



# Designing for and with the ‘Digital Citizen’

David S. Kirk  
Open Lab, Newcastle University, UK  
david.kirk@newcastle.ac.uk

Suzan Boztepe  
Linköping University, Sweden  
suzan.boztepe@liu.se

Jörn Christansson  
IT University of Copenhagen,  
Denmark  
jme@itu.dk

Amalia De Götzen  
Aalborg University, Denmark  
ago@create.aau.dk

Nils Ehrenberg  
Aalto University, Finland  
nils.ehrenberg@aalto.fi

Erik Grönvall  
IT University of Copenhagen,  
Denmark  
erig@itu.dk

Shaun Lawson  
Northumbria University, UK  
shaun.lawson@northumbria.ac.uk

Per Linde  
Malmö University, Sweden  
per.linde@mau.se

Joanna Saad-Sulonen  
LUT University, Finland  
joanna.saad-sulonen@lut.fi

Vasilis Vlachokyriakos  
Open Lab, Newcastle University, UK  
Vasilis.Vlachokyriakos1@newcastle.ac.uk

## ABSTRACT

Longstanding practices of participatory co-design have sought to engage communities in the development of shared resources, services, and technologies. However, approaches such as citizen-centered design and digital civics bring these design methods to bear on the development of digital technologies in support of civic and third sector organizations in particularly complex and rapidly changing socio-technical landscapes. Such endeavors frequently need to engage marginalized, under-served and hard to reach communities. In these design spaces, the ‘Digital Citizen’ becomes a contested concept, deserving of deeper exploration. In this one-day workshop we seek to bring together the DIS community, industry practitioners and third sector representatives to mutually explore the concept of the digital citizen, its boundaries, and opportunities, and in response to a rapidly changing environment of smart digital services, the ways in which design methods might be evolved to better support designing for and with these digital citizens.

## CCS CONCEPTS

• **Human-centered computing:**

## KEYWORDS

Digital Citizen, Citizen-Centered Design, Participatory Design, Co-Design, Digital Social Innovation

### ACM Reference Format:

David S. Kirk, Suzan Boztepe, Jörn Christansson, Amalia De Götzen, Nils Ehrenberg, Erik Grönvall, Shaun Lawson, Per Linde, Joanna Saad-Sulonen, and Vasilis Vlachokyriakos. 2024. Designing for and with the ‘Digital

Citizen’. In *Designing Interactive Systems Conference (DIS Companion ’24), July 01–05, 2024, IT University of Copenhagen, Denmark*. ACM, New York, NY, USA, 3 pages. <https://doi.org/10.1145/3656156.3658383>

## 1 BACKGROUND AND MOTIVATION

Over the last 20 years there has been a rapidly growing interest amongst the HCI, Design and Community Informatics academic communities around research which explores the (co-)design and (co-)production of digital tools and services with and for marginalized and under-served communities [6]. In recent years, much of this research has been framed under the banner of an emerging concept, ‘Digital Civics’ [13]. This area of research has sought to explore the ways in which government and third sector / Voluntary, Community and Social Enterprise (VCSE) organizations could be supported through carefully designed relational digital technologies [18]. This has variously been framed as an important, if not critical, endeavor, because these vital actors within society have frequently been overlooked, and have often received low levels of investment, especially as part of growing (trans)national Government agendas around supporting and growing the ‘digital economy’ [17]. However, in many countries these organizations provide a critical layer of supportive social services, which could otherwise be absent from society [14]. Volunteers have also organized, to provide IT-support for (often elderly) citizens that find the digitalization of public services challenging [4].

Where digital services, tools and infrastructures are being developed to support communities, there is a broad acknowledgement that there is significant potential benefit in the use of participatory and inclusive approaches to their design [3]. This is intended to ensure that members of marginalized and underserved communities (such as immigrant communities, political movements, solidarity initiatives, ageing populations, people with learning impairments etc.) are both given a voice within, and adequately supported by, these services, tools and infrastructures. Ideally, no sector of society would be left behind in the push towards digital innovation.



This work is licensed under a Creative Commons Attribution International 4.0 License.

*DIS Companion ’24, July 01–05, 2024, IT University of Copenhagen, Denmark*

© 2024 Copyright held by the owner/author(s).

