Health, Ethics & Future Trends

Telecommunication Usage

Countries with the highest number of internet users as of March 2019 (in millions)

Telecommunication Usage

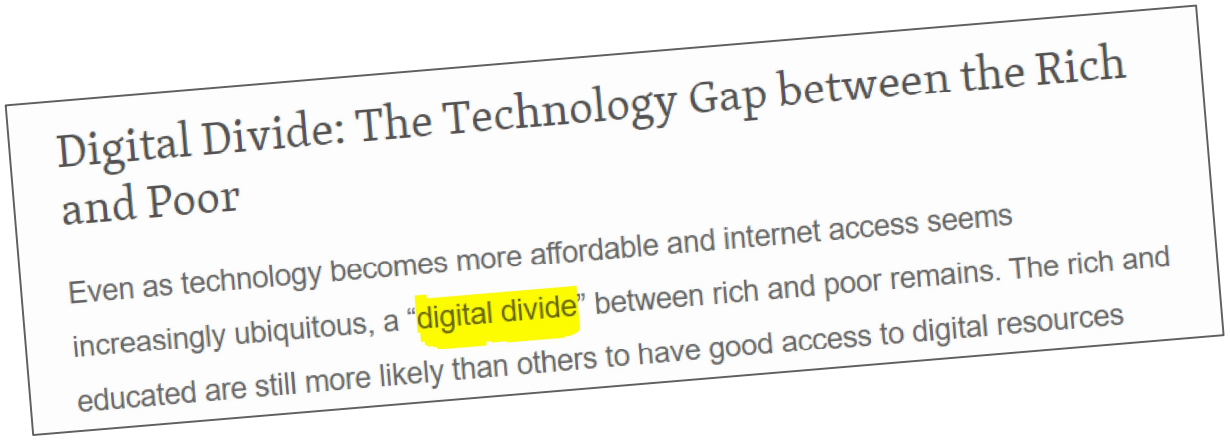
	Asia	Europe	North America	Latin America / Caribbean	Africa	Middle East
2009	764.4	425.8	259.6	186.9	86.2	58.3
2010	825.1	475.1	266.2	204.7	110.9	63.24
2011	1,016.8	500.72	273.07	235.82	139.88	77.02
2012	1,076.68	518.51	273.79	254.92	167.34	90
2013	1,265.14	566.26	300.29	302.01	240.15	103.83
2015	1,563.21	604.12	313.86	333.12	313.26	115.82
2016	1,792.16	614.98	320.07	384.75	339.28	132.59
2017	1,938.08	659.63	320.06	404.27	388.38	146.97
2018	2,062.14	704.83	345.66	438.25	455.84	164.04
2019	2,300.47	727.56	327.57	453.7	522.81	175.5

Number of internet users worldwide from 2009 to 2019 by region (in millions)

Digital Divide

Digital divide refers to gap between those who have and do not have access to computers and the Internet.

The digital divide can be classified according to criteria that describe the difference in participation according to **education**, **income**, **social groups**, **geographic location**,etc.


Digital Divide: The Technology Gap between the Rich and Poor

Even as technology becomes more affordable and internet access seems increasingly ubiquitous, a "digital divide" between rich and poor remains. The rich and educated are still more likely than others to have good access to digital resources

Carbon Footprint

Carbon footprint is defined as the total emissions caused by an individual, organization or product expressed as carbon dioxide equivalent.

The increasing demand for wireless services comes to the mobile communications industry at the price of a sizable carbon footprint.

2020 global carbon footprint of mobile communication systems will increase by a factor of three when compared to 2007*. It is predicted to rise from about 86 to 235 megatonnes of CO_2

In mobile communications, a large part of the carbon footprint comes from electricity consumption, from the production and distribution of electricity, from the extraction, production, and distribution of fuels consumed, from the construction and operation of the power plants and the grid, and from all related waste treatment.

* Fehske, Albrecht & Malmodin, Jens & Biczók, Gergely & Fettweis, Gerhard. (2011). The Global Carbon Footprint of Mobile Communications - The Ecological and Economic Perspective. IEEE Communications Magazine. 49.

Carbon Footprint

Studies show that by 2020, the carbon footprint of mobile phones will exceed that of desktop computers, laptops, and displays.

A smartphone's energy cost comes mainly from its production. Making a phone accounts for 85-95 % of its annual carbon footprint because manufacturing its electronics and mining the metals that go into them is energy-intensive.

