

More people have mobile phones than toilets.

According to a 2013 UN Report there are 7 billion people in the world.

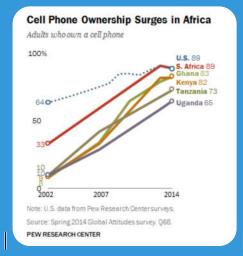
6 billion have access to mobile phones but only 4.5 billion have access to a toilet or latrine.



By 2014, humans on the planet were outnumbered by active mobile devices.

This does not mean everyone had a mobile phone - many people had more than one SIM card







FACTS



FACTS



FACTS



Martin Cooper, inventor, with the first ever mobile phone invented for Motorola in 1973.

It weighed 1.1 Kg, had 30 minutes talk time and took 10 hours to charge.



The first commercially produced mobile phone was made by Motorola in 1983. The DynaTac 8000X cost over £2000.

Throwing away old mobile phones is harmful and dangerous.

They contain toxic chemicals such as cadmium, lead, arsenic and mercury which leach out into water systems, contaminate the soil and eventually enter the food chain and cause serious health problems.

Millions of old phones end up in landfill sites around the world every year.



FACTS

People in many parts of the world replace their mobile phone handset on average every 18 months to 2 years.

This means that they may throw away, or have somewhere in their home an old mobile phone that may still work.

How often do you replace your phone?



FACTS

Many parts of a mobile phone can be recycled:

- Nickel, copper, cadmium, aluminium and cobalt from batteries.
- · Gold and silver from circuit boards.
- Plastics from the casings and accessories.



FACTS

Minerals in lithium ion batteries can be recovered.

One former mining company, Umicore now does this but it is alleged that it also buys unethically sourced cobalt from mines in DRC.



You can extract

- 50 150 kg of copper
- 500-700 g of silver
- 150 400 g of gold

from 1 tonne of old mobile phones

1 tonne of ore gives you

- 3.7 kg of copper
- 4.2 g of silver
- 0.2 g of gold

and a big pile of waste rock, polluted water and destroyed ecosystems.



Metal ores are mined from the ground and then extracted from the rock by heat and or chemical processes.

Oil is pumped from the ground and cracked into fuels to make into plastics.

Sand is refined to extract silicon to make glass and semiconductors.

CONCERNS Conflict, human rights abuses, loss of food security, child labour, violation of land rights, pollution of river systems, loss of fragile eco-systems.



A mobile phone is made of more than 300 parts each of which is manufactured separately, often in different parts of the world.

These components are then assembled in yet another factory.

CONCERNS Human and labour rights violations, child labour, health and safety violations, low wages.



The life of mobile phones DISTRIBUTION

Mobile phones are sent all over the world for sale, usually in attractive, luxurious and wasteful packaging.

Mobile phone shops have popped up on high streets in towns and cities everywhere. They too are attractively designed to catch the eye of shoppers.

CONCERNS Labour rights violations, wasteful use of resources.



The life of mobile phones CONSUMPTION

The average consumer replaces their cell phone every two years.

This might be because of planned obsolescence - this is when your phone is designed to break down forcing you to get a new one

OR

perceived obsolescence - this is when your old phone is still working but you feel it should be replaced because there is a newer, sleeker model with more accessories on the market.

CONCERNS Over-consumption.



The life of mobile phones DISPOSAL

Millions of phones get thrown away every year. It is often cheaper to buy a new one than to get an old phone repaired.

Sometimes only one part is broken, such as the camera but the phone still functions as a phone.

The minerals are recyclable but only 7 per cent of phones disposed of in Europe are recycled.

CONCERNS Human and labour rights violations, child labour, health and safety violations, pollution of air and water systems.



BATTERIES

These are the very lightweight rechargeable batteries that can store a lot of energy and hold their charge and are found in cell phones.

The +ve electrode (cathode) is made of lithium cobalt oxide (LiCoO₂). Cobalt as well as lithium are vital minerals therefore for this type of battery.

They probably only last 2-3 years before they need to be replaced.



