

## Enhancing regional innovation capabilities through formal public service Communities of Practice

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**Impact:** The Circular Economy Innovation Community (CEIC) project developed a novel programme to create regional inter-organisation innovation Communities of Practice, for public service organisations across a region. Participants are introduced to contemporary tools and techniques to enable their organisation to reduce carbon footprint, reduce costs and enhance service levels. CEIC will develop sustainable innovation communities of ‘change-makers’ to enhance regional innovation capability and support the transition to a circular economy.

*Keywords: Circular economy; Public services; Innovation; Experiential learning; Communities of Practice; Design thinking*

### 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, obligations to meet 2030 Net Zero targets, and Brexit repercussions. These challenges have highlighted the requirement for public service organisations (PSOs) to enhance their innovation capabilities (Arundel et al. 2019). 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). However, limited formal programmes are available to PSOs that enhance the capabilities required to develop solutions to their challenges. This paper presents a novel programme for PSOs that combines the above theories with an underpinning Social Learning Theory (Bandura, 1977) pedagogy. The authors found no published evidence of similar inter-organisational programmes that support PSOs to co-design regional new service solutions that embed CE principles.

### Introduction

The 21<sup>st</sup> century has experienced multiple economic, environmental, and social crises, evidencing the contention that organisations operate in a Volatile, Uncertain, Complex, Ambiguous (VUCA) world (Persis et al. 2021). The recent IPCC (UN) Climate Change Report (2021) evidences the certainty of future exogenous crises if both the 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); resultantly, 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 Circular Economy as drivers of economic and environmental change, due to their visibility and role in policy implementation (Persis et al. 2021). The recent financial cuts imposed on public services, 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*" (p4). The Wellbeing of Future Generations (Wales) Act (2015) 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 above strategy and the WFGA (2015) the Welsh Government called for programmes to support '*public services reform and regional working*'. The novel CEIC programme, outlined in this paper, was developed in response to this call and the challenges PSOs face.

## Literature

The necessity to transition to a CE is evident, yet the term remains contested both theoretically and practically. The authors favour the definition of Van Buren et al. (2016), "*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*" (p.3). Gaining insights into CE within public services is challenging as a paucity of empirical studies exists (Klein et al. 2020). The majority of CE innovation within PSOs has 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 overtly 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' (Welsh Government, 2021) states that far more needs to be done to transition to a circular economy. 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 organisations 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) argued considerable investment and thought leadership is required from policy makers and PSOs to accelerate progress towards a circular economy through innovation across multiple domains. A recent systematic review by Suchek et al. (2021) emphasised the link between innovation and circular economy can only be fully established through a multi-level approach where public and private sector actors actively engage; yet 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 demand for new services (Arundel et al. 2019). Hence, innovation should be underpinned by an ongoing strategy that increases organisational capabilities to, in turn, increase innovative outputs (ibid). Open Innovation (OI; Chesbrough, 2003) involves the sharing of knowledge across organisational boundaries, therefore providing a methodology to support PSOs to co-design public value through engaging with stakeholders across a region. Cheah & Yuen-Ping (2021) suggest PSOs could benefit considerably by optimising the value of collaborating with external organisations through establishing mechanisms

that facilitate OI. Existing literature outlines the need for additional experimentation in the collection of data on public sector innovation (Arundel et al. 2019). 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 novel Circular Economy Innovation Communities (CEIC) programme is a collaborative approach between Swansea and Cardiff Metropolitan University to create 14 distinct public service regional inter-organisation 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 Communities of Practice (CoPs; Lave & Wenger, 1991). CoPs offer an established foundation for connecting practitioners with a shared interest, hitherto primarily used to facilitate knowledge transfer across expert communities which enables 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 to PSOs, the CEIC programme advances public sector engagement with innovation through facilitating inter-organisation CoPs to support collaborative innovation by enabling practitioners to co-design services across organisational boundaries, thus mitigating costs. CEIC shall facilitate the development of new service solutions (NSS), for implementation across a region, moving beyond a CoP as a knowledge sharing function.

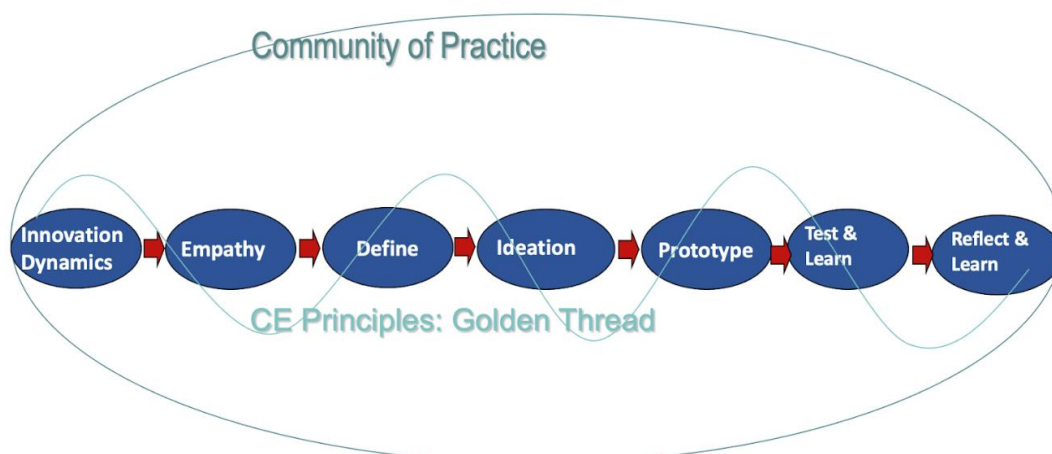
The programme supports the PSO actors to meet the aims of 'Beyond Recycling' and their Well-being of Future Generations (Wales) Act (2015) obligations. The programme assesses individual and organisational innovation capability, then designs and delivers interventions to develop innovation knowledge and skills and enhance understanding of CE principles. Participants engage with ten 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 avoids advocating normative models and encourages participants to adopt an abductive approach to their new service solution (NSS) development. Moreover, the CEIC pedagogy is informed by Social Learning theory (Bandura, 1977), and addresses the 'Knowing Doing Gap' (Pfeffer & Sutton, 1999) practitioners face. The participants engage in multiple exercises throughout a two-day residential in order to develop trust and 'critical friend' relationships. The participants are introduced the CoP roles and framework in order to cede agency and to provide the participants with self-governance mechanisms.

*Figure 1: Conceptual Framework*

The CEIC programme content combines theory from operations management, product design, organisational development, and regional economics. The programme teaches Design Thinking (Lewrick et al, 2020), ordinarily confined to product design programmes, and supports PSOs to develop the NSSs through each of the five stages of design thinking within subsequent workshops. Circular Economy 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. The 'reflect and learn' workshop and the 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 which facilitates further boundary spanning activities.

### Conclusion

We live in a VUCA world, where public services are increasingly being asked to do more with less. The CEIC programme facilitates open innovation within a Community of Practice, providing a sustainable mechanism for the co-design of services across a region, simultaneously enhancing innovation capability. CEIC will provide 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 shall deliver 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 leverages economies of scale and knowledge, mitigating financial pressures and knowledge and skills paucity.



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