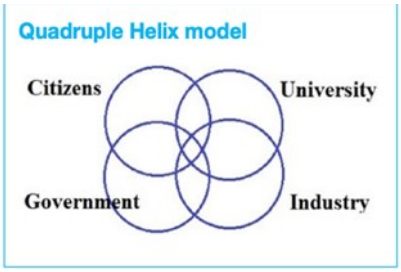
Institution: Newcastle University		
Unit of Assessment: 13 Architecture, Built Environment and Planning		
Title of case study: *Newcastle City Futures*: Addressing Urban Challenges by Building a Collaborative Innovation Platform		
Period when the underpinning research was undertaken: 2012-2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	**Role(s) (e.g. job title):**	**Period(s) employed by submitting HEI:**
Professor Mark Tewdwr-Jones	Professor of Town Planning	August 2012-May 2020
Period when the claimed impact occurred: 2014-2020		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact

Newcastle City Futures (NCF) was established as a collaborative innovation platform to address urban needs, linking academic research expertise to external partners in the public, private and voluntary sectors, while also facilitating new innovative proof of concept projects. The uniqueness of NCF lay in its approach to involving everyone in the city in the development of its future. Where in the past single sectors, disciplines, agencies or businesses worked independently to provide solutions, NCF provided a new way to harness the creative thinking and expertise of diverse groups of people. Funded by a GBP1,400,000 UKRI Urban Living Partnership (ULP) grant and a GBP15,000 UK Government Office for Science Foresight project, NCF brought together experts from academia, government and public and voluntary sectors to work with citizens and industry leaders. The key impacts of NCF have been, first, the development of 196 stakeholder partnerships which resulted in 77 new innovative project ideas, leading to 30 new projects attracting GBP27,000,000 in new funding to the city-region and, second, the changing of policy, governance and practice in the city and city-region, leading to Newcastle being recognised nationally and internationally as a smart city exemplar.

2. Underpinning research

There has been a growing recognition that single discipline research only partially conceptualises the multifaceted complex form of urban problems, often leading to inadequate responses to them. This has been accompanied by calls for the 'democratisation' of science such that it is more transparent and responsive to public concerns. In addition, a series of urban crises covering, inter alia, ageing, sustainability and digitisation, often unique to individual places, demands wider ownership and new approaches and methods to make research better oriented to such problems. NCF was devised as a cross-research council interdisciplinary pilot requiring strategic collaboration across universities, government, business and civil society. This form of strategic collaboration has come to be conceptualised as a 'quadruple helix' (**PUB 6**) – see the diagram below – and NCF worked at the interstices of these myriad points of connection. It provided a place-based test bed for interdisciplinary collaboration between natural and social scientists, and devised methods for effective stakeholder engagement, policy exchange, and practice involvement in shaping interdisciplinary and cross-sectoral real-world interventions (**PUB 5**). As detailed on its public-facing platform - http://www.newcastlecityfutures.org/ - NCF was led by Newcastle University in partnership with Northumbria University and 22 other organisations across local government (Newcastle City Council, Gateshead Council, North East LEP), industry (IBM, Arjuna, Intu, Newcastle Airport, Nexus, AECOM, Arup, BuroHapold, Zero Carbon Futures, Northumbrian Water, Northern Gas Networks, Northern Power Grid, Federation of Small Businesses, TechCity) and the public and voluntary sectors (NHS, Newcastle Schools Forum, Newcastle Council for Voluntary Service, Quality of Life Partnership, and the Royal Society of Arts).



One of the main purposes of NCF was to put into practice a particular conceptualisation of the way we think of the urban through 'fluid spatial planning as strategic intelligence', as articulated by Tewdwr-Jones in **PUB 1**. This involved advocating for the design and development of a 'test of territorial and spatial resilience' working across disciplines in order to identify risk and uncertainties of land and places (capacity); multiple potential benefits of land and places (multifunctionality); and the assets and flows of land and places (uniqueness). The test creates a form of strategic place intelligence, both for and beyond local government, to allow a shared understanding of options to be worked through collaboratively; it allows new research spaces to emerge that enable discussion, engagement and innovation through projects that are public-facing, market-supportive, and research-rich. The approach was developed into a practical scientific and methodological toolkit combining this test of territorial and spatial resilience with Tewdwr-Jones and Goddard's 2014 work (**PUB 2**), building on the long tradition of civic university work at Newcastle. This created both the test (conceptual) and the working approach (methodologies) that formed the basis of NCF.