ACM ISBN 979-8-4007-0632-5/24/07

<https://doi.org/10.1145/3656156.3658383>

These participatory framings for digital innovation are entirely concomitant with an implied agenda within ‘Digital Civics’ approaches, that we might redefine the foundational principles of the design, production, and delivery of civic services [1]. An important aspect of such an approach is an understanding of innovation as not necessarily and only techno-centric and top-down (trickling down from industry and traditional knowledge producers such as universities), but an innovation that when seen through a different lens can be found within community and civic organisation practices in the form of socio-political, socio-economic, and socio-technical innovation from which we should learn. Such an approach sees us moving away from a traditional transactional model of service delivery and consumption towards the design of relational services, in which communities are more fully engaged and involved in all stages of service and technology designs, which are consequently developed not *for* them, but *with* them [18]. Done well, such approaches would allow designers to address some of the extant critiques of existing civic technologies, such as the ways in which they can create additional, unnecessary layers of bureaucracy [8], serve as means of exclusion rather than inclusion [15], inadvertently reinforce implicit neoliberal agendas [16], and the ways in which such civic innovations can remain ad-hoc, and lack requisite scalability [5].

However, many of the challenges facing modern societies are what we might frame as wicked problems [2], the needs arising are potentially interminable, nested and differentially (intersectionally) experienced by different sectors of society [7]. Moreover, such approaches in design raise questions around how expertise is negotiated and enacted – i.e. how do we negotiate the lived experience of local communities, their social innovative practices, and our own (interaction and technology) design expertise? Even though these are challenges explored in Participatory Design [1], Social Innovation [10] and Design communities more generally for decades, they still make designing for civic services and social support an inherently complex space.

Equally, work on Digital Civics or community technologies (especially when supporting Government services) often has an implicit assumption of ‘Citizen-Centred’ design – and this is evident in recent large investments from UK research councils (see for example ESRC Centre for Digital Citizens at Newcastle University [11] and UKRI AI Centre for Doctoral training in Citizen-Centred AI at Northumbria University [12]). However, notions of the Digital Citizen are ill-defined. Who or what exactly, is a digital citizen? The idea of citizenship, who counts as a citizen, and the ways in which this might differentially provide access to supportive services is a controversial area of debate and public discourse [9].

These issues inevitably complicate strategies for effectively designing supportive digital infrastructures. If we cannot adequately operationalise a foundational understanding of what it means to be a digital citizen, and within that resolve concerns about what we may or may not mean by ‘citizen’, and what fundamental standards of service provision and support (i.e. what basic needs and requirements) might underpin the notion of a ‘digital citizen’ – then it is hard to adequately scope the design spaces within which we are working. Equally, it is hard to understand what best practice might look like when we design for/with the digital citizen. However, there are many people working within these spaces of

research, design and innovation and wrestling with these problems. These people span academia, the third sector, Government, not-for-profit and industry. As the pace of technology enhancement and development quickens, and with the advent of newly omnipresent technologies which might profoundly change the ways in which people offer and consume services, such as AI, it is increasingly important that we come together to explore, debate and exchange ideas around these notions of the Digital Citizen.

## 2 WORKSHOP AIMS AND THEMES

Our 1 Day workshop at DIS 2024 aims to address a series of critical considerations. Each of these considerations essentially forms a question and a theme which will be addressed through discussion and activities at the workshop.

**What is a ‘Digital Citizen’?** – How do we define and understand the concept of the Digital Citizen? What are the bounds of the notion of ‘citizen’ and what constitutes its elements? How tied is citizenship to service consumption, legal and administrative structures, and public institutions? What are the roles of transnational or migratory identities, and the digital within them? How are online identities or AI intermediaries’ part of this notion of the ‘digital citizen’?

**What are we designing for when designing for and with the ‘Digital Citizen’?** What democratic values and service needs must be met for the ‘digital’ citizen? How are these defined and where do they come from? What is the role of trust towards institutions in designing for the digital citizenship? How do such design endeavors fit within narratives of resilience in crises, and what is the ‘minimum digital living standard’ that we might aspirationally look to support and go beyond? How can design for digital citizenship foster people’s wellbeing as opposed to supporting ‘resilience’ to changing circumstances?

