

Smartphone Intelligence Service

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Analyzing the Potential for the Google Pixel Phone

Google Must Work Hard to Drive Sales of its Impressive Pixel Smartphones

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Google announced two premium smartphones on October 4th, Pixel and the larger screen Pixel XL. Unlike Google's previous co-branded Nexus smartphones developed with partners such as Samsung, Motorola, HTC, LG and Huawei, the new Pixel Phone is entirely branded as Google. HTC is manufacturing for Google more in an Original Device Manufacturer (ODM) role than the Original Equipment Manufacturer (OEM) role of Google's Nexus partners. Google claims to have designed all the Pixel Phone hardware itself.

As Google unveiled this new Android premium phone in the aftermath of Samsung Note 7 recall, Google aims to fill in some of the gaps left by Note 7's failure. But we believe the amount of additional sales Google can pick up from Samsung is small, because of low Pixel production volumes and high pricing. Instead, the biggest immediate beneficiaries will be Apple's iPhone 7 and 7 plus.

We expect Google Pixel phones will have modest sales volumes in the short term for the following reasons:

- **Google is yet to build up strong carrier and retail relationships.** Because Google worked closely with OEMs on older Nexus devices, it relied on their carrier relationships, rather than having its own.
- **The prices will hold back some potential buyers.** The price of the Google Pixel phones match the iPhone and are significantly higher than Nexus models.
- **The initial production volume of Pixel phones is moderate.** IHS believes Google's planned 2016 Pixel production is around two million units.
- **Google is not known as a hardware brand, yet.** While smartphone buyers may have confidence in Google software products but not necessarily in its hardware gadgets. Google must re-position its brand and compete with the enormous brand marketing spend of the smartphone market leaders, Samsung, Apple and Huawei.

Territories covered

World

Company	Symbol
Apple	NASDAQ:AAPL
Google	NASDAQ:GOOGL
Samsung	KRX:005930



In the long run, if Google manages to handle the problems above, whether Pixel can be a great success will rely upon several factors. Notably, Google must be prepared to spend significant amounts on marketing and channel incentives and be prepared to follow up the initial Pixel models with further strong smartphone designs in 2017. Google has to win three battles:

- **Google Android phone (Pixel) vs. iPhone**
- **Google Android phone (Pixel) vs. all other Android phones, which are made by almost all the existing smartphone makers**
- **Premium vs. mid to low-end phones.**

Google needs to build up strong carrier and retail relationships in many countries

As of now, people in US, Canada, Australia, UK and Germany can buy the Pixel phones via Google's local exclusive carrier partners. The Pixel phones also work with Project Fi, the company's own MVNO programme which is available in the US and uses with Sprint, T-Mobile and U.S. Cellular networks alongside public WiFi.

Pixel phones are also available direct from Google without subsidy on the online Google Store and sold by several retailers which mostly focused on local markets unlike the global retailer Amazon.

Although Google's carrier partners are among the biggest operators in their own countries, their combined size still represents a small market compared with Apple's reach or the wide availability enjoyed by other established smartphone makers. As a new entrant, Google will inevitably need to work on its channel relationships.

In addition to the Pixel's five initial developed markets, it's worth noting Google has set eyes on India as well. India is significant because it will be a large volume smartphone market to drive future smartphone growth. Pixel phones are available on three Indian retailers - Cromā, Reliance Digital and Flipkart.

Carriers*1 offering the Google Pixel phone

Name	Country	Scale, in mobile subscriptions *2	Rank in country by subscriptions
Verizon	US	128 million	2nd
Deutsche Telekom	Germany	40 million	2nd
EE	UK	24 million	1st
Telstra	Australia	17 million	1st
Rogers	Canada	9.9 million	1st
Telus	Canada	8.5 million	2nd
Bell	Canada	8.2 million	3rd

*1 T-Mobile in the US introduced a limited time offer at the end of October 2016. Customers who own an unlocked Google Pixel phone will receive a bill credit worth \$325 if they sign up for T-Mobile One plan.

*2 as of end 2015

Source: IHS

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Retailers offering the Google Pixel phone

Name	Available Country/Countries
Google Store	Australia, Canada, Germany, United Kingdom, United States
Best Buy	US
Wirelesswave	Canada
Dixons Carphone	UK
JB HI-FI	Australia
Reliance Digital	India
Cromā	India
Flipkart	India

Source: IHS

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The high prices of Pixel phone will discourage potential buyers

