**UNITED STATES DISTRICT COURT**
**FOR THE WESTERN DISTRICT OF TEXAS**
**WACO DIVISION**

| | |
|---|---|
| **BCS SOFTWARE, LLC,**<br><br>Plaintiff<br><br>v.<br><br>**LG ELECTRONICS U.S.A., INC.,**<br><br>Defendant | **Case No. 6:19-cv-00239**<br><br>**JURY TRIAL DEMANDED** |

## COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff BCS Software, LLC ("Plaintiff" or "BCS") hereby asserts the following claims for patent infringement against LG Electronics U.S.A., Inc. ("Defendant or "LG"), and alleges, on information and belief, as follows:

## THE PARTIES

1. BCS Software, LLC is a limited liability company organized and existing under the laws of the Texas with its principal place of business in Austin, Texas.

2. LG Electronics U.S.A., Inc. is a Delaware corporation having a principal place of business at 9420 Research Blvd, Austin, Texas 78759.

## JURISDICTION AND VENUE

3. This action arises under the patent laws of the United States, 35 U.S.C. § 1, *et seq*. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

4. LG has committed acts of infringement in this judicial district.

5. On information and belief, LG has a regular and established place of business in this judicial district at 9420 Research Blvd, Austin, Texas 78759.

6. On information and belief, the Court has personal jurisdiction over LG because LG has committed, and continues to commit, acts of infringement in the state of Texas, has conducted business in the state of Texas, and/or has engaged in continuous and systematic activities in the state of Texas.

7. On information and belief, LG's instrumentalities that are alleged herein to infringe were and continue to be used, imported, offered for sale, and/or sold in the Western District of Texas.

8. Venue is proper in the Western District of Texas pursuant to 28 U.S.C. § 1400(b).

## U.S. PATENT NO. 7,890,809

9. BCS is the owner, by assignment, of U.S. Patent No. 7,890,809 ("the '809 Patent"), entitled HIGH LEVEL OPERATIONAL SUPPORT SYSTEM, which issued on February 15, 2011. A copy of the '809 Patent is attached as **Exhibit A**.

10. The '809 Patent is valid, enforceable, and was duly issued in full compliance with Title 35 of the United States Code.

11. The '809 Patent was invented by Messrs. Blaine Nye and David Sze Hong.

12. The priority date for the '809 Patent is at least May 1, 2003.

13. The expiration date of the '809 Patent is August 21, 2023.

14. The '809 Patent has been referenced by 18 United States Patents, United States Patent Applications and foreign patents.

15. The '809 Patent was examined by United States Patent Examiner Joshua Lohn. During the examination of the '809 Patent, the United States Patent Examiner searched for prior art in the following US Classifications: 714/38, 714/47, 719/320.

16. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent No. 6,748,555 to Teegan et al as one of the most relevant prior art references found during the search.

17. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent No. 6,862,698 to Shyu as one of the most relevant prior art references found during the search.

18. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent No. 7,003,560 to Mullen et al as one of the most relevant prior art references found during the search.

19. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent No. 7,100,195 to Underwood as one of the most relevant prior art references found during the search.

20. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2003/0037288 by Harper et al as one of the most relevant prior art references found during the search.

21. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2003/0204791 by Helgren et al as one of the most relevant prior art references found during the search.

22. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2004/0073566 by Trivedi as one of the most relevant prior art references found during the search.

23. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2004/0088401 by Tripathi et al as one of the most relevant prior art references found during the search.

24. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 2005/0044535 by Coppert as one of the most relevant prior art references found during the search.

25. After conducting a search for prior art during the examination of the ’809 Patent, the United States Patent Examiner identified and cited U.S. Patent Application No. 6,748,555 by Shyu as one of the most relevant prior art references found during the search.

26. The ’809 Patent relates to:

> A high level Operational Support System (OSS) framework provides the infrastructure and analytical system to enable all applications and systems to be managed dynamically at runtime regardless of platform or programming technology. Applications are automatically discovered and managed. Java applications have the additional advantage of auto-inspection (through reflection) to determine their manageability. Resources belonging to application instances are associated and managed with that application instance. This provides operators the ability to not only manage an application, but its distributed components as well. They are presented as belonging to a single application instance node that can be monitored, analyzed, and managed. The OSS framework provides the platform-independent infrastructure that heterogeneous applications require to be monitored, controlled, analyzed and managed at runtime. New and legacy applications written in C++ or Java are viewed and manipulated identically with zero coupling between the applications themselves and the tools that scrutinize them.

’809 Patent (Abstract).

