Title

Community repair: enabling repair as part of the movement towards a circular economy

Authors

Alex Gnanapragasam[1]*, Christine Cole[1]*

[1] Centre for Industrial Energy, Materials and Products, Product Design, Nottingham Trent University, UK
* Corresponding authors, alex.gnana@ntu.ac.uk and christine.cole@ntu.ac.uk

Keywords

Repair; electrical and electronic equipment; circular economy; waste reduction; community repair; repair networks.

Acknowledgements

Preferred format

Oral presentation

Abstract

The growth in sales of household electrical and electronic equipment in recent years, combined with faster product obsolescence, has resulted in waste electrical and electronic equipment becoming the fastest growing waste stream globally (Baldé et al., 2015). Many products develop simple faults which can be challenging for amateurs to repair (Green Alliance, 2015). This often results in the purchasing of replacement products, and items with minor faults being (incorrectly) disposed of or hoarded (WRAP, 2011). This untimely loss of products and materials hinders our ability to close and slow resource loops (Bocken et al., 2014), stifling efforts towards a circular economy. Additionally, short-lived products not only represent an increased financial cost for the consumer (Cooper, 2010), but also for the environment as they result in further resource extraction and increased greenhouse gas emissions across their life cycle (Norman et al., 2016).

In this context, innovative approaches to repair are emerging across the world. Organisations such as iFixit provide consumers with the knowledge, tools and parts they require to attempt their own repairs (Raihanian et al., 2016). Nevertheless, some consumers lack the skills and confidence to attempt repair on their own (Gregson et al., 2009). Repair events facilitated by community organisations (Charter & Keiller, 2014, 2016), such as The Restart Project, aim to address these barriers.

This paper reports the findings of a questionnaire survey conducted with 99 participants at The Restart Project's events held in London, England, between September and November 2016 (Cole & Gnanapragasam, 2017). The survey asked open and closed questions on experiences of repair and engagement with reuse and recycling. Participants were self-selecting and constitute just under one-third of the total attendees (319) at The Restart Project events during this time.

Over half (56%) of the participants reported that they had previously attempted repair at home with varying levels of success. Knowledge, skills and confidence were cited as the barriers to future attempts at repair. Additionally, nearly half (45%) of the participants could not name a commercial repair service they trusted. Small household electronics were reported to not be as widely recycled (55%) as paper (90%), plastics (85%), tins (83%) and glass (83%). The majority (82%) of participants stated they looked for others to reuse items they no longer had a need for.

Throughout the study, participants emphasised they valued the social aspect of repair events. Feedback illustrates a high level of satisfaction with the events, even when repairs proved unsuccessful. Participants noted the value of meeting others with shared interests, and welcomed the opportunity to be guided through their repairs by The Restart Project's volunteers.

Community-based organisations such as The Restart Project appear ideally positioned to develop bottom-up solutions, fostering trust and empowering consumers to take an active role in product life extension through facilitating repair and reuse (Montalvo et al., 2016). In turn, this may have a positive impact on efforts towards slowing and closing resource loops (Bocken et al., 2014), furthering our efforts towards the circular economy, resource security and environmental sustainability.

References

Baldé, C. P., Wang, F., Kuehr, R., & Huisman, J. (2015). *The global e-waste monitor – 2014*. Bonn: United Nations University, IAS – SCYCLE. Retrieved from https://i.unu.edu/media/unu.edu/news/52624/UNU-1stGlobal-E-Waste-Monitor-2014-small.pdf

Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, *65*, 42–56.

Charter, M., & Keiller, S. (2014). *Grassroots innovation and the circular economy: a global survey of repair cafés and hackerspaces*.

Charter, M., & Keiller, S. (2016). *The second global survey of repair cafés: a summary of findings*. Farnham: The Centre for Sustainable Design, University for the Creative Arts. Retrieved from http://cfsd.org.uk/site-pdfs/The%20Second%20Global%20Survey%20of%20Repair%20Cafes%20-%20A%20Summary%20of%20Findings.pdf

Cole, C., & Gnanapragasam, A. (2017). *Community repair: enabling repair as part of the movement towards a circular economy*. Nottingham: Nottingham Trent University and The Restart Project. Retrieved from http://irep.ntu.ac.uk/id/eprint/30462/

Cooper, T. (2010). The significance of product longevity. In T. Cooper (Ed.), *Longer lasting products: alternatives to the throwaway society* (pp. 3–36). Farnham: Gower.

Green Alliance. (2015). *A circular economy for smart devices: opportunities in the US, UK and India*. London: Green Alliance. Retrieved from http://www.green-alliance.org.uk/a_circular_economy_for_smart_devices.php

Gregson, N., Metcalfe, A., & Crewe, L. (2009). Practices of object maintenance and repair: how consumers attend to consumer objects within the home. *Journal of Consumer Culture*, *9*(2), 248–272. https://doi.org/10.1177/1469540509104376

Montalvo, C., Peck, D., & Rietveld, E. (2016). *A longer lifetime for products: benefits for consumers and companies*. European Parliament, Directorate General for Internal Policies. Retrieved from

http://www.europarl.europa.eu/RegData/etudes/STUD/2016/579000/IPOL_STU(2016)579000_EN.pdf

Norman, J. B., Serrenho, A. C., Cooper, S. J. G., Owen, A., Sakai, M., Scott, K., … Allwood, J. M. (2016). *A whole system analysis of how industrial energy and material demand reduction can contribute to a low carbon future for the UK*. CIE-MAP. Retrieved from http://ciemap.leeds.ac.uk/wp-content/uploads/2016/04/CIEMAP-Report.pdf

Raihanian, M. A., Esmaeilian, B., Cade, W., Wiens, K., & Behdad, S. (2016). Mining consumer experiences of repairing electronics: product design insights and business lessons learned. *Journal of Cleaner Production*, *137*, 716–727. https://doi.org/10.1016/j.jclepro.2016.07.144

WRAP. (2011). *Market flows of electronic products & WEEE materials: summary data*. Banbury: WRAP. Retrieved from http://www.wrap.org.uk/sites/files/wrap/MDD036%20Summary%20report%20FINAL.pdf