

The Sustainable Squad

<u>Team Member Name</u>	<u>Year</u>	<u>Major</u>
Vijayankesh Bariar	1 st Year	General Management
Sarayu S Nair	1 st Year	General Management
Bharath R	1 st Year	General Management
Nishit Rastogi	1 st Year	General Management
Sakthivel L	1 st Year	General Management

Advisor(s): Kuruvilla Pandikattu Joseph SJ

Topic Title: E-Waste Helix: Physical waste of the digital world

Audience: Board Members of Tata Elxsi, Integrating Digital Technology and Design

Sustainable Development Goals

SDG #9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

SDG #12: Ensure sustainable consumption and production patterns

Executive Summary

India is the third largest generator of e-waste in the world. However, it lags in their proper treatment. Out of 3.2 million metric tons of e-waste in India, around 78% remain untreated, so they are dumped in open spaces and water bodies. Computer devices account for around 70% of the e-waste, and public and private sector corporations generate about 75% of the total e-waste. These electronic wastes contain Lead (Pb) and Cadmium (Cd) in Printed Circuit Boards (PCBs), which are hazardous and toxic. Cadmium is also found in monitors, metal enclosures, and sub-assembly parts. Mercury is the third dangerous metal common in e-waste, used in LCD screens and switches. However, Rare Earth Elements (REEs) include certain valuable metals in electronic devices. These REEs, although abundant, need ways of recycling as there are no practical alternatives to replace them. Along with the environment, e-waste is also becoming a social hazard. Seelampur, Delhi, is India's largest e-waste dump zone, where children spend 8-10 hours collecting reusable components and precious metals.

In this presentation, we argue that Tata Elxsi must start managing its e-waste more efficiently, sustainably and ethically. According to the Government of India E-Waste Management Rules, companies need to forward for recycling or dismantle 60 % of the recycling waste. Principles such as Life-Cycle Assessment (LCA) and Circular Economy can help the company take more accountability. However, the solutions should be more comprehensive than these, and the company should invest in innovating better solutions to this looming problem. And as the electronics market is growing internationally, these solutions shouldn't be limited to India alone but must be seen through international lenses. This demands enterprising, sustainable, responsible, transparent and ethical innovations from Tata Elxsi. As an ethical pioneer seeking “integrity, accountability and transparency,” Tata Elxsi can offer innovative, economic and ethical E-Waste management leading to sustainability helix.