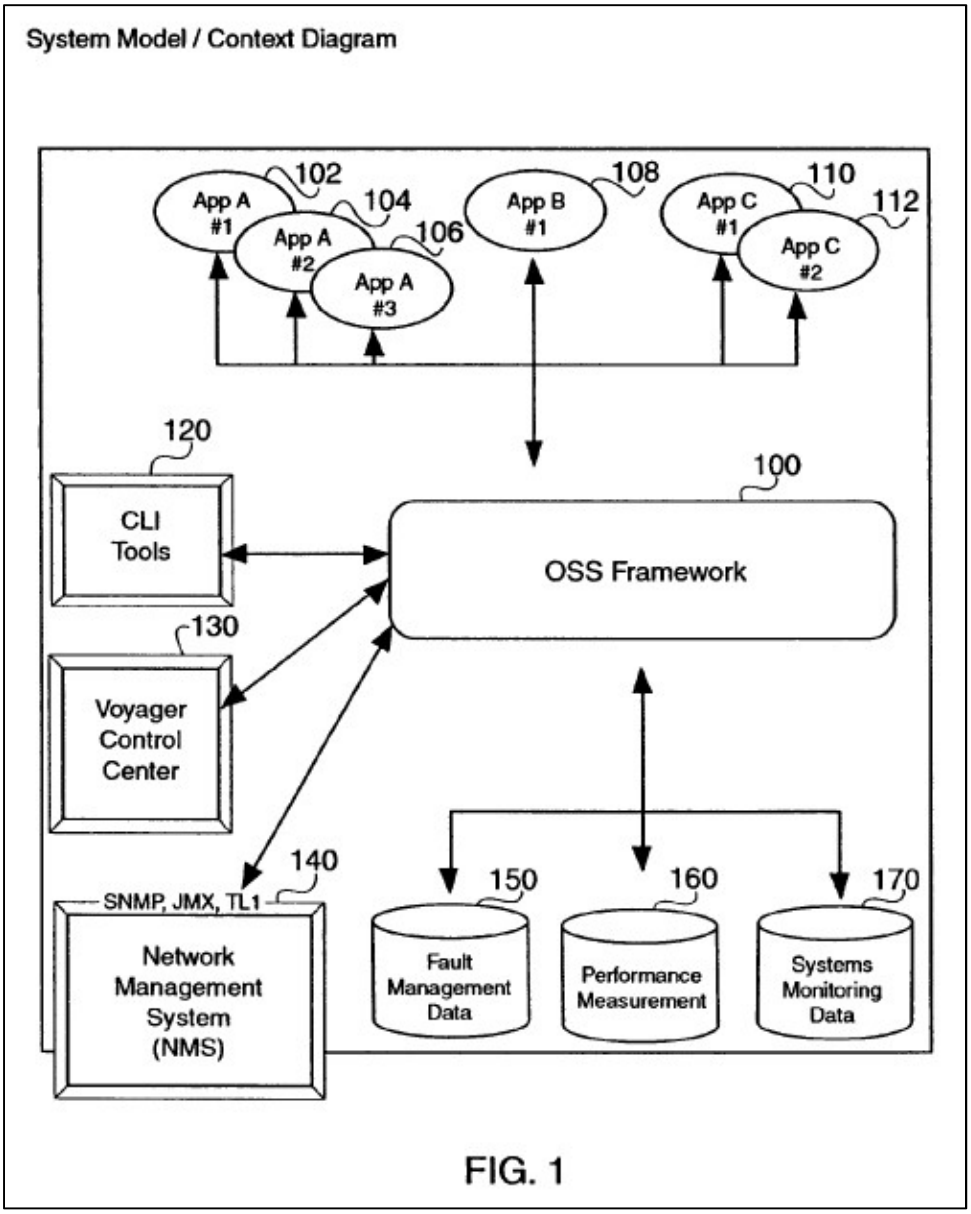



FIG. 1

*Id.* (Figure 1).

27. The field of the invention is to improvements in "wireless communication carriers. More particularly, it relates to operational support system (OSS), application/systems management, and network management." *Id.*, col. 1:17-20.

28. As disclosed in the '809 Patent, "[m]any network management technologies exist that allow operators to manage applications and devices at runtime. For instance, SNMP, TL1 and JMX

each attempt to provide operators with the ability to manipulate and affect change at runtime." *Id*., col. 1:22-26.

29. As disclosed in the '809 Patent, "[t]he fundamental of each is similar. It is to manipulate the objects of an application through messaging." *Id*., col. 1:26-27.

30. As disclosed in the '809 Patent, "SNMP is the standard basic management service for networks that operate in TCP/IP environments. It is intended primarily to operate well-defined devices easily and does so quite successfully. However, it is limited to the querying and updating of variables." *Id*., col. 1:28-32.

31. As disclosed in the '809 Patent, "Transaction Language 1 (TL1) is a set of ASCII-based instructions, or 'messages,' that an operations support system (OSS) uses to manage a network element (NE) and its resources. *Id*., col. 1:32-35.

32. As disclosed in the '809 Patent, "JMX is a Java centric technology that permits the total management of objects: not only the manipulation of fields, but also the execution of object operations. It is designed to take advantage of the Java language to allow for the discovery and manipulation of new or legacy applications or devices." *Id*., col. 1:35-40.

33. As disclosed in the '809 Patent, "Operational Support for enterprise applications is currently realized using a variety of technologies and distinct, separate services. For instance, network management protocols (SNMP, JMX, TL1, etc.) provide runtime configuration and some provide operation invocation, but these technologies are not necessarily geared toward applications." *Id*., col. 1:40-45.

34. As disclosed in the '809 Patent, "[s]ome are language specific (e.g., JMX) and require language agnostic bridging mechanisms that must be implemented, configured and maintained.

SNMP is generic (e.g., TL1 and SNMP) and very simple in nature, but it requires application developers to implement solutions to common OSS tasks on top of SNMP. *Id*., col. 1:46-51.

35. As disclosed in the ’809 Patent, “TL1 is also ASCII based and generic. However, while it is very flexible and powerful, it is another language that must be mastered, and it's nature is command line based. As a result, it is not intuitively based in presentation layer tools. While all the technologies have their respective benefits, they do not provide direct means of providing higher level OSS functionality. Conventionally, applications are monitored, analyzed and managed at runtime.” *Id*., col. 1:52-59.

36. As disclosed in the ’809 Patent, one or more claims “provid[e] a high level operational support system framework comprises monitoring a health of a plurality of applications. The health of the plurality of applications is assessed, and the health of the plurality of applications is analyzed, whereby each of the plurality of applications are managed dynamically at runtime regardless of a platform of each of the plurality of applications.” *Id*., col. 1:64–2:3.

37. Consequently, the ’809 Patent improves the computer functionality itself and represents a technological improvement to the operation of computers.

