Case study - Planta de Gestión de Residuos Informáticos: The long and challenging road in setting up an e-waste recycling plant in Argentina

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Project / Programme	Planta de Gestión de Residuos Informáticos
Geography / Region / Country	Rosario, Argentina
Organisation / Agency Brief	https://tau.org.ar
Circularity	e-waste, repair and recycling, youth employment

Overview

Nodo TAU is a civil association founded in 1995 by a group of engineers working on promoting information and communications technologies (ICTs) in mainly grassroots social organisations in order to address the digital divide. From 2003 to 2008, we worked with organisations to develop a network of community telecentres.[1] For the telecentre equipment, we promoted the use of discarded and reconditioned computers, creating a "machine bank" from the used computer donations we received.

In 2008, Nodo TAU joined a project aimed at setting up an e-waste management plant (Planta de Gestión de Residuos Informáticos), which was a natural next step from the work we had been doing. The e-waste plant, which started to operate in 2019 after several institutional processes and intermediate experiences, addresses the need to reduce the environmental impact of e-waste, and provides work opportunities for unemployed youth.

About the project

Nodo TAU has worked with second-hand computers in projects since 2003, which depended on donations. These donations of used digital devices started slowly, coming from individuals and small companies. As time passed, the quantity of devices increased, becoming difficult to manage for the people working in Nodo TAU and in the house shared as an office with other organisations.

The problem became more evident when, in 2007, Nodo TAU received numerous donations of computers from a multinational agro-industrial corporation, which included modern notebooks that allowed the development of a mobile digital classroom (Aula Digital) for workshops in communities. The donation also included a large number of machines that could not be repaired. Facing the problem of the accumulation of e-waste, we started to deepen our knowledge of local recycling and to develop resources for addressing e-waste management.

Laying the foundations

In 2008, the Secretariat of Environment and Public Space, in the framework of a Zero Waste programme, invited Nodo TAU to join a project on the development of an e-waste recycling plant, together with the National Institute of Industrial Technologies (INTI) and Taller Ecologista, the main environmental organisation in Rosario, the city where we are based.

As a result of this process, in 2009 Nodo TAU developed a training pilot project, consisting of workshops on repairing computers with young people from low-income neighbourhoods. The municipal Secretariats of Social Economy and of Environment were in charge of the distribution of the collected devices. In 2012, the pilot project became an enterprise named "Reciclados Electrónicos", promoted by the municipal government.

In 2016, with support from APC, Nodo TAU researched the local e-waste market, including the stakeholders involved and the presence of e-waste treatment facilities, developing a business model for the functioning of the plant. This process involved a collaboration with Barcelona-based APC member Pangea in implementing a tracing system developed by the eReuse.org initiative. In the meantime, the development of the plant was delayed due to internal conflicts in the municipal government, and later it was stopped.

Setting up the plant: Leveraging government programmes, and the importance of legislation

A milestone in the process was the work we did with the grassroots organisation Grupo Obispo Angelelli in 2019, on

projects aimed at job inclusion for young people in the context of the provincial social programme Nueva Oportunidad (New Opportunity) in 2019.

In the same year, a provincial law was approved that regulated the management of e-waste, including extended responsibility, and which recognised informal repairers as a stakeholder. Nodo TAU decided to reinvigorate the project and found an adequate place that complied with all the formal requirements for the operations of the plant. In 2019 the Planta de Gestión de Residuos Informáticos finally began to operate. Although it was set up without the help of the municipal government, a key factor in its implementation and sustainability was the inclusion of the plant under the Nueva Oportunidad programme.

In 2020, devices started to arrive at the plant from a new source: netbooks from the national educational programme Conectar Igualdad, which distributed five million computers from 2010 to 2015 among students in public high schools. When the programme was discontinued, large numbers of computers were left unused and piled up in schools due to poor maintenance. When the COVID-19 pandemic forced schools to close and education turned to digital platforms, these computers became fundamental for students.

In September 2020, the provincial Ministry of Education signed an agreement with Nodo TAU for the repair and upgrading of the computers, working in coordination with the authorities of each school.

Learning from regional experiences

During 2019, Nodo TAU was invited by the International Labour Organization (ILO) to participate in a research project on e-waste and employment[2] in different countries in the region, starting with a pilot in Peru and Argentina. The project involved the reconstruction of the e-waste value chain, and involved the organisation of local roundtables with relevant actors. For the first time, a wide range of stakeholders met to discuss e-waste treatment in the region. This process strengthened the project and its visibility.

In 2020, the work with the ILO was followed by a period dedicated to further research on the management of e-waste from a circular economy perspective.[3] This research will be followed by capacity building in the field.

Challenges

Sustainability and stability are key challenges faced by the plant. The project depends on the public programmes and policies in which it participates. The provincial government programme provides scholarships for young people training and working at the plant, guaranteeing a stable income for them. During some seasons, the low volume of incoming devices affects the stability of the workforce.

The scale is also a challenge. This is related to the strength of the plant's relationships with local companies, municipal governments and other public offices. The services offered to companies, schools and social organisations, from repairing to final disposal, are also relevant.

The implementation of the plant presented difficulties related to the condition of the building where the plant was located, and the process of certification and links with regulators. The lack of local actors for some processes in the proper treatment of e-waste also represents a difficulty.

Besides the state, manufacturers, repairers, large and small companies, and commercial chains, among others, should budget for e-waste management. However, the awareness of the responsibilities of each stakeholder about e-waste treatment remains a problem.

Conclusion

The e-waste plant, discussed above, has presented opportunities and challenges. As can be seen, it is a difficult project to develop and sustain, and the role of stakeholders, including supporting government frameworks, is crucial. There is also a debate about the social agenda of the plant and its sustainability, both essential to its performance. A fact highlighted by some specialists is that the activity is not profitable, and implies tasks that no one wants to do. For that reason, it should be considered a public service, not only an economic activity.

Nodo TAU is historically focused on the digital inclusion of local communities, and now works on the treatment of e-waste. This is related to its objective of inclusivity, which in this project is framed by the circular economy of ICT devices. These two frames – inclusivity and the circular economy – direct the focus of the work we do in two directions: the improvement of internal processes to increase the efficiency and effectiveness of our recycling activities so that they are environmentally sustainable, and in providing refurbished devices to communities that need access to computers.

References and further reading

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Ministerio de Ambiente y Desarrollo Sostenible de la Nación. (2020). *Gestión integral de RAEE. Los residuos de aparatos eléctricos y electrónicos, una fuente de trabajo decente para avanzar hacia la economía circular.* https://www.argentina.gob.ar/sites/default/files/manual_raee.pdf

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Footnotes

[1] Roveri, F. (2018, 29 June). Un camino por el acceso de las comunidades *enREDando*. https://www.enredando.org.ar/2018/06/29/un-camino-por-el-acceso-de-las-comunidades

[2] Maffei, L., & Burucúa, A. (2020). *Residuos de Aparatos Eléctricos y Electrónicos (RAEE) y empleo en la Argentina* ILO. https://www.ilo.org/buenosaires/publicaciones/WCMS_737650/lang--es/index.htm

[3] Ministerio de Ambiente y Desarrollo Sostenible de la Nación. (2020). *Gestión integral de RAEE. Los residuos de aparatos eléctricos y electrónicos, una fuente de trabajo decente para avanzar hacia la economía circular*. https://www.argentina.gob.ar/sites/default/files/manual_raee.pdf

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