The TTT-Conundrum – Why technology is not enough

By Holger Berg

Information asymmetry

The lack of information on availability and quality of plastics recyclate is a major barrier to effective plastics recycling. The What?, Where?, When?, and How much? of high value plastic waste and recyclate is unclear even in the best functioning European markets. Hence, we work based on the assumption that the creation and the transfer of the information required would both enable and support plastics recyclate markets and utilization.

Last year, we conducted a pathfinder project to create and assess distributed ledger technology ("blockchain") as a potential component in this puzzle. The argument for this is quite straightforward: The possibility of storing data on recyclate specifics safely and incorruptibly in a distributed ledger would allow a secure exchange and utilization of recyclate through the creation of transparency and reliability of all data passed on along the supply chain. We created and assessed business models for blockchain applications in this regard in cooperation with members of the whole plastics chain, recyclers, and IT experts.

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While the concepts we generated were promising, one finding struck us when we investigated, discussed and pondered over them with experts, stakeholders and practitioners. It became quite obvious, that with the idea of creating a solution that would enable trust and reliability for the recyclate, a new trust-barrier emerged.

The issue is distrust or scepticism towards the new technology: Does it work? Is it safe? Who else is using it? Are there enough users to make it work? Won't it be sunk costs? These are the questions we heard most, and given our experiences with the use of other digital technologies, we know they do not only come up here.

We term this finding the TTT-Conundrum with TTT standing for Trade, Technology and Trust. It depicts the fact that the use of digital technologies to enable trade (the "short" way between these items in the triangle) is mediated by trust into the technology that is used, trust into those who provide it, and trust into the other users (The "long" way).

THE TTT-CONUNDRUM
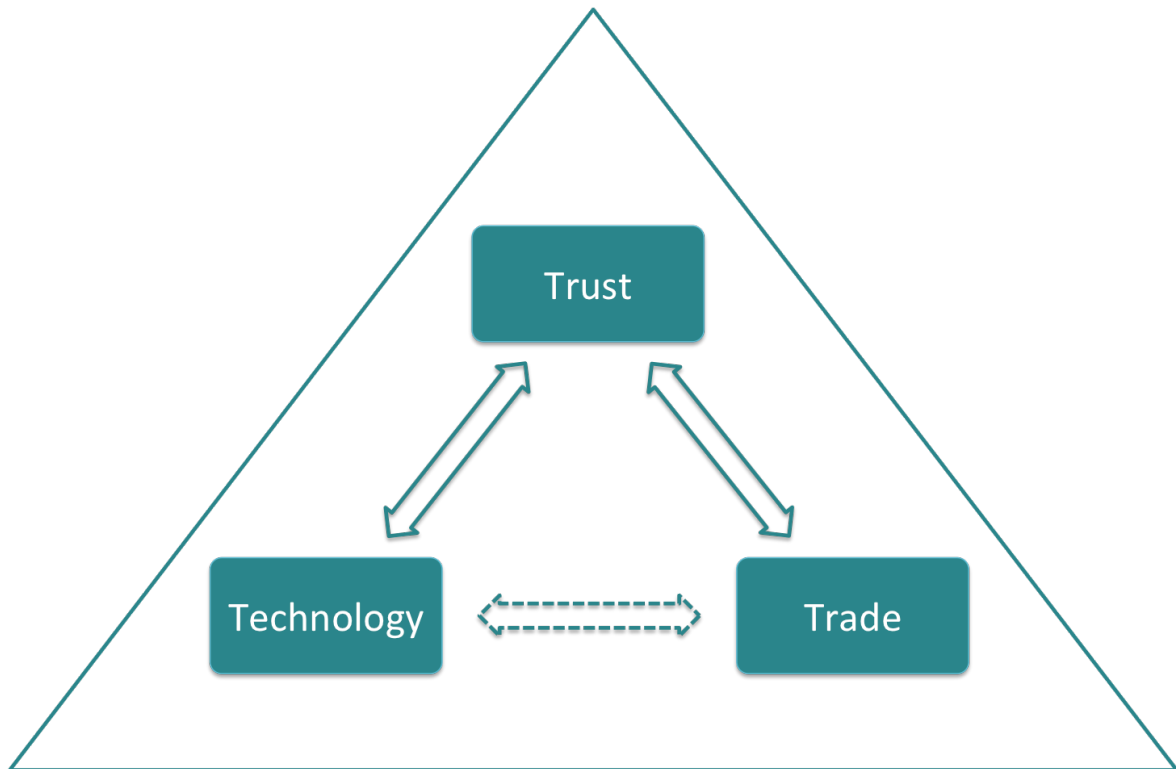
The requirements for a digital circular economy

In other words, this means that the establishment of promising technologies for a functioning circular plastics economy will require all of us to increase our efforts by considering the attitude of the users towards digital technologies – in general and towards specific applications.

Demonstrating technical usability, reliability and robustness has to be accomplished by caring about and addressing the doubts mentioned above. The question how this can be done effectively will be a big part of our research in the near future. We are looking forward to be in touch with you about it!