Editorial Note: Putting a spotlight on the challenge of e-waste

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E-waste refers to any electrical and electronic equipment that has been discarded by its owner as waste, without the intent to reuse it. The term covers a very wide range of products. It can include:

- households with circuitry or electrical components for delivering power;
- Business products that do the same;
- Temperature exchange equipment for cooling and freezing, like refrigerators, air conditioners and heat pumps;
- Screens or monitors;
- Large equipment like washing machines, clothes dryers, dish-washing machines, electric stoves, large printing machines, etc.
- Smaller equipment like microwaves, ventilation equipment, video cameras, electronic tools, etc.
- Small IT and telecommunication equipment like mobile phones, pocket calculators, printers, etc.

For many of these products, there's an increasingly short replacement cycle as technological advances keep updating each device on a regular basis, offering consumers a new and improved model. And it's not just smartphones that consumers replace frequently. Upgrades can include higher speeds and newer technologies, so older equipment gets replaced even if it's not broken or obsolete. What it becomes, in the minds of the consumers, is outdated – too slow, or without the latest features.

The study also noted that another change is that in many countries, people own multiple devices. That means they also have multiple devices to discard.

What is happening today to e-waste?

The report is forecasting an additional 17 percent increase in e-waste, up to 52.2 million metric tons of obsolete electronics by 2021, which would make e-waste the fastest growing part of the world's continuous steam of discarded household items. The annual growth rate of e-waste is expected to be between 3-4 percent.

The concerns about the rising amount of discarded equipment are not just economic. There are also serious environmental concerns, and even serious fears, about the health risk of devices that contain toxic substances like lead and mercury not being treated adequately.

Allowing e-waste to pile up in landfills significantly increases these risks, when they can be lowered by having e-waste treated through appropriate recycling methods. This trend also shows how valuable resources are being wasted on a very large scale.

Can this problem be addressed?

If there's good news in the report, it's that more nations are recognizing the problem and doing something about it. By January 2017, roughly 4.8 billion people were covered by legislation that addresses the e-waste problem, which is 66 percent of the world's population in 67 countries. That compares to 2014, when 44 percent of the world's population (in 61 countries) was covered.

Still, as the report cautions, "National legislation does not always translate to concrete action."

In some instances, the report points out, establishing a new techwaste recycling system gets complicated when there isn't a single entity to oversee it and become responsible for the successful operation of that system.

When a successful recycling program is adopted, the report stressed, it usually includes a system to ensure that the rules are enforced and there is full compliance with the program's goals. The most successful ones, they add, have a financial model that works to help promote techwaste recycling, and the reuse of recycled parts. The report points out that India and China both have national e-waste regulations, and those policies cover 4.8 billion people.

"However, the existence of policies or legislation does not necessarily imply successful enforcement or the existence of sufficient e-waste management systems," the report notes, while adding that legislation is complicated by the fact that the laws cover different types of e-waste from one nation to the next.