## LG PRODUCTS

38. Upon information and belief, LG makes, uses, imports, sells, and/or offers for sale smart appliances with the Smart ThinQ Hub and supporting software (“**ThinQ**”), which is described by the LG website (www.LG.com). and is exemplified by the following references:

- “LG SmartThinQ: Discover LG Smart & Connected Appliances | LG USA” (“**LG1**”), *available at* https://www.lg.com/us/discover/smartthinq/thinq (last accessed April 2, 2019);
- “LG smartThinQ” (“**LG2**”), *available at* https://us.smartthinq.com/main/index.dev (last accessed April 2, 2019);

- "LG Advances Smart Home Ecosystem With Smart ThinQ Hub at CES 2016" ("**LG3**"), *available at* https://www.prnewswire.com/news-releases/lg-advances-smart-home-ecosystem-with-smart-thinq-hub-at-ces-2016-300197866.html (last accessed April 2, 2019);

- "LG SmartThinQ" ("**LG4**"), *available at* https://play.google.com/store/apps/details?id=com.lgeha.nuts (last accessed April 2, 2019);

- "LG-lo-T-Ecosystem" ("**LG5**"), *available at* http://www.lgnewsroom.com/wp-content/uploads/2015/12/LG-IoT-Ecosystem.jpg (last accessed April 2, 2019);

- "LG SmartThinQ App: Control Your Appliances w/ your Smartphone | LG USA" ("**LG6**"), *available at* https://www.lg.com/us/discover/smartthinq/app (last accessed April 2, 2019);

- "How to Connect Your Appliances to Wifi and LG SmartThinQ | LG U.S.A." ("**LG7**"), *available at* https://www.lg.com/us/support/connect-your-wifi-appliances-with-lg-smart-thinq (last accessed April 2, 2019);

- "LG SmartThinQ on the App Store" ("**LG8**"), *available at* https://itunes.apple.com/us/app/lg-smartthinq/id993504342?mt=8 (last accessed April 2, 2019);

- "LG at CES 2018 – LG ThinQ AI Smart Solutions" ("**LG9**"), *available at* https://www.youtube.com/watch?v=DjzrYQ-CrVs (last accessed April 2, 2019);

- "LG at CES 2018 – LG ThinQ Lifestyle" ("**LG10**"), *available at* https://www.youtube.com/watch?v=nTeQ68wAPs8 (last accessed April 2, 2019);

- "LG SmartThinQ for Air Conditioning" ("**LG11**"), *available at* https://lghvac.com/residential-light-commercial/lg-smartthinq/ (last accessed April 2, 2019);

- "LG ThinQ: AI Solution enhances your life | LG USA" ("**LG12**"), *available at* https://www.lg.com/us/lg-thinq#products (last accessed April 2, 2019); and

- "LG ThinQ: AI Solution enhances your life | LG USA" ("**LG13**"), *available at* https://www.lg.com/us/lg-thinq (last accessed April 2, 2019).

39. The information contained in References **LG1-LG13** is incorporated by reference as if set forth fully herein.

40. The information contained in reference **LG1** accurately describes the operation and functionality of the ThinQ product.

41. The information contained in reference **LG2** accurately describes the operation and functionality of the ThinQ product.

42. The information contained in reference **LG3** accurately describes the operation and functionality of the ThinQ product.

43. The information contained in reference **LG4** accurately describes the operation and functionality of the ThinQ product.

44. The information contained in reference **LG5** accurately describes the operation and functionality of the ThinQ product.

45. The information contained in reference **LG6** accurately describes the operation and functionality of the ThinQ product.

46. The information contained in reference **LG7** accurately describes the operation and functionality of the ThinQ product.

47. The information contained in reference **LG8** accurately describes the operation and functionality of the ThinQ product.

48. The information contained in reference **LG9** accurately describes the operation and functionality of the ThinQ product.

49. The information contained in reference **LG10** accurately describes the operation and functionality of the ThinQ product.

50. The information contained in reference **LG11** accurately describes the operation and functionality of the ThinQ product.

51. The information contained in reference **LG12** accurately describes the operation and functionality of the ThinQ product.

52. The information contained in reference **LG13** accurately describes the operation and functionality of the ThinQ product.

**COUNT I**
**(Infringement of U.S. Patent No. 7,890,809)**

53. BCS incorporates paragraphs 1-52 herein by reference.

54. LG has been on notice of the '809 Patent at least as early as the date it received service of this complaint.

55. Upon information and belief, LG has infringed and continues to infringe one or more claims, including Claim 1, of the '809 Patent by making, using, importing, selling, and/or, offering for sale the ThinQ product.

56. LG, with knowledge of the '809 Patent, infringes the '809 Patent by inducing others to infringe the '706 Patent. In particular, LG intends to induce its customers to infringe the '809 Patent by encouraging its customers to use the ThinQ product.

57. LG also induces others, including its customers, to infringe the '809 Patent by providing technical support for the use of the ThinQ product.

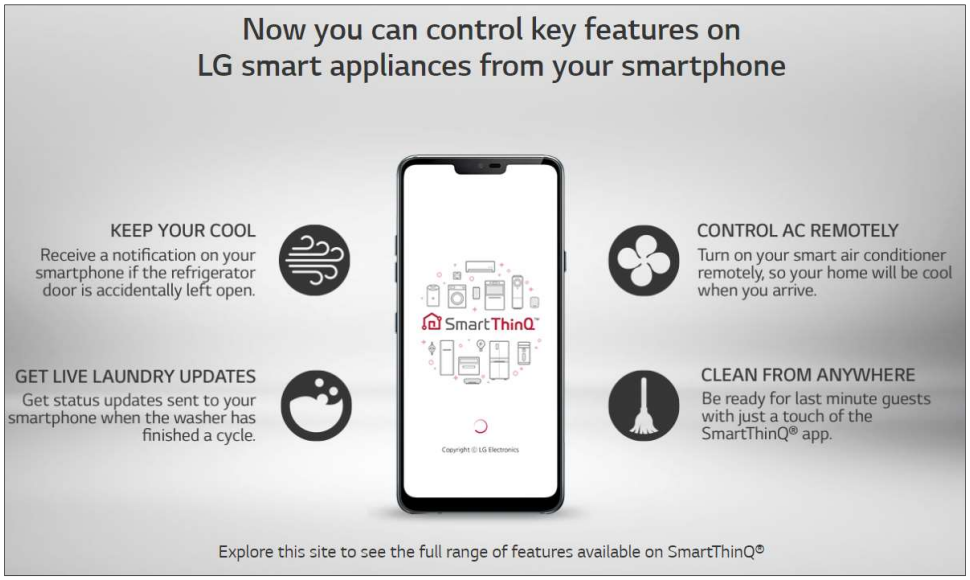
58. Upon information and belief, at all times LG owns and controls the operation of the ThinQ product in accordance with an end user license agreement.

