

What's New?

September 2016

Apple: iPhones

- Last week, Apple announced the iPhone 7 and iPhone 7 Plus. Highlights:
 - No earphone jack.
 - iPhone 7 Plus has two back cameras: wide angle and telephoto. Back cameras on both phones are 12MP
 - 4-LED flash w/environmental sampling for better flash color.
 - Water and dust resistant.
 - Stereo speakers (one at each end of the phone).

Apple: Other Hardware

- Apple also announced the Apple Watch, series 2 ...
- ... and air buds, a truly wireless pair of earbuds.

Apple: Software

- iOS 10 (for iPhone/iPad) was released Sep 13.
- tvOS 10 (for Apple TV) was released Sep 13.
- watchOS 3 (for Apple Watch) was released Sep 13.
- These are free upgrades.

Meanwhile, over at Android ...

- Android *Nougat* (a.k.a. Android 7) was released Aug 22. It includes enhancements such as:
 - VR (virtual reality) mode for better handling of VR applications.
 - Split screen mode for displaying two apps at once.

Samsung

- Samsung released the Android-based Galaxy Note 7 on Aug 19, sporting a 5.7” diagonal display (just slightly larger than the iPhone 7 Plus display).
 - There have been a number of incidents of the Galaxy Note 7 catching fire or exploding, due to battery issues.
 - If you own one of these phones, Samsung urges you to return it for a replacement, immediately.

Television

- 4K or UHD TV is now standard for many reasonably-priced televisions.
 - The resolution on these TVs is equivalent (approximately) to that of four HD TVs.
- What are the differences between 4K and UHD (ultra-HD)?
 - The terms are used rather loosely – and sometimes interchangeably – by manufacturers.
 - But the real definitions are these:
 - 4K is a resolution of 4096×2160 .
 - UHD is a slightly lower resolution of 3840×2160 .
- Last year at this time, the price for a 55”, 4K/UHD TV was about \$1,000.
- This year, the same size/resolution TV can be found for as low as \$600.
- 4K video is becoming more common from Internet sources (Netflix, Amazon Video, etc.), but the “over the air” networks still have not begun offering the higher resolution content.
- OLED (Organic Light Emitting Diode) TV, which provides the best picture quality now that plasma TVs no longer are produced, have remained steady in price, but could drop significantly in 2017 as more manufacturers move this direction.
 - Right now, OLED TVs are very expensive.
- As I predicted last year, curved-screen TVs are going the way of the dinosaur and the 3D TV.

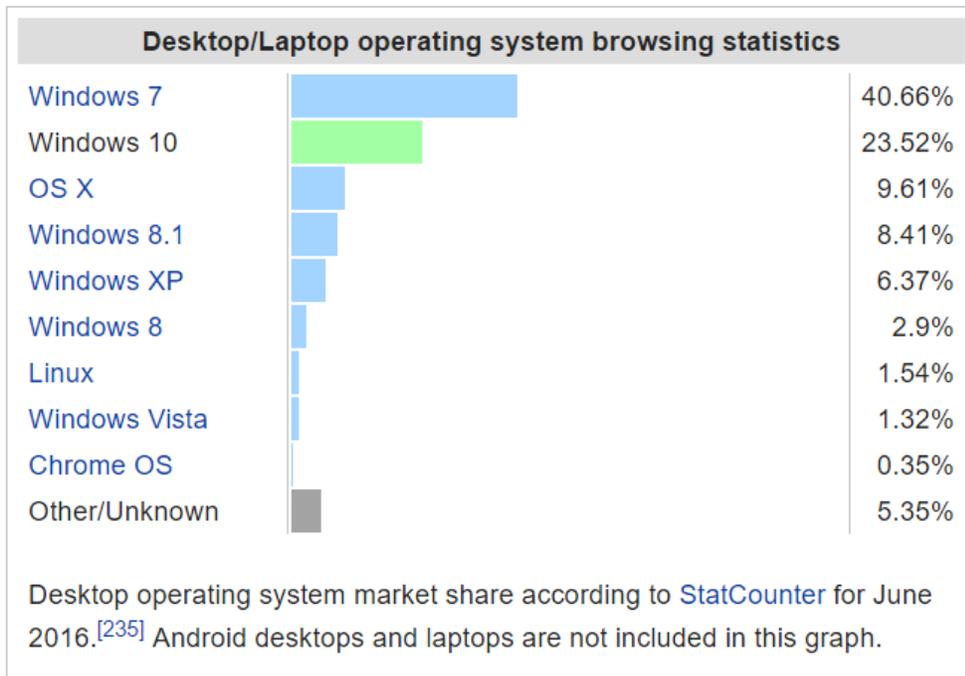
- So, what new feature are manufacturers pushing this year? HDR!
- *HDR (High Dynamic Range) ... content preserves details in the darkest and brightest areas of a picture that are lost using current standards. It also allows for more natural, true-to-life colours that are closer to how we see them in real life.*
 - Trusted Reviews (<http://trustedreviews.com/opinions/hdr-tv-high-dynamic-television-explained>)

