 1:42-43. However, to

fully make use of a user's keystroke, some form of disambiguation is required. One such method of disambiguation, available at the time of the '011 Patent's inventions, was the "so-called multi-press interface." '011 Patent at 1:46-48. Multi-press systems, such as the multi-tap text entry system for mobile phones, require a user to "press a particular key multiple times in quick succession to select a desired character." '011 Patent at 1:46-48. For instance, a user would have to quickly press the "2" key twice for "B" and three times for "C." '011 Patent at 1:48-50. Multi-tap systems have the advantage of accuracy (*i.e.*, users are able to select each particular letter or number), but users complained of the extremely tiresome number of keystrokes required for text entry.<sup>8</sup> Thus, a multi-tap system of resolving overloaded keys is not "particularly suitable" for performing searches because of the sheer number of key strokes needed to perform a single search. '011 Patent at 1:55-57.

90. Another prominent method of overloaded key disambiguation that was available at the time of the '011 Patent's inventions is the vocabulary based text entry method, which consists of "vocabulary based completion choices for each word entered." *See* '011 Patent at 1:50-53. One popular vocabulary based text entry system at the time of the '011 Patent's inventions was the T9 system.<sup>9</sup> *See* '011 Patent at 1:50-53. The T9 system and other vocabulary based text entry technologies improved upon multi-tap systems by reducing the number of keystrokes necessary for text input by allowing for a single keystroke for each letter or number.

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<sup>8</sup> *See, e.g.*, Clive Thompson, *A Phone You Can Actually Type On*, SLATE (Jan. 4, 2005 7:02 PM), [http://www.slate.com/articles/arts/gizmos/2005/01/a\\_phone\\_you\\_can\\_actually\\_type\\_on.html](http://www.slate.com/articles/arts/gizmos/2005/01/a_phone_you_can_actually_type_on.html) (describing the multi-tap system of text input as accurate but a "hair-pulling annoyance").

<sup>9</sup> The T9 system of overloaded key disambiguation is disclosed over U.S. Patents No. 5,818,437 (Grover et al.), 5,953,541 (King et al.), and 6,011,554 (King et al.) (all cited as prior art by the '011 Patent).

However, vocabulary based text entry systems “are designed typically for composition applications (as opposed to search applications)” and require that a user “explicitly disambiguates each word by performing a word completion action” before proceeding to the next word in the composition.<sup>10</sup> ’011 Patent at 1:60-65. For search applications, this selecting of each word creates an additional burden for the user and “has the undesirable consequence of reducing the usefulness of a search engine that has the potential to retrieve results with just a few input characters.” ’011 Patent at 2:4-7.

91. These shortcomings—associated with the “multi-press interface” and “vocabulary based” text entry methods—gave rise to the challenge of providing users with a way of using overloaded keypads for search functions that was not overly burdensome or complicated. To address the drawbacks of applying existing overloaded key text entry technology to search functions, the ’011 Patent discloses the unique solutions detailed above. Given the state of the art at the time of the invention, the ’011 Patent’s inventions were novel, unconventional solutions that directly addressed problems arising in the field of electronic display devices with input devices, particularly those display devices with integrated program guides having search functionality.

92. A person having ordinary skill in the art at the time of the inventions of the ’011 Patent would not have understood that the inventions could or would be performed solely in the human mind or using pen and paper. Indeed, the very purpose of the identifying and displaying the specific characters present in search results that caused the displayed items to be associated

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<sup>10</sup> See also U.S. Patent No. 5,818,437 at 13:56-58, 14:50-51, 15:34-35, 16:17-18, 17:5-6 (all independent claims requiring “receiv[ing] from a user a selection of the words from the set of words” or similar).

with the unresolved keystrokes from a user is to illustrate to the user how the unresolved keystrokes match information associated with the displayed items so that the user can perform more precise and efficient searches with subsequent keystrokes. Using pen and paper would frustrate the purpose of the '011 Patent and exacerbate the problems the '011 Patent specifically addresses (e.g. making the process of performing unresolved overloaded key searches less complex and burdensome for users). Performing the '011 Patent solely in the human mind or using pen and paper would be a practical impossibility and would run counter to the inventors' detailed description of the inventions and the language of the claims.