59. Claim 1 of the '809 Patent recites:

> 1. A method of providing a high level support framework, comprising:
>
> monitoring from a physical server a health of a plurality of client applications and a health of said plurality of client applications' distributed components, using a common monitoring protocol, said monitoring being independent of a programming technology of said plurality of client applications and respective distributed components;
>
> assessing said health of said plurality of client applications and said respective distributed components; and

associating said health of said plurality of client applications and said respective distributed components as belonging to a single application node.

60. With the ThinQ product, LG provides a high-level operational support system framework.




Source: **LG1**.


Source: **LG2**.

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Dec 30, 2015, 11:44 ET

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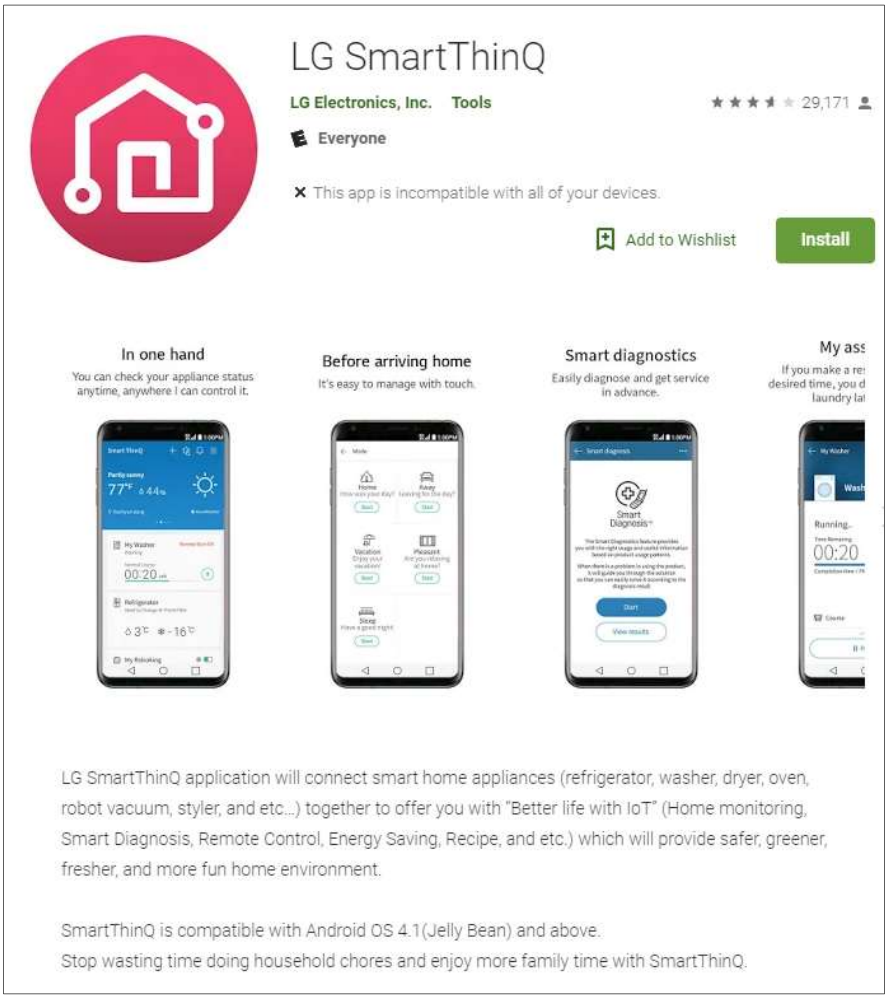
ENGLEWOOD CLIFFS, N.J., Dec. 30, 2015 /PRNewswire/ -- LG Electronics (LG) will unveil its newest addition to its IoT ecosystem, the LG Smart ThinQ™ Hub, at CES® 2016.

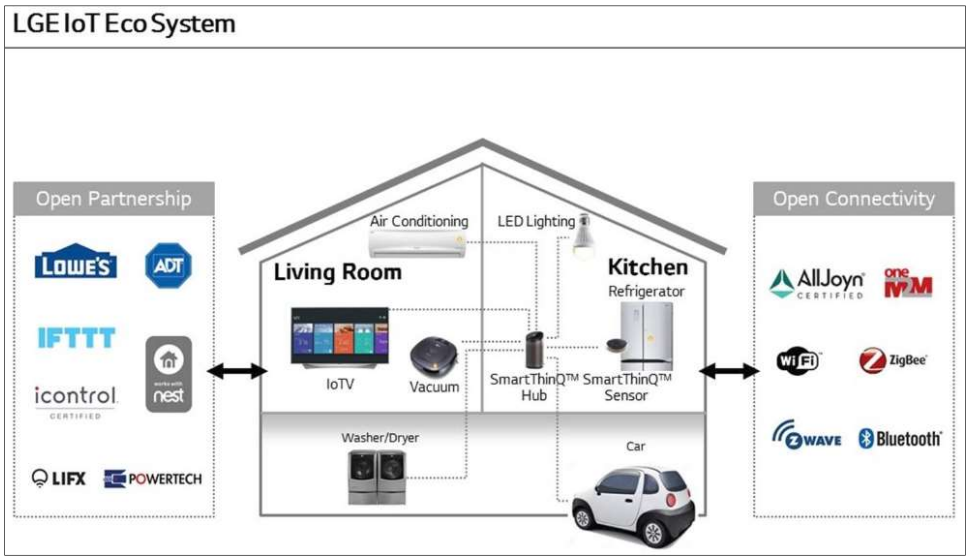
The LG Smart ThinQ Hub serves as a gateway to smart sensors and connected appliances in the home while also displaying reminders from personal calendars and streaming music from its built-in speaker. The elegantly designed Smart ThinQ Hub features a 3.5-inch color LCD display and connects to a smartphone app to facilitate two-way communication with smart appliances and smart sensors in the home.

