

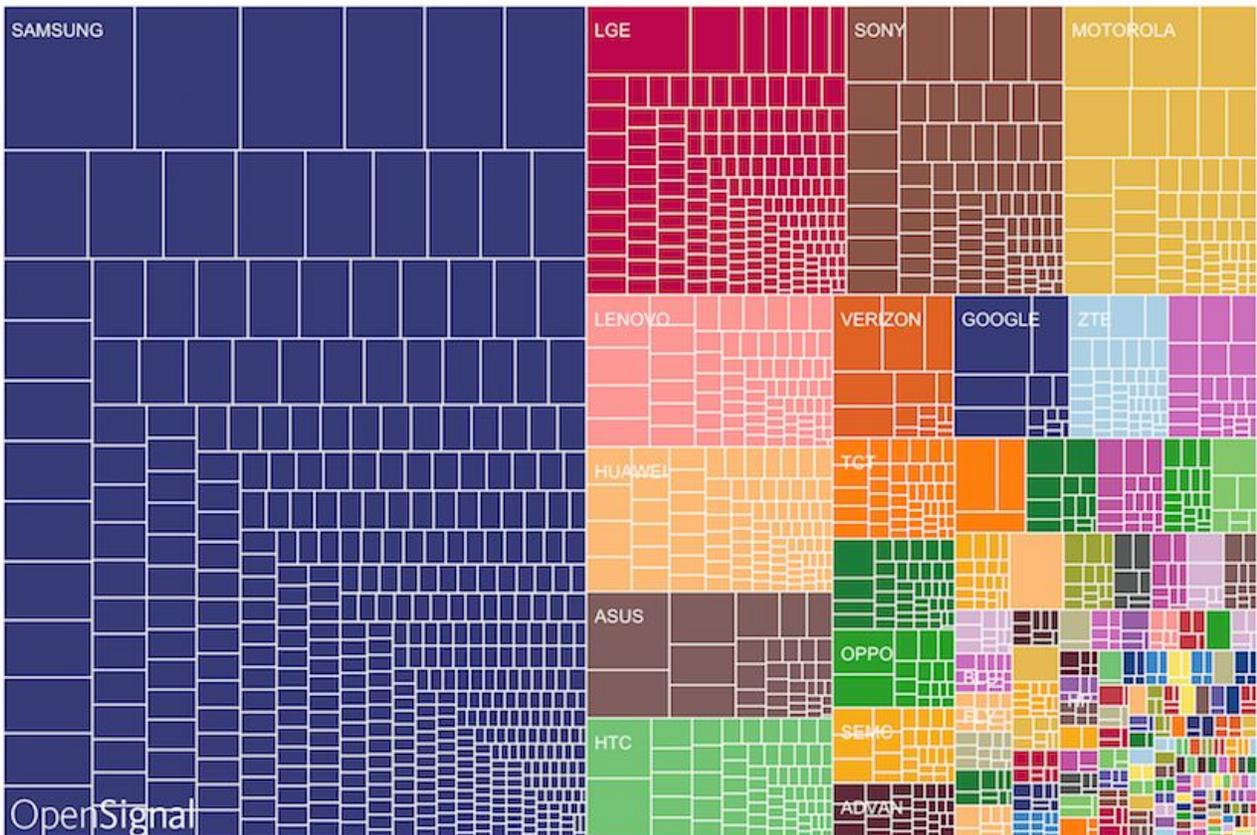


## Android Fragmentation 2015

*We have seen 24,093 distinct devices download our app in the past few months. In our report last year we saw 18,796. In 2013 we saw 11,868.*

This is the best way of visualizing the sheer variety of Android devices that have downloaded the OpenSignal app over the past couple of months. This graph shows the challenge that faces Android developers; over 24,000 distinct devices can immediately use their app, making optimization a real challenge. In two years Android Fragmentation has more than doubled from the 11,868 we saw back in 2013.