### **'011 PATENT ALLEGATIONS**

93. Comcast has infringed and is infringing, individually and/or jointly, either literally or under the doctrine of equivalents, one or more claims of the '011 Patent in violation of 35 U.S.C. § 271, *et seq.*, directly and/or indirectly, by making, using, offering for lease, leasing, distributing in the United States, and/or importing into the United States without authority or license, systems comprising networked servers controlled and operated by Comcast, and/or (or in combination with) set-top boxes (and any corresponding input devices, such as remote control units and mobile phones), including one or more of the Accused Products capable of being used with Comcast's X1 Search feature ('011 Accused Products) that infringe one or more claims of the '011 Patent. On information and belief, each of the '011 Accused Products contains or is designed to be used with Comcast's X1 Search feature.

94. For example, a preliminary claim chart applying exemplary independent claims 1, 9, and 17 of the '011 Patent to the Accused Products (as defined herein, which include related hardware and software components) with a remote control, mobile application, and/or Comcast PX001ANM X1 Set-Top Box operating Comcast Xfinity X1 software can be found at Exhibit B.

This chart is an exemplary chart representative of the infringing operation of all '011 Accused Products, which operate the Comcast Xfinity X1 software in the same manner.

95. Comcast has been, and currently is, actively inducing infringement of the '011 Patent under 35 U.S.C. § 271(b).

96. Comcast has had actual knowledge of the '011 Patent since at least August 7, 2013, when Veveo filed suit against Comcast in the United States District Court for the District of Massachusetts, alleging that during the course of a software license agreement between the parties that Comcast used its access to Veveo's search technology to copy Veveo's core features and that Comcast infringed the '011 Patent. Comcast was reminded of the patent on April 7, 2015 when, at Comcast's request, Rovi provided a spreadsheet illustrating the breadth of Rovi's guidance portfolio, including the '011 Patent.

97. With full knowledge of the '011 Patent, then, Comcast intentionally encourages and aids at least service-providers and end-user subscribers to directly infringe the '011 Patent.

98. Comcast provides the '011 Accused Products and instructions to Xfinity subscribers so that such subscribers will use the '011 Accused Products in a directly infringing manner. Comcast markets the Xfinity System to subscribers by touting the ability to "Search X1 with the Remote Control Keypad" by using "the alphanumeric keys on the keypad to enter your search term. For example, to search for 'NOVA' enter 6682."<sup>11</sup> Comcast provides instructions to its subscribers on how to use the functionality of the '011 Patent on this website as well.

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<sup>11</sup> *Search X1 with the Remote Control Keypad*, XFINITY, <https://www.xfinity.com/support/articles/x1-search-using-the-remote-keypad> (last visited Jan. 22, 2018).

99. Comcast subscribers directly infringe by using the Accused Products in their intended manner to infringe. Comcast induces such infringement by providing the Accused Products and instructions to enable and facilitate infringement, with full knowledge of the '011 Patent. Upon information and belief, Comcast specifically intends that its actions will result in infringement of the '011 Patent or has taken deliberate actions to avoid learning of infringement.

100. This Complaint will serve as notice to Comcast of the '011 Patent and its infringement, should Comcast contend that it did not previously have knowledge thereof.

101. Additional allegations regarding Comcast's knowledge of the '011 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

102. Comcast's infringement of the '011 Patent is and has been willful and deliberate, entitling Veveo to enhanced damages and attorneys' fees.

103. Comcast's infringement of the '011 Patent is exceptional and entitles Veveo to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

104. Veveo has been damaged by Comcast's infringement of the '011 Patent and will continue to be damaged unless Comcast is enjoined by this Court. Veveo has suffered and continues to suffer irreparable injury for which there is no adequate remedy at law. The balance of hardships favors Veveo, and public interest is not disserved by an injunction. Veveo is entitled to recover from Comcast all damages that Veveo has sustained as a result of Comcast's infringement of the '011 Patent, including without limitation lost profits and not less than a reasonable royalty.

**SECOND CLAIM FOR RELIEF**

**INFRINGEMENT OF U.S. PATENT NO. 7,937,394**

105. Plaintiff realleges and incorporates by reference the allegations of paragraphs 1-104 of this Complaint.

106. The '394 Patent is valid and enforceable under United States Patent Laws.

107. Veveo, Inc. owns, by assignment, all right, title, and interest in and to the '394 Patent, including the right to collect for past damages.

