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-Essay-

Promoting Cradle-to-Cradle(C2C) design and thoughtful consumption of plastics in our daily lives

Oceans provide vital natural resources to the mankind, such as a variety of seafoods with essential nutrients for sustaining our lives and core ingredients for the contemporary medicine, and they even bear essential fuels such as petroleum, coal, natural gas, and methane hydrate which is spotlighted with its huge amount of reserves in comparison with other forms of fuels. In addition, ecologically, oceans bear over 80% of the world's species while taking around 71% of the total surface of the Earth, which means it takes a vital position in the ecosystem, and we cannot live without the oceans. Economically, sea water is an easily accessible source of cooling water for the factories around the coastlines, and there are many industries including shipbuilding, fisheries, trade and tourism which highly count on the oceans itself. Therefore, considering the benefits stated above at least, it is desirable to conserve our oceans seas and marine resources for our economy, ecosystems and the future of the Earth.

However, it took so long for humans to realize that our precious oceans were long suffering from the unpurified synthetic contaminants and garbage generated from factories, ships and households because the oceans seemed so vast that it seemed like okay even if we spill 'a little' amount of contaminants and garbage to the oceans. Unfortunately, at the first time of contamination the symptoms hardly showed up, and now we are faced with a big challenge that threatens the sustainability of the entire oceans, seas and marine resources. This is not a result led by the only one particular group of people, but it is a result of the congregated ignorance of all of us. Early companies and entrepreneurs did not want to bear huge amount of extra cost for setting up purifying systems which deteriorate the price competitiveness of their products, the governments did not fully investigate the effect of the contaminants on the oceans and did not let the people know about that, resulting in consumers' ignorance and silence.

It is a total disaster. Unlike air pollution or land pollution which reveals itself apparently to the public and are easily observable by the public, people who are not experts can hardly detect problems in the oceans, even though it is highly relevant to their daily lives actually. Especially, there would be little amount of people who already know that 'plastic' deadly corrupts the ocean, while it is one of the most critical challenge in preserving the oceans these days.

While researching on this theme, I found some interesting but uncomfortable facts:

- 80% of Ocean plastic comes from land-based sources.¹
- A whopping 91% of plastic is not recycled.²
 - Every time we recycle a ton of plastics, it equals saving 900L of petroleum.³
 - Plastics in the ocean do not biodegrade, but rather break into smaller pieces. When combined with micro-plastics, such as in cosmetic products, they are released directly into waterways, and the majority of plastics in the ocean are less than 5 millimeters in size.⁴
 - In the North Pacific Ocean near Hawaii, there is an island, which is not artificial, but after come to think of it a little more, we can say it is artificial because it is mostly made up of floating plastic garbages such as fishing nets, ropes and strings, flew from all over the oceans along the North Pacific Current. It is 7 times bigger than Korean Peninsula and 2 times bigger than Texas.⁵

Faced with these uncomfortable and challenging realities, I looked back my past behaviors seriously, having consumed and disposed of plastic materials recklessly. And then I started to come up with and find a reasonable and easy- to-implement solutions to reduce further reckless plastic usage.

David de Rothschild, the youngest of three children of Victor Lou Schott of the Rothschild banking family of England, is an adventurer and ecologist, and environmentalist. He had a great voyage of crossing a Pacific Ocean (from San Francisco to Sydney) only with a 60-foot long boat made of 12.5 thousand plastic PETs., which was called a 'Plastiki'. What was interesting is the boat was designed in a totally recyclable way from its building material to the energy production for its management. His team found a company(Comfill) which produces srPET(pure PET) from other plastic garbages and used srPET as a main material for its body, and invented a eco-friendly bio-epoxy. His journey gave me a great idea on this issue - even an individual can act and make changes for the environment.

Actually, most of the consumers are poorly guided how to dispose their plastic products (including cosmetics with microplastics) when they purchase them compared with the guidance for the usage. Therefore, making the public to take a look back into their previous plastic consumption would be an essential step. Therefore I suggest holding a public campaign on the street as well as on the Internet to

¹ <https://www.ecowatch.com/80-of-ocean-plastic-comes-from-land-based-sources-new-report-finds-1891173457.html>

² <https://mitte.co/2018/07/18/truth-recycling-plastic/>

³ David de Rothschild, *The Plastiki: An adventure to Save Our Oceans*, 2010, p21

⁴ <http://www.ecopartnersinc.com/2016/03/15/five-fast-facts-on-microplastics/>

⁵ <http://lg-sl.net/product/scilab/sciencestorylist/WEST/readSciencestoryList.mvc?sciencestoryListId=WEST2010010001>

promote the public understanding of the total history of plastics from its production to its recycling, especially stressing the importance of recycling and the impact on the oceans. The main purpose of the campaign is to make the public regard that their consumption directly relates to the environment. The campaign would be designed in an effective way considering the time constraint and the budget.

As a following project, designing and selling a simple product such as a tumbler or a personal reusable cup in a Cradle-to-Cradle(C2C) design which is, simply to say, totally eco-friendly from its production to disposal. As mentioned, srPET would be a good material for making the product. It does not need to be off-line. Considering the project time (approximately 3 months I think), opening an online pop-up store would be desirable.

After that, based on the results of the two projects, we need to thoroughly review relevant regulations and, if there are any improvements, suggest policy improvements. For example, China -for years the world's biggest importer of recyclable materials- prohibited the import of plastic waste since 2018. In this context, there might have been changes in the regulations on the subsidies to the recycling factories. Or the firms got economically worse because of the China's ban. Of course Russia would have similar difficulties processing the plastic wastes. We need to reconsider our plastic wastes and make improvements.

We, youths have advantages in acting power. We were grown in an incomparably fast developing period, and we are made to adapt to sudden changes and challenges. We can come up with many creative ideas and driving force addressing various problems around us and, further, around the world. We are living in the inter-connected world which makes us keep close although we are in the different countries. Taking this opportunity of participating in the 10th Korean-Russian Youth Dialogue, I sincerely hope we can reach a substantial result through our discussions and results.

Thank you.