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Behavioural Change for the Circular Economy (BC4CE)

Circular economy (CE) is a concept that aims at slowing down the consumption rate of resources by circulating them in the society for the longest time possible (e.g. by reuse and recycling). CE is considered essential to address challenges in sustainable supply of resources for growing demands of electrical and electronic products (e-products) and in managing the resulting end-of-life (EoL) e-products (known as e-waste). E-waste is not only the fastest growing solid waste stream globally, but also a complex mixture of valuable resources and hazardous substances that demands careful handling. Despite available technologies, infrastructure, and policies, the performance of existing e-waste management systems is not satisfactory and is far from circular. CE is an integrated system of stakeholders including manufacturers, users, and waste managers. While many stakeholders are driven by monetary rewards or legislative requirements, certain transactions rely solely on users' behaviour (e.g. repairing instead of replacing, recycling instead of storing or wrongly discarding). Such behaviours have considerable impact on the performance of EoL collection and recycling. Although the techno-economic aspects of EoL management have advanced, social and behavioural dimensions that define the success of a circular system remain to be understood.

In this context, BC4CE investigates the rationale behind users' actions and the significance of user behaviours in product lifecycle and e-waste management, and it explores possibilities of matching and influencing user behaviours through interventions. This is undertaken by interpreting user actions through the prism of behavioural science to design behavioural 'nudges'. Such insights can help businesses in designing products and services to achieve optimal economic and environmental performance. EoL managers (e-waste collectors and recyclers) can benefit from utilizing this knowledge in adopting strategies to match user behaviours. The research outcomes will also support authorities in implementing behaviourally informed policies in order to achieve the desired results.

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