108. A copy of the '394 Patent is attached hereto Exhibit C.

109. The '394 Patent is a continuation of U.S. Patent No. 7,779,011 (asserted herein), and claims priority to U.S. Provisional Patent Application No. 60/716,101, filed on September 12, 2005, and U.S. Provisional Patent Application No. 60/711,866, filed on August 26, 2005.

**THE '394 PATENT**

110. The '394 Patent is directed to a method of processing unresolved keystroke entries by a user from a "text input interface with overloaded keys." '394 Patent at Abstract. Overloaded keys are those with a fixed association with both a number and at least one alphabetic character. '394 Patent at Figure 1. The '394 Patent discloses, among other things, identifying and displaying matching search items in response to each of a user's unresolved keystrokes and the characters present that caused the displayed items to be associated with the unresolved keystrokes so as to illustrate to the user how the unresolved keystrokes match information associated with the displayed items. This display guides users toward faster and more precise searches with overloaded keys.

111. Figure 2 of the '394 Patent is a schematic diagram depicting one or more embodiments of the invention and the equipment on which the patented invention may function.

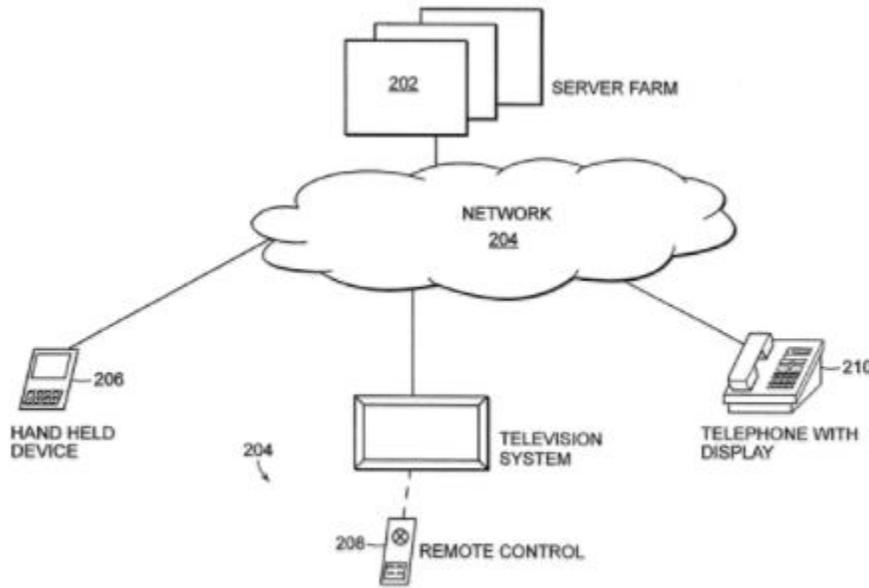


FIG. 2

As the '394 Patent describes:

FIG. 2 schematically illustrates an overall system for performing searches with reduced text entry using various devices in accordance with one or more embodiments of the invention. The system includes a server farm or system **202**, a network **204**, and a variety of devices **206**, **208**, **210** operated by users with text input interfaces. In accordance with one or more embodiments of the invention, the server **202** processes search queries received from the user devices **206**, **208**, **210**. In other embodiments, the search queries are processed on the devices themselves. As discussed below, the server **202** can be the source of search data and relevance updates. If part of a television system, the server **202** can also be the source of or be linked to a source of at least some of the available television content (e.g., a cable or satellite television operator) from which the user can obtain content associated with search results.

The network **204** functions as the distribution framework for transmitting data from the server **202** to the devices operated by the users. The distribution network **204** could be wired or wireless connections or some combination thereof. Examples of possible networks include computer networks, cable television networks, satellite television networks, IP-based television networks, mobile communications networks (such as, e.g., wireless CDMA and GSM networks), wired telephone networks, and IP-based wired and wireless networks.

The search devices could have a wide range of interface capabilities. A device, e.g., could be a hand-held mobile communications device **206** such as a cellular phone or PDA having a limited display size and a reduced keypad with overloaded keys. Another type of search device is a television system **204** with a remote control device **208** having an overloaded keypad. Another possible search device is a desk telephone **210** with a reduced keyboard and a small display screen.

'394 Patent at 4:23-56.

112. Figure 4 of the '394 Patent is a flow chart illustrating a search process in accordance with one or more embodiments of the invention.