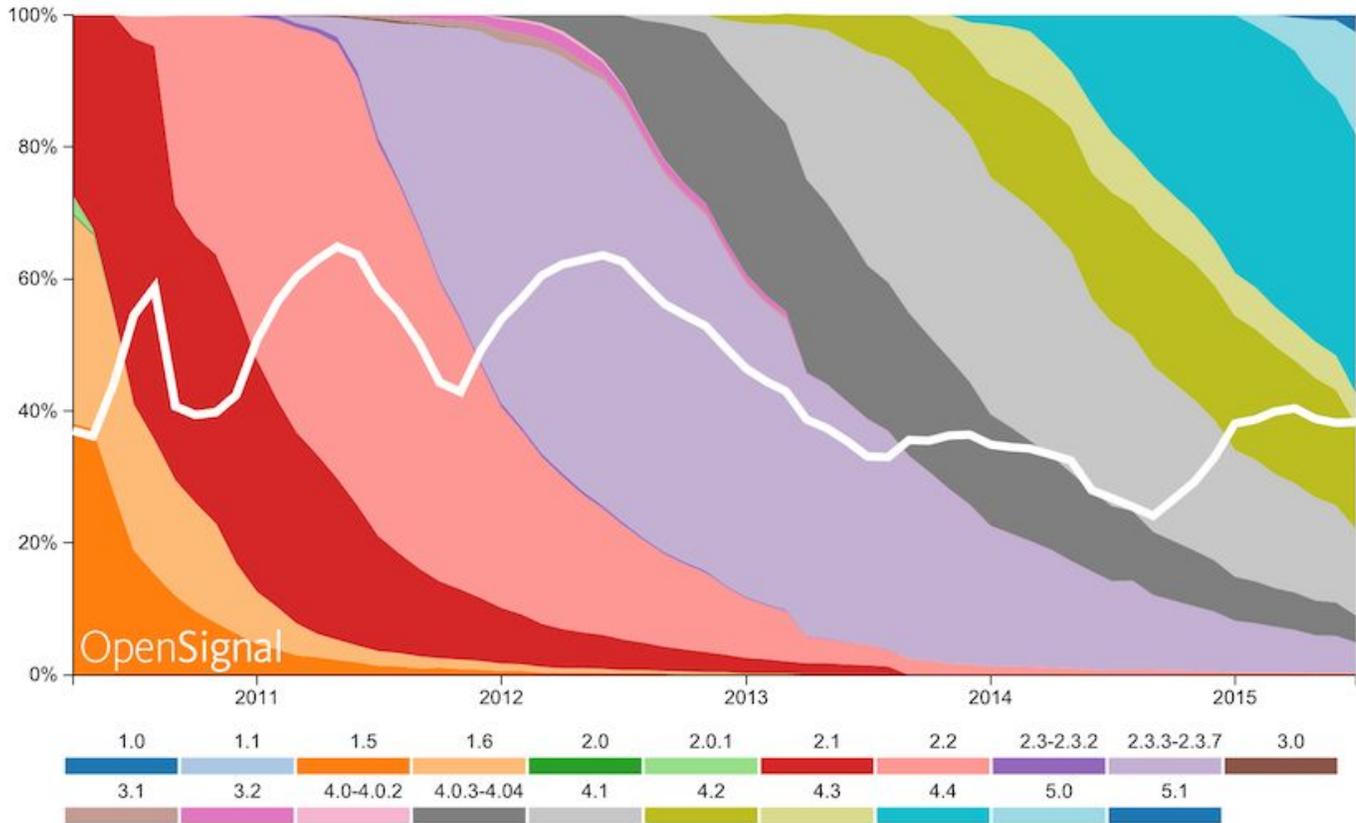
### BRAND FRAGMENTATION



*Samsung have a 37.8% share of the Android market.*

Similar to the above graph, this shows the market divided in terms of manufacturer, with Samsung once again proving dominant. In the first fragmentation graphic Samsung had made 12 of the 13 most popular devices – showing why they have a 43% share of the market. This is actually a slight reduction since the last report – which showed Samsung having a 47.5% market share. Sony rank second with a 4.8% market share, showing quite how large the gap is between Samsung and second place.

