Current mobile contracts damaging the environment, research finds

June 7 2015

Credit: Peter Griffin/Public Domain

Research published today in the journal the *International Journal of Life Cycle Assessment* has called for an overhaul of the way mobile devices are manufactured and contracted, in order to stop the harmful effects on the environment caused by current business models.

Researchers from the University of Surrey analysed studies on the

lifespan of mobile devices, from manufacture, use and disposal to see what impact each stage had on the environment. Through their investigation, they concluded that the current mobile business model, driven by frequent upgrades, is costing both the manufacturer and the environment. The study argues that where frequent upgrades are encouraged and recycling schemes not actively pursued, valuable materials integral to phone manufacture are lost, causing damage to the environment by additional waste to landfill as well as from the impact of extracting additional finite resources.

"There are an estimated 85 million unused phones in the UK," said lead author Dr James Suckling from the University of Surrey. "Each of these phones has been manufactured using precious metals such as gold, copper and silver which are costly to extract, both in cash-terms and environmental impact. These unused phones contain approximately 4 tonnes of gold, lost resource that would cost £110million and an equivalent of 84,000 tonnes of CO_2 released into the atmosphere to replace.

"The current business model of mobile contracts encourages consumers to upgrade frequently, regardless of whether their current phone is fit for purpose. Our study shows that there is little incentive for people to recycle old mobiles. Unfortunately this leaves many unused devices lingering in drawers, until they are eventually thrown away and end up in landfill. This isn't a trend that can continue if we are to have the mobile lifestyle we want, while still ensuring a sustainable future."

As an alternative, the researchers propose a 'cloud-based product service system', where the heavy processing and memory storage of mobile devices are moved to a remote server, over the internet. Without the need for complex processing, mobile devices could become less complex, designed to last longer and requiring less precious resources to make. Together with a "take-back" clause in the mobile service contract,

researchers believe that consumers would be encouraged not only retain their device for longer, but to return it to the manufacturer at the end of the service contract. This would be instrumental in ensuring that the resources tied up in mobile phones are retained and not lost to landfill.

"This is a model that has been used already. Replacing power hungry desktop PCs with thin client computers that run off cloud services, with less hardware reduced power consumption by up to 55%," said Dr Suckling.

"There are of course other challenges to overcome. Our research team is now looking at how to implement such business models while convincing consumers that cloud services can be trusted to deliver services, and hold data privately and securely. This will be one important focus for our continuing research, as will be understanding the wider impact of the mobile lifecycle on the environment and what impact new business models will have on this cycle."

Provided by University of Surrey