FACTS

Many parts of a mobile phone can be recycled:

- Nickel, copper, cadmium, aluminium and cobalt from batteries.
- Gold and silver from circuit boards.
- Plastics from the casings and accessories.





Artisanal Cobalt Mining in the Democratic Republic of Congo

Women miners carry heavy loads and are exposed to dust.

Josephine, a 33 year old mother of five, said she had to carry 50 kg sacks for more than an hour at a time. "We all have problems with our lungs, and pain all over our bodies.'



Artisanal Cobalt Mining in the Democratic Republic of Congo

Children work up to 12 hours a day and earn between \$1 and \$2 per day. Those that can afford to go to school often work at weekends to supplement family income.

They work without protective clothing, masks, gloves or shoes.



The miners dig tunnels sometimes more than 30m deep. These are unsupported and poorly ventilated.

Democratic Republic of Congo

They have basic tools and no protective clothing. Accidents are frequent but usually go unrecorded and the bodies are left underground.



The life of mobile phones



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Artisanal Cobalt Mining in the Democratic Republic of Congo

Children, as young as six, work on the surface sifting and sorting through the tailings (waste).

Micheline, a woman who provides food for miners said that parents send their children there, because they don't have money and because they don't have jobs.

Tin Mining at Bangka Island, Indonesia

The ground is pitted with craters from tin mining. These fill up with water and create ideal breeding ground for mosquitoes.

As a consequence, malaria has become widespread and difficult to control.

Tin Mining at Bangka Island, Indonesia

Where there was once lush forest, tin mining has left behind grey, sandy, acidic subsoil.

Even the toughest plants struggle to grow.

It has become impossible to grow food in many places.



The life of mobile phone:



The life of mobile phones









Tin Mining at Bangka Island, Indonesia

The tin mining boom has drawn many workers to the area. Some work formally for mining companies. Others work informally often at pits abandoned by the companies. This work is unregulated and dangerous. In 2011, on average, one miner died per week in an accident at work.







Tin mining also takes place at sea.

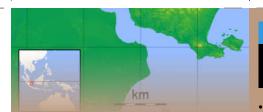
"This beach used to be good before mining, it had no mounds of mud, it was white sand... Now the water is full of mud, sludge and sediment: the fish don`t like it and the coral reefs die. Before the giant dredgers and suction ships arrived we fished on bagan (traditional fishing rafts) closer to the shore. Now we are further out our operating costs (and fuel) are higher because it takes an hour to get to the places we fish. When bagan are far away there are bigger waves and bigger risk."

fisherman and protester Bangka Island, Indonesia









Tin Mining at Bangka Island, Indonesia

Bangka Island is east of Sumatra. It is about the size of Yorkshire and has a population of about 1 million people. More than half of the people rely on fishing, and agriculture. But increasingly they are forced to rely on tin mining for their livelihood.

About 2g of tin is used in each cell phone. It is used as solder (glue).



The life of mobile phones RAW MATERIAL



The life of mobile phones







Tin mining blues on Bangka Island

Tin mining on land at a glance

Injuries and fatal accidents when pits

Hard to grow crops on areas that have

Landscape drastically changed forever.

Little or no restoration once land mined.

Dangerous working conditions for many

Pollution of drinking water.

collapse.

been mined.

unofficial miners.

Loss of soil fertility.

Conflict Minerals in Democratic Republic of Congo

Armed groups including government militia earn 100s of millions of dollars trading minerals essential for smartphones and other electronic gadgets. They fight to control mines and smuggling routes.

They commit rape and murder to intimidate and control people.

Conflict Minerals in Democratic Republic of Congo

Twenty years of civil war has displaced thousands of people who, unable to earn a living or return to their farm lands, are trapped into forced labour in mines.

This includes children.



Tin mining blues on Bangka Island

Tin mining on the sea bed at a glance

- Silt and sludge killing coral, sea grass and mangroves.
- 60-70 per cent of the coral reef is dead.
- Endangered turtles threatened because of the loss of their beach nesting sites and food sources like sea grass.
- Fish stocks down so fishermen have to travel further for fewer fish.
- Crab and shrimp catch reduced.
- Endangered Napoleon fish are disappearing from the area.
- Endangered giant clams killed by silt deposits.