Computers: Storage

- Solid-state drives (SSDs) continue to improve in reliability, speed, and capacity.
 - At this time two years ago, prices were about 50¢/GB; last year they were around 35¢/GB. Today, one can find SSD prices of about 25¢/GB.
 - New SSD technologies are coming online that should continue this trend.
- SSDs are and will continue to be much more expensive than hard drives, per GB.
 - For example, I recently purchased a 4TB (4,000GB) portable hard drive for \$135 or about 3.3¢/GB

Computers: Operating Systems

- Windows 10 was a free upgrade for the first year. That year ended in July.
 - To legally upgrade to Windows 10, one now has to purchase it.
- The Sierra version of Mac OS (formerly OS X) will be released Sep 20.
 - This is a free upgrade.



https://en.wikipedia.org/wiki/Windows_10

Computers: Processors

- Computer processors continue to feature:
 - Lower power consumption.
 - Modest speed improvements.
 - Increased data throughput.
- However, the processor manufacturers also are pushing these features:
 - Faster start-up times.
 - VR (virtual reality) support.

Computers: Connections

- Almost all older devices support USB 2.0.
- Many newer devices support USB 3.0.
- A few of the newest devices support USB 3.1.
- USB Data Rates:
 - USB 2.0: 480 Mb/s.
 - USB 3.0: 5Gb/s.
 - USB 3.1: 10 Gb/s.

- USB-C has not caught on as quickly as I expected.
 - Apple adopted it for its MacBook computers.
 - Its advantage, as compared to standard USB connectors, is that it can be plugged in right-side-up or upside-down.
 - USB-C connectors have USB 3.1 data transfer rates.

Lighting

- LED light bulbs continue to drop in price.
 - Last year 60-watt equivalent LED bulbs were about \$3-\$4/bulb.
 - In packs of 6 or 8 bulbs, they now are \$2-\$3/bulb.
 - Unless there is a fault in the electronics, such bulbs are expected to have an average life of about 20 years.
- The newest and slightly more expensive bulbs are introducing new features:
 - Dimmable.
 - “Temperature” adjustable (i.e., temperature of the light).
 - Color adjustable.
 - Internet addressable.

Devices You Can Talk To

- We continue to see a proliferation of devices to which one can talk.
- Examples of this technology are:
 - Amazon Echo (Alexa-enabled)
 - iPhone/iPad/Mac (Siri-enabled)
 - Windows PC/tablet/phone (Cortana enabled)
 - We are able to get answers and control devices using our voice.

The Internet of Things

- *The internet of things (IoT) is the internetworking of physical devices, vehicles, buildings and other items – embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data.*
 - https://en.wikipedia.org/wiki/Internet_of_things
- IoT will continue to spread throughout our homes and into other areas of our lives.

- Examples:
 - A smart parking lot that lets drivers know (via a display on their dashboards) of the locations of empty spots.
 - Home lighting that changes color and intensity based on the light coming through windows and the time of day or night, and which can be controlled remotely via the Internet.
 - Bio-sensors (wearable or ingestible) that alert the patient and his/her physician of problematic readings.

Autonomous vehicles

- Generally, there are two types of autonomous vehicles:
 - UGVs (unmanned ground vehicles).
 - UAVs (unmanned aerial vehicles).
- The ones that get the most press are UAVs under human or computer control, also known as drones.
 - Over the next year (once the elections have passed), I expect to see more laws restricting the use of drones.
- Most drones have cameras, and those with high-resolution cameras can capture stunning video.
 - They are even used by Hollywood filmmakers because of their maneuverability and “smaller footprint” (for example, unlike a helicopter, they cause almost no “rotor wash”).
- Many auto manufacturers now offer cars with vehicular automation.
 - Anti-lock braking systems.
 - Rear-view alarms when backing up.
 - Auto-braking anti-collision systems.
 - Cars that can parallel park themselves.
- Completely autonomous cars and trucks are in the roadway experimentation phase (for example, by Google) and can be expected to gain popularity within the next few years, as the technology gets better.
- How do you feel about driving on the same road as an automated vehicle?
 - A number of the test vehicles have had accidents with non-autonomous (i.e., “peopled”) vehicles.
- Could it be that, at some time in the future, full automation will be required for passenger vehicles?