The Smart ThinQ Hub monitors, controls and collects information from home appliances such as washing machines, refrigerators, ovens, robotic vacuum cleaners, air conditioners and a variety of sensors. Data is displayed in the form of notifications on the LCD screen or announced through its speaker of the LG Smart ThinQ Hub, acting as the central "hub" of the smart home. This allows users to communicate via a single device instead of a separate smartphone app for each smart-enabled product.

Source: **LG3**.




Source: **LG4**.



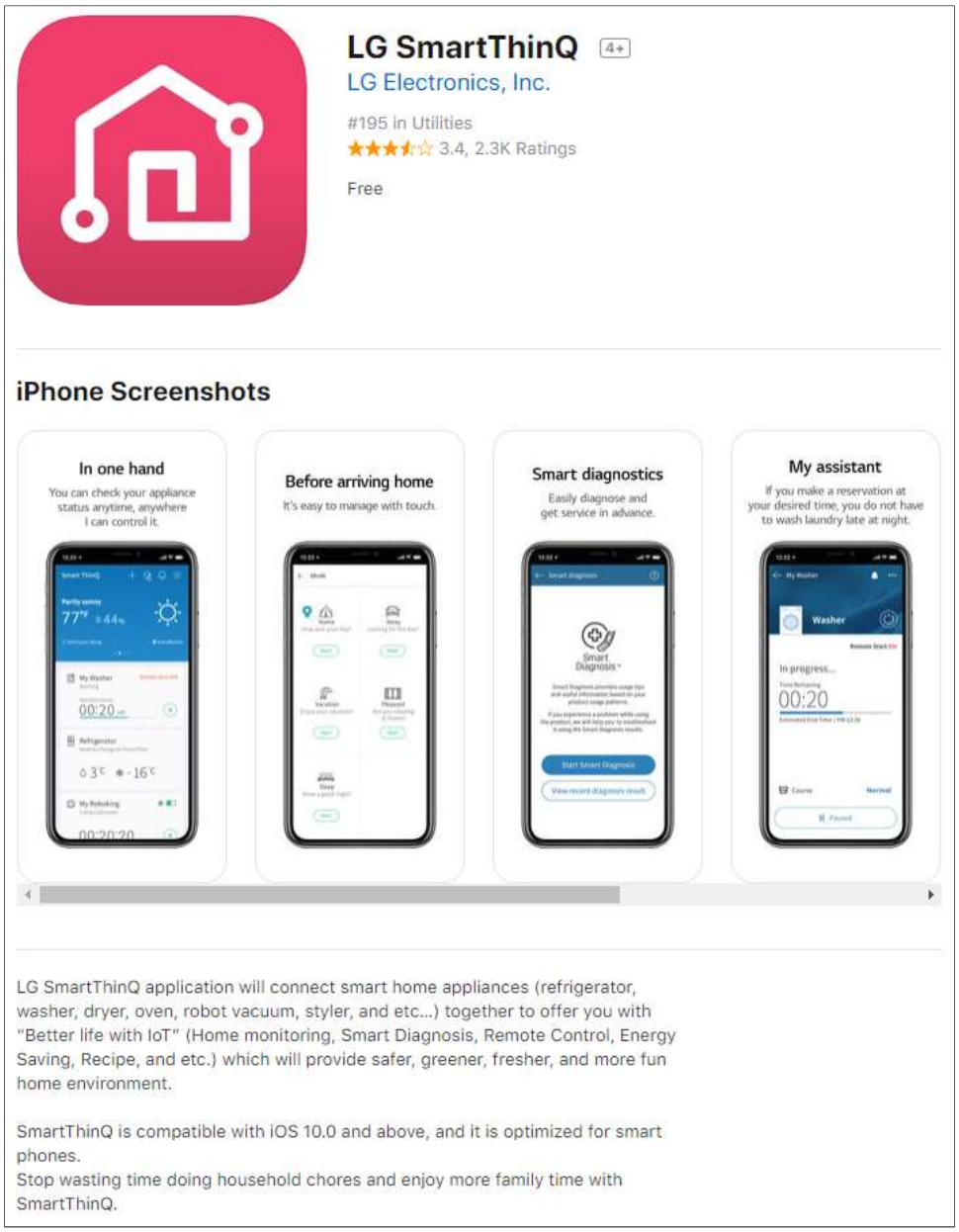

Source: **LG5**.

Compatible Models

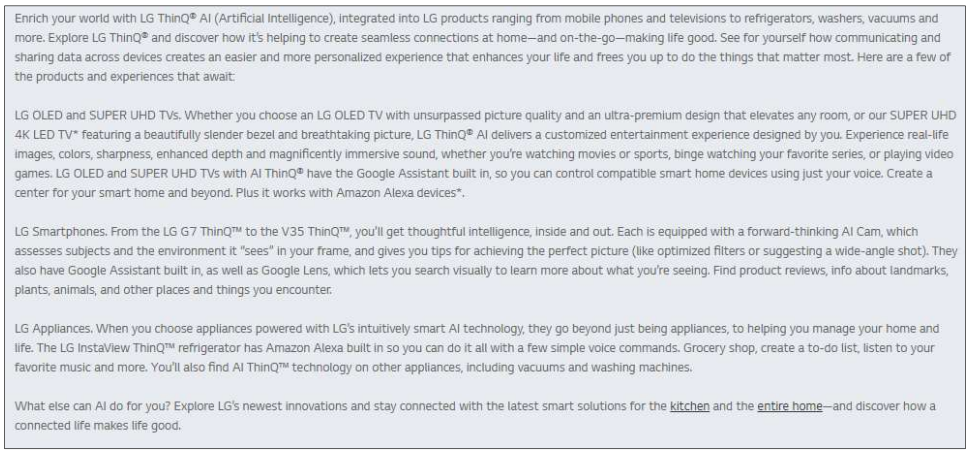
The following device models with LG SmartThinQ logo are compatible.

