Angelique Amour

iWaste

What actually happen’s to all those old iPhone’s?.

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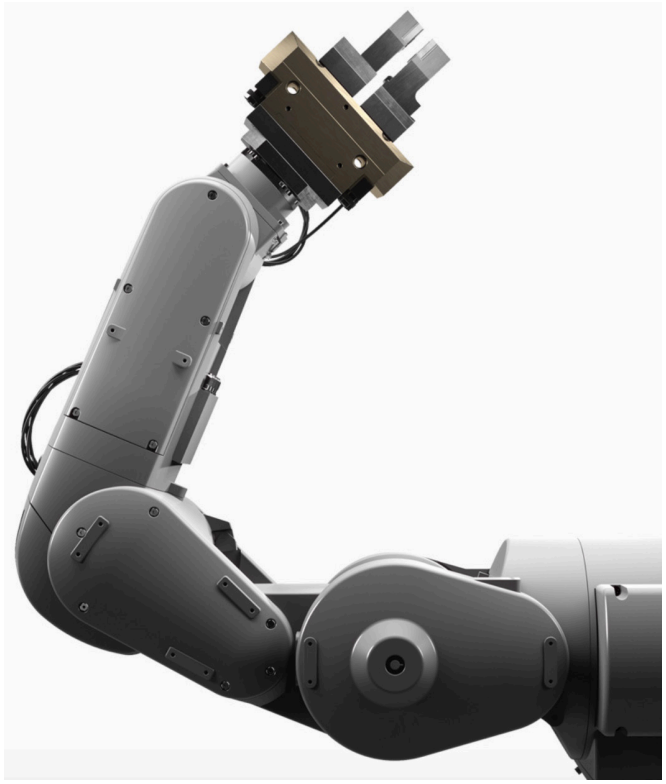


Apple products and branding have become synonymous with revolutionary technology and are considered leaders in there market

One of their forefront products is the iPhone from its initial launch in 2007 to it's latest advanced version today: the iPhone X that boasts capabilities such as facial recognition, super retina display and high quality 4k video.

The desire to own a shiny, new iPhone with bigger, better, faster features is enough to entice consumers to ditch last years device in order to buy the latest model.

So what happens to all those old iPhones that are considered obsolete?

In todays environmental crisis with mobile phones contributing to the 1.6 billion e waste causes, the average life span is estimated to be about 18 months before it is discarded.

Considering these phones contain toxic substances like arsenic, lead and poly brominated flame retardants, 30% of the materials used cannot be recycled and 60% of these obsolete phones are destined for land fill.

What position are the Apple corporation taking to deal with this issue?

According to Apple's website they are offering a few solutions that we can explore more in depth. The first solution is the "Apple GiveBack program".

Apple GiveBack is a trade-in program offered by Apple for older devices where the customer can exchange their device for a Apple gift card.

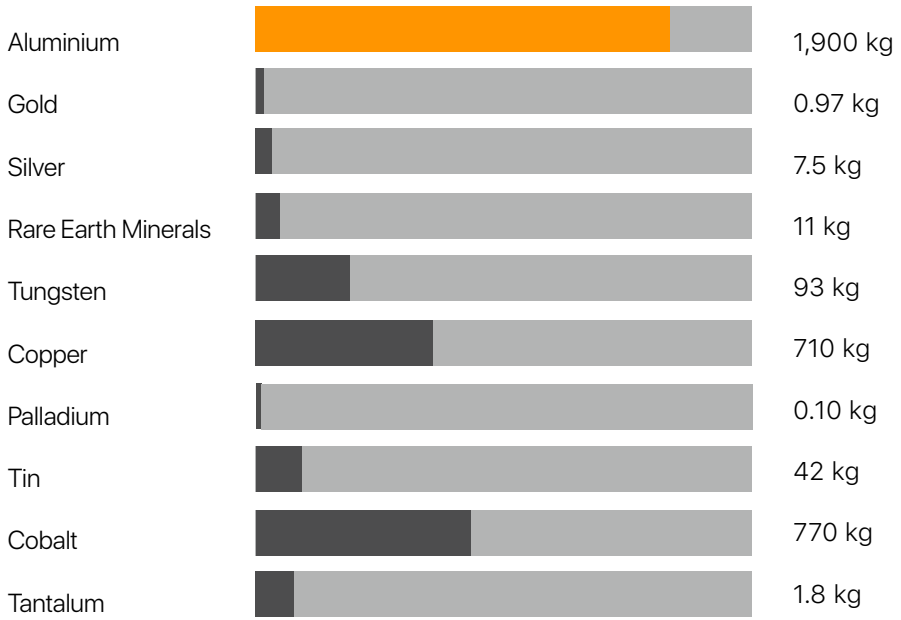
Another solution is the creation of a robot made from reclaimed materials, specifically designed to deal with old iPhones.

Daisy, Apple's newest disassembly robot, can disassemble nine different kinds of iPhones, 200 per hour, sort and separate recovered materials and components.

