

New development: Enhancing regional innovation capabilities through formal public service communities of practice

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IMPACT

The circular economy (CE) involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible—moving away from the traditional linear economy. The Circular Economy Innovation Community (CEIC) project, presented in this article, developed a novel programme to create regional inter-organizational innovation communities of practice for public service organizations across a region. Participants were introduced to contemporary tools and techniques to enable their organizations to reduce their carbon footprints, reduce costs and enhance service levels. The authors describe the way that the CEIC project has been able to create sustainable innovation communities of ‘change-makers’—enhancing regional innovation capabilities and supporting the transition to a CE.

ABSTRACT

Public services have recently experienced a ‘perfect storm’: dealing with challenges including the task demands of Covid-19, increased financial pressures derived from the pandemic and its impact on future revenue flows, and obligations to meet carbon reduction targets. In the UK they have also been impacted by Brexit. However, limited formal programmes are available to public service organizations (PSOs) that enhance the capabilities required to develop solutions to their challenges. This article presents a novel programme for PSOs that supports them in co-designing regional new service solutions that embed circular economy principles.

Keywords: Circular economy; Circular Economy Innovation Community (CEIC) programme; communities of practice; design thinking; experiential learning; innovation; public services

Introduction

The 21st century has experienced multiple economic, environmental, and social crises, evidencing that organizations operate in a volatile, uncertain, complex, ambiguous (VUCA) world (Persis et al., 2021). The IPCC (UN) Climate Change Report (2021) warns of future

exogenous crises if public and private sector actors do not make radical operational and strategic changes. The transition to a circular economy (CE) necessitates a paradigm shift—requiring changes in the way that society legislates, produces and consumes goods and services (Prieto-Sandoval et al., 2018). As a result, public and private sector providers have to develop their innovation capabilities and adopt systems change methodologies (Ellen MacArthur Foundation, 2017). PSOs are positioned as leaders in the transition to a CE as drivers of economic and environmental change, due to their visibility and role in policy implementation (Persis et al., 2021). Financial cuts imposed on public services in the UK and elsewhere, alongside the requirement to develop CE-related processes, has resulted in PSOs having to deliver ‘more with less’.

Wales presents a unique operating context for PSOs; the Welsh Government *Beyond recycling* strategy (2021) states ‘we are setting out our commitment to action as a Government to use the powers and levers that we have...to accelerate our transition to a circular, low carbon economy’ (p. 4). The Wellbeing of Future Generations (Wales) Act 2015 (WFGA) places a statutory obligation on public services to make decisions based on the social, economic, cultural, and environmental well-being of current and future generations in Wales. To facilitate the requirements of the *Beyond recycling* strategy and the WFGA, the Welsh Government called for programmes to support ‘public services reform and regional working’. The Circular Economy Innovation Community (CEIC) programme outlined in this article was developed in response to this call and the challenges that PSOs are facing.

Literature

The necessity to transition to a CE is evident, yet the term remains contested both theoretically and practically. We favour the definition of Van Buren et al. (2016, p. 3):

The reduction of raw material consumption, the design of products in a way that allows them to be taken apart and reused after use, prolonging the lifespan of products through maintenance and repair, and the use of recyclables in products and recovering raw materials from waste flows.

Gaining insights into CE in public services is challenging because few empirical studies exist (Klein et al., 2020). The majority of CE innovations in PSOs have involved establishing ‘green’ and ‘sustainability’ policies, focusing primarily on the procurement of products that are refurbished or contain recycled materials, or the implementation of services with ‘environmental’ objectives (Klein et al., 2020). These innovations are undoubtedly important and PSOs in Wales have performed well in reaching the Welsh Government target of 65% recycling of domestic waste. However, *Beyond recycling* states that far more needs to be done to transition to a CE. Focusing on services that are intended (or mandated) to deliver against environmental targets risks missing the ‘hidden’, more intractable emissions associated with broader public sector activities (Welsh Government, 2021).

