

The Story of Their Consumption Sustainability

The contribution of ICTs in the sophisticated day-to-day products and services are so much beneficial to the consumers nowadays including myself and so many demanding to the product industries. I am thankful to the technologies including ICTs which make my life easier, convenient and multitasking. I would say that today's generation much more grateful to the role of earlier generation who discover and sustain all these ubiquitous technologies where their developments are still continue.

However, in the same time we should aware and consider the issues on the efficiency of energy, materials, global resources and natures which later could be a disaster in our life and environments. As an example, we can see these days when world climate change due to the increasing of greenhouse gases, many countries affected with these catastrophes such as floods, hurricanes and other environmental debates limelight. As histories repeat, it is our decision to achieve more sustainable consumption with ICTs ability for our future generation [1].

1.0 Consumption Sustainability

In this chapter, I will present electronic appliances that I have been using in my daily life and their sustainable consuming components. Figure 1 shows the trend of the home energy usage which computers contribute the most. This shows how ICTs adoption impacts these applications considering energy efficiency, environmental safety and more materially sustainable consumption achievements[1].

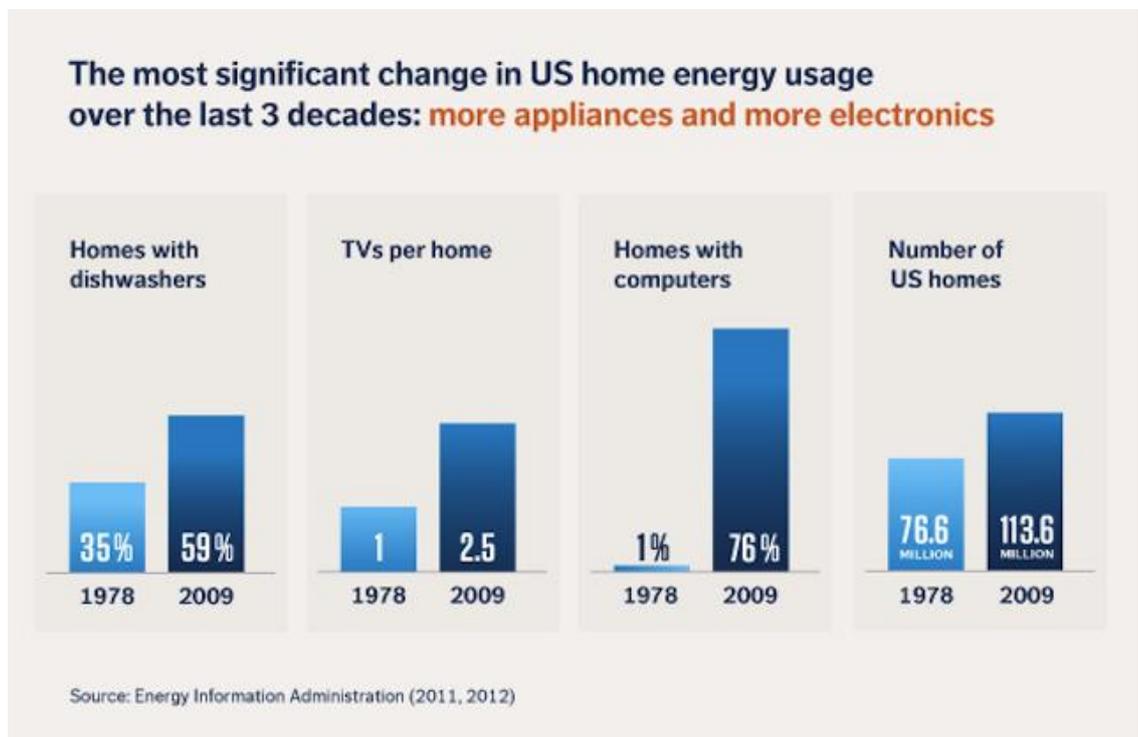


Figure 1 : The significant change in US home energy usage [3]

1.1 Smartphone and Laptop



One of the best things in my life is my cellular phone, Samsung Galaxy Note II smartphone. I believe nowadays cellular phones are not just useful but can be considered as a very important device in our daily life. These devices have become smaller, more compact and more versatile compare to the traditional desktop or laptop. Dramatic shift in personal computing has led from the consumer demanding and their enthusiasm [2] toward smartphones which equipped with highly advanced telecommunication features and computational power comparable to a laptop. Figure 2 shows how smartphones capability in reducing energy consumption compares to other traditional electronics.

