Impact of E-commerce on the Recycling Industry

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***Abstract*—This paper discusses the impact of e-commerce on the recycling industry. It will touch on areas such as its origin, how it has progressed, the impact on the environment, and several advantages it provides to the users of the service. Some organizations which are already working in this area will also be discussed along with the success they have had in this niche.**

Introduction

E-commerce is the process of conducting business or trans- actions electronically. It is fast, efficient, and involves the least human interaction, and has proved to be remarkably useful in situations like pandemic where minimal human interaction is needed. The recycling industry on the other hand has always been physical with waste collectors either going from door to door in order to collect waste or us going to the dumpstersordesignated bins to throw out the waste which would later get sorted into recyclable and non-recyclable material later attherecyclingplant.

Integration of both of these has proven to be a remarkable step in the past with some organizations already implementing it and seeing promising results. It has transformed the way recycling was done and is a new step towards a better future.

Progression

The progression of e-commerce starting from the 1990s,to the current day and age, has had a tremendous impact on various industries. Several industries have changed the way they were operating before due to this shift. One industry that can greatly benefit from this is the Recycling industry.

More than 2 billion people now regularly make e-commerce transactions worldwide, and mobile e-commerce has continued to grow — nearly 73 percent of e-commerce transactions are expected to take place on mobile devices by 2021**.** [2]

The recycling industry has been around for a longtime, the mode of operation, however, remains primitive. Many countries around the world, instead of domestically recycling the waste which would be extremely cost-effective, are instead, exporting it. A good example would be European countries which are recycling 30% - 40% of their waste versus theU.S., which is recycling only 10% of it and exporting the rest. [1]

However, there exists an idea of circular economy, introduced in 2018, which says that the waste, plastic or electrical, needs to be recycled again and again instead of extracting its virgin form. This will eliminate a lot of waste and cut down on the avalanche of new waste made every year. Organizations like Procter & Gamble are already implementing this idea of circularity.

Advantages

Combining the e-commerce and recycling industry will provide several advantages that the traditional modes didn't. As described above, a lot of countries choose to export their waste rather than recycling it domestically. It does create a trade surplus but causes the domestic industries to perish.

For example, in the case of many countries, they received a shock when importing countries like China, which has been the world's biggest importer of waste for years, introduced the policy called "**national sword**" which restricted the import of certain kinds of

solid waste. This created significant log jams in the international recycling system causing the materials to pile up at the **materials recycling facilities (MRFs)** which were not ready for this sudden change. [3]

Having an e-commerce industry setup adds advantages like having a continuous flow of materials hence maintaining a certain operational capability at these facilities so if situations like this arise, the domestic industries can easily handle the pressure. Since there is no **reach-limitation** on these e-commerce platforms, a continuous supply of e-waste can be maintained at all times, from different parts of the country.

Another advantage combination of e-commerce with the recycling industry would provide is a **faster response to market demands** and the addition of a screening system for buyers. For example, in case a situation arises wherein there is an increased demand for glass, the recyclers can screen through an e-commerce portal for the materials rich inglass,buy them and recycle them.

Established Organisations

Since the concept of combining the two industries is fairly new, not many organizations are working in this domain, but the ones which are working, have shown promising results. These organizations have been successful in developing facilities that are capable enough to recycle the e-waste along with managing the toxic elements found in it such as copper, liquid crystal, lithium, mercury, nickel, selenium, arsenic, and bar- ium, hence keeping other severe problems to the environment at bay.

Attero

- **Attero** is an e-waste recycler and metal extraction startup. It is one of the first e-waste recyclers registered with the **Central Pollution Control Board (CPCB)**. The startup not only helps in treating e-waste but collects the trash from various entities.
- Attero has an end-to-end e-waste recycling unit where it processes end-of-life electronics in an environmentally responsible manner. Its facilities are capable of recovering useful metals from waste.
- Its wide range of services includes waste collection, electronic asset management and recovery , **reverse logistics**, refurbishment, and e-waste recycling.

BinBag

- BinBag was developed with the idea of faster adoption of the circular **economy for** end-of-life electrical and electronic equipment. The company works with private organizations, health care units, and the government to collect and recycle e-waste generated through various modes.
- Todayit is of vital importance that every e-waste recycler undertakes **Extended Producer Responsibility (EPR)** to manage the e-waste they churn out. BinBag extends support to process their e-waste too by collaborating with various other recyclers.

EcoCentric

- **EcoCentric**is an e-asset management startup. It works on the three R's of sustainability (Reduce, Reuse and Recycle). Ecocentric undertakes several activities such as e-waste management, asset recovery, reverse logistics, data security and destruction, CSR initiatives (donation to NGOs), and refurbishment services.
- With a strong belief in the three R's of sustainability (Reduce, Reuse, Recycle), the startup undertakes a slew of activities — e-waste management, asset recovery, reverse logistics, data security and destruction, CSR initiatives (donations to NGOs), and refurbishment services.
- The process followed at EcoCentric is simple which begins with segregating waste into plastics, glass, and metals.Then the hazardous substances are processed, the remnants of which are sent for further extraction.The remaining materials then move onto other

recyclers with the required extraction resources.

- So far Ecocentric has recycled more than **250,000 laptops, 250,000 printers** and **50,000 air conditioners** at its facilities. [4]

Conclusion

Adoption of new means has always proven to be beneficial for a market as it not just affects a particular business but many industries related to it. E-commerce has proven its mettle over the years as something which is very fast, simple, cost-effective and an amazing mode of connection for various sectors of industries. It is the time when more recycling organisations should opt for an online medium to enhance their operations as the technology will keep on improving. In the end this will benefit the industrial sector in ways we are yet to see.

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