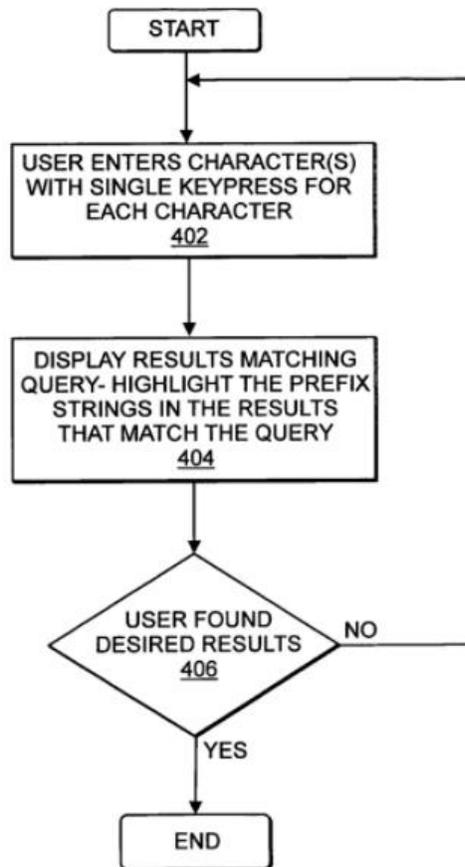


FIG. 4

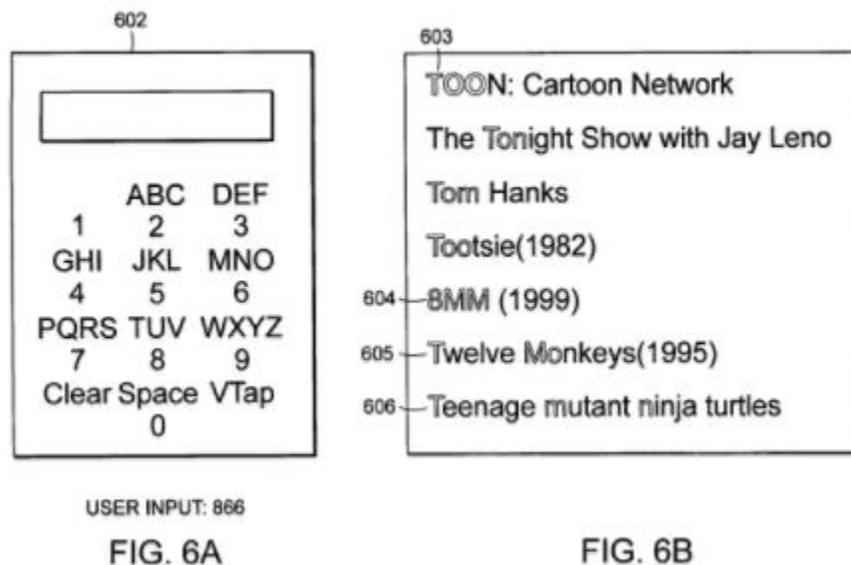
As the '394 patent describes:

At step **402**, the user enters a character using an ambiguous text input interface, e.g., using a keypad with overloaded keys where a single key press is performed for each character entered. At **404**, an incremental search system determines and displays at least some of the results that match the input character entered at **402**. Since the input is ambiguous, the match of results would include the matches for all the ambiguous input characters represented by the single key press (including those not of interest to the user). To address this increased set of matches, an ordering scheme is preferably used to order the results to improve accessibility to results expected to be more of interest to the user. The ordering of results can be based on a variety of criteria including, e.g., temporal relevance, location relevance, popularity and personal preferences (that may have been determined implicitly or explicitly) or some combination of these criteria. (In a television application, temporal relevance can be used to favor programs whose timing may be more of interest to the viewer. For example, if the user entered NBA, then the system would list the games in order of temporal relevance. Such as those in progress or are scheduled to begin in the near future are listed at the higher on the list. The popularity criterion can be used to favor programs or channels that are more popular than others. The personal preference criterion can be used to favor programs or channels that the user has indicated preference for in prior user selections. For example, if a user frequently scrolls down to “CNBC and selects it, the system would over time place CNBC higher in the list of results over a more generally popular channel such as CNN. Furthermore, identity independent time-based usage pattern learning algorithms can be applied in conjunction with personalization to apply the results ordering rules in an appropriate context. Also, e.g., when using a PDA or cell phone to search for a business, the system may use location relevance as part of the ordering criteria.)

