Operating Systems Development

Android & iOS

Operating Systems

I am leaving out desktop systems, especially Windows, which can be a subject of its own.

Happily MacOS and ChromeOS follow the standard development patterns as iOS and Android

Operating Systems

In House Development

Development can be as long 5 years to as little as 2 year before release.

Depending on OS complexity seveal Teams maybe working on future versions of the OS.

Apple: Current - iOS 15, with iOS 16 & 17 under development

Google (AOSP): Current - Android 12, with Android 13 & 14 under development

Operating Systems

Development Team reviews "Base OS"

Linux (AOSP)

Unix (iOS)

Upgrade if necessary

Apply new User Interface to Base OS

- Remember Linux and Unix are the real OS with Apple & Google topping them with a UI. Many Mfg. add a 3rd layer.

Operating Systems - Step 1

Development Team releases "Developers Beta"

This Beta is only available to registered Application Developers

This is done so Application Developers can test their applications. Also for Developers to find Bugs and Security issues. These are reported via developer channel. If the Bugs or Security issues can be duplicated, the Development Team corrects the problems.

Operating Systems - Step 2

The Development Team upgrades Developer's Beta to "Public Beta"

The Public Beta is open to all Android and iOS users. Google limits Beta's to selected Mfg's.

Many millions of Users download the Public Beta, they find any outstanding issues with Applications, Bugs and Security and corrected as needed.

Three to Seven Public Betas can be issues, depending the complexity of the OS

Example: iOS 15 - 7 Betas   Android 12 - 5 Betas

Opertating Systems - Step 3

The Development Team upgrades the Pubic Beta to "Gold Master or Release Candidate" (GM/RC)

This is the last step for any major corrections

Operating Systems - Step 4

The Development Team upgrades GM/RC to "Stable"

This version is now available to all. However, there are problems for Android Users, OS updates are at the whim of the Manufacture and/or the Carrier.

Operating Systems - Step 5

Development Team issuses "Mid Life Service" updates.

During the life of a OS (usually one year) Google and Apple upgrades or adds features, issues bug and security fixes (mid life services)

Operating Systems - OS Sequencing

The Development Team identifies each versions of the OS with a Numbering Sequence.

Example: Apple iOS Beta 15.1.1 - Google Android Beta 12.5.1

Apple iOS 15 (Stable)   Google Android 12 (Stable)

Example: (Mid Service): Apple is OS 15.4.1   Google Android 12.2.1

<u>**Sequence Numbering**</u>

15/12 - OS Indentifer

.4/.2 - Add or correct features

.1 - Bug and Security fixes

Build Numbers are used after a OS update. iOS uses both Sequence and Build Number. Google used only Build Numbers (AOSP)

Some Manufactures have such large UI's, they have their own Build Number. Copying the Build number and pasting it into your browser will show the Sequence Numbering

Update "FEAR"

Question: I'm affraid my Apps will not work

Answer: Developers, Public and RC Beta's testing work out any issues.

Question: I have been told not to update until all of the Bugs are worked out.

Answer: The development cycles for iOS and Android is extensive for catching issues. To protect the End User "Mid Service" updates are for fixing remaining Bugs but focus on Security issues

What Causes Update "Fears"

Microsoft

Microsoft does not follow due dilgence when Developing Windows Updates.

Why: Poor testing

Why: Hardware

Example: Microsoft pushed out three flawed Windows 10 updates this year which had to be fixed with in a week.

DO NOT LET YOUR FEAR OF WINDOWS IMPACT UPDATES