The process of developing the NCF experiment fell to its director Tewdwr-Jones. He was uniquely well placed to take on this task as both an academic researcher – he was Professor of Town Planning at Newcastle University at the time (as well as holding Visiting Professorships at Berkeley California, Hong Kong, UNSW Sydney, Western Sydney, Pretoria, Guadalajara, Nijmegen and Dublin) – and as a place-based leader (Chair of both the Regional Studies Association and the Connected Places Catapult Research Panel, for example). He utilised his position (**PUB 5**), as well as a participant and observer, to develop insights into effective interdisciplinary working and knowledge exchange between stakeholders, and to experiment further with different approaches that could enhance the relevance and impact of research into urban living challenges.

This comprised: interactive public engagement on research themes (through an exhibition on the city's urban past, present and future) (**PUB 4**); researching the baseline evidence across disciplines; organising stakeholder 'mash-up' workshops; and analysing themes for the city using scenario building methodologies for the future. This culminated in the *NCF2065 Foresight Report* (**PUB 3**) that acted as a research incubator for stakeholders to discuss and shape innovative city ideas. NCF took the ideas generated in earlier rounds of engagement, scenario development and innovation as a research accelerator to translate ideas into deliverable projects, testing the approach applied to practice. The 2065 Report has been cited as an example of good practice in the Government Office for Science (2017) *Future of Cities: Foresight for Cities report*, and also informed the development of the North East LEP (2017) *Sustainable Development in the North East Strategy*.

3. References to the research

All six research outputs have been subject to rigorous peer review process as part of their acceptance process for publication. The UKRI pilot was funded as the Newcastle and Gateshead urban living partnership, one of five ULPs nationally, and **PUBs 4-6** were funded as gold open access papers. **PUB 3** was funded from a UK Government Office for Science Future of Cities Foresight project. **PUB 3** received the RTPI Research Award for Excellence 2016 commendation in the Sir Peter Hall Award for Wider Engagement category. The NCF2065 report (**PUB 3**) has also been widely cited in academic peer-review published output providing a feedback 'research informing' loop back into the academy from the world of policy and practice.

PUB 1: Tewdwr-Jones, M (2012) *Spatial Planning and Governance*, Palgrave Macmillan, Basingstoke. Available on request.
PUB 2: Tewdwr-Jones, M and Goddard, J (2014) A future for cities: Building new methodologies and systems for urban foresight, *Town Planning Review* 85(6) 773-94. https://doi.org/10.3828/tpr.2014.46
PUB 3: Tewdwr-Jones, M Goddard, J and Cowie P (2015) *Newcastle City Futures 2065: Anchoring Universities in Urban Regions through City Foresight*, NISR, Newcastle. http://www.newcastlecityfutures.org/wp-content/uploads/2016/11/NewcastleCityFutures2065Report.pdf

PUB 4: Tewdwr-Jones, M Freestone, R and Sookhoo, D (2019) From Geddes' city museum to Farrell's urban room: Past, present and future at the Newcastle City Futures exhibition, *Planning Perspectives* https://doi.org/10.1080/02665433.2019.1570475
PUB 5: Vallance, P Tewdwr-Jones M and Kempton L (2019) Facilitating spaces for place-based leadership in centralised governance systems: The case of Newcastle City Futures, *Regional Studies* 53(12). https://doi.org/10.1080/00343404.2019.1598620
PUB 6: Vallance, P Tewdwr-Jones M and Kempton L (2020) Building collaborative platforms for urban innovation: Newcastle City Futures as a quadruple helix intermediary, *European Urban and Regional Studies* 26(3). https://doi.org/10.1177/0969776420905630

4. Details of the impact

Overall, NCF fostered 196 stakeholder partnerships, facilitated 77 innovation project ideas and delivered 30 projects, helped deliver GBP27,000,000 for partner projects, and engaged with an estimated 150,000 members of civil society during the REF period. NCF also set up the *Tyneside Crowd* crowdfunding platform that, since 2018, local government community development officers have used to co-fund community-led initiatives, such as *The Learning Bus*, the *Shieldfield Community Bakery* and the *Fenham Pocket Park*, the details of all of which can be found here: https://www.spacehive.com/profile/newcastlecityfutures. In order to do all of this, NCF employed a range of innovative scientific and methodological processes to apply urban research and engage stakeholders to incubate and accelerate ideas across the city. Various descriptions of this process, from a range of different stakeholders, can be found in a series of videos on the NCF platform: http://www.newcastlecityfutures.org/videos/.