The life of mobile phones **RAW MATERIALS**



Conflict Minerals in Democratic Republic of Congo

Tantalum - essential for storing electricity and for high speed processing. DRC may have up to 80% of reserves.

Tin - used for solder (like glue) in circuit boards and other components. Also found in large quantities in DRC.

Tungsten - this enables mobile phones to vibrate. DRC is a major producer but 80% also comes from China.

Gold - DRC is a small producer by global standards but its gold deposits are controlled by armed groups.



The life of mobile phone



The life of mobile phone:





The life of mobile phone:





Conflict Minerals in Democratic Republic of Congo

Workers may earn as little as 33 pence per day and women are routinely raped and beaten.

The UN special representative on sexual violence in conflict described the DRC as "the rape capital of the world".

Conflict Minerals in Democratic Republic of Congo

Boys as young as 12 may spend many days underground digging up the minerals in Eastern Congo which end up in mobile phones.



Base salaries are so low, employees have to work overtime (60 hours plus) just to get by.

An employee revealed her salary was 2,020 vuan (£230) a month. An iPhone 6 in China costs 4,488 yuan (£480).











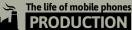


Pegatron iPhone Factory, Shanghai, China

According to a BBC documentary made in 2014, workers are so exhausted by their long hours that they fall asleep at their workstations, risking injury or even death if they fall against the machinery









Pegatron iPhone Factory, Shanghai, China

After their long shifts, workers take a 30-minute shuttle bus back to their dorms where up to 14 people are crammed into a room. Mould grows pervasively along the walls. Bed bugs have spread throughout the dorm, and many workers are covered in red bug hites

At a glance

Pegatron iPhone Factory, Shanghai, China

- Inadequate health and safety training including how to protect themselves from toxic chemicals.
- Overcrowded, damp and infested dormitories with inadequate shower and toilet facilities.
- · Bullying from factory managers.
- Workers falling asleep standing up because they're all on 12 hour shifts.
- · Workers too exhausted to eat.
- Workers queue for overcrowded shuttle busses back to dormitories.
- No trade unions.



The life of mobile phones PRODUCTION







Grasberg, gold and copper mine in West Papua

Highly toxic waste from the mine has damaged surrounding river systems. By 2010, one billion tons of waste had been disposed of in the local river systems destroying fishing, farming, and damaging ecosystems and people's health.



The life of mobile phones

RAW MATERIALS



Grasberg, gold and copper mine in West Papua

Rio Tinto and Freeport McMoran who own the mine have provided millions of dollars to the Indonesian government to ensure that the mine is protected from community opposition and labour unrest.

The picture shows the Indonesian army crackdown on striking miners who earn between \$1.50 - \$3.00 an hour.



The life of mobile phones

RAW MATERIALS



Grasberg, gold and copper mine in West Papua

The Amungme and Kamoro people were forced off their land to make way for the mine.

They lost their food gardens, hunting and fishing grounds, forest produce and their cultural and spiritual connection to the land was severed.

Their resistance continues to be brutally suppressed.



The life of mobile phones

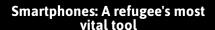
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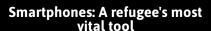


Grasberg, gold and copper mine in West Papua

West Papua is occupied by Indonesia. The West Papuan resistance is brutally suppressed by the Indonesian government and human rights abuses are widespread. Yet the UK and US owned Grasberg mine continues to operate in this climate of terror and collude with the Indonesian occupation.



These refugees are taking photos of a map on the Greek island of Lesbos where they have just arrived.



A young boy at a reception centre near the Greek border – letting his family know where he is and that he is safe perhaps?











Smartphones: A refugee's most vital tool

Lives can be saved if there is a signal and refugees are able to call the coastguard when in danger at sea.

Remember



Health

+ Health

The Mobile Alliance for Maternal Action has helped 7.5 million women in Nigeria, South Africa, India and Bangladesh via text messages.