This all-in-one concept of mobile device has displaced so many things in my daily life routine. My purchase of physical products can be substituted with electronic variants such as e-commerce, physical mobility can be displaced with teleconferencing, teleworking, or telepresence; pictures, audios, videos and publication can be displaced with data storage and electronic documents as simple as recording them into the smartphone; such as music and many other services. All information only at our fingertip just by Googling, reading emails, Facebook, Twitter and other social media applications. Text messaging or chat becomes more efficient at no cost by using unpaid applications such as WhatsApp or WeChat. As a student, I use more by using my smartphone to record lectures, writing notes and applying e-learning. Even I can just download my notes and reading it anywhere, everywhere at any time such as while waiting my bus or having coffee. In a boring day, I use my smartphone for entertainment such as online gaming, watching shows or listening music. It can be my personal assistant by reminding me for any important events, appointments, wake-up call alarm, personal diary or my cook book. I don't need any GPS navigator gadget as I have GPS application and maps in my smartphone so I would never get lost in my trip.

There are so many other services which now can be employed to increase the energy and materials efficiency of human activity, from products used in day-to-day life [1]. In the matters of private and confidential security, Galaxy Note II is a SAFE™ (Samsung Approved for Enterprise) device, providing the ability to securely sync corporate email, calendars, contacts and sensitive information. In addition, AllShare Cast feature and AllShare Cast Wireless Hub accessory allow me to control or functioning as a remote control for projector or Smart TV once they are connected.

The Common components for a smartphone are random access memory (RAM), embedded processors, batteries, internal data storage, screen display, sensors and cameras. All smartphones have the similar component but different features. From the latest technologies, smartphone such as Samsung has been believed to reduce energy consumption for CPU, GPS, Network connection and screens [2]. Unfortunately, still smartphones have environmental impact, the energy actually consumed more by the radio access network compare to the handset by a factor of 100 or more on a per-subscriber basis [2]; and mobile phones are the large contributor to the growing stream of Waste Electrical and Electronic Equipment (WEEE) which later leads to the environmental and health burden especially in the developing countries. However, there is promising efforts by ongoing projects to re-use, re-purpose and recycle the end-of-life mobile phones by industry and policymakers.

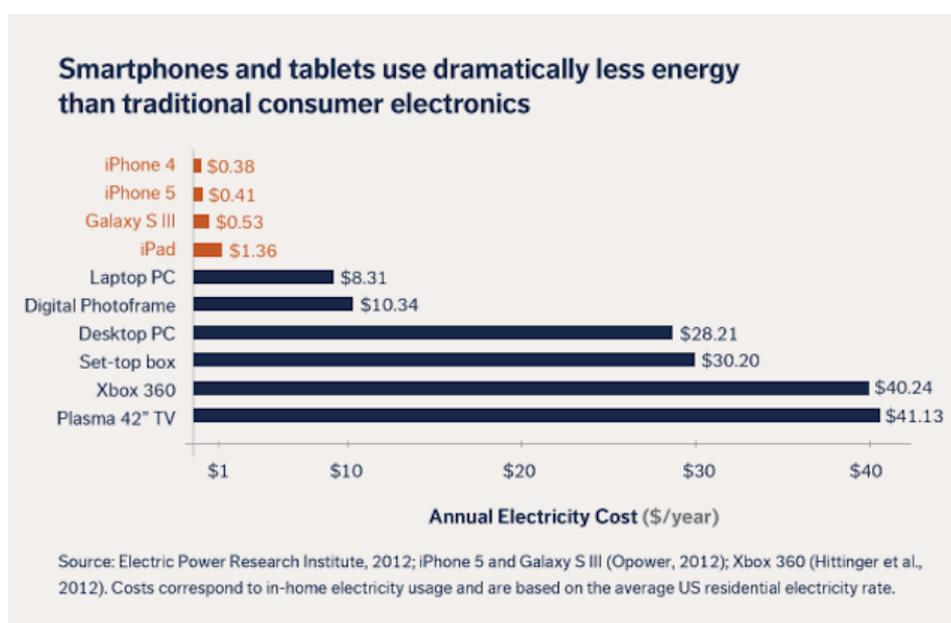


Figure 2 : The comparison of Electronics Appliances [3]

1.2 Fridge



As a housewife and a mother, fridge or freezer helps me so much to keep my food fresh after few days. The fridge not just keep my food stay cold but more space on milk of my children and other drinks such as soda and yogurt. Instead, it helps me much in my busy day where I could cook much in one time and put the food in freezer and can be microwave later before meal. I would say that my fridge is the highest power consumer in my household because it is running 24 hours a day contributes much to my apartment energy cost. However, figure 3 shows that from overall electronic household appliance, fridge doesn't consume so high power rating compare to others but because it would be keeping running for all the time it contribute for the more energy consumption.

For the last thirty years, several regulator programs such as U.S. department of Energy's conservation standards encourage people to choose more efficient model of a fridge such as with the Energy Star label. All fridges and freezers sold in Britain are required by law to carry the European Energy Label, which rates their efficiency in energy use [4].