Activities

A 2014 NCF exhibition of research and engagement in the city attracted some 2,400 visitors and created a platform for civic society to submit research and practice ideas to government on how to improve the city (**IMP1**). The exhibition generated wide ranging discussions between researchers and local politicians which resulted in the establishment of a specific policy forum: Newcastle City Council established a new quasi-committee, the *City Futures Development Group* in 2015, chaired by Tewdwr-Jones, as a multi-partner place to discuss long term trends and scenarios, identify assets and opportunities, link research to policy, and endorse new partnership projects. Tewdwr-Jones also became a member of related local authority governance committees, the *Newcastle 2020 group* and *Gateshead's Place Board*, to shape policies on the impact of austerity in the region, and this led to a number of specific practical projects on the future of the principal retail core of Northumberland Street (2016-18) and Gateshead town centre digital place connectivity (2017-19). The future of Northumberland Street Area project led to innovative green and creative elements being factored into Newcastle City Council/NE1 BID's Northumberland Street Area strategy, with the first GBP3,200,000 investment of a GBP30,000,000 scheme announced in February 2018 (**IMP3**). The Gateshead work led to the employment of smart, creative and digital strategies for the future of Gateshead town centre, and the Spatial Planning and Environment Manager for Gateshead noted how they have continued to utilise the digital consultation and engagement methods introduced by NCF through the Covid pandemic (**IMP4**). NCF also bought together academic partners at Open Lab, Newcastle University, with Nexus, the operators of Metro, the busiest light railway outside of London (https://www.nexus.org.uk/what-nexus/our-key-business), carrying around 37,000,000 passengers a year. The work engaged residents in the region to give their thoughts and ideas much-needed replacement rolling stock that has been service since it opened (https://www.nexus.org.uk/news/item/your-chance-design-new-metrocars). The project, Metro Futures, received over 23,000 responses (https://www.nexus.org.uk/news/item/nexus-and-stadler-one-year).

Value Added

The 'value-added' of the NCF pilot was highlighted by the Independent Evaluation of the urban living partnership pilots' impacts commissioned by UKRI (**IMP2**). The cross-sector partners described the impacts as: (1) improving communication and understandings between local authorities and researchers resulting in the development of more practical ways to tackle city problems; (2) bringing the voices and concerns of community groups and citizens to local authority

attention; (3) helping third sector groups take advantage of research expertise in the framing and execution of projects; (4) giving industry and commerce a better understanding of local authority priorities and potential business opportunities as well as insight into academic thinking; and (5) challenging local authorities to think more innovatively, flexibly and over the longer term at a time when, due to austerity measures, their resources to develop new ideas are limited.

Best Practice

The report also notes that, from the perspective of local government the Director of Place for NCC stated that, NCF "assisted us to look at best practice from other cities and consider how we might bring innovative ideas to bear in Newcastle – particularly in transport and digital issues" (**IMP2** p.29). A business partner (Territory Ecosystem Representative for IBM Commercial) stated that, "NCF enabled us to broaden and ratify our thoughts and ideas, as well as increasing our understanding of Newcastle in a safe, managed, non-threatening way with the city itself becoming the heart and soul of the project" (**IMP2** p.27). These partnerships across the quadruple helix influenced the research and policy arenas, particularly in growth of acceptance of interdisciplinarity in urban policy relevant research, and in a shift from a model of knowledge *transfer* to one of *co-production*. This is a significant legacy from the pilot, since it "experimented with a diverse set of tools, methodologies, frameworks and techniques designed to dig deep into their city challenges. They also built effective multi-sectoral partnerships, brokered new business ventures and opportunities, co-produced innovative projects in local authorities and community organisations, sparked international interest and brought significant new funding to their cities" (**IMP2** p.9).

Smart Cities

A further distinctive feature of NCF's role has been to link scientific and technological developments with social need across the city and find a space for unique projects; this led to NCF being recognised nationally and internationally by government agencies such as the Connected Places Catapult and led to NCF receiving the Huawei Smart Cities Index 2017 Education Award (**IMP5**). The report states, NCF "is… now at the forefront of progressing smart and socially inclusive city initiatives across the city" and has influenced the digital small business community in the city (**IMP5.2** p.51). NCF commissioned a report for the city council entitled *Newcastle as a System of Systems* in 2018 that audited the innovative smart, digital and social projects underway across the city and enhanced the work of business. This "laid the foundations of our Newcastle Innovation Partnership [established 2019] … bringing together of different organizations to deliver improved outcomes for people within Newcastle...advancing the Council's strategy towards digital connection and empowerment" (Digital Newcastle Programme Manager **IMP6**). This led to Urban Foresight becoming the official digital partner of the city council and directly resulted in Newcastle City Council being nationally recognised for its collaboration and smart city approaches and named Smart City of the Year 2019 (**IMP6**). Subsequently, The City Council established a new City Futures directorate to deal with smart city issues, digitisation, and climate resilience. Most recently (2020) a City Futures Board has also been created as the new name of the statutory health and wellbeing board for Newcastle with partnership from Universities and other bodies such as the NHS, reflecting the legacy of NCF within Newcastle (**IMP7**). Newcastle University remains a leading player in these smart city developments, most obviously through the work of Prof Phil James, working in our new Urban Science Building (USB) on the Helix site (see below), on the development of the *Urban Observatory* - https://urbanobservatory.ac.uk/ - which provides an innovative platform for huge volumes of relevant real-time environmental and social data for both public engagement and policy use.