Mobile Alliance for Maternal Action has helped millions of women in Asia and Africa by sending advice and information by text message.





Mobile banking

For UK Somalis, sending money to relatives in Somalia was expensive and unreliable. People in Somalia often had to travel long distances to get the money from a bank as they did not live near

The solution: mobile banking

Cheap ● Reliable ● Instantaneous



The life of mobile phones CONSUMPTION



The life of mobile phones CONSUMPTION



Mobile banking

In 2010, UK Somali businessman Ismail Ahmed founded WorldRemit, an online service to send money internationally via a PC or phone.

"The unbanked people have for the first time access to a digital store where they can put their money rather than having to put it under the mattress.'

Mobile farming in Kenya

Apps such as iCow keep track of gestation periods, feed types and schedules, vet information and market prices giving farmers in remote areas instant access to such information via their mobile phone.











Mobile Farming in Zimbabwe

Farmers are able to check crop prices on their mobiles before harvesting and taking their produce to market. They can find out where the best prices are.

They can also get instant weather forecasts and access micro-insurance against poor weather and other problems on their mobile phones.



The life of mobile phones CONSUMPTION





Recycling e-waste

An estimated 8,500 mobiles/day are dismantled in India at e-waste sites to recover the materials inside.

Over 45,000 Indian children are involved in this work in slums in the informal sector.

They are exposed to hazardous, toxic waste which endangers their health and development.



The life of mobile phones



Recycling e-waste

In the picture, children play near e-waste discarded at the side of a small pond in Sangrampur. As electronic waste is broken down, harmful elements such as mercury, lead and arsenic leach into the soil and water, poisoning local resources.

Sangrampur is near Kolkata, India and just 25 miles from the World Heritage Sundarbans (mangrove forests).







Lithium-ion batteries - not Recycling e-waste so green?

so green? Tibetan villagers have accused a lithium

Lithium-ion batteries - not

Boys and young men burn away the plastics and rubber in e-waste to extract the metals at this gigantic e-waste dump at Agbogbloshie in Ghana. They suffer burns, eye damage, lung and back problems, chronic nausea, anorexia, debilitating headaches and respiratory problems.

As a result of mining in the Atacama desert, communities are facing severe water shortages. Rural subsistence farmers are simply forced to give up and take their families to horrendous living and working conditions in the cities.

mining company of polluting rivers; killing masses of fish; causing landslides; damaging forests, grasslands and drinking water and disrupting sites of spiritual significance.

Many workers die from cancer in their twenties.

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Lithium-ion batteries – not so green?

A spill from a tailings pond at a lithium mine in Tibet polluted river systems for twenty to thirty miles around, killing fish and livestock and poisoning drinking water.

Forced Labour in Malaysia

Forced labour has been found to be widespread in Malaysian electronics factories which supply components to big companies including Apple and Samsung. This particularly affects foreign workers from impoverished countries such as Nepal, Burma, India, Indonesia and Vietnam.

More than 100,000 workers are affected by what is a form of modern slavery.



Forced Labour in Malaysia

Workers in Malaysian electronics factories are forced to pay employment agents illegally high recruitment fees in order to get jobs.
This traps them in impossibly high debt and they cannot leave the job until they pay it off.



The life of mobile phones



The life of mobile phones PRODUCTION













Forced Labour in Malaysia

Foreign workers indebted to employment agencies have their passports (illegally) taken from them. This makes it impossible to leave their job and find a better one. Even travelling a few miles from their home is difficult as everyone in Malaysia is legally required to carry an ID card (Malaysians) or passport (foreigners) at all times.

Forced Labour in Malaysia

The picture shows a hostel for workers at an electronics company in Johor in Malaysia. Workers are often housed eight or more to a room and have nowhere safe to store belongings. They have reported feeling unsafe themselves.

Labour violations at Samsung Brazil

Samsung Brazil, based in the Manaus Free Trade Zone, was taken to court by the Brazilian government in 2013 for abusing workers' rights. This was just two years after they were fined for violating workers' rights in



The life of mobile phones **PRODUCTION**







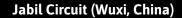




Labour violations at Samsung Brazil

Workers do 10- 15 hour shifts standing up with only two ten minute breaks.