## ANDROID OPERATING SYSTEM FRAGMENTATION

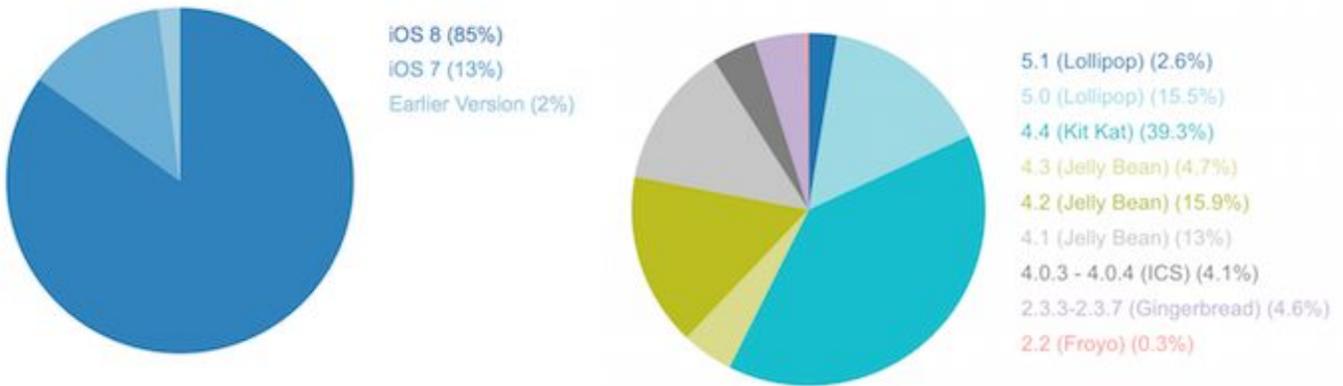


*The Android operating system remains highly fragmented.*

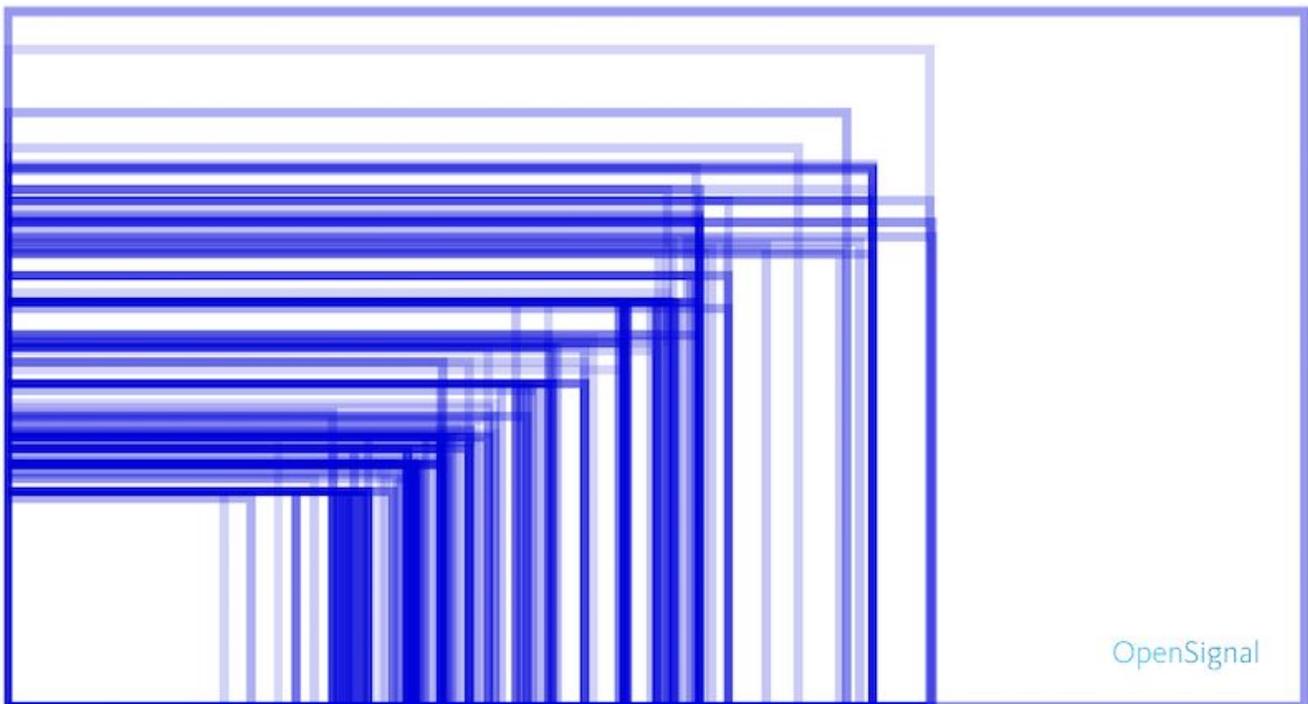
Device fragmentation is not the only challenge that developers face when building for Android; the operating system itself is extremely fragmented. We have, however, seen a slight reduction in fragmentation over the past year, with the market share of the dominant API version (in this case KitKat) having risen over the past year.