**How do we design for and with ‘Digital Citizens’ through ‘citizen-centered design’?** What are the common pitfalls and mistakes that can happen when designing for ‘Digital Citizens’? Who are the key stakeholders that we need to engage? How do we go beyond co-design and participatory design through a radical re-imagination of ‘innovation’, its origin and means of production? How do we move towards methods and technologies that allow us to co-produce and co-manage digital (public or commons) services? How do we acknowledge and negotiate diverse expertise and literacies towards a more equitable socio-digital innovation? What are the challenges (especially for university-driven research) for maintaining sustainable stakeholder engagement and support?

**What are potential radical re-imaginaries of the ‘digital citizen’?** What choices and alternatives are there for a re-imagination of what a digital citizen might consist of? Is resisting the digital transformation of the civic futile, what are radically alternative examples and cases studies and how do they work? How can the digital citizenship be re-imagined under different socio-economic and political assumptions (for example, through commons-based peer production, or social solidarity economies)?

## 3 WORKSHOP GOALS AND STRUCTURE

The primary goal of the workshop is to provide a forum for interdisciplinary discourse and knowledge exchange bringing together

participants from academia, industry, government and the third sector – to articulate challenges of conducting design research and innovation in relevant spaces and to provide examples of best practice in stakeholder-driven co-design within citizen-centered design framings. The goals are therefore to better define the Digital Citizen and to identify the challenges around designing to support the Digital Citizen. **The 1-Day workshop will be structured as follows:**

Pre-workshop participants will be given shared access to each other's submitted position papers and case studies. The workshop itself will begin with a keynote address – highlighting challenges around citizenship and the digital and the provision of third sector and government services in a landscape of rapidly advancing technology. A moderated Q&A will follow, which will expand participants' understanding of the challenge space to be addressed that day.

Workshop participants will then engage in Pecha Kucha presentations of their workshop submissions to support networking and information exchange. This will be followed by group discussion identifying key themes emerging from the interests presented through case-studies and position papers. We will work with various collaborative design materials during the workshop. Participants will be asked to prepare one material artifact to bring to the workshop (A4 with written statement on digital citizenship), for use in the Pecha Kucha and afternoon group sessions. Lunch and breaks will support continued networking and discussion.

After lunch discussion groups will work with submitted case studies to explore complex challenges and potential opportunities arising from specific citizen-centred design projects and will support the co-production of a set of digital citizenship personas and scenarios (to be discussed and reflected upon at the end of the day). Case study work provides critical context to exchange insight and discuss the themes and challenges raised above and to receive expert advice and input from colleagues with design expertise around co-design techniques for working with marginalized and under-served communities. Participants will be encouraged to bring examples of design materials and processes they have previously used for engaging in processes of citizen-centred design.

Late afternoon sessions will provide opportunity for group discussions addressing the challenges of defining and understanding the Digital Citizen based on critical reflections from discussion of the case studies and personas. This will then be complemented by whole group discussion and the charting of challenges and opportunities – before closing with discussion of future directions.

#### 4 ANTICIPATED OUTCOMES

The workshop is intended to facilitate several outcomes. In the immediate, we hope that it will generate opportunities for further collaboration and skills exchange between and amongst researchers and practitioners working in these spaces. Collectively, we intend that the workshop will help to define a position around the 'Digital Citizen', which will form the core of a manifesto for research in this space, which we will seek to publish. This will be embedded within a collective call for a shared journal or book (edited collection) as a larger vehicle for discussion of these critical issues. We will also share, document, and disseminate (through the workshop website)

tools, insights, and best-practices for supporting citizen-centered design (sensitive to the topics discussed), which is likely to be of broad value to workshop attendees (and others working in this space).

#### ACKNOWLEDGMENTS

This workshop is funded by the EPSRC Next Stage Digital Economy Centre for Digital Citizens (EP/T022582/1), and the Civic Agency in Public E-service innovation (CAPE) project funded by NordForsk (project: 98907).