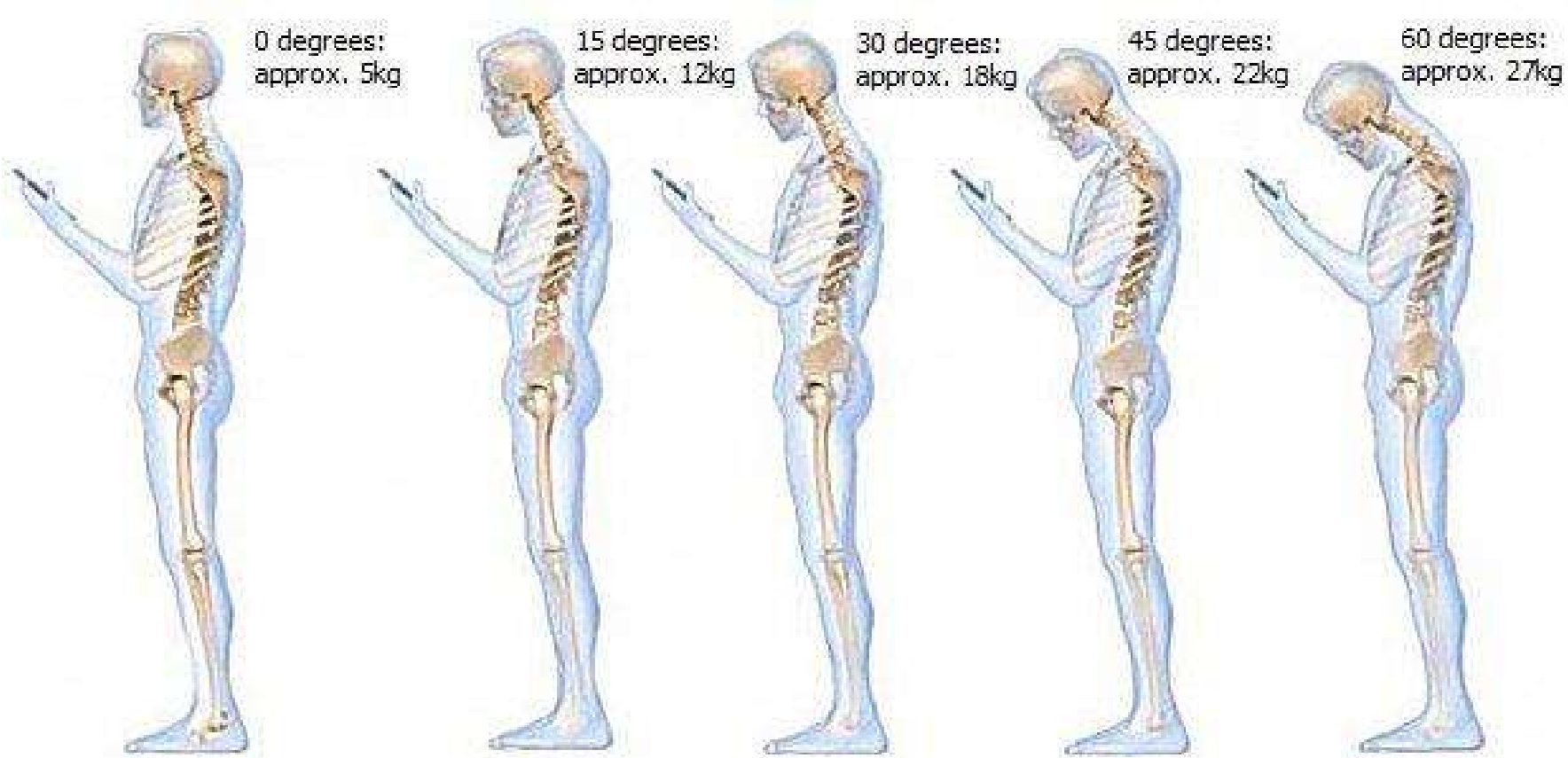
The analysis showed that smartphone emissions will go up from 17 to 125 megatons of carbon dioxide equivalent between 2010 and 2020.

At the consumer level, we should hold on to our phones for as long as possible and recycle old phones when upgrading to a new one.

Visual Impact

Visual Impact

Mobile phone use - health implications



https://www.spineuniverse.com/wellness/ergonomics/your-cell-phone-killing-your-back

Blue Light - health implications

Blue light can affect your sleep and potentially cause disease.

https://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side

Health

Health

Impossible to prove something is ever perfectly safe.
So there will always be a risk that we've missed something.
We just have to balance risks and benefits.

- Take care of your posture when using your phone
- Use blue light filter at night
- Turn phone, WiFi off at night
- Don't give phone to young children
- Don't keep it on your body when not necessary