They are expected to package a mobile phone and accessories in 32 seconds. They make 6,800 repetitive movements a shift and over a third have reported muscular-skeletal injuries caused by the work.



Workers are forced to work 11 hours/day, 6 or 7 days/week. They do up to 158 hours overtime, yet they still earn less than the average wage.

Jabil Circuit (Wuxi, China)

Workers are assembling phones in buildings that are still under construction and where ceiling slabs are reported to have fallen down around the production line.



The life of mobile phones **PRODUCTION**



The life of mobile phones









Jabil Circuit (Wuxi, China)

Investigators discovered that the employment agency recruiting on behalf of the company did not accept pregnant mothers or any ethnic minority Chinese people such as Uighurs or Tibetans.

Jabil Circuit (Wuxi, China)

Supervisors constantly patrol the lines; workers are not permitted to talk or look up. They are only to focus on their work. If any mistakes are made, the worker's wages will be affected.

Samsung's Toxic Legacy in South Korea

Worker safety group Banolim, holds Samsung responsible for 76 worker deaths most of the victims were in their twenties and thirties - and more than two hundred cases of serious illnesses including leukemia, lupus, lymphoma, and multiple sclerosis among former Samsung semiconductor and LCD workers.



The life of mobile phones RODUCTION



The life of mobile phones





The life of mobile phones



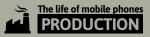


Samsung's Toxic Legacy in South Korea

"Samsung is a business model that has lost its moral compass, based on exploitation and abuse of human rights" according to Sharan Burrow of the International Trade Union Confederation.

This means that its 1,500,000 workers work without trade union protection

Samsung's "no-union" policy affects the entire Asian electronics industry, "because Samsung Electronics intervenes actively to prevent the formation of unions at its suppliers."





PRODUCTION

SHARPS's 1000 days sit-in

Samsung's Toxic Legacy in South Korea

From Oct. 7, 2015, SHARPS and its supporters staged a sit-in at Samsung D'light, the company's global exhibition space in Seoul. It lasted over 1000 days. They called for the world's largest technology company

- 1) compensate all victims of occupational disease transparently and sufficiently;
- 2) make a sincere and full apology.

SHARPS = Supporters for the Health And Rights of People in the Semiconductor industry



The life of mobile phones **PRODUCTION**





The South Korean government supports Samsung's refusal to release critical data about chemicals that could be used to prove that the illnesses of former workers seeking compensation could be related to working in Samsung's factories in South Korea. Samsung claims that this would be forcing them into giving away trade secrets.







Disposing of Old Phones

Up to 80 per cent of a phone is recyclable. Most charities accept old mobile phones, whether they are working or not. They can raise valuable funds by passing them on to mobile phone recycling companies.



Disposing of Old Phones

There are companies that can repair old phones or recycle the materials.

There is plenty of advice about what to do with your old phone on the Ecogreen website.











Disposing of Old Phones

Old phones can be donated to Oxfam and other charities who will turn every mobile phone donation into cash to buy vital kit, such as water tanks, wells, tools, seeds, school books - and loads more.

Oxfam's Fonebank will also buy your old mobile. You can chose to donate part of what you receive for your phone to Oxfam.



The life of mobile phones DISPOSAL





Disposing of Old Phones

E-waste from industrialized countries is still often shipped to Asia and Africa. Here the metals are extracted and sold on, often under informal, hazardous conditions and the rest goes to landfill. The most commonly recycled parts are PCBs (printed circuit boards) which contain all the precious metals.





Disposing of Old Phones

Informal recycling markets in China, India, Pakistan, Vietnam, and the Philippines handle anywhere from 50 percent to 80 percent of global e-waste, often shredding, burning, and dismantling the products in "backyards." Emissions from these recycling practices are damaging human health and the environment.



The life of mobile phones





Lithium-ion batteries - not so green?