## COMPARISON WITH IOS

Android fragmentation of all kinds is usually illustrated in comparison with iOS. These two pie charts clearly show the difference in API fragmentation between the two competing operating systems.



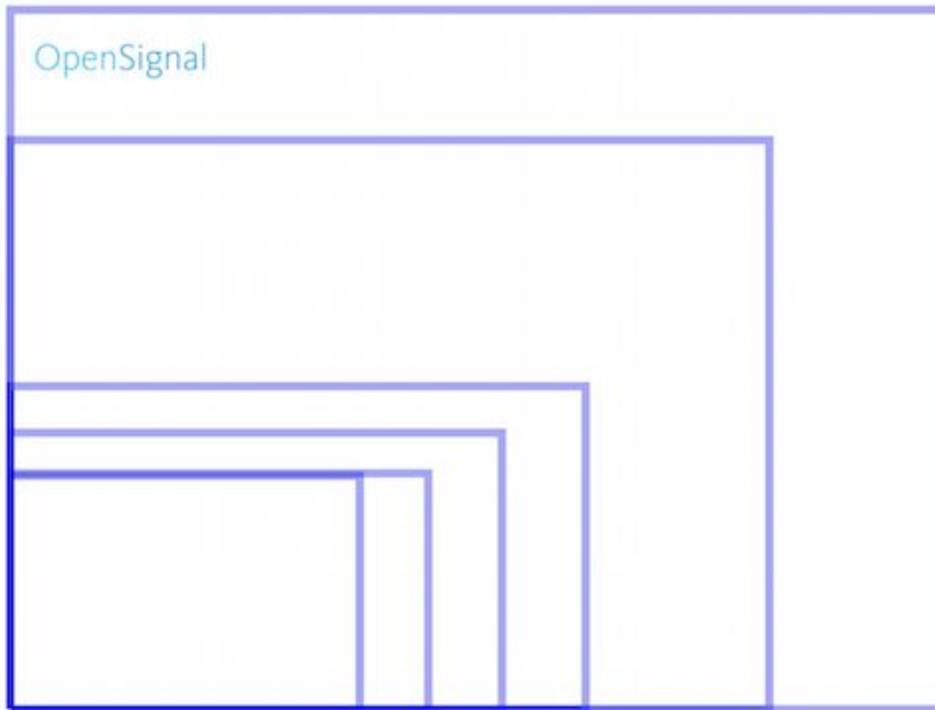
## SCREEN SIZE FRAGMENTATION



## Android Fragmentation 2015

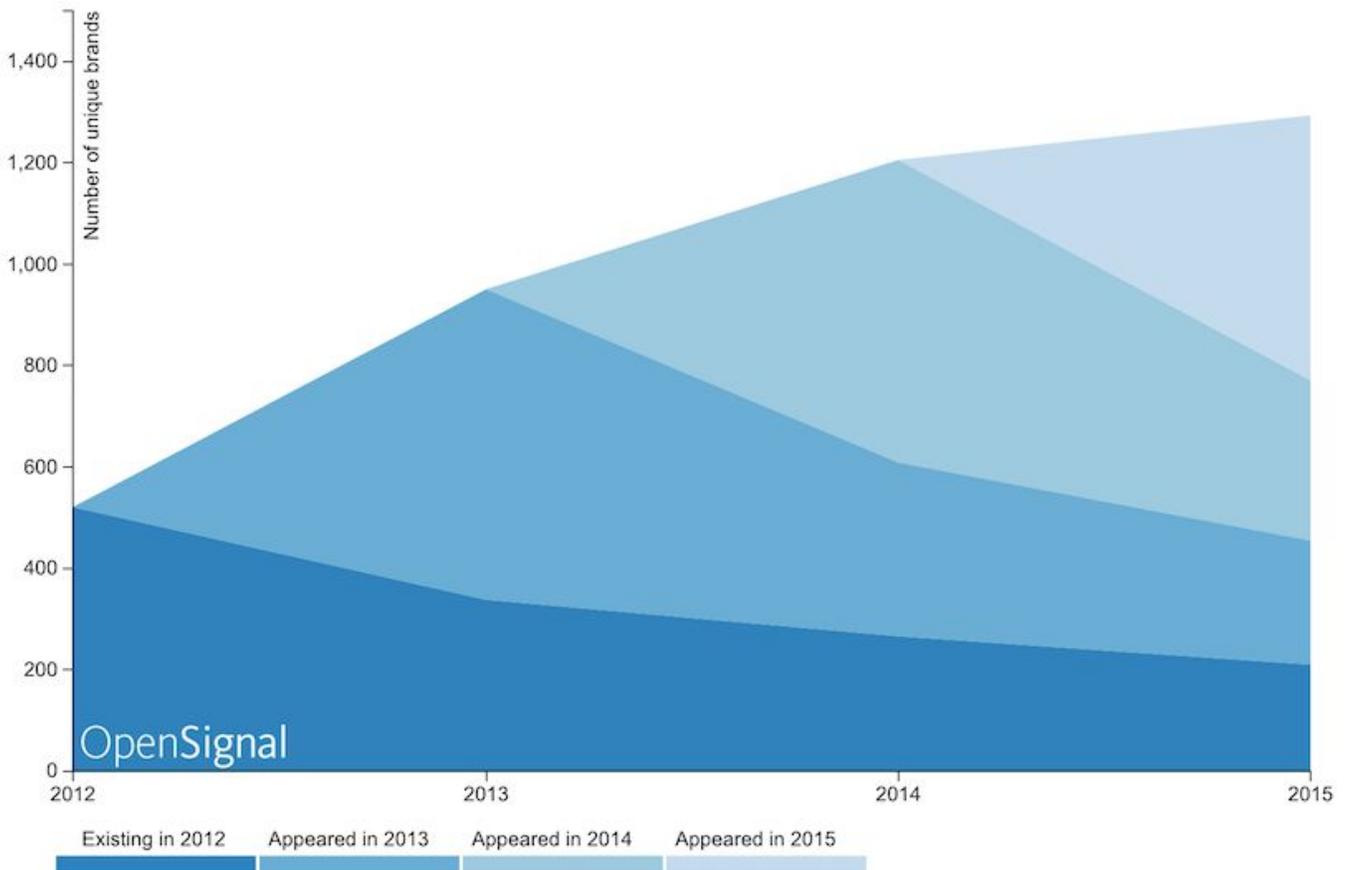
Key to the success of any app is getting the UI right, and Android presents two particular challenges to developers in this regard. Firstly, brands have a tendency to produce their own variants on the system UI (Samsung's Touchwhizz and the HTC Sense being two such examples) which can change the look of various default elements. Secondly, no other smartphone/tablet platform boasts such a proliferation of different screen sizes. One big change to the graphic this year is the inclusion of the enormous Slate 21 - which absolutely dwarfs all other Android devices we have seen this year (and all iOS devices also)

Designing and coding layouts that work well across all these screens is hugely challenging for any developer. The iOS ecosystem shown in the graphic below makes for a good comparison with Android, as it is much easier to design for the considerably smaller number of dimensions.