Nandi et al. (2020) described the value of commercial organizations collaborating to implement CE principles; they argue that the waste generated by the health sector during the pandemic has highlighted the need to apply CE principles and practices to medical waste and develop regional supply chains. The post-pandemic economy will require considerable economic impetus, which should embed CE principles in order to reduce waste and develop capacity in regional supply chains (Ibn-Mohammed et al., 2020). Ibn-Mohammed et al. (2020) also argued that considerable investment and thought leadership is required from policy makers and PSOs to accelerate progress towards a CE through innovation across multiple domains. A systematic review by Suchek et al. (2021) emphasised that the link between innovation and CE can only be fully established through a multi-level approach where public and private sector actors actively engage and that nascent engagement with innovation models and methodologies across PSOs to embed CE requires further practical and theoretical development. Additionally, existing discourse suggests that PSOs need to become more sustainable in their operations (Gelderman et al., 2017), yet very few studies outline how this can be achieved. The absence of published literature suggests little holistic implementation of CE practices within PSOs.

Innovation is essential for PSO improvement (Albury, 2005): yet innovation in the public sector often occurs on an ad hoc basis, in response to regulatory change, declining budgets, or demands for new services (Arundel et al., 2019). Hence, innovation should be underpinned by an ongoing strategy that increases organizational capabilities to, in turn, increase innovative outputs (ibid.). Open innovation (OI; Chesbrough, 2003) involves the sharing of knowledge across organizational boundaries—therefore providing a methodology to support

PSOs to co-design public value through engaging with stakeholders across a region. Existing literature evidences the value of supporting open innovation in the public sector (Mergel & DeSouza, 2013), the value of communities of practice (CoPs) within formal development programmes (Smith et al., 2018), and the efficacy of design thinking in developing new service solutions in collaboration with users (Harhoff & Lakhani, 2016). Cheah & Yuen-Ping (2021) suggest that PSOs could benefit considerably by optimizing the value of collaborating with external organizations through establishing mechanisms that facilitate OI. Arundel et al. (2019) additionally outline the need for additional experimentation in the collection of data on public sector innovation. Further strategic and operational perspectives are needed to explore how innovation capabilities and practices can be developed, the types of innovations produced, and the differences in innovation outcomes by management strategies to support innovation (Arundel et al., 2019). Hence, extant literature suggests that an intervention that draws on contemporary theory to develop CE and the innovation knowledge and skills of PSOs is essential and timely.

The CEIC programme

The Circular Economy Innovation Communities (CEIC) programme is a collaborative approach between Swansea and Cardiff Metropolitan University to create 14 distinct public service regional inter-organization communities of practice (CoPs). The programme brings together different PSOs to work on existing operational challenges and facilitates collaborative regional working. The CEIC programme formally creates and supports ‘networks of change-makers’ (Hanna et al., 2018), which bridge the gap between national and regional development, in the form of CoPs (Lave & Wenger, 1991). CoPs offer an established foundation for connecting practitioners with a shared interest, and were previously primarily used to facilitate knowledge transfer across expert communities enabling PSOs to improve their reactions to uncertain and complex situations (Agrifoglio et al., 2021). Existing research has identified a need for further exploration, using case studies, of collaborative innovation, to substantiate claims and evaluate benefits, but also costs, of collaborative versus bureaucratic innovation (Torfing, 2018). Rather than advocating increasing funding for PSOs, the CEIC programme advances public sector engagement with innovation through facilitating inter-organization CoPs to support collaborative innovation by enabling practitioners to co-design services across organizational boundaries, thus mitigating

costs. The CEIC programme facilitates the development of new service solutions (NSS) for implementation across a region—moving beyond a CoP as a knowledge-sharing function.