As the major concern of fridge to the environmental is the Chlorofluorocarbons (CFCs) used which lead to destroying ozone layer. However, nowadays there fridge which are using Greenfreeze technology, mixture of propane (R290) and isobutene (R600a) or isobutene as the pure gas for blowing the insulation foam. Greenfreeze has become dominant technology in North Western Europe since 1992.

Appliance	Rating	Appliance	Rating
Immersion heater	3000W	Fridge	40-120W
Electric fire	2000-3000W	Fridge-freezer	200-400W
Oil-filled radiator	1500-2500W	Freeze	150W
Electric shower	7000-10,500W	Electric mower	500-1500W
Dishwasher	1050-1500W	Electric drill	900-1000W
Washing machine	1200-3000W	Hairdryer	1000W
Tumble dryer	2000-4000W	Heating blanket	130-200W
Iron	1000-1800W	Plasma TV	280-450
Vacuum cleaner	500-1200W	LCD TV	125-200W
Towel rail	250W	Video, DVD or CD	20-60W
Deep fryer	1200W	TV box	30-40W
Toaster	800-1500W	Games console	45-190W
Kettle	2200-3000W	Laptop	20-50W
Microwave	600-1500W	Desktop computer	80-150W
Oven	2000-2200W	Tablet (charge)	10W
Grill/hob	1000-2000W	Broadband router	7-10W
Dehumidifier	300-700W	Smart phone (charge)	2.5-5W
Extractor fan	1-36W		

Figure 3 : The Comparison of Electronic Appliances Power Ratings [5]

1.3 Aeroplane



Flying has been nominated as the safest way to travel [8], less crash rate, rotate around the clock 24 hours a day using radar procedures, rigorous training and certification processes of piloting, technological improvements control all aspect of flying which is so called “Fly-by-wire” planes, electronic controls replaced outdated mechanical controls and no reckless flying by cautious any errors from the safety demonstration before take-off.

Some airlines are developing their attitude towards sustainability over the past several years and become greener by reducing their carbon footprint and the rising cost

of fuel as their motivation. They are trying by modernizing the fleets by employing new technologies and fuel efficiency standards to reduce emissions, recycling and water saving programs, installing winglets, reducing airplane idling programs, removing excess weight and so on. In addition to reduce the impact to the environment and become more sustainable, Airbus 380 as an example is more fuel efficient from 20 to 40 percent as same as Boeing which also less waste during its production by using fewer materials.

From the perspective of flying which is related to tourism sector, some initiatives have been made by some of the organisations in Europe which have created Voluntary Initiative for Sustainability Tourism (VISIT) by promoting consumer carbon offset scheme. As an example, Flybe airline provides the passengers with information of the fuel consumption, emissions and noise patterns of its aeroplane which customers can assess the environmental effects of their travel [10].

I used to travel a lot by using Malaysian Airlines which well known of its best cabin crew in the world, best services, best food, one of the top airlines [6] and the tickets are not cheap. Recently, one of the Boeing 777-200ER flight with 227 passengers and 12 cabin crew aboard has vanished without traced somewhere over the South China Sea [6] and only after 18 days later it was believed ended in the Indian Ocean. This really a big disaster which has been told the first as such in the world which has been affected me so much emotionally.

It is a very sad ending, so much pain and puzzles, wondering how much advanced and sophisticated technology nowadays with our powerful satellite or radar still cannot trace where this plane has been flying even though after vanished from the radar, immediate investigation were conducted and it were believed still flying for few hours and took 18 days to locate where is the plane ends. We believed that wireless technologies have extended the reach of land-based communications applications and satellites communications are bringing a wealth of information to every corner of the globe. ICTs can allow the environment to be monitored and modelled [1]. With the satellites capability, tropical deforestation could be tracked, the ozone layer to be monitored; forest fires to be overseen; air, water, and land pollutants to be traced; shifts in water bodies to be observed and modeled; and severe weather to be modeled and monitored.

Fortunately later after the never give-up investigation of Malaysian investigation team, The collaboration of telecommunications, satellites, computers, geographic information systems (GISs), and software enable the collection, storage, transfer, monitoring, analysis, and manipulation of tremendous amounts of data finally answered the puzzle but it is already too late. This mysterious disappeared aeroplane shows a sign by using a type of analysis which never been used before by using further calculations on the data provided by the UK company, Inmarsat which their business is providing satellite data [7]. However, this might be a positive side to be considered on how the satellites and radar should improve to avoid the same disaster happen again in future. But does it means that our technology is not sufficient or sustain enough in avoiding such kind of tragedy besides of the God will?

Conclusion

I am so grateful and appreciate the technology advances so much. The world become smaller and brought all the people in the world together and the benefits are priceless. News sources are everywhere and any alerted news happens somewhere can be assessed by the other part of the world with just a click. Technology is all around us, from our household to the globalised world. In my opinion, the energy and material consumption issues, change must be more than technological and must be our cultural too. Technology was created to improve our lives but it is how the way we are using it.

2.0 References

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