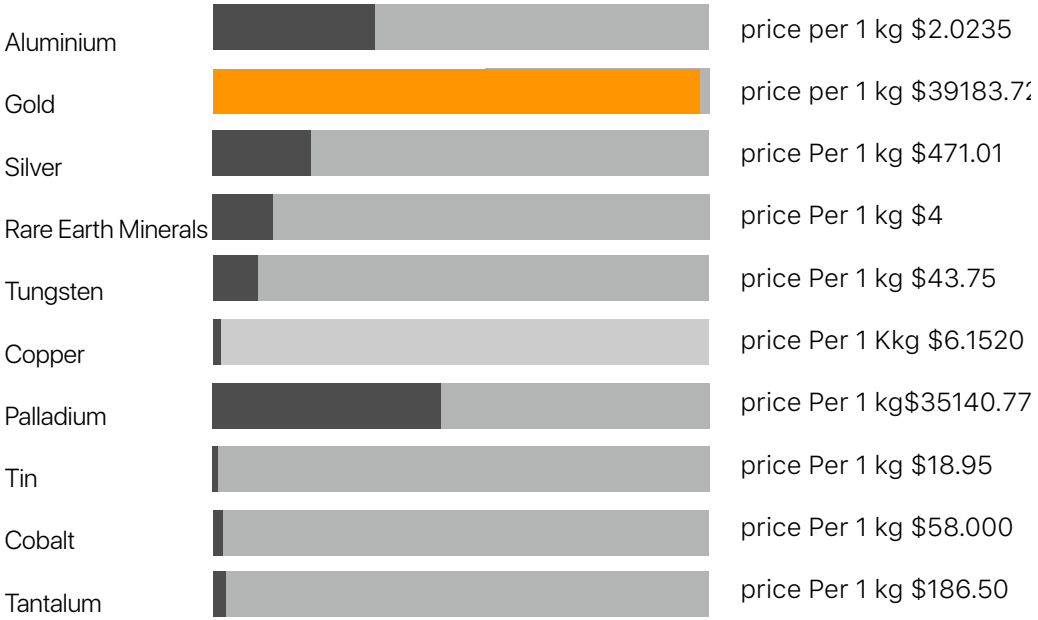
Apple iPhones include rare earth magnets, alloys, tantalum capacitors, titanium screws, extremely high end and varying grades of pure aluminium, and of course

Recovered Materials vs Materials Value

Per 100,00 iPhone Devices



Value of Materials (price per kg)



("Environment - Resources", 2018)

semiconductors and bonded glass and displays.

Daisy separates nine different iPhone models into logical parts that can be recycled today, recycled in the future, or disposed of as safely as reasonably possible.

Inside the rocks from this mine are rare-earth minerals, crucial ingredients for iPhones, as well as wind turbines, hybrid cars, and night-vision goggles.

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Minerals such as neodymium are used in magnets that make speakers vibrate to create sound.

Europium is a phosphor that creates the bright red on an iPhone screen. Cerium gets put into a solvent that workers use to polish devices as they move along the assembly line.

Other solutions dealing with old phone's can be found outside of Apple via localised groups and individuals.

Dr. Veena Sahajwalla is a Director of the Sustainable Materials Research and Technology Centre at UNSW where she runs Australia's first E-waste micro Factory; SMaRT. Amongst the different types of e-waste Dr. Sahajwalla recycles are old mobile phones.

The discarded devices are first broken down. Then either a specialised robot or a small furnace are used to either extract or seperate valuable materials for re-use.

The extracted materials include metal alloys and a range of nanoparticles that can be used in industrial-grade ceramics.

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The extracted materials include metal alloys and a range of nanoparticles that can be used in industrial-grade ceramics. The specific quality plastics from computers, printers and other discarded sources can be put through another module that produces filaments suitable for 3D-printing applications. industry along their lifecycle.

As we move towards a future of innovative sustainability being the foundation to any kind of design, the solutions that Apple offer are good but are they good enough?

For a company like Apple with all its profits generated from the iPhone alone... how will the future look? Can Apple create a responsibly designed iPhone and still maintain it's revolutionary technology?

References:

Mineral pricing, (2018 October 19) Retrieved from https://mineralprices.com/rare-earth-metals/.

Moorehead, P.(2018 October 7). *Apple's New iPhone Recycling Robot 'Daisy' Is Impressive, And In Austin*. Retrieved from https://www.forbes.com/sites/patrickmoorhead/2018/04/19/apples-new-iphone-recycling-robot-daisy-is-impressive-and-in-austin/#2b70b0b57f2e.

Daisy image (2018). Retrieved from https://www.apple.com/au/trade-in/

'The Problem with E-Waste', (Retrieved 2018, October 19) from https://ifixit.org/ewaste.

Dr. Sahajwalla., Veena. (Retrieved 2018, October 19) https://research.unsw.edu.au/people/scientia-professor-veena-sahajwalla.

https://www.apple.com/au/environment/pdf/Apple_Environmental_Responsibility_Report_2018.pdf

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