| APPLIANCE | MODEL |
|---|---|
| Washer | WT1901*, WT7200*, LUWM101*, WM9500*, WM9000*, WM5000* |
| Dryer | DLEX5000*, DLGX5001*, DLEY1901*, DLGY1902*, DLE7200*, DLGX9501*, DLEX9500*, DLEX9000*, DLGX9001*, DLG7201* |
| Refrigerator | LMXS30796*, LMXC23796*, LFXS30796*, LFXS30766*, LFXC24796*, LMXS28676*, LMXS28626*, LFXS28566*, LFXS28968*, LSXS26396*, LSXC22396*, LSXC22486*, LSXC22426*, LSFXC2496*, LSFXC2476*, LNXS30866*, LNXC23726*, LNXC23766*, LUPXS3186*, LUPXC2386*, LSSB2692*, LSFXC2496*, LSFXC2476* |
| Air Conditioner | LW8017*, LW1217*, LW1017*, LP1417*, ARNU*4, ARNH*4, LMAN*7HVP, LMN*9HVT, LMCN078HV, LCN*8HV4, LDN*7HV4, LCN*7HV, LHN*7HV, LVN*0HV4, LVN*0HV |
| Robot Vacuum Cleaner | CR3465*, CR5765*, CR3365* |
| Air Purifier | AM501* |
| Range/Oven | LUTD4919*, LUTE4619*, LSE4617*, LSE4612*, LSE4613*, LSE4611*, LSG4512*, LSG4513*, LSG4511*, LUTG4519* |
| Dishwasher | LUDP8997*, LDT7797*, LDP6797*, LDT5665*, LDP5665* |
| Styler | S3RFBN |
| TV | W8, G8, E8, C8, B8, B8S, SK95**, SK85**, SK81**, SK80**, UK75**, UK69**, UK67**, UK65**, UK64**, UK63**, LK62**, LK61**, LK59** (WebOS 4.0 operating system only) |

Source: **LG7**.


LG SmartThinQ
4+
LG Electronics, Inc.
#195 in Utilities
3.4, 2.3K Ratings
Free
iPhone Screenshots
In one hand
You can check your appliance status anytime, anywhere I can control it.
Before arriving home
It's easy to manage with touch.
Smart diagnostics
Easily diagnose and get service in advance.
My assistant
If you make a reservation at your desired time, you do not have to wash laundry late at night.
LG SmartThinQ application will connect smart home appliances (refrigerator, washer, dryer, oven, robot vacuum, styler, and etc...) together to offer you with "Better life with IoT" (Home monitoring, Smart Diagnosis, Remote Control, Energy Saving, Recipe, and etc.) which will provide safer, greener, fresher, and more fun home environment.
SmartThinQ is compatible with iOS 10.0 and above, and it is optimized for smart phones.
Stop wasting time doing household chores and enjoy more family time with SmartThinQ.

Source: **LG8**.



Enrich your world with LG ThinQ® AI (Artificial Intelligence), integrated into LG products ranging from mobile phones and televisions to refrigerators, washers, vacuums and more. Explore LG ThinQ® and discover how it's helping to create seamless connections at home—and on-the-go—making life good. See for yourself how communicating and sharing data across devices creates an easier and more personalized experience that enhances your life and frees you up to do the things that matter most. Here are a few of the products and experiences that await:

LG OLED and SUPER UHD TVs. Whether you choose an LG OLED TV with unsurpassed picture quality and an ultra-premium design that elevates any room, or our SUPER UHD 4K LED TV* featuring a beautifully slender bezel and breathtaking picture, LG ThinQ® AI delivers a customized entertainment experience designed by you. Experience real-life images, colors, sharpness, enhanced depth and magnificently immersive sound, whether you're watching movies or sports, binge watching your favorite series, or playing video games. LG OLED and SUPER UHD TVs with AI ThinQ® have the Google Assistant built in, so you can control compatible smart home devices using just your voice. Create a center for your smart home and beyond. Plus it works with Amazon Alexa devices*.

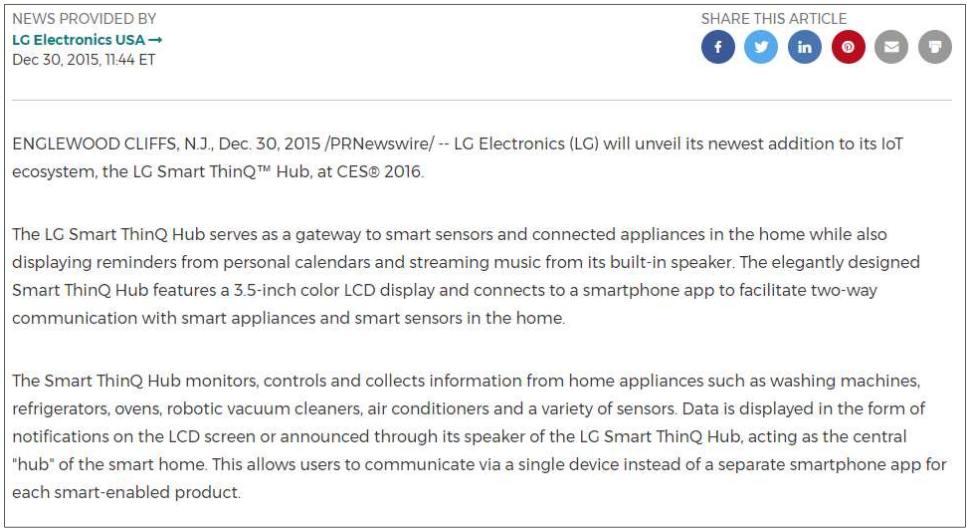
LG Smartphones. From the LG G7 ThinQ™ to the V35 ThinQ™, you'll get thoughtful intelligence, inside and out. Each is equipped with a forward-thinking AI Cam, which assesses subjects and the environment it "sees" in your frame, and gives you tips for achieving the perfect picture (like optimized filters or suggesting a wide-angle shot). They also have Google Assistant built in, as well as Google Lens, which lets you search visually to learn more about what you're seeing. Find product reviews, info about landmarks, plants, animals, and other places and things you encounter.

