

**EXHIBIT 15**  
**FILED UNDER SEAL**

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UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION

APPLE INC., a California corporation,  
Plaintiff,

v.

SAMSUNG ELECTRONICS CO., LTD., A  
Korean business entity; SAMSUNG  
ELECTRONICS AMERICA, INC., a New York  
corporation; SAMSUNG  
TELECOMMUNICATIONS AMERICA, LLC, a  
Delaware limited liability company,  
Defendants.

Case No. 11-cv-01846-LHK

**EXPERT REPORT OF KARAN  
SINGH, PH.D. REGARDING  
INFRINGEMENT OF U.S.  
PATENTS NOS. 7,864,163,  
7,844,915 AND 7,853,891**

**\*\*CONFIDENTIAL – CONTAINS MATERIAL DESIGNATED AS HIGHLY  
CONFIDENTIAL – ATTORNEYS’ EYES ONLY PURSUANT  
TO A PROTECTIVE ORDER\*\***

1           273. As discussed above with respect to claim 50, each of the Accused Products  
2 includes a touch screen display coupled to a processor programmed with special purpose  
3 software, in response to detecting the second gesture, to translate the structured electronic  
4 document so that the second box is substantially centered on the touch screen display. The  
5 Accused Products perform the claimed function in manner equivalent to the manner described in  
6 the specification. *See, e.g.*, ’163 patent at 2:28-44; 2:66-3:13; 6:17-22; 18:38-21:25; FIGS. 1A-B,  
7 6A-C.

8           274. I conclude that the Samsung Accused Products, which contain structures  
9 equivalent to those in the ’163 patent to perform all the functions in claim 52, meet each and  
10 every element of claim 52 either literally or, in the alternative, under the doctrine of equivalents.  
11 Therefore, the Samsung Accused Products infringe claim 52.

12           **E. Samsung’s Emulation Of The Features Of The ’163 Patent**

13           275. I have also reviewed a number of documents produced by Samsung in this  
14 litigation, including analyses of features in Apple products and email messages. Based on my  
15 review of these documents, it appears that Samsung studied a number of Apple products that  
16 embody the asserted claims of the ’163 patent, recognized the benefits of the ’163 patent, and  
17 implemented the features of the ’163 patent in Samsung products.

18           276. In December 2009, Samsung’s C.E.O. issued “instruction items” for 2010, stating,  
19 “going forward our comparison standard is Apple iPhone. In High End cases, evaluate with  
20 iPhone standard.” (SAMNDCA10907803.) The then-principal engineer of Samsung’s Mobile R  
21 & D, Dongsub Kim, reiterated this sentiment in an email to several at the company, saying,  
22 “Henceforth our standard for comparison is the Apple iPhone.” (SAMNDCA1097800.)

23           277. Earlier in 2009, Samsung conducted a “Browser Zooming Methods UX  
24 Exploration Study.” (SAMNDCA11104115.) There, it concluded that it must “Adopt Double-  
25 Tap as a supplementary zooming method...The UX of iPhone can be used as a design  
26 benchmark.”

27           278. A presentation entitled “Relative Evaluation Report on S1, iPhone” by the  
28 “Product Engineering Team Software Inspection Group” at Samsung shows that Samsung

1 modeled the embodiment of the “second gesture” element of the ’163 patent in its Galaxy S  
2 devices after that element’s embodiment in the iPhone. (SAMNDCA00203880,  
3 SAMNDCA00203937.) This document observes that, on the iPhone, “[w]hen a different point is  
4 tapped after enlarging, the screen moves to the tapped screen and shows the enlarged screen,”  
5 while the Galaxy S prototype merely “shrinks back to the original screen” instead of translating to  
6 center on an enlarged view of a second box. (SAMNDCA00203937.) The slide concludes that  
7 Samsung “[n]eed[s] to supplement the double tapping enlargement/shrinkage feature” as an  
8 “[i]mprovement” for the Galaxy S prototype, to match the iPhone’s embodiment of the “second  
9 gesture” element of the ’163 patent. (*Id.*)

10 279. Documents produced by Samsung show that Samsung referred repeatedly to Apple  
11 products in developing and improving the double-tap zooming features of the ’163 patent in its  
12 products. Samsung tested some of the Samsung Accused Products using Apple products  
13 embodying the ’163 patent as benchmarks, creating charts measuring the smoothness, response  
14 time, and feel of the ’163 patent’s double-tap zooming features. (SAMNDCA00229399;  
15 SAMNDCA00229410; SAMNDCA00229449; SAMNDCA00525359; S-ITC-003524055; S-ITC-  
16 003680299.)

17 280. Samsung also developed patches to attempt to improve functionality covered by  
18 the ’163 patent in its products to meet the superior performance of Apple’s ’163-embodiment  
19 products. An email from Sangheon Kim to Jaegwan Shin shows that even after one patch was  
20 applied to Samsung’s P7500 prototype, there was a “Double Tap problem...Initial response time  
21 is slow....zoom animation is not smooth like in the iPad2, and it feels slow and wobbles slightly  
22 from left/right.” (SAMNDCA00201783.)