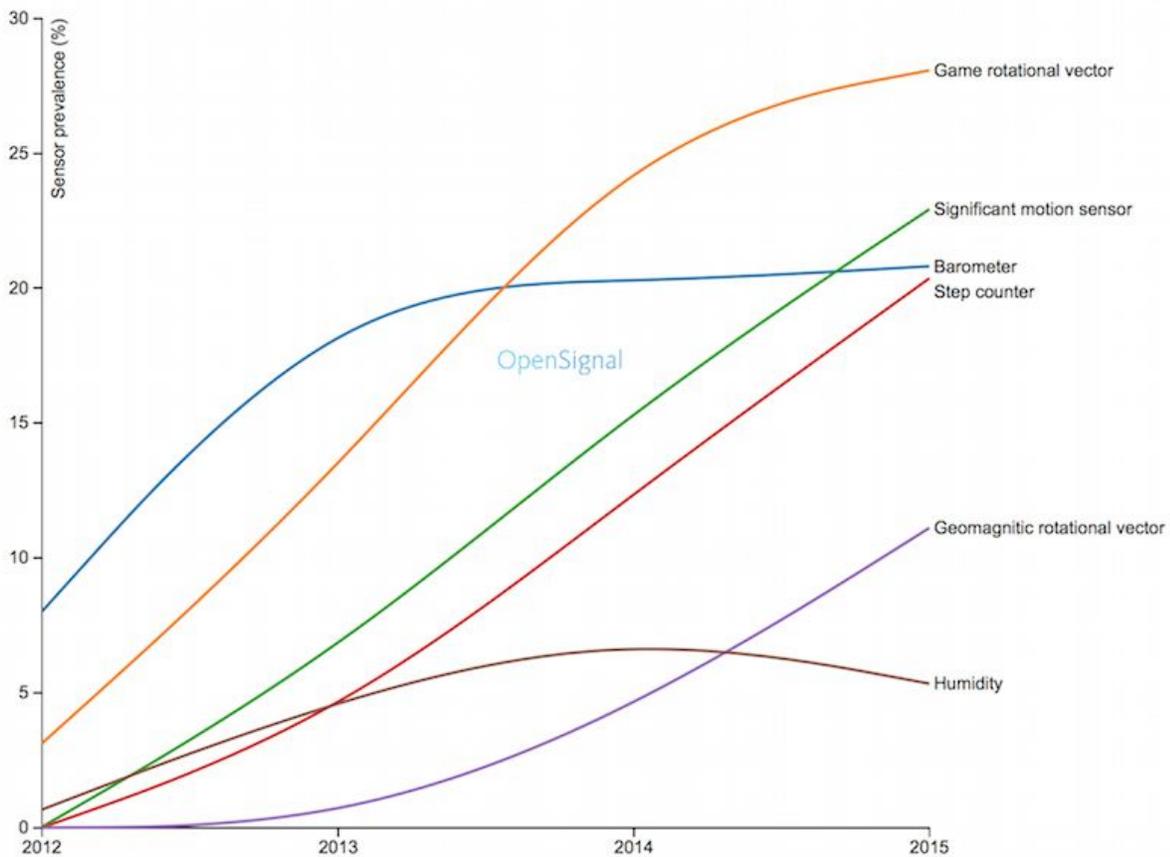
## BRAND PROLIFERATION

This graphic shows the huge expansion in the number of device manufacturers in the last few years, with 1,294 distinct manufacturers responsible for the 682,000 devices we surveyed for this report. The number of manufacturers seen in our sample has almost sextupled since 2012.



