

Artists have experimented with wireless forms of communication for most of the past century. Since the invention of radio by Nikola Tesla and Guglielmo Marconi, artists have utilised the radio spectrum as a medium for creative intervention and experimentation.

In his 1932 essay, *The Radio as an Apparatus of Communication*, Bertolt Brecht wrote about the radical potential of radio to become a system of open communication, a method to "let the listener speak as well as hear". The free radio movement and cultural experiments with Mini-FM

and pirate radio attempted to explore the potential of radio as a communicative medium. In the 1980s a number of small radio stations in Tokyo used very low-powered FM transmitters to broadcast to FM listeners over a small geographical area. To expand the broadcast area, some stations set up receiver / transmitter relays. A transmitter would broadcast a few hundred metres in any direction. Its signal would be received by an FM receiver, and then rebroadcast for an additional few hundred metres via another FM transmitter. And so on. This nodal / molecular way of broadcasting enables a relatively large area to be covered using a 'daisy-chained' relay of small transmitter/receiver modules. In this way community radio could be created by small groups of artists, musicians, DJs and activists, who used these transmitter-receiver modules to create operational radio stations. The upsurge of this form of radio is often referred to as the Mini-FM movement.

Despite these and other important cultural experiments, regulations and licensing laws associated with the radio spectrum have ensured that the means to transmit radio has remained by and large in the hands of the few.

Recently a new form of wireless communication utilising the radio spectrum, has emerged as a possible example of the many-to-many media that Brecht, John Cage and others imagined in the 1930s. Wireless internet connectivity, using the radio band, has catalysed the emergence of mobile social networks in cities all over Europe and the United States. Driven by a Brechtian ideal to 'mobilise the user and redraft him/her as a producer', small grass roots groups are attempting to sever artists' reliance on large centrally provided telecommunications structures, and create a new form of communicative mobility.

Wireless internet networks are starting to rapidly blossom in locations all over London, informed by the work of groups such as Consume, Free2Air. These groups act as hubs for research and data-sharing regarding methods to distribute wireless connectivity for cultural and not-for-profit use. The focus of these groups is on 'localising' the global medium of the internet, connecting neighbourhoods together in local area networks, using hundreds of radio antenna and wireless hubs.

Many of the resulting neighbourhood networks operate using similar principals to the mini FM networks of the 1980s. Wireless internet technology uses the radio band to send data signals between transmitting units (a wireless router/antenna) and receiving units (computers equipped with 802.11b cards). Networks are created in small community areas by utilising clusters of interconnecting 'nodes', which often have a dual transmitter/receiver role.

The formal similarity between the kind of free radio practiced by certain Mini-FM stations during the 1980s, and more contemporary social urban wireless networks, presages further resonances between the two systems.