IRON MOUNTAIN®

THE ENVIRONMENTAL IMPACT OF DIGITAL TECHNOLOGY

COULD A STRATEGIC END-OF-LIFE ASSETS APPROACH DRIVE HEALTHCARE ORGANISATIONS CLOSER TO ZERO WASTE?

DEFINING ZERO WASTE AND ITS CHALLENGES

As simple and as complex as it gets, zero waste is built on the idea that we can eliminate the need to use landfills. For this to occur, it's important that healthcare organisations eliminate waste in the system by reducing consumption, and reusing and recycling where possible.

However, the zero waste concept, is really far more complex. What needs to happen is a re-imagining of the current linear economy and its underlying facets. This would help us bring to life a full-scale circular economy that, much like nature, ensures every raw material used is reused and reabsorbed into a continuous "circle of life."

ROADBLOCKS TO ZERO WASTE IN HEALTHCARE AND LIFE SCIENCES

In healthcare, getting to zero waste is particularly difficult as there is a variety of medical and pharmaceutical waste. You've got everything from day-to-day paper and plastic products to potential hazardous materials such as used syringes, soiled dressings, expired drugs and chemicals. The good news is healthcare organisations are getting more advanced and sophisticated at managing some of these waste streams to help reduce the negative environmental impacts. The bad news is, as we address the existing sphere of waste, the industry's digital transformation is creating news ones.

As many industries push forward towards zero-waste initiatives, healthcare and life science organisations face pressure to drive results through digital innovation. Unfortunately, this digital effort results in a different kind of waste called e-waste. In 2019, 54 million metric tons of "e-waste" was generated worldwide. Right now, it's hard to say exactly how much e-waste healthcare is generating, but it isn't difficult to consider the scope of its impact. E-waste is a broad category that includes computer components, cell phones, tablets, printers, medical devices, imaging equipment and more.

That's before we even consider the Internet of things. There's nowhere in healthcare where the question of waste may be more pertinent than the "internet of medical things." According to Frost & Sullivan, 2020 was the predicted year where there would be up to 30 billion connected and medical devices in the healthcare ecosystem.

Given what we now know about the impact of e-waste on the planet and on human health, we need to start prioritising e-waste as a stream that must be immediately managed proactively and in a sustainable manner.

THE IMPACT E-WASTE HAS ON THE PLANET AND HUMAN HEALTH

Many toxic chemical elements and compounds are associated with e-waste. On the human level, increased or excessive exposure to these can cause adverse health outcomes. The level of that is often debated as research continues, but the industry acknowledges a real connection.

On the environmental side, we must consider both the factors of production and disposition. On the production side:

> Manufacturing these devices, often built with short refresh cycles in mind, on such a large scale results in increased consumption of our limited natural resources.

> E-waste often contains materials such as copper, iron, gold, silver, and platinum. When these items are dumped or burned rather than being collected for recycling, precious metals are wasted.

> According to a recent report "Poor Sustainability Practices: Enterprises are Overlooking the E-waste Problem", only a quarter of end-of-life equipment is being recycled. When you consider that the material value alone of yearly e-waste amounts to $62.5 billion, that stat is mind blowing.

> According to the World Economic Forum (WEF), there is more gold in a metric ton of mobile phones than there is in a metric ton of gold ore. The process of mining these precious metals, which continue to grow in scarcity, also causes significant damage to the environment.

Remember, there was 54 million metric tons of e-waste created in 2019 alone - that's a 21% increase over five years per the UN's Global E-Waste Monitor 2020 research. In the report the UN also predicts that, if current trends continue, the amount of e-waste will rise to 74 million metric tons by 2030.

If electronic devices are improperly disposed of, chemicals and compounds -- some toxic -- can seep into the water table, further fueling the climate crisis with their pollution. From the UN's research, proper e-waste disposal can help mitigate negative environmental impacts. However, currently only 17.4% of e-waste is being collected and recycled.

