BMA~Techne participant in the EU funded REFLOW project

REFLOW will empower citizens to better understand their environments and address urban degradation and other pressing environmental problem linked to the traditional linear production paradigm. To achieve this, REFLOW will leverage open source technologies combined with innovative interfaces. A simple and strong value proposition, the implementation of CE practices to close the production cycle within cities, will help to mobilise large numbers of citizens across Europe. In fact, REFLOW will illustrate the existing cities' metabolism as the first step towards a balanced use of material and energy resources, a more responsive and flexible urban planning, and the generation of economic opportunities for innovative CE practices. Moreover, REFLOW OS will provide a real-time resource management system to monitor and articulate the cities' dynamic material flows of plastics, textiles, agri-food, wood and packaging among the others. The proposed system for cities is fundamental to re-organize resources and enable innovative circular production processes. The said technology will be supported by a set of multidimensional indicators, such as stream type, localization of origin, composition, quantity, and quality, that will support the design innovative business models for circular practices at city level. Finally, a social, environmental, and economic impact assessment will be performed, in order to provide an economic quantification of the outcomes of the CE practices implemented.

How does this work?

The pilot cities involved in the REFLOW project will take advantage of tailored distributed ledger (Blockchain) technologies to track and trace material flows. Moreover, REFLOW will deploy key circular practices on mobile and multi-channel platforms adapted and appropriate to the range of user settings of the single pilot context. At the same time, REFLOW will identify opportunities for local manufacturing ecosystems within urban and peri-urban areas, through the adoption of innovative technologies, codesigned via a multi-stakeholder approach involving citizens' organizations, municipalities, and SMEs. By providing evidence of the economic impact of the innovative CE practices designed and implemented, REFLOW will demonstrate how the re-localization of production within urban and peri-urban areas will foster relevant positive outcomes. Examples of which can be identified in the reduction of carbon footprint within cities, also through the creation of shorter and more efficient supply chains; the attribution of a quantifiable economic value of previously discarded materials and products through their inclusion in innovative productive cycles; and the development of materials created from locally available inputs and waste streams. REFLOW will, ultimately, create awareness in citizens, businesses, and governments of the relevance of the adoption of CE practices to foster a sound positive environmental, social, but also economic return.

To this end, REFLOW will combine tailored ICT infrastructures, open access, community engagement and inclusion through the involvement of grassroots citizens' organizations such as makerspaces. This approach will be enabled by the articulation of networks involving citizens, various grassroots organizations, SMEs and supported by municipalities, whose role will central to select, facilitate and actively support the adoption of CE practices considered relevant at city level.

REFLOW will provide numerous stakeholders at city level with relevant opportunities:

1. SMEs with a new set of certified circular products to be created out of recycled materials.
2. Entrepreneurs and start-ups with new market spaces to either buy, sell or re-sell waste materials, converting them into valuable goods.
3. Citizens with information about CE production practices. This knowledge will allow them to play an active role in the management of the recycling flows within cities.
4. Product designers, with insights and open access technologies to design for circularity.
5. Governments and city planners, with the real-time information about the city metabolism, as well as tested models and best practices illustrating the benefits resulting from cities' transition towards

circular economy.

To sum up, REFLOW will create circular ecosystems of resources in cities, allowing discarded materials to become valuable resources for local production, thus generating a positive environmental impact consisting of urban regeneration, the emergence of economic opportunities, and creative solutions for complex problems that need to be approached in non-conventional ways.

Obviously, we will focus on the textile part as a member of the Amsterdam (WAAG) team and wee will work in a joint effort with Alcon Advies.

The project will start in June 2019 and run for 3 years.