’394 Patent at 5:32-67.

113. The items for which the user searches can include television content items such as movies or television shows, and searches for television content items can be performed over many content sources “including, but not limited to, broadcast television, VOD, IPTV, PVR [personal video recorder] (local and network).” ’394 Patent at 4:19-22. Using a text input interface, “the user can enter an ambiguous search query directed at identifying a desired item,” such as a television content item, “by pressing overloaded keys of the text input interface once to form each character of an ambiguous query string.” ’394 Patent at 3:32-33; 3:47-49. The search query comprises a prefix substring, wherein “[a] prefix substring of a word is a variable length string of characters that contains fewer than all the characters making up the word.” ’394 Patent

at 3:35-37. In response to the search query, “[t]he system dynamically identifies a group of one or more items from the set of items having one or more words in the names thereof matching said search query as the user enters each character of said search query.” ’394 Patent at 3:38-41. This group of one or more items is displayed “with the characters of the one or more words in the names corresponding to the prefix substring of the search query being highlighted.” ’394 Patent at 3:41-45. Figures 6A and 6B illustrate an exemplary user text input interface and an exemplary display interface. The display interface in FIG. 6B shows the results of a sample incremental search where “the user has entered a multi-word query in accordance with one or more embodiments of the invention.” ’394 Patent at 2:65-3:2.



114. Because each key the user presses is overloaded and therefore represents multiple possible search prefixes, simply displaying the text input “866,” as in FIG. 6B, with the results “will not provide the user sufficient information to associate his or her input with the match results.” ’394 Patent at 7:20-21. For example, the “8” character initially entered by the user, “matches all items in the search database containing any word which begins with any of the

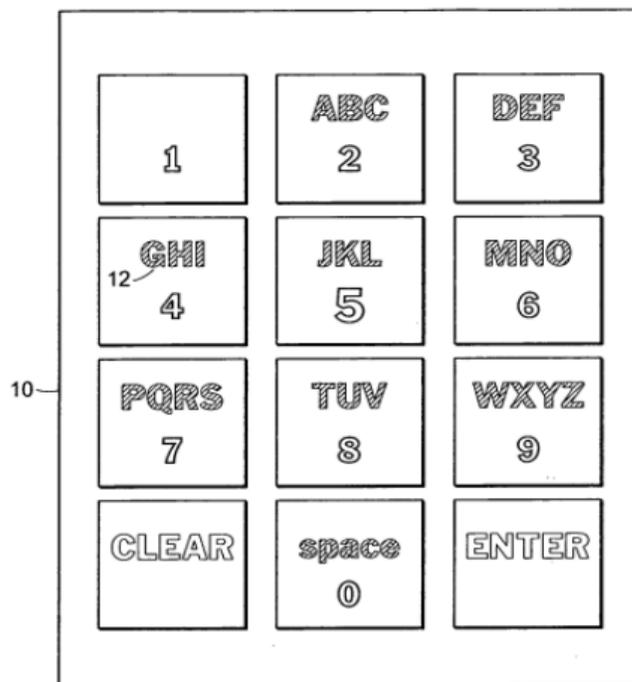
alphanumeric characters ‘8’, ‘T’, ‘U,’ or ‘V.’” ’394 Patent at 7:22-24. Thus, matches to the first character include “8MM” and “Star Trek.” ’394 Patent at 7:25-26. The “6” character entered by the user next in Figure 6B further “limits these search results only to items containing words that begin with the alphanumeric characters ‘8’, ‘T’, ‘U,’ or ‘V’ and whose second character is one of the alphanumeric characters ‘6,’ ‘M,’ ‘N,’ or ‘O’ or to items containing words that begin with the alphanumeric characters ‘8’, ‘T’, ‘U,’ or ‘V’ and that also contain subsequent words that begin with the alphanumeric characters ‘6,’ ‘M,’ ‘N,’ or ‘O.’” ’394 Patent at 7:26-35. With the user’s input of ‘6,’ the earlier match, ‘Star Trek,’ would drop out of the results because the “r” in “Trek,” following the “T” matched by the “8” character, does not match the alphanumeric characters “6,” “M,” “N,” or “O” (and there are no additional words in “Star Trek” that would follow the sequence of any combination of alphanumeric characters associated with “86”). ’394 Patent at 7:35-39. The next “6” character entered by the user in Figure 6B as the third overloaded character further limits the search results to only items containing words with a third character mapped to the alphanumeric characters associated with “6” that follows two characters associated with “8” and “6,” respectively. ’394 Patent at 7:40-46. The relationship between the unresolved keystrokes of overloaded characters entered by the user and the corresponding match results in thus “complicated and not necessarily intuitive to the user.” ’394 Patent at 7:47-48. Accordingly, “in various embodiments of the invention, the characters in the search result that match the overloaded single-word search prefix characters are highlighted, providing the user with a visual indication of the relationship between the key pressed and the incremental match results.” ’011 Patent at 7:49-53. This feature aids the user in identifying items of interest and in tailoring subsequent keystrokes to maximize search efficiency.

