

Improving Waste Recycling and Resource Productivity by Integrating Smart Resource Tracking System

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Abstract : The high contamination rate in the recycling waste stream is one of the major problems in Australia. In addition, a lack of reliable waste data makes it even more difficult for designing and implementing an effective waste management plan. This article conceptualizes the opportunity to improve resource productivity by integrating smart resource tracking system (SRTS) into the Australian household waste management system. The application of the smart resource tracking system will be implemented through the following ways: (i) mobile application-based resource tracking system used to measure the household's material flow; (ii) RFID, smart image and weighing system used to track waste generation, recycling and contamination; (iii) informing and motivating manufacturer and retailers to improve their problematic products' packaging; and (iv) ensure quality and reliable data through open-sourced cloud data for public use. The smart mobile application, imaging, radio-frequency identification (RFID) and weighing technologies are not new, but the very straightforward idea of using these technologies in the household resource consumption, waste bins and collection trucks will open up a new era of accurately measuring and effectively managing our waste. The idea will bring the most urgently needed reliable, data and clarity on household consumption, recycling behaviour and waste management practices in the context of available local infrastructure and policies. Therefore, the findings of this study would be very important for decision makers to improve resource productivity in the waste industry by using smart resource tracking system.

Keywords : smart devices, mobile application, smart sensors, resource tracking, waste management, resource productivity

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