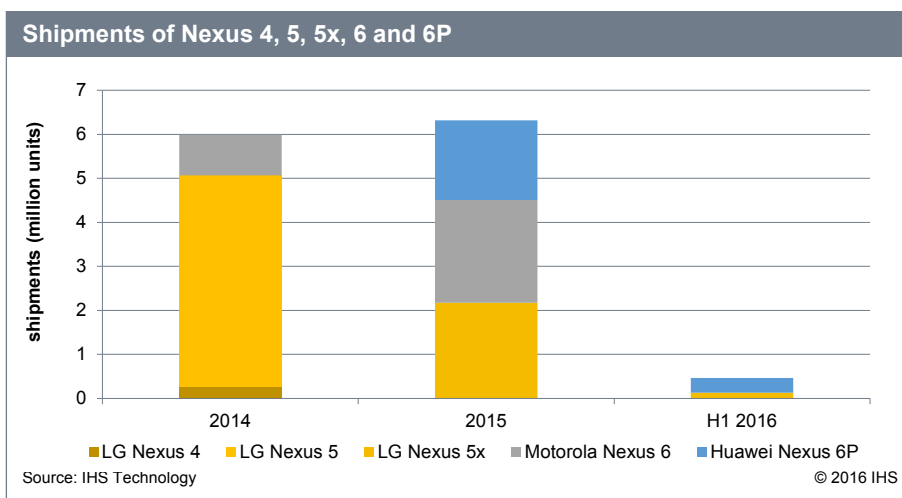
The design of Pixel phone is a standard premium Android phone with the Qualcomm Snapdragon 821 chipset and the OLED display. The pricing indicates Pixel is competing with Apple iPhones and Samsung Galaxy S and Note phones. But Pixel phones do not have any differentiating hardware innovations or designs to justify the price such as the dual camera on iPhone 7 Plus, or the curved screens on Samsung’s premium phones.

Partnerships with carriers and retailers will allow payment by instalment to reduce the up-front cost, but these offers are not widely available yet because of Google’s limited channel relationships. The high prices will hold back some potential buyers, especially those who are sensitive to pricing. Increasingly, consumers are offered high end smartphone hardware at significantly lower prices from Huawei, Oppo, Xiaomi, OnePlus, and ZUK. One US example is another new market entrant LeEco’s Le Pro3, which features Snapdragon 821 and costs just \$399. But while LeEco has done well in China, its US offer will have niche appeal because it is available exclusively via retail channels rather than through the large US carriers where almost all smartphones are sold in the US.

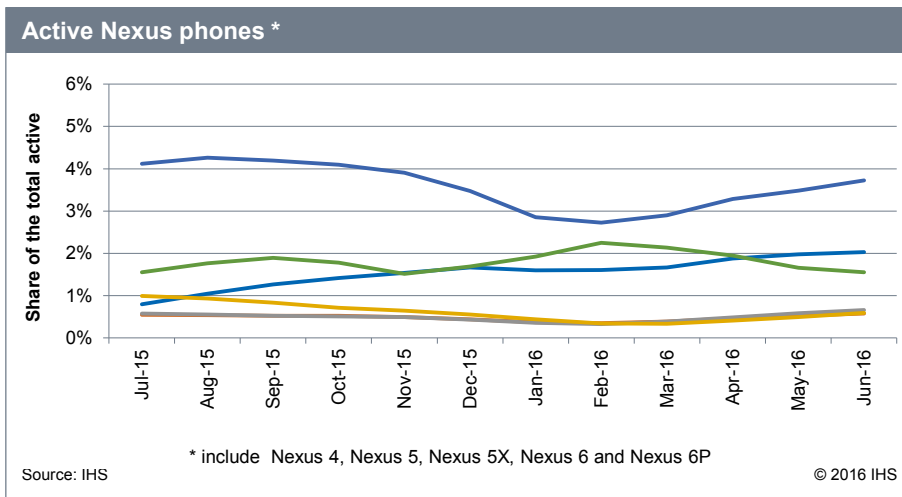
Google’s biggest selling point is its powerful software support - the Google applications and clean Android user experience on Pixel includes the latest version of Android, 7.1 and for now exclusively offers Google Assistant, the company’s AI agent. Assistant competes with Apple’s Siri, Microsoft’s Cortana and Amazon’s Alexa.

The clean up to date software and Google Assistant will attract a group of enthusiastic users but not likely the general audience. Nexus phones, although with affordable prices, previously appealed to this niche group. Nexus devices were often labelled as geeky phones and didn’t reach the mass market.

In the last year, the then current Nexus smartphones, shipped a total of 4 million units. This was split 45.3 % to the Huawei Nexus 6P and 54.7 % to the LG Nexus 5X. IHS expects initial Pixel shipment volumes in 2016 to be a similar order of magnitude.



The share of active Nexus phones in the Pixel’s initial launch countries are all below 4.5% of the total active smartphones. Google has to work on its marketing muscles to make the Pixel phones known to the mass market and to differentiate them from other phones.



