



Cybersecurity and sustainability: The surprising role that security will play in a sustainable future

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The links between cybersecurity and sustainability go much deeper than you think.

When thinking about crowdsourced security, the first topic that comes to mind probably isn't sustainability. From a business perspective, there are, of course, huge benefits of having robust cybersecurity, particularly when it comes to ensuring the sustainability and longevity of your company. But the links between cybersecurity and sustainability go much deeper and can play a crucial role in the global push towards more sustainable business practices.

Critical infrastructure, cybersecurity, and sustainability

Digital systems have a huge impact on the world around us. They underpin some of the most critical infrastructure that we need to live – supply chains, administration systems, finance, and energy production, to name but a few. Cyber-attacks on this infrastructure can severely reduce their efficiency or cause a complete outage altogether. From a resource perspective, these incidents can have a huge impact on sustainability, and in more ways than one.

Last week, we reported on the [World Economic Forum's Global Risks Report 2023](#), where the international organization warned that "critical technology-enabled resources and services will become more common, with attacks anticipated against agriculture and water, financial systems, public security, transport, energy and domestic, space-based and undersea communication infrastructure."

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Reducing waste and loss are a key part of improving sustainability. In 2021, malicious hackers targeted the Colonial Pipeline, a key gasoline pipeline originating in Houston, Texas. In a ransomware attack, the hackers targeted computerized components of equipment across the pipeline, resulting in the entire system having to be shut down. After receiving the ransom payment, the hacking group 'DarkSide' provided the decryption key that was needed to restore the system.

On top of removing access to resources, some cyber-attacks are putting both lives and the environment at a direct threat of chemical exposure. [Back in 2017](#), hackers targeted a key petrochemical plant in Saudi Arabia, using a malware strain known as Triton to harness the facility's safety instrument systems (SIS). With these compromised, it could have led to a release of toxic gas, or even an explosion at the plant.

Attacks like these are on the rise, and industrial control systems around the world lack the cyber resilience that is necessary to withstand the onslaught. In fact, in [IBM's latest Cost of a Data Breach Report](#), the company noted that: "Critical infrastructure lags in zero trust – almost 80% of critical infrastructure organizations studied don't adopt zero-trust strategies, seeing average breach costs rise to

\$5.4 million – a \$1.17 million increase compared to those that do. All while 28% of breaches amongst these organizations were ransomware or destructive attacks.”

Securing sustainable networks

Then there's the task of securing budding systems and networks set up to build a sustainable future. Internet of things (IoT) devices, for example, will play a huge role in optimizing industrial processes, and here the links between cybersecurity and sustainability are clear for all to see. Energy usage and water management are two key examples listed by BehrTech, where devices collect data that allows the controlling processes to adjust to meet the exact needs of the system.

Smart cities are another key future development, particularly as urban areas have become the most common place of living for people around the globe. IoT devices are being used in a similar manner to enable cleaner living in urban areas. Smart grids, for example, ensure that energy is delivered more efficiently, reducing waste by monitoring usage. They can be used to reduce air pollution, by monitoring peak zones and times and providing information to help reduce things like traffic congestion.

While IoT devices offer huge benefits for an almost endless list of applications, their adoption has expanded the attack surface of many networks. Simpler, specifically purposed devices connected to networks often don't have the protection needed and can act as a gateway into a network. With many smart cities potentially using highly sensitive biometric data or being linked to certain controls, this can pose a real threat.

We can also look at the effects on social sustainability regarding cybersecurity incidents. In the worst cases, negative business impact due to data breaches can result in losses for shareholders, companies becoming insolvent, and people losing their jobs. The IBM report of last year showed the global average cost of a data breach increased to \$4.35 million. Sustainable growth goes hand-in-hand with keeping businesses protected from cyber-attacks.

Social sustainability through cybersecurity

At Intigriti, [we believe](#) that the rapidly growing digital world must be used to help make the physical world more sustainable. The solutions will need to be robust – we are betting our future on it – so we need great cybersecurity.

Moreover, from a people perspective, crowdsourced security platforms such as those offering bug bounty services are also helping to provide sustainable income to those whose skills may have otherwise gone untapped.

Access to jobs in security is simply not a reality to some, despite their tremendous knowledge of IT security. Within our own community at Intigriti, ethical hackers from a variety of backgrounds from across the globe are able to capitalize on their hacking abilities and make a living without having to relocate to another part of the world.

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