Future Homes as an Exemplar

We could point to numerous projects across the city-region to which NCF has 'added value' and has thus had an impact. These are all detailed in the reports and websites cited here and in **IMP1-IMP7**. But one project, in particular, is perhaps emblematic of what has been achieved. The Newcastle Helix site - https://newcastlehelix.com/ - is a huge 24-acre testbed and collaborative ecosystem for public and private bodies – the development of a brownfield site once occupied by the Scottish and Newcastle Brewery close to Newcastle city centre. As well as hosting a range of new Newcastle University research and teaching buildings - *The National Innovation Centre for Data*, *the UK National Innovation Centre for Ageing* and the aforementioned *Urban Sciences*

Building amongst them (see our institutional environment statement for more details) – it is also home to a wide range of private businesses and shared public-private-university facilitation spaces. In many ways it is the premier architectural and urban design expression of the civic and place-based agenda that Newcastle University has been developing for over two decades. It has also been a development that has been the material spatial instantiation of the quadruple helix model in the city-region, within which NCF has played such an important facilitative role. As part of the development of the Helix site, NCF was instrumental in bringing to fruition the *Future Homes* project – the design, planning and building of 66 age-friendly housing units informed by many years of housing and social gerontological research carried out at Newcastle University – and overseen by a Community Interest Company, of which Newcastle City Council is a member. The project has been led by Professor Rose Gilroy (a colleague in the School of Architecture, Planning and Landscape) – and a key participant in the NCF project alongside Tewdwr-Jones. The development of the project is detailed here: https://www.futurehomesalliance.com/origins/. Future Homes is one of the most developed NCF inspired projects and potentially the one with greatest longevity. In August 2020 it received planning permission drawing in more than GBP20,000,000 from various actors spanning central government, the academy, business and industry (see below) https://newcastlehelix.com/news/approval-for-future-homes-project-on-newcastle-helix.

Approval for Future Homes project on Newcastle Helix

5. Sources to corroborate the impact

IMP1: https://www.chroniclelive.co.uk/news/local-news/2300-visit-newcastle-city-future-7250203.
IMP2: http://urbanliving.epsrc.ac.uk/files/ulpbooklet/.
IMP3: Chief Executive, NE1 BID Ltd letter.
IMP4: Letter from Spatial Planning and Environment Manager, Gateshead Council.
IMP5: (5.1) Future Cities catapult leading cities (2016): http://futurecities.catapult.org.uk/press-release/centre-excellence-urban-innovation-names-bristol-plymouth-newcastle-leading-cities-field-urban-planning/; (5.2) UK Smart Cities Index 2017 Commissioned by Huawei: https://www.itu.int/en/ITU-T/ssc/resources/Documents/Huawei_2nd_Smart_Cities_Index_2017_FINAL.pdf; (5.3) Tech-savvy cities (2017) outlining the importance of digital futures to engage with citizens and NCFs role: http://www.huffingtonpost.co.uk/peter-madden-obe/techsavvy-cities_b_17518404.html; (5.4) Govtechleaders (2018) learning from Newcastle City Futures: https://www.govtechleaders.com/2018/10/01/learning-from-newcastle-city-futures/; (5.5) The Telegraph (2017): https://www.telegraph.co.uk/business/britains-smart-cities/professor-mark-tewdwr-jones-interview/; (5.6) Rising stars: smart cities to watch (2018): https://hub.beesmart.city/strategy/rising-european-stars-eight-smart-cities-to-watch-in-2018.
IMP6: Letter from Digital Newcastle Programme Manager, Newcastle City Council.
IMP7: Letter from the Director of City Futures, Newcastle City Council concerning the role of NCF in the development of the smart city agenda in Newcastle.