Comparison of Google Pixel phone and selected flagship phones by other brands										
	Google		Apple		Samsung		LG	Huawei		
	Pixel	Pixel XL	iPhone 7	iPhone 7 plus	Galaxy S7	Galaxy S7 edge	Note 7	V20	P9	P9 plus
Chipset	Qualcomm Snapdragon 821		Apple A10 Fusion		Snapdragon 820 or Exynos 8890		Exynos 8890	Snapdragon 820	HiSilicon Kirin 955	
Display	5"	5.5"	4.7"	5.5"	5.1"	5.5"	5.7"	5.7"	5.2"	5.5"
	AMOLED		LED-backlit IPS LCD		Super AMOLED		Super AMOLED	IPS LCD	IPS-NEO LCD	Super AMOLED
OS	Android 7.1 Nougat		iOS 10		Android 6.0 Marshmallow		Android 6.0 Marshmallow, upgradable to 7.0 Nougat	Android 7.0 Nougat	Android 6.0 Marshmallow	
Camera	8 MP front /12.3 MP rear		7 MP front/ 12 MP rear OIS	7 MP front/ dual 12 MP rear OIS	5 MP front /12MP rear OIS		5 MP front /12MP rear OIS	5MP front/ 16MP +8 MP dual rear OIS	8 MP front /dual 12 MP rear	
Other notable features	<ul style="list-style-type: none"> - Highest DxOMark-scored smartphone camera - Google Assistant - Compatible with Daydream VR 		<ul style="list-style-type: none"> - IP 67 Water resistance - Dual cameras on iPhone 7 plus - Siri 		<ul style="list-style-type: none"> - IP68 water resistance - Double curved screen - Compatible with Samsung Gear VR 		<ul style="list-style-type: none"> - IP68 water resistance - Iris scanner - Stylus 	- Dual rear camera	- Leica certified dual rear camera	
SIM-free price*	32 GB - \$599 128 GB - \$699	128 GB - \$819	32 GB - \$649 128 GB - \$749 256 GB - \$849	32 GB - \$769 128 GB - \$869 256 GB - \$969	32 GB - \$699	32 GB - \$770	64 GB - \$850	64 GB - \$749.99	32 GB - \$440 64 GB - \$545	64 GB - \$589 128 GB - \$648

* Retail prices in the US. Huawei P9 is not available in US hence the price is adapted from UK.

Source: IHS

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Google's display choice helps Daydream VR, but limits its ability to increase production

IHS estimates Pixel's production is being restricted by the supplies of the OLED displays and IHS estimates initial production volume was only about 2 million units, shared 70% to the XL model and 30% for the standard 5" Pixel.

Organic Light-Emitting Diode (OLED) displays are one of the most sought-after components in the smartphone industry because OLED panels have very fast refresh rates which are suited for Virtual Reality (VR), vibrant colors and low power consumption. Companies are looking to have OLEDs to enable more functionalities on their flagship devices. Samsung

Display is currently the only supplier that has the capacity of mass producing the smartphone OLED displays. LG, another key supplier in the industry and the supplier for Apple, is still deploying LCDs on its flagship phones such as the latest V20. Apple is using LCD but IHS believes Apple will adopt OLED technology in future, most likely in 2017's iPhone model refresh. Chinese OEMs such as Xiaomi, OPPO and Vivo are also in the queue for the OLED supplies.

More OLED manufacturers will eventually emerge driven by the growing demand, but it will take time. Google as a newcomer has not only entered the sales war but also the supply chain competition. It will need efforts to stand out of the queue by proving good sales record and maintaining good relationships with Samsung.

Google's choice of OLED panel makes the Pixel perfectly suited to support Google's new Daydream VR headset, but also makes it harder for Google to quickly raise Pixel production following the Note 7 cancellation because high quality OLED panels are in short supply and neither production partner HTC nor Google are high priority customers because of their lack of track record of large smartphone shipment volumes in the recent past.

Smartphone buyers may have confidence in Google as a software product brand, but not for hardware

The Google brand itself has a halo effect among users and the company take prides in its software innovations and products. But Google's hardware developments lack the same reputation and have had an uneven record. Google Glass has been halted. The modular phone project Ara has been shelved this September, just four months after the Ara team announced a new project plan at Google I/O 2016. Google's best known hardware is probably Chromecast, which is a cheap \$30 smartphone streaming accessory. Google needs to boost users' confidence in Google hardware products. It must convince users that their phones will be taken good care of throughout the life cycle.

The company has promised the Pixel phones will receive security updates for at least three years after the launch, or at least 18 months from when the Google Store last sold the device. It's also running a 24-hour phone support service which allows users to share their screen while reporting the problem. Nevertheless, customer support will struggle to match established players. Apple has a particular advantage because Apple's physical stores can be found in all major cities and the genius bar in every store is able to facilitate much easier customer interactions for troubleshooting or training.

Beyond the short-term Google must overcome even more challenges

If Google manages to solve its initial Pixel launch challenges and gain a foothold in the smartphone industry, it will be faced with more challenges, which will be much more difficult to address.