115. In view of the historical context and development of search technology discussed below, a person of ordinary skill in the art would understand that the '394 Patent's inventions provided unconventional solutions to search for content.

#### **HISTORICAL CONTEXT OF THE '394 PATENT**

116. Identifying and displaying matching search items in response to each of a user's unresolved overloaded keystrokes, and displaying the specific characters present that caused the displayed items to be associated with the unresolved keystrokes so as to illustrate to the user how the unresolved keystrokes match information associated with the displayed items, is not common or conventional today, let alone at the time of the '394 Patent's inventions. *See* '394 Patent at 1:48-2:12.

117. At the time of the inventions of the '394 Patent, many user-operated devices such as mobile phones and television remote controls showcased overloaded keys, but the potential convenience of the overloaded keys for use in search functions was overshadowed by cumbersome input methods. *See* '394 Patent at 1:39-40. Figure 1 of the '394 Patent illustrates a common twelve-key keypad interface found in many cell phones and some television remote controls at the time of the inventions.



PRIOR ART  
FIG. 1

118. In this common twelve-key interface, for example, the “2” key can be used to enter the number “2” but also the letters “A,” “B,” and “C,” ’394 Patent at 1:47-48. However, to fully make use of a user’s keystroke, some form of disambiguation is required. One such method of disambiguation, available at the time of the ’394 Patent’s inventions, was the “so-called multi-press interface.” ’394 Patent at 1:51-53. Multi-press systems, such as the multi-tap text entry system for mobile phones, require a user to “press a particular key multiple times in quick succession to select a desired character.” ’394 Patent at 1:51-53. For instance, a user would have to quickly press the “2” key twice for “B,” and three times for “C.” ’394 Patent at 1:53-55. Multi-tap systems have the advantage of accuracy (i.e. users are able to select each particular letter or number), but users complained of the extremely tiresome number of keystrokes required

for text entry.<sup>12</sup> Thus, a multi-tap system of resolving overloaded keys is not “particularly suitable” for performing searches because of the sheer number of key strokes needed to perform a single search. ’394 Patent at 1:58-60.

119. Another prominent method of overloaded key disambiguation that was available at the time of the ’394 Patent’s inventions is the vocabulary based text entry method, which consists of “vocabulary based completion choices for each word entered.” *See* ’394 Patent at 1:55-58. One popular vocabulary based text entry system at the time of the ’394 Patent’s inventions was the T9 system.<sup>13</sup> *See* ’394 Patent at 1:55-58. The T9 system and other vocabulary based text entry technologies improved upon multi-tap systems by reducing the number of keystrokes necessary for text input by allowing for a single keystroke for each letter or number. However, vocabulary based text entry systems “are designed typically for composition applications (as opposed to search applications)” and require that a user “explicitly disambiguates each word by performing a word completion action” before proceeding to the next word in the composition.<sup>14</sup> ’394 Patent at 1:65-2:3. For search applications, this selection of each word creates an additional burden for the user and “has the undesirable consequence of reducing

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<sup>12</sup> *See, e.g.*, Clive Thompson, *A Phone You Can Actually Type On*, SLATE (Jan. 4, 2005 7:02 p.m.), [http://www.slate.com/articles/arts/gizmos/2005/01/a\\_phone\\_you\\_can\\_actually\\_type\\_on.html](http://www.slate.com/articles/arts/gizmos/2005/01/a_phone_you_can_actually_type_on.html) (describing the multi-tap system of text input as accurate but a “hair-pulling annoyance”).