LG Appliances. When you choose appliances powered with LG's intuitively smart AI technology, they go beyond just being appliances, to helping you manage your home and life. The LG InstaView ThinQ™ refrigerator has Amazon Alexa built in so you can do it all with a few simple voice commands. Grocery shop, create a to-do list, listen to your favorite music and more. You'll also find AI ThinQ™ technology on other appliances, including vacuums and washing machines.

What else can AI do for you? Explore LG's newest innovations and stay connected with the latest smart solutions for the kitchen and the entire home—and discover how a connected life makes life good.

Source: **LG12**.

61. With the ThinQ product, LG monitors the health of a plurality of client applications from a physical server.



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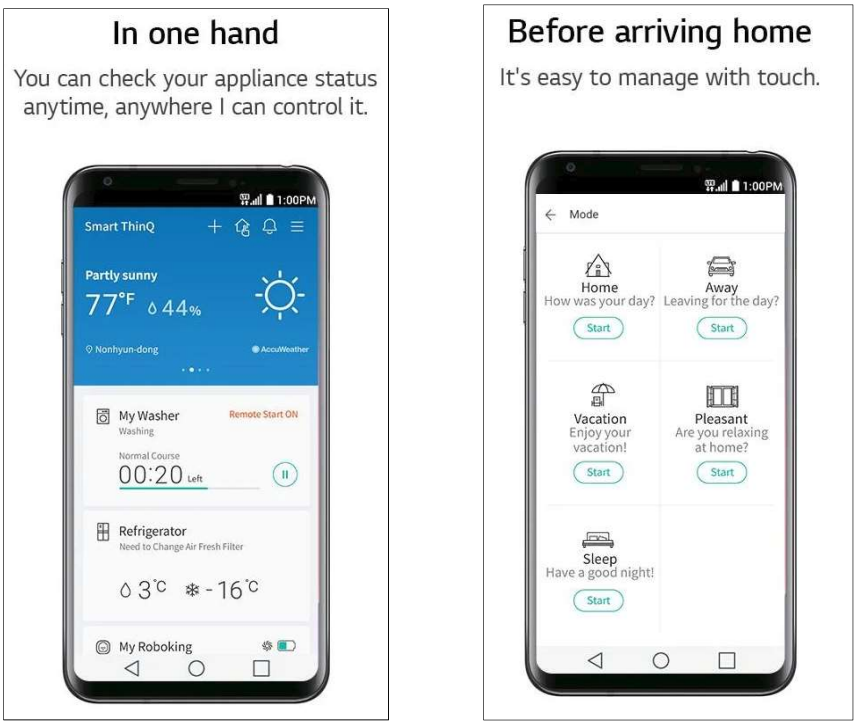
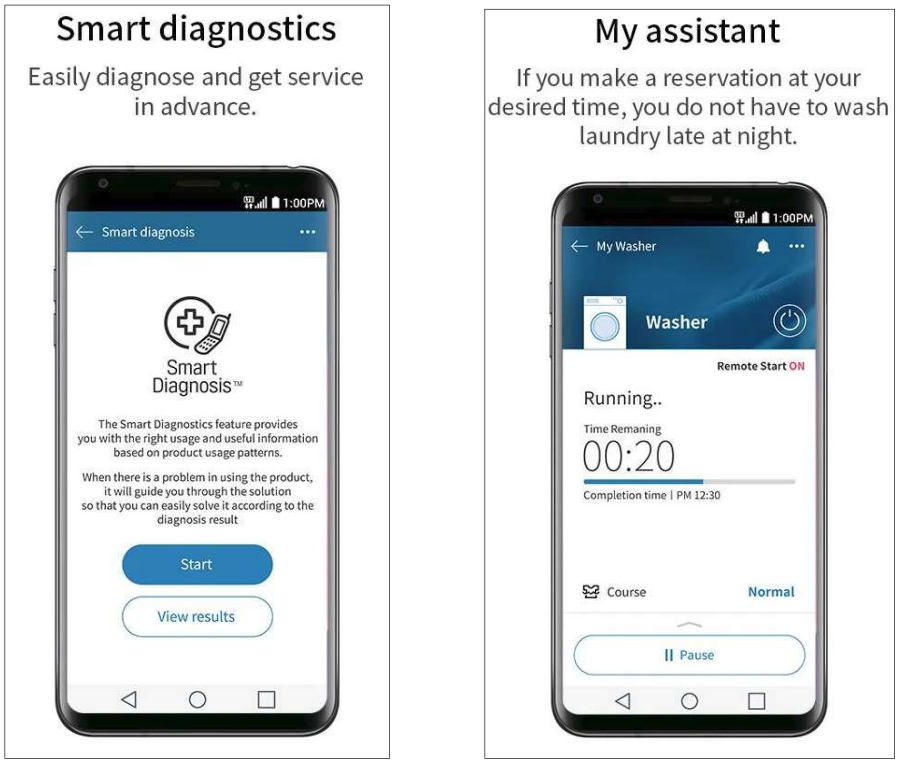
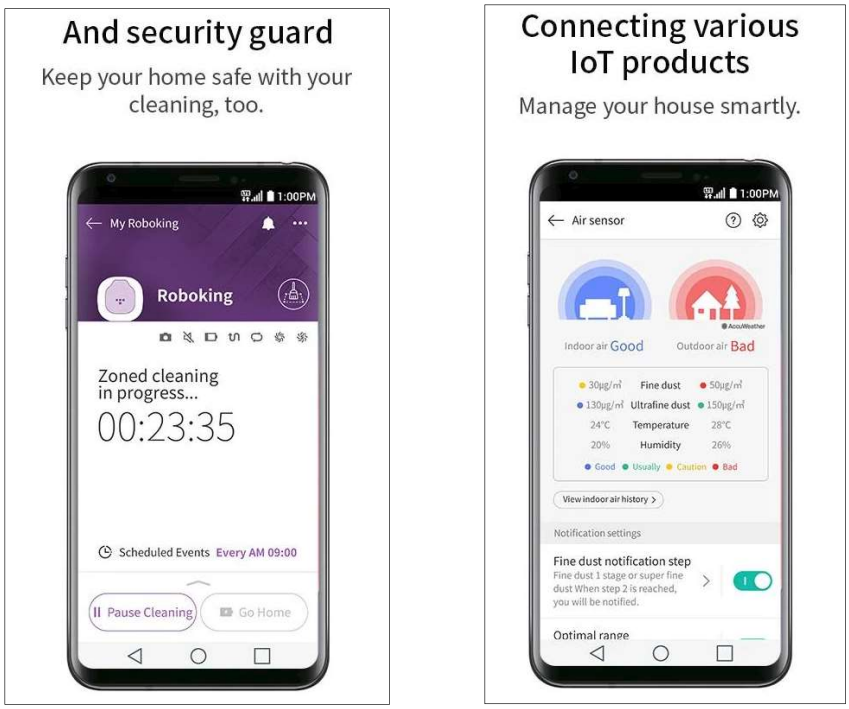
Source: **LG3**.




