Alternative civic architecture: maps of the alternative internet
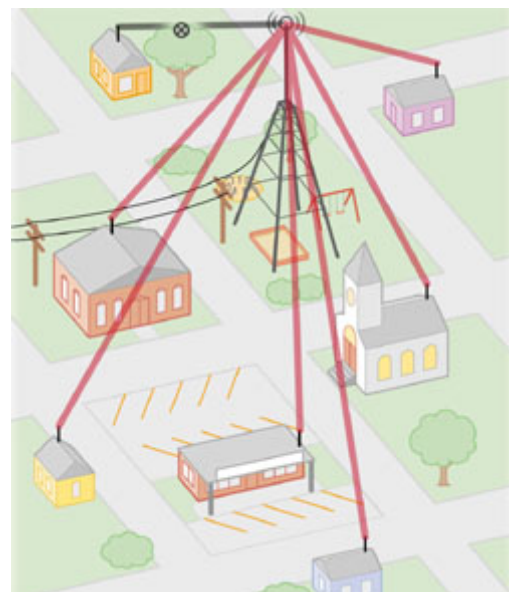
Building wireless networks differently can illustrate different ways of occupying space and organizing access to communications. In this latest post in our alternative internet(s) series, LSE's Alison Powell discusses some of the ways that alternative internets have brought attention to architectural choices about networking, and highlights how these politicizations might be valuable in the age of the top-down "smart city" where corporate infrastructure often combines with centralized control.

Community wireless networks (CWNs) enact alternative "coding" work both through the coded architectures they produce but also via the kinds of social or cultural codes that configure how the wireless architecture is seen as being integrated into the city.

Historically, CWNs demonstrated ways to politicize architectural choices about network structure. Two architectural forms – broadcast and distributed networks – combined with the social structures that developed around CWNs. Broadcast networks require internet connectivity at a central point that is of high enough quality to transmit a signal to receivers in the area, bearing in mind that the radio spectrum used by community wireless networks is of low quality. In contrast, a distributed network architecture, in which wireless routers are linked together, each sharing a portion of their connectivity, suggests a reciprocal, peer-to-peer diagram of civic relationships.

Broadcast networks operate on a hub and spoke design

These different structures imply different relationships between people within the city, and even different conceptual frames for civic relations. In 1999, sociologists Thomas Osborne and Nikolas Rose used the concept of 'diagramming' to describe the relationship between space and government of cities. They wrote, "the vicious immanence of the city is a never-ending incitement to projects of government. Such projects seek to capture the forces immanent in the city, to identify them, order them, intensify some and weaken others, to retain the viability of the socialising forces immanent to urban agglomeration whilst civilising their antagonisms" (738).

We could take these diagrams produced by practitioners of community networks as literal 'diagrams' of cities that propose alternative spatial tendencies by establishing nodes and links that connect different kinds of spaces, some physical and some virtual. We could also use them to help understand the social and relational aspects of local city governance. A 'broadcast lilypad city' might prioritise centres of exchange such as local community centres (used by many CWNs as installation points for wireless broadcast antennae) in keeping with the traditions of social mapping derived from the Chicago School of Sociology in the 1930s, focussing on a knowable city that can be mapped and whose community institutions are of the type that can be immediately recognized – art galleries as opposed to drop-in centres, public libraries as opposed to
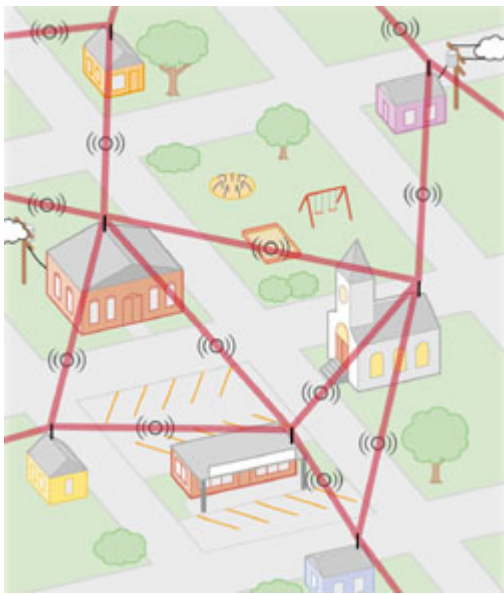
Mesh networks are based on a distributed architecture

temporary learning spaces or mobile bookmobiles. In contrast, a 'distributed, peer-to-peer city' might valorize more informal social links not based around cultural institutions, or the creation of hybrid, commercial/community 'third spaces,' as imagined by Ray Oldenberg.

Spatial engagements: a coded city's alternative diagrams

CWNs reiterate how such diagramming of the city can be a sociotechnical project that links new infrastructures to existing social and spatial practice. For CWN researchers, network architecture both constructs and reflects alternative social and spatial relations, which in some cases is valued above the network architecture being technically robust. In other words, CWNs and their interventions create a way for advocates to talk about and explore what their cities meant to them.

For example, in his report on the Consume network active in London in the early 2000s, Julian Priest argued that attempts to map the location of Consume network nodes was actually more successful as a proxy for measuring the location of geeks living in London, since geeky participants in the Consume project were likely to have wireless network nodes on their personal property. Unfortunately for the 'success' of Consume, the distribution of geeks was concentrated in particular areas of the city, and outside of these areas their density was simply not high enough to create a functioning wireless network. In a 2012 analysis of Adelaide Wireless in southern Australia, Katrina Jungnickel described the messiness of aims to create a meshed network linking individual residences, which by necessity included ad hoc and informal meetings of wireless network creators in backyards and on rooftops. These meetings were social and in addition to helping to create wireless networks they were also places where people could tinker with other technologies (like bicycles).

The extent to which projects oriented around the smart city can produce forms of 'technological citizenship' depends on how citizenship, space and technology are combined. CWNs offered an alternative to technological citizenship based around consumption of ICT connectivity. But this may not be enough, as the very notion of citizenship has now been challenged by the dominant neoliberal political order. Therefore, there is a compelling question about whether peer to peer forms of production can help to address this political lack.

As the technological city shifts from being a place where new innovations are discussed as creating new ways to listen and speak, and towards a place where subjects produce and clients consume data, the alternative modes of techno-social governance sketched here will need to be better developed. In the coming re-iteration of the smart city, who writes the codes? How open will they be and in what way? How will data be able to speak for people's interest? The architectures of WiFi and the augmentations of space they promised have given way to architectures of management of other kinds of information. As these develop and mature we need to examine how they, too, might be governed – and what techno-social alternatives remain.

This article gives the views of the author, and does not represent the position of the LSE Media Policy Project blog, nor of the London School of Economics.

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