The programme supports PSOs in meeting the aims of *Beyond recycling* and their WFGA obligations. The programme assesses individual and organizational innovation capability, then designs and delivers interventions to develop innovation knowledge and skills and enhance understanding of CE principles. Participants engage with 10 workshops (~~11 contact days and 11 workplace days~~) over a ten-month period to enable them to develop and prototype robust NSSs. The programme was developed from a critical realist epistemology, therefore avoiding advocating normative models and encouraging participants to adopt an abductive approach to their NSS development. Moreover, the CEIC pedagogy is informed by social learning theory (Bandura, 1977), and addresses the ‘knowing–doing gap’ (Pfeffer & Sutton, 1999) that practitioners sometimes face. The participants engage in multiple exercises throughout a two-day residential workshop in order to develop trust and ‘critical friend’ relationships. The participants are introduced the CoP roles and framework in order to cede agency and learn self-governance mechanisms.

The CEIC programme content combines theory from operations management, product design, organizational development, and regional economics. The programme teaches design thinking (Lewrick et al., 2020), which is ordinarily confined to product design programmes, and supports PSOs to develop the NSSs through each of the five stages of design thinking in workshops. CE theory and practice (the ‘golden thread’) is introduced in the first workshop and threaded through subsequent workshops in order for PSOs to incorporate CE principles. A ‘reflect-and-learn’ workshop and a final ‘all-Wales conference’ gives participants the opportunity to capture their learning and learn from other groups within the programme, embedding reflective practice principles and extending their networks—facilitating further boundary-spanning activities.

Conclusion

We live in an uncertain world, where public services are increasingly being asked to do more with less. The CEIC programme has been shown to facilitate open innovation in COPs, providing a sustainable mechanism for the co-design of services and simultaneously enhancing innovation capability. The CEIC programme provides practitioners with the knowledge and skills for PSOs to move to a circular operating model, to meet statutory obligations. The CEIC programme is novel, timely and delivers significant impact for PSOs

operating within increasingly volatile, uncertain, complex, and ambiguous environments. To enable practitioners to acquire the relevant knowledge, skills, and networks necessary to deal with such challenges, the CEIC programme has been shown to leverage economies of scale and knowledge, mitigating financial pressures and knowledge and skills paucity. The programme presents a replicable model underpinned by a series of established pedagogical techniques used to enhance the innovation and circular economy practices of PSOs, stimulating the design of a range of practical solutions to be implemented across Wales and indeed beyond.

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Circular Economy Innovation Community conceptual framework

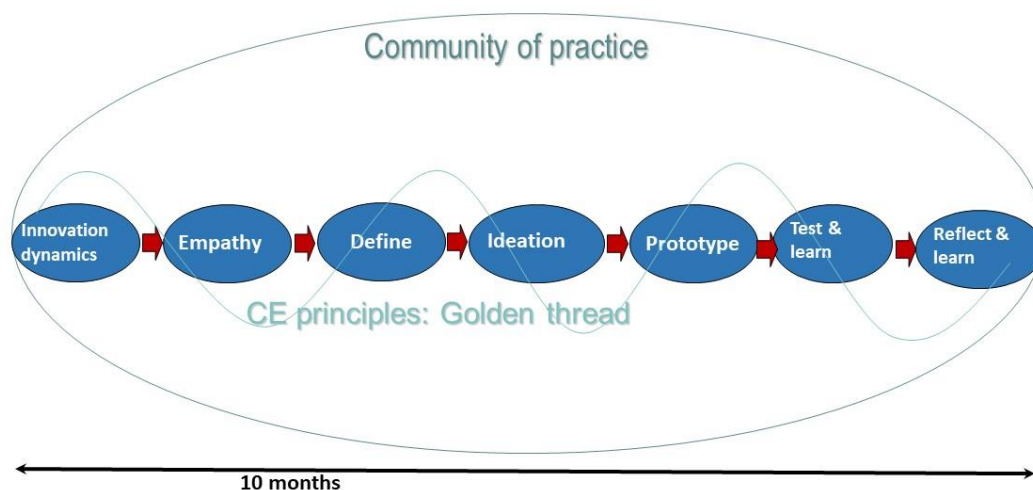


Figure 1. Conceptual framework.