#### REFERENCES

- [1] Erling Björgvinsson, Pelle Ehn, and Per-Anders Hillgren. 2010. Participatory design and "democratizing innovation". In Proceedings of the 11th Biennial Participatory Design Conference (PDC '10). Association for Computing Machinery, New York, NY, USA, 41–50. <https://doi.org/10.1145/1900441.1900448>
- [2] Richard Buchanan. "Wicked Problems in Design Thinking." *Design Issues*, vol. 8, no. 2, 1992, pp. 5–21. *JSTOR*, <https://doi.org/10.2307/1511637>
- [3] Silvia Cazacu, Nicolai Brodersen Hansen, and Ben Schouten. 2021. Empowerment Approaches in Digital Civics. In Proceedings of the 32nd Australian Conference on Human-Computer Interaction (OzCHI '20). Association for Computing Machinery, New York, NY, USA, 692–699. <https://doi.org/10.1145/3441000.3441069>
- [4] Camilla Christensen, Nils Ehrenberg, Jörn Christiansson, Erik Grönvall, Joanna Saad-Sulonen, and Turkka Keinonen. 2022. Volunteer-based IT Helpdesks as Ambiguous Quasi-Public Services - a Case Study from Two Nordic Countries. In Nordic Human-Computer Interaction Conference (NordCHI '22). Association for Computing Machinery, New York, NY, USA, Article 44, 1–12. <https://doi.org/10.1145/3546155.3546660>
- [5] Andy Dow, Rob Comber, and John Vines. 2018. Between Grassroots and the Hierarchy: Lessons Learned from the Design of a Public Services Directory. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18). Association for Computing Machinery, New York, NY, USA, Paper 442, 1–13. <https://doi.org/10.1145/3173574.3174016>
- [6] Elise Hodson, Annukka Svanda and Nastaran Dadashi (2023) Whom do we include and when? participatory design with vulnerable groups, *CoDesign*, 19:4, 269–286, DOI: 10.1080/15710882.2022.2160464
- [7] Catherine D'Ignazio and Lauren F. Klein. 2020. *Data Feminism*. MIT Press
- [8] Christian Ø. Madsen, Ida Lindgren and Ulf Melin. 2022. The accidental caseworker - How digital self-service influences citizens' administrative burden. *Government Information Quarterly*, 39, (January 2022), 1–11. <https://doi.org/10.1016/j.giq.2021.101653>
- [9] Gaja Maestri & Sarah M. Hughes (2017) Contested spaces of citizenship: camps, borders and urban encounters, *Citizenship Studies*, 21:6, 625–639, DOI: 10.1080/13621025.2017.1341657
- [10] Ezio Manzini. 2015. *Design, when everybody design: An Introduction to Design for Social Innovation*. The MIT Press
- [11] Newcastle University - EPSRC Next Stage Digital Economy Centre for Digital Citizens <https://www.digitalcitizens.uk/>
- [12] Northumbria University – EPSRC Centre for Doctoral Training in Citizen-Centred Artificial Intelligence
- [13] Patrick Olivier and Peter Wright. 2015. Digital civics: taking a local turn. *interactions* 22, 4 (July - August 2015), 61–63. <https://doi.org/10.1145/2776885>
- [14] Stephen Osborne (2008) *The Third Sector in Europe: Prospects and Challenges*. Routledge: Abingdon
- [15] Sofia Ranchordás and Catalina Goanta. 2020. The new city regulators: Platform and public values in smart and sharing cities. *Computer Law & Security Review*, 36 (October 2020), 1–15. <https://doi.org/10.1016/j.clsr.2019.105375>
- [16] Jannick Schou and Morten Hjelholt. 2018. *Digitalization and Public Sector Transformations*. Springer International.
- [17] UK Gov (2022) UK Digital Strategy. <https://www.gov.uk/government/publications/uks-digital-strategy/uk-digital-strategy> Last Accessed 21/02/24
- [18] Vasilis Vlachokyriakos, Clara Crivellaro, Christopher A. Le Dantec, Eric Gordon, Pete Wright, and Patrick Olivier. 2016. Digital Civics: Citizen Empowerment With and Through Technology. In Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '16). Association for Computing Machinery, New York, NY, USA, 1096–1099. <https://doi.org/10.1145/2851581.2886436>