<sup>13</sup> The T9 system of overloaded key disambiguation is disclosed over U.S. Patents No. 5,818,437 (Grover et al.), 5,953,541 (King et al.), and 6,011,554 (King et al.) (all cited as prior art by the ’394 Patent).

<sup>14</sup> *See also* U.S. Patent No. 5,818,437 13:56-58, 14:50-51, 15:34-35, 16:17-18, 17:5-6 (all independent claims requiring “receiv[ing] from a user a selection of the words from the set of words” or similar).

the usefulness of a search engine that has the potential to retrieve results with just a few input characters.” ’394 Patent at 2:4-7.

120. These shortcomings—associated with the “multi-press interface” and “vocabulary based” text entry methods—gave rise to the challenge of providing users with a way of using overloaded keypads for search functions that was not overly burdensome or complicated. To address the drawbacks of applying existing overloaded key text entry technology to search functions, the ’394 Patent discloses the unique solutions detailed above. Given the state of the art at the time of the invention, the ’394 Patent’s inventions were novel, unconventional solutions that directly addressed problems arising in the field of electronic display devices with input devices, particularly those display devices with integrated program guides having search functionality.

121. A person having ordinary skill in the art at the time of the inventions of the ’394 Patent would not have understood that the inventions could or would be performed solely in the human mind or using pen and paper. Indeed, the very purpose of the identifying and displaying of the specific characters present in search results that caused the displayed items to be associated with the unresolved keystrokes from a user is to illustrate to the user how the unresolved keystrokes match information associated with the displayed items so that the user can perform more precise and efficient searches with subsequent keystrokes. Using pen and paper would frustrate the purpose of the ’394 Patent and exacerbate the problems the ’394 Patent specifically addresses (e.g. making the process of performing unresolved overloaded key searches less complex and burdensome for users). Performing the ’394 Patent solely in the human mind or using pen and paper would be a practical impossibility and would run counter to the inventors’ detailed description of the inventions and the language of the claims.

**'394 PATENT ALLEGATIONS**

122. Comcast has infringed and is infringing, individually and/or jointly, either literally or under the doctrine of equivalents, one or more claims of the '394 Patent in violation of 35 U.S.C. § 271, *et seq.*, directly and/or indirectly, by making, using, offering for lease, leasing, distributing in the United States, and/or importing into the United States without authority or license, systems comprising networked servers controlled and operated by Comcast, and/or (or in combination with) set-top boxes (and any corresponding input devices, such as remote control units and mobile phones), including one or more of the Accused Products capable of being used with Comcast's X1 Search feature ('394 Accused Products) that infringe one or more claims of the '394 Patent. On information and belief, each of the '394 Accused Products contains or is designed to be used with Comcast's X1 Search feature.

123. For example, a preliminary claim chart applying exemplary independent claim 1 of the '394 Patent to the Accused Products (as defined herein, which include related hardware and software components) with a remote control, mobile application, and/or Comcast PX001ANM X1 Set-Top Box operating Comcast Xfinity X1 software can be found at Exhibit D. This chart is an exemplary chart representative of the infringing operation of all Accused Products, which operate the Comcast Xfinity X1 software in the same manner.

124. Comcast has been, and currently is, actively inducing infringement of the '394 Patent under 35 U.S.C. § 271(b).

125. Comcast has had actual knowledge of the '394 Patent since at least August 7, 2013, when Veveo filed suit against Comcast in the United States District Court for the District of Massachusetts, alleging that during the course of a software license agreement between the parties that Comcast used its access to Veveo's search technology to copy Veveo's core features

and that Comcast infringed the '394 Patent. Comcast was reminded of the patent on April 7, 2015 when, at Comcast's request, Rovi provided a spreadsheet illustrating the breadth of Rovi's guidance portfolio, including the '394 Patent.

126. With full knowledge of the '394 Patent, then, Comcast intentionally encourages and aids at least service-providers and end-user subscribers to directly infringe the '394 Patent.

127. Comcast provides the '394 Accused Products and instructions to Xfinity subscribers so that such subscribers will use the '394 Accused Products in a directly infringing manner. Comcast markets the Xfinity System to subscribers by touting the ability to "Search X1 with the Remote Control Keypad" by using "the alphanumeric keys on the keypad to enter your search term. For example, to search for 'NOVA' enter 6682."<sup>15</sup> Comcast provides instructions to its subscribers on how to use the functionality of the '011 Patent on this website as well.