23 **F. A Non-Infringing Alternative Design for Navigating Structured Electronic**  
24 **Documents**

25 281. Samsung could have chosen other methods to implement the ability to navigate  
26 around structured electronic documents using touch gestures, but they would not have been as  
27 elegant or intuitive. One of the Samsung documents already discussed above—the “Relative  
28 Evaluation Report” at SAMNDCA00203880—highlights one possible alternative to using the

1 features of the ’163 patent, although this alternative is, in my opinion, less appealing to users.  
2 The Browser on a smartphone or tablet computer could be programmed to use gestures to zoom  
3 in and out on portions of a structured web page without the additional ability, once zoomed in, to  
4 use a “second gesture” (in the language of the ’163 patent) to translate to a different box of  
5 content. This appears, from Samsung’s own Relative Evaluation Report (SAMNDCA00203880  
6 at SAMNDCA00203937), to be precisely how a Galaxy S prototype functioned before it imitated  
7 ’163 functionality from an Apple iPhone: the prototype allowed zooming in and zooming out, but  
8 translation to a second box of content via a second gesture in the zoomed in state was not  
9 possible. Samsung itself assessed this alternative functionality as inferior—it proposed an  
10 “[i]mprovement” to “supplement the double tapping enlargement/shrinkage feature” to include all  
11 of the ’163 patent’s features. (*Id.*) I agree that the ’163 functionality is superior.

## 12 **VI. DETAILED OPINION REGARDING THE ’915 PATENT**

### 13 **A. Summary of the ’915 Patent**

14 282. The ’915 patent is entitled “Application Programming Interfaces for Scrolling  
15 Operations.” The application that resulted in the ’915 Patent was filed on January 7, 2007.

16 283. The ’915 patent is generally directed to methods and apparatus for responding to  
17 user inputs on a touch-sensitive display integrated with a device. The asserted claims of the ’915  
18 patent recite methods and apparatus that distinguish between a single-input point that is  
19 interpreted as a “scroll operation” and two or more input points that are interpreted as a “gesture  
20 operation.”

21 284. The Background of the Disclosure section of the specification explains that various  
22 devices such as electronic devices, computing systems, portable devices, and handheld devices  
23 have software applications and application programming interfaces or “APIs” that interface  
24 between the software applications and user interface software to provide a user of the device with  
25 certain features and operations. [’915 patent, col. 1:7-8, 33-37.]

26 285. The specification further explains that various types of electronic devices, such as  
27 portable devices and handheld devices, have a limited display size, user interface, software, API  
28 interface and/or processing capability which limit the ease of use of the devices. User interfaces

1 of devices implement APIs in order to provide requested functionality and features, such as  
2 scrolling, selecting, gesturing, and animating operations for a display of the device. The ’915  
3 patent explains that one issue with these user interfaces is that they can have difficulty  
4 interpreting the various types of user inputs and providing the intended functionality associated  
5 with the user inputs. [’915 patent, col. 1:48-55.]

6 286. The ’915 patent proposes a method for responding to a user input of a device, such  
7 as a portable electronic device (e.g., cellular phone, media player, multi-touch tablet device), in  
8 order to implement and distinguish between various desired input operations for a user interface,  
9 such as a scrolling operation and a multi-finger gesture operation. [’915 patent, col. 6:20-60.]

10 287. Figure 1 of the ’915 patent illustrates one embodiment of a method for responding  
11 to a user input of a data processing device that is covered by claims 1, 8 and 15.

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1 equivalent to the corresponding structures described in the '891 patent for performing the  
2 functions in claim 74. Accordingly, these three Samsung Accused Products infringe claim 74.

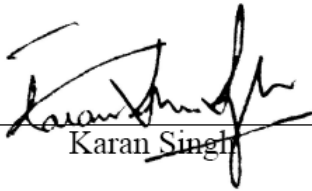
3 **VIII. CONCLUSION**

4 593. My opinions are subject to change based on additional opinions that Samsung's  
5 experts may present and information I may receive in the future or additional work I may  
6 perform. I reserve the right to supplement this Report with new information and/or documents  
7 that may be discovered or produced in this case, or to address any new claim constructions  
8 offered by Samsung or ordered by the court. With this in mind, based on the analysis I have  
9 conducted and for the reasons set forth above, I have preliminarily reached the conclusions and  
10 opinions in this Report.

11 594. In connection with my anticipated testimony in this action, I may use as exhibits  
12 various documents produced in this Action that refer or relate to the matters discussed in this  
13 Report. I have not yet selected the particular exhibits that might be used. In addition, I may  
14 create or assist in the creation of certain demonstrative exhibits to assist in the presentation of my  
15 testimony and opinions as described herein or to summarize the same or information cited in this  
16 Report. Again, those exhibits have not yet been created.

17  
18 Dated: March 22, 2012

/s/

  
Karan Singh