TAKE A MORE STRATEGIC APPROACH TO IT ASSET DISPOSITION

Focus on these three key action items to help spur the adoption of secure and sustainable IT Asset Disposition processes throughout your healthcare organisation:

1. **Make an inventory** of all data-bearing devices, regardless of the data you suspect they might contain. Don't worry about perfection. Take inventory to the best of your ability to determine the average age of your hardware and uncover opportunities to refresh or recycle end-of-life assets. This will allow you to zero in on an area that is immediately actionable while building the business case to scale your programme more broadly. An electronic device inventory will also help your team see current year-over-year e-waste disposal trends and where to improve to inform future purchasing decisions.

2. **Incorporate sustainability criteria into your purchasing decisions.** We know healthcare organisations need electronic devices in order to function in today's world. However, where possible, ask purchasing and business leaders to evaluate and prioritise devices that are built to last. Devices that can be easily refreshed, upgraded (rather than replaced) or powered on renewable energy should be granted preference. To help adopt these more sustainable selection practices, find environmentally-friendly devices on the Electronic Product Environmental Assessment Tool (EPEAT).

3. **Build a secure and scalable process** that enables you to establish a "mini-circular economy" through redeploying and/or remarketing IT assets on an ongoing basis. While complete physical destruction of a data-bearing devices ensures information security, it is not an environmentally-friendly option as it can use up to 20 times as much energy as reuse/remarketing efforts. Prioritise device reuse. What does that mean exactly? Consider the following to help aid in this process:

   > Sanitising and redeploying devices in order to extend their useful lives for high-impact enterprise IT purchase value

   > Redirecting end-of-life hardware into the circular economy. Examples of this process include:

      > Sanitising and redeploying older electronics

      > Donating devices to organisations in need

      > Harvesting parts of devices for use in new products

Reusing and remarketing devices can yield a number of benefits including:

> **Environmental:** Reduction in e-waste through reuse or remarketing of refurbished devices slows the consumption of precious natural resources used in the manufacturing of new devices.

> **Social:** Donation or reselling used devices increases affordability and accessibility to a broader demographic.

> **Economic:** Device resale lowers the Total Cost of Ownership of the equipment.

ADDRESSING PRIVACY AND SECURITY CONCERNS

Some organisations are reluctant to resell or redeploy end-of-life IT assets due to data privacy concerns, but while these concerns are valid, they are not unsurmountable. There are a number of solutions and vendors with expertise in this space.

The key for healthcare and life science organisations is to know what to look for and what to ask when assessing a reuse/remaking solution. Here are a few things that are mandatory for any successful sustainable device programme:

Asset Tracking: Have a process in place to ensure that every asset designated for remarketing is tracked through the entire lifecycle and does not go astray. Each individual item should be tagged and tracked with a unique barcode in accordance with the nature of the data stored on it.

Secure Transport: To mitigate data privacy and security risks, consider how assets will be transported for processing. Ask questions to ensure that assets will be transported in vehicles that are locked, alarmed, and equipped with GPS-tracking.

Securely Erase Data: Erasing, wiping, deleting, sanitising - these terms are not all created equal. Formatting drives or deleting storage volumes is not enough to erase the data, since software that can easily recover it exists. To permanently destroy deleted data, put a process in place that physically overwrites it. All data-bearing devices should be sanitised in this manner according to international guidelines such as NIST SP 800-88 and ISO/IEC 21964 (DIN 66399).

LOOKING TO THE FUTURE

Moving forward, healthcare and life science leaders can expect to see an increase in sustainability initiatives, along with a more mindful approach to digital innovation. It's not just a "feel good" thing to do.

We can't continue with "how it's always been done." We need to rethink our existing business processes to identify opportunities to reduce waste and negative environmental impact. All of this won't just result in "feeling good," it will lead to positive and measurable business outcomes - and ultimately get healthcare organisations one step closer to that "zero waste" state we all hope to someday achieve.

+358 9 8256 020 | IRONMOUNTAIN.FI   800 40 980 | IRONMOUNTAIN.NO
+46 8 55 10 2030 | IRONMOUNTAIN.SE   +45 70 21 77 00 | IRONMOUNTAIN.DK