Google Android phone (Pixel) vs. all other Android phones

The release of Pixel phones is an attempt by Google to have full grip on the Android operating system and it will upset the company's Android ecosystem partners. All the major smartphone OEMs, excluding Apple, are manufacturing Android phones and almost all of them have no alternative OS on hand.

Google's partners may take pre-emptive actions and consider alternative solutions.

- **Samsung will consider expanding use of its Tizen OS.** The recent acquisition of Viv signals the company is setting foot in the arena of AI, which is the differentiator of both Google Pixel and Apple iPhone. Samsung uses Tizen on smartwatches, smart TV's and on a small number of smartphone models aimed at India and South Africa.
- **OEMs may fork Android.** Other OEMs, mostly China-based, may have less options as Samsung but the pressure from Google may drive them to abandon Google Android and advance their own Android variants, or seeking partnership with local tech giants such as Baidu.
- **Microsoft may have a new opening for Windows 10 Mobile.** Microsoft has failed with its smartphone efforts. But if Google antagonizes its Android partners, Microsoft offers a potential alternative, if sufficient investment goes in. Windows will not gain traction in smartphones unless there is a major market disruption such as Google taking too much control

over Android and perhaps prompting a regulatory intervention which helps rival operating systems and approaches.

Google Android phone (Pixel phone) vs. iPhone

The industry sees Google’s launch event on October 4th as a shift towards an integrated hardware and software strategy, an approach taken by Apple, and similarly underway through Microsoft’s Surface adventures in the PC market. But Google’s entire hardware ecosystem is not as developed as Apple. The AI device, Google Assistant, is directly competing with Apple’s Siri but it needs a big user base to contend it. Although Android is currently the dominant OS, Google Assistant is so far only deployed on the Pixel phones and Google is likely to have the backfire from its Android partners that are making the rest of Android phones. Google Assistant will be a much more successful AI agent if it is more widely deployed on other OEMs’ phones and hence has access to a much larger training data set.

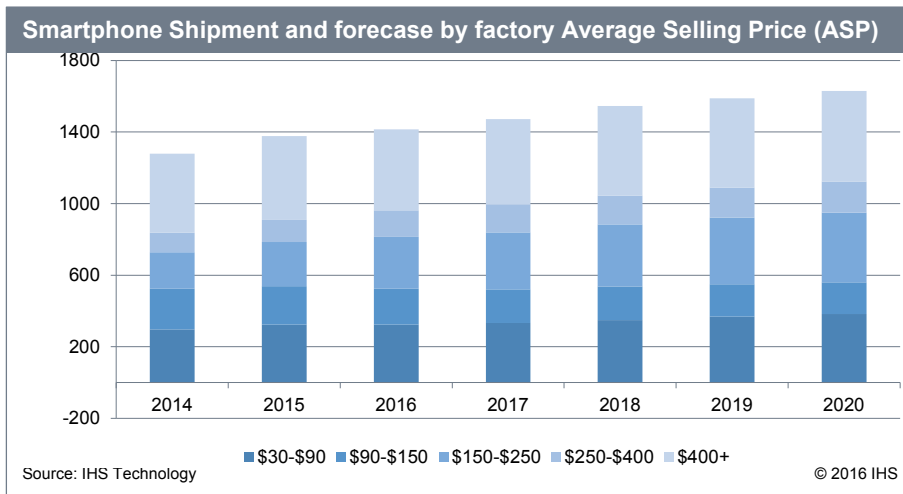
Another differentiator of Pixel phone from iPhone is Google’s Daydream VR platform. But VR is yet to be a mainstream product, and to be commercially viable among a general audience will take time.

Additionally, the Note 7 recall may have undermined people’s confidence in Android phones and make buyers consider turning to iPhones as a safe option. The halo effect of the Google brand may offset some of the negative impacts, but it is unclear how much the Android brand itself is hurt by Samsung’s incident.

Premium vs. mid to low-end phones

The premium smartphone segment has been facing pressure from cheaper devices. IHS forecasts the premium market will remain flat and smartphone shipment growth will be mainly driven by mid to low-end devices.

We believe the entry of Pixel phones into the premium market is not likely to reverse this trend in short term. As set out above, the Pixel’s differentiators – VR and AI are not convincing enough for mass market to switch to Pixel phones at this stage given the very high Pixel pricing.



Rising hardware commoditization will help Google's unified software and hardware strategy

Google may not be expecting a mainstream mass market instant success with Pixel. Instead, Google is maximising its competitive strengths through its software, such as deep learning, rich user database and AI while delivering an impressive high end hardware experience with a good camera.

When hardware innovation slows further, and it becomes impossible for smartphones to differentiate by the hardware components alone, then Google's time will come because competition in the realm of software will become critical, rather than simply important.

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