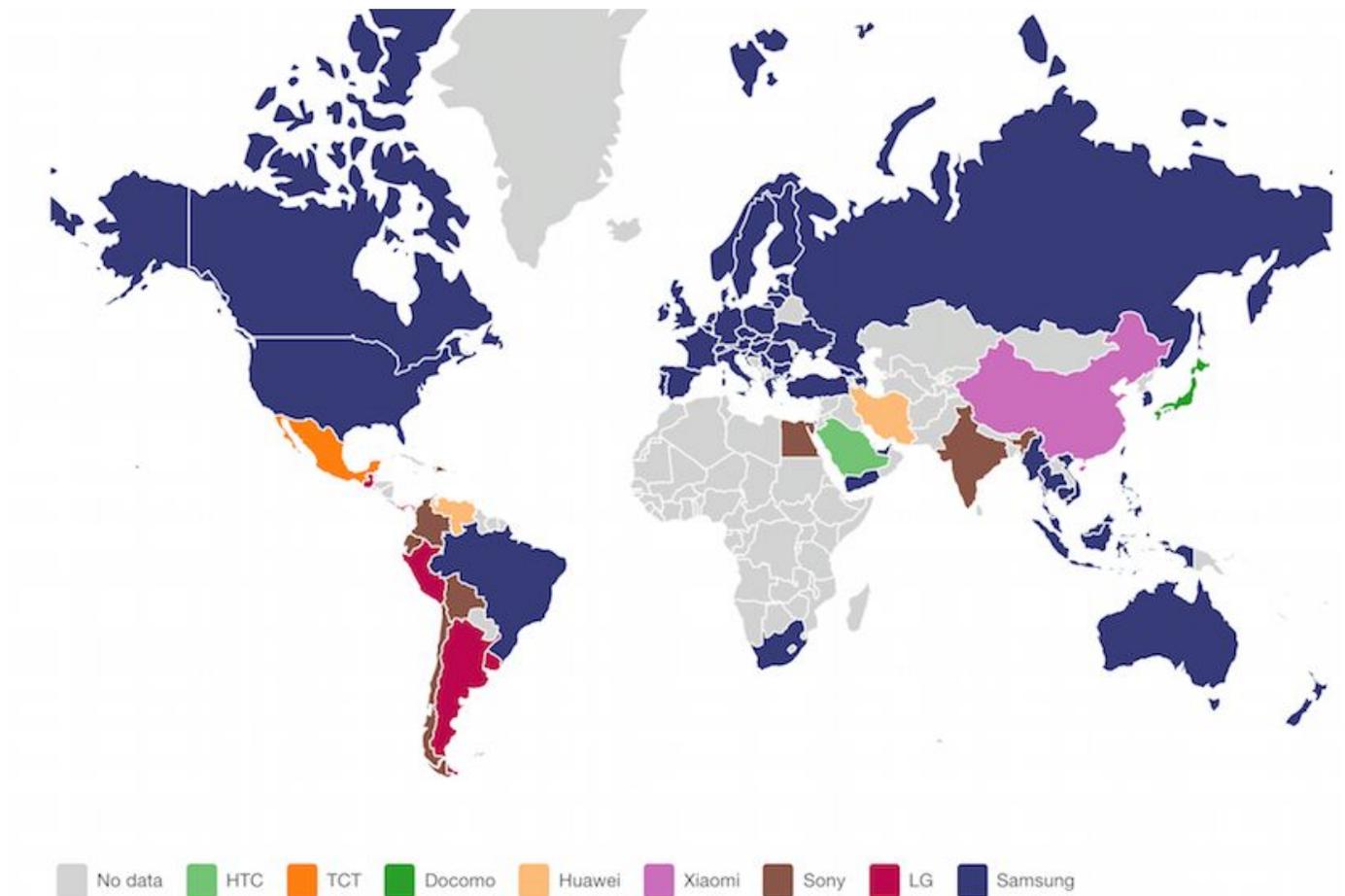
## SENSOR PREVALENCE

One of the trends we noted last year was the rise of sensors in mobile devices, something which has enabled the development of the mobile sensor network - which includes our own meteorological sensor network WeatherSignal (download the app for Android and iOS and get involved!). The decline of the humidity sensor can be explained by its inclusion in the Galaxy S4, but not in the S5. Interestingly the prevalence of barometers in mobile phones has not dramatically changed over the past few years, remaining almost constant.



## ANDROID MARKET LEADER BY COUNTRY

This map shows the leading manufacturer for each country where we have significant data and is based on all devices that have downloaded the OpenSignal app in 2015. As is to be expected, Samsung are the dominant manufacturer in many countries around the world, with notable exceptions in Mexico, India and China.



# NOTES ON METHODOLOGY

**The Device Fragmentation Graphic** shows the 24,076 distinct device types that were present in the last 682,000 unique devices to download our app. The reason we chose 682,000 is because we wanted to make a fair comparison with the fragmentation reports from [2014](#), [2013](#) and [2012](#), which were also based on a sample of 682,000 devices.

**The Brand Fragmentation Graphic** is based on the same 682,000 devices as the device fragmentation graphic.

**The API Level Fragmentation Graphic** is based on data made publicly available by Google.

**iOS API pie chart** is based on data made publicly available by Apple.

**The Android Screen Size Graphic** is based on information from almost 10 million OpenSignal users. In this graphic we are showing physical screen size, not size in pixels. Changes in resolution at the same screen size (for example as between the iPad 3 and iPad 2) present fewer difficulties for developers than changes in physical size. We derive the screen size by dividing the number of pixels of height and width by the pixel density (points per inch - ppi). Ideally we would use separate values for X-density and Y-density as screens are sometimes manufactured with different ppi in different directions, however Android only gives access to one variable. Also worth noting: with rooted devices users are able to “alter” the pixel density - in reality the physical characteristics of the screen stay the same, but the Android OS thinks it’s running on a larger device.

**The Brand Proliferation Graph** includes only brands that contribute at least 5 devices to the sample of 682,000 (in order to weed out inaccurate data - some devices incorrectly report their manufacturer)

**The Market Leaders Map** is based on all data from the 3.1 Million devices that have downloaded the OpenSignal app in 2015.