Appendix:

Proposal to be evaluated in Assignment 1

Mobile Charging Cap

Background

Mobile phone, an electronic device that are used by the people in this modern day. A device that could make all kind of communications, like making a call or message over a radio link while the user is dynamically moving around a wide geographic area, or even using a chat features, take pictures and hear music (Mobile Phone, n.d.). All of this could be done on the device as long it has a power that could supply electricity into it, and now it's called battery. The higher technology a mobile phone has, the more power from the battery supplied, giving it a fast time for it to deplete all of the power in it. Thus people this day are using a portable charger that can charge the battery of their phone and extend its life.

Problem

The portable charger are basically portable and can be used anywhere. However, the problem lies when the power of itself is totally run out. Some product are improving the device by making it able to maintain more and more power in it, but the consequences are the dimension of the device is getting bigger and bigger, which making it less portable, heavier, and takes lots of spaces.

Solution

The main objective of this proposal is to introduce a wearable, portable, and user-friendly accessories called solar cap. This cap is basically an ordinary cap but with an upgrade, where it has solar cell, a solid-state semiconductor devices which produces DC electricity by changing the power of light (Böer, n.d.), that able to charge your electronic device, especially mobile phone just by standing or walking during the day. The circuit inside the cap contain small stabilizer to maintain the power input during the charge so it'll be mobile friendly especially for the battery. It's also less space consuming where you could just wear the cap to start charging as long there's a light.

Benefits

Solar cap are wearable for all people, all range of age, making it very user-friendly. It's also very eco-friendly where it doesn't contain any volatile elements and use the sunlight for making an electricity power. Comparing to the current portable charger, it's less space consuming and easier to be used.

Implementation

In order to improve this device, the following steps will be taken:

1. We're going to collaborate with research team to conduct a research for creating more user-friendly solar cell on the cap and maximizing the power output from it.
2. Having a collaboration with certain cap manufacturer to create more comfortable and compatible cap for the device.

Costs

Normal Cap	$5
Small Solar Panel	$20
Small Stabilizer	$30
Wire	$1
Total Cost	$56

Conclusion

Electronic device these days are using more power from its battery, making it faster to deplete. Using a portable charger is an alternative to extend its life but will be useless if there're no power in it. The solar cap is a user friendly device that able to charge portable electronic device using the power of sunlight.

References

Böer, K. W. (n.d.). *Solar Cells*. Retrieved September 19, 2015, from Chemistry Explained: http://www.chemistryexplained.com/Ru-Sp/Solar-Cells.html

Mobile Phone. (n.d.). Retrieved September 19, 2015, from Wikipedia: https://en.wikipedia.org/wiki/Mobile_phone

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Source: Anon (2016). Mobile Charging Cap. (HW0188 Report). Unpublished manuscript, School of Material Science and Engineering, Nanyang Technological University, Singapore.