

Google Android

In 2005 tech giant Google acquired the Android operating system from Android Inc., to develop the User Interface for the touchscreen devices like smartphones and tablets.

It is developed under the co-arrangement of developers called *Open Handset Alliance (OHA)*, sponsored by Google. There are multiple partner companies in OHA including Samsung, HTC, Lenovo, and other smartphone manufacturers.

The first commercial smartphone available in the market was the **HTC Dream**, announced on the 23rd of September 2008. Andy Rubin is known as the **father of android** who started Android Inc., in 2003 and which then got acquired by Google in **2005**, also Andy Rubin has gotten hired as the senior vice president of mobile and digital content.

Google's Android division is the primary development and maintenance team of the Android OS. They release new updates, features, security patches, and versions for the Android OS. They support it via the google play services which are present in most of the android devices that come under OHA and are backed by Google.

Android updates are often released under each carrier due to the complex nature of the Android ecosystem. When a new Android update is released, it needs to be tested and customized for each specific device and carrier network to ensure compatibility and stability. This process involves collaboration between the device manufacturer,

the carrier, and sometimes additional third-party software providers. As a result, updates are often staggered to accommodate these various factors and to ensure a smooth rollout across different devices and networks. Android, since it's an open-source operating system, device manufacturers are responsible for the hardware they make,

Whenever Google rolls out a new version of Android, it goes to the Pixel devices first. It is the responsibility of a manufacturer (like Samsung/HTC) to make the latest version available for a contract-based phone for the specific carrier.

Device manufacturers first must update the drivers and port their tweaks and skins to work with the newer version of Android, they then send the device to the carrier for testing. Thus, the delay.

To be precise, Android is not fully open source as Google showcases it. Though the most parts of the Android code are available as open source, many critical parts of the code are remaining closed under proprietary licenses by Google, Samsung, HTC and by other OEM vendors. Few proprietary parts of the code include:

1. **Device drivers** - Fingerprint sensor in HTC and Samsung devices and Other similar features they have introduced into their high-end phones.
2. **Launcher Skins** - Samsung owns TouchWiz skins, HTC owns HTC sense and other vendors have their own proprietary skins which are close to their own ecosystem.

3. **OEM apps** - All the OEMs tightly integrate their own apps in android system level in their phones. For example, Samsung integrates its ChatOn, Samsung App Store, Samsung Pay, etc., These app codes are proprietary.
4. **Custom made tweaks in Android OS** - OEMs usually tweak the open-source version of the android heavily. They remove a few heavy features in their low-end devices and add extra features to the high-end phones. Compare the Nexus settings screen and Samsung S3 settings screen. You can find features missing or a few added extra in between these devices.
5. **Branding the mobile** - OEMs made custom code tweaks in device BIOS and add their own branding to it.

All the above constraints are causing heavy work to code/re-code their own version of android. Apart from the difference between the OEMs, the OEMs must make a different set of code tweaks for their different device models. This causes a heavy delay for the OEMs to push their own.

The current release is Android 14. Google 15 is rumored to be released in March 2024.

Samsung, Nokia, Motorola, AT&T, T-Mobile, etc.
There are now nearly 1,300 brands that have produced **over 24,000** distinct Android devices.