128. Comcast subscribers directly infringe by using the '394 Accused Products in their intended manner to infringe. Comcast induces such infringement by providing the '394 Accused Products and instructions to enable and facilitate infringement, with full knowledge of the '394 Patent. Upon information and belief, Comcast specifically intends that its actions will result in infringement of the '394 Patent or has taken deliberate actions to avoid learning of infringement.

129. This Complaint will serve as notice to Comcast of the '394 Patent and its infringement, should Comcast contend that it did not previously have knowledge thereof.

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<sup>15</sup> *Search X1 with the Remote Control Keypad*, XFINITY, <https://www.xfinity.com/support/articles/x1-search-using-the-remote-keypad> (last visited Jan. 2, 2018).

130. Additional allegations regarding Comcast's knowledge of the '394 Patent and willful infringement will likely have evidentiary support after a reasonable opportunity for discovery.

131. Comcast's infringement of the '394 Patent was willful and deliberate, entitling Veveo to enhanced damages and attorneys' fees.

132. Comcast's infringement of the '394 Patent is exceptional and entitles Veveo to attorneys' fees and costs incurred in prosecuting this action under 35 U.S.C. § 285.

133. Veveo has been damaged by Comcast's infringement of the '394 Patent and will continue to be damaged unless Comcast is enjoined by this Court. Veveo has suffered and continues to suffer irreparable injury for which there is no adequate remedy at law. The balance of hardships favors Veveo, and public interest is not disserved by an injunction. Veveo is entitled to recover from Comcast all damages that Veveo has sustained as a result of Comcast's infringement of the '394 Patent, including without limitation lost profits and not less than a reasonable royalty.

### **RELIEF SOUGHT**

WHEREFORE, Veveo prays for a judgment in its favor and against Comcast and respectfully requests the following relief:

134. A judgment declaring that Comcast has infringed one or more claims of each of the Asserted Patents in this litigation pursuant to 35 U.S.C. §§ 271(a) and 271(b);

135. A preliminary injunction pursuant to 35 U.S.C. § 283 in accordance with the principles of equity preventing Comcast, its officers, directors, attorneys, agents, servants, employees, parties in privity with, and all persons in active concert or participation with any of the foregoing, from continued licensing, distributing or offering for license the X1 IPG Product

to any cable operator or any Pay-TV provider that is not licensed by Veveo to make, use, lease, license, or sell any product offered by Comcast that practices, provides, or contains any method, apparatus, or system covered by one or more of the Asserted Patents;

136. A preliminary injunction pursuant to 35 U.S.C. § 283 in accordance with the principles of equity preventing Comcast, its officers, directors, attorneys, agents, servants, employees, parties in privity with, and all persons in active concert or participation with any of the foregoing, from leasing, licensing, distributing, offering or providing to any of its cable customers and consumer end users any IPG product solution that practices, provides, or contains any method, apparatus, or system covered by one or more of the Asserted Patents commencing on a date ninety (90) days following the entry of the preliminary injunction;

137. An injunction pursuant to 35 U.S.C. § 283 permanently enjoining Comcast, its officers, directors, attorneys, agents, servants, employees, parties in privity with, and all persons in active concert or participation with any of the foregoing, from continued acts of infringement, contributing to infringement, or inducing infringement of the Asserted Patents in this litigation;

138. A judgment requiring Comcast to make an accounting of damages resulting from Defendants' infringement of the Asserted Patents in this litigation;

139. A judgment awarding Veveo its damages resulting from Defendants' infringement of the Asserted Patents in this litigation, and increasing such damages pursuant to 35 U.S.C. § 284 because of the willful and deliberate nature of Defendants' conduct;

140. A judgment requiring Defendants to pay Veveo costs, expenses, and pre-judgment and post-judgment interest for Defendants' infringement of each of the Asserted Patents in this litigation;

141. A judgment finding that this is an exceptional case and awarding Veveo's attorneys' fees pursuant to 35 U.S.C. § 285; and

142. Such other relief as the Court deems just and proper.

**DEMAND FOR JURY TRIAL**

In accordance with Rule 38 of the Federal Rules of Civil Procedure, Plaintiff respectfully demands a jury trial of all issues triable to a jury.

Dated: January 10, 2018

**McKOOL SMITH, P.C.**

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