Chile's Atacama Desert is damaged by lithium mining. In places, the white landscape has become an endless brown field. Huge mountains of discarded bright white salt rise out of the plain. The cracked brown earth of the site crumbles in your hands. There is no sign of animal life anywhere. The scarce water has all been poisoned by chemicals leaked from the mine.







Do you deserve a GREEN POINT?

Your phone is at least five years old. It is still working perfectly but your friends all have flash new phones.

What will you do?

- 1 Buy a new phone
- 2 Keep using your old phone
- 3 Hide your unfashionable phone from them and pretend you have lost it.

Po you deserve a GREEN POINT?

The screen on your phone is a little bit cracked (after you dropped it).

What will you do?

- 1 Continue to use the phone as it is.
- 2 Get the screen replaced although this was a bit expensive.
- 3 Get a new phone

Po you deserve a GREEN POINT?

Your very old phone has finally given up.

What will you do?

- 1 Buy a brand new one.
- 2 Buy a second hand one still in perfect working order but not the latest model
- **3** Get a new fair trade phone they are OK surely?

Po you deserve a GREEN POINT?

Your fairly new phone isn't working. It may be quite a simple problem.

What will you do?

- 1 Take it to a Restart Party where a volunteer technician may be able to help.
- 2 Try to repair it yourself with internet help.
- 3 Buy a new phone

Give yourself a GREEN POINT?

WELL DONE!

You have learnt to love your mobile Phone. It is like a much loved pet, a favourite jacket or a treasured piece of jewellery. You have owned it for several years and really hope it doesn't break down irreparably soon.



WELL DONE!

You really need a new phone as your old one has finally conked out. You want one that has hurt as few people and places as possible while being made. You are going to splash out on what is for you a very expensive fair trade phone.



WELL DONE!

You need a new phone and want one that has hurt as few people and places as possible. You can't afford a fair trade phone but then a friend says they have a spare one in perfect working order that you can have.

Do you deserve a GREEN POINT?

We are wasting the earth's resources, poisoning the environment and hurting communities and workers.

What will you do?

- 1 Nothing there's no point as you don't have any power anyway.
- 2 Organise with friends to raise awareness
- 3 Learn skills that will mean you can repair, recycle and waste less



WELL DONE!

You organised a WEEE (Waste Electronic and Electrical Equipment) recycling bank in your college. Students and staff brought in their old phones to dispose of. You made sure that these were all sent off to a charity such as Oxfam who will either refurbish and sell the phones or sell them for materials recycling.



WELL DONE!

You are so appalled at the way in which minerals used in phones are fuelling conflict in the Democratic Republic of Congo (DRC), that you decide to find out more and organise meetings to share this information with your friends. You want to encourage them to join you in finding ways to show solidarity with the people affected by conflict minerals in the DRC.



WELL DONE!

Your new-ish phone was not working properly. You took it to a Restart Party where a volunteer technician was able to repair it very easily. Your phone is now working perfectly.



WELL DONE!

You are one of 25,000 people who wrote to Apple to ask them whether the tin they use comes from Bangka Island as part of a Greenpeace and Friends of the Earth campaign.

Unlike other electronics companies, Apple still won't own up to using tin from Bangka.

Do you deserve a GREEN POINT?

You are shocked at how often your friends replace their phones. Many just throw away the old one or forget about it in a drawer at home.

What will you do?

- 1 Ignore it after all, it isn't really your business.
- 2 Offer to buy up all their phones and try to sell them on.
- 3 Organise a WEEE (Waste Electronic and Electrical Equipment) recycling bank in your college.

Po you deserve a GREEN POINT?

You are shocked to hear how minerals for phones are fuelling conflict in the DRC

What will you do?

- 1 Decide to find out more and try to raise awareness.
- 2 Be ethical in your consumption of mobile phones and other technology.
- 3 Do nothing because this has nothing to do with you; it is up to the politicians.

Do you deserve a GREEN POINT?

You have lost your mobile phone.

What will you do to replace it?

- 1 Buy a new one
- 2 Take the one a friend has offered you it is old but works perfectly.
- **3** Buy a fair trade phone they must be OK surely...