Textile waste collector reveals outcome of large-scale monitoring with smart sensors

Bratislava, 9.8.2021 / Ekocharita, a textile waste collection company that annually collects approx. 3000 tonnes of textile waste, has revealed the results of a waste monitoring project using Sensoneo waste monitoring sensors. As of January 2021, Ekocharita began installing Sensoneo smart sensors to monitor the fill-levels of their containers in real-time. By the end of June they had monitored 600 containers, and thanks to data gained from the sensors, they managed to significantly improve the management of their operations as they:

- **decreased the time required for the collection of 1 tonne of textile waste by 30 percent,**

- **reduced the waste collection cost by 20 percent,**

- **and made the logistics process smoother and better organized.**

„We are able to guarantee daily collection of volumes we need for a smooth logistics process – and it takes us fewer hours and less km than before."

Textile waste is a stream that is still awaiting legislation for separate collection. According to European law, it should come into practice in 2025. Until then, the system is supported by private companies that manage the collection of discarded clothes, and ensure its reuse, recycling, and charity donation.

Ekocharita operates within an area of **16000 km2 and manages 1300 containers for clothes, shoes, toys, and home textiles**. The containers are usually distributed in busy urban areas. The availability of textile waste containers in close proximity encourages citizens to sort the clothes properly.

What makes containers for textile waste unique, is their **very irregular filling cycles**. The speed by which the containers become full is absolutely unpredictable, which makes **collecting this waste difficult for operations and logistics** and puts high financial and time demands on managers. Real-time online monitoring of fill levels can significantly improve operations and reduce costs.

Implementation of waste monitoring sensors

Ekocharita began installing the sensors in January 2021 thanks to the EIC Accelerator grant that Sensoneo received for large-scale deployment of their solution to prove its positive environmental, operational, and financial benefits of smart waste management.

The [Sensoneo sensors](#) use **ultrasonic technology** to monitor fill levels in containers 24 times a day. Along with this data, they also monitor **temperature** and provide **fire and tilt alarms**. For the data transfer, the company decided on the **LoRaWAN IoT** network. With every batch of installation, the positive impact on operations became more and more visible. *„We have installed the sensors on our own, following a 2-hours training from Sensoneo, and we were surprised by how easy it was – it takes less than 5 minutes to install and set up the sensor,"* explains Juraj Kunak, CEO and Founder of Ekocharita.

The drivers, originally opposed to the implementation of new technologies, became very proactive as they realized the actual positive affect to their workloads. Juraj Kunak: *„Even those who said that „I will not use it;I can't do it with a smartphone" are the first to open a smartphone at six in the morning, make 12 red dots along the way, and at 10:00 they are back with a full car."*

A complete change of operations

With smart waste monitoring on board, Ekocharita has **completely redesigned the way they operate**. The whole network is digitalized, and the drivers can easily and **quickly identify the containers which really require pick-up**, and so spend their time much more efficiently: *„Right now, the driver wakes up in the morning, opens the app and can see the orange and the red dots – and that is exactly where he should go to quickly collect the full car – because that is the metric based on which the drivers are paid."*

Before the sensors, collection was based merely on the estimations of the drivers: *„They were driving for 8-9 hours to collect a full car. They were running in circles and let's say in 6 months the drivers were completely burnout. Now they can start at 7 or 8 and can be finished by 12:00 or by 1-2:00 PM and they can go back home to their families."*

„We know that 6 full cars are coming to the warehouse every single day."

The ability to choose only the nearly full containers for collection also allows Ekocharita to ensure **they collect the volumes of material they need for easy and smooth warehouse management:** *"Before having sensors for example, 5 drivers would come full, but one driver would come empty. For one day, you can say it does not matter, but after 30 days you are missing let's say 15 tons inside the warehouse, and that is the highest loss."*

A huge advantage over competitors

On-time waste collection means to **avoid overflowing bins.** Potential mess around bins and a dirty environment is a great obstacle for many business partners of Ekocharita: *„Having sensors means being reliable for the partner. That is why we are deploying more and more containers which are very near to us in shopping malls, schools, universities, kindergartens… New areas where I have not been before because there was another competitor. Now we are able to replace them."*

„Digitalization not only helped our operations – it also opened a brand new customer segment for us."

Cost vs Benefit

Ekocharita was able to implement the solution thanks to the EIC Accelerator grant for Sensoneo. This way, the company could test and experience the actual benefits of a large-scale smart waste management deployment immediately. Naturally, the pace would have been different if the company had purchased the solution the standard way. That is why the company has also calculated the **Return of Investment if the investment** was fully on them. To calculate the ROI, the company used the Sensoneo's monthly „smart waste as a service" pricing. „*If the purchase of the sensors had been fully on us, we would have recieved the ROI in 7 months,*" explains Juraj Kunak, CEO and Founder of Ekocharita.

About Ekocharita

Ekocharita was founded in 2017 and focuses on the collection, donation, pre-sorting and wholesaling of used clothing, footwear, bed sheets, linen as well as feather-beds, either for further reuse or recycling. Today, Ekocharita is the fastest-growing bin operator in the region. Overall, EKOCHARITA collects textile waste from the network of 1300 bins located mainly in the western part of Slovakia. Annually, they collect approximately 3 000 000 kilograms of clothes and textiles, that would have otherwise ended in a landfill or in the incinerator.

About Sensoneo, j.s.a.

Sensoneo is a global enterprise-grade smart waste management solution provider that enables cities and businesses to manage their waste efficiently, lower their environmental footprint and improve the quality of services.

Through its unique smart waste management technology, Sensoneo is redefining the way waste is managed.
The solution combines in-house produced Smart Sensors that monitor waste in real-time with advanced tracking and monitoring equipment and sophisticated software providing digital transformation and data-driven decision making which results in transparent waste streams, optimization of waste collection routes, frequencies, and vehicle loads and the introduction of incentive programs dedicated to decreasing waste production.

Sensoneo's smart waste management has attracted cities and businesses around the world, and the solution has been installed in more than 50 countries on 5 continents. The company is the winner of several reputable competitions (Microsoft Awards 2018 in the category of Public Administration & Smart City, Proptech Startup Europe 2019, Deloitte Fast50 2020 Impact Stars), a member of Circular Slovakia and a member of Proptech for Good.

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