Source: **LG4**.




Source: **LG4**.




Source: **LG4**.

62. With the ThinQ product, LG assesses the health of the client applications and distributed components.

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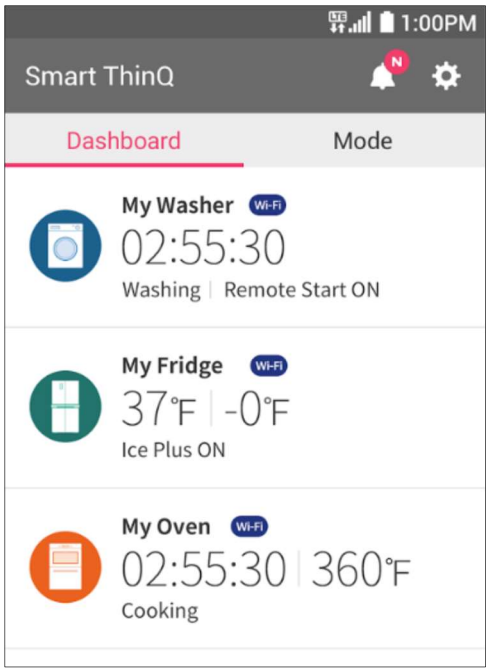
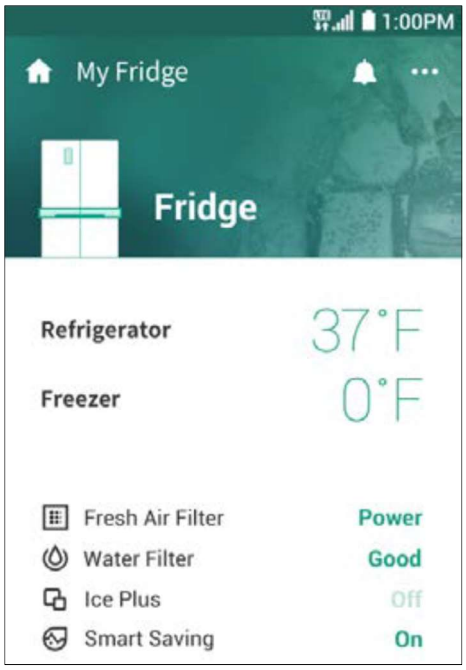
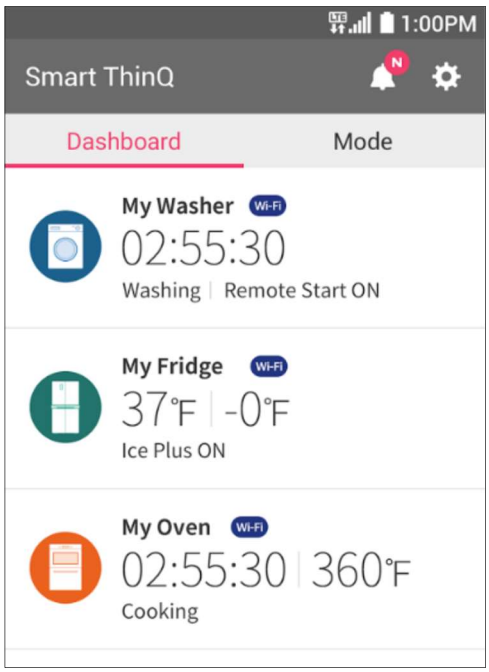
Source: **LG3**.




Source: **ThinQ Android App**.

63. With the ThinQ product, LG associates the health of the client applications and the respective distributed components as belonging to a single application node.





Source: **ThinQ Android App**.

64. BCS has been damaged by LG's infringement of the '809 Patent.

## PRAYER FOR RELIEF

WHEREFORE, BCS respectfully requests the Court enter judgment against LG:

1. declaring that the LG has infringed the '809 Patent;
2. awarding BCS its damages suffered as a result of LG's infringement of the '809 Patent;
3. awarding BCS its costs, attorneys' fees, expenses, and interest; and
4. granting BCS such further relief as the Court finds appropriate.

## JURY DEMAND

BCS demands trial by jury, Under Fed. R. Civ. P. 38.

Dated: April 2, 2019

Respectfully Submitted

*/s/ Raymond W. Mort, III*

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