Supporting Community Networks Trough Law and Policy

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netCommons[1]

During the workshop on community networking infrastructures held in Barcelona on June 17th, 2016, I talked about the regulatory hurdles faced by Community Networks (CNs) in Europe, as well as a few potential solutions. Here is the long version of the talk…

For the most part, the following is based on research conducted for an article I co-authored with Primavera De Filippi after interviewing several leading community networks in Europe that use wireless networks to provide Internet connectivity to their members, such as Guifi.net, Freifunk, Ninux or Tetaneutral.net. As we at netCommons start looking into the legal landscape surrounding community networks, I thought it would be useful to provided an updated version to provide a starting point for our research at netCommons.

Regulation creates hurdles for Community Networks

First, it is clear that despite their potential in fostering public interest goals in telecom policy, policy-makers have so far failed to support the efforts of community networks. More often than not, public policy actually puts important hurdles on their way by focusing solely on the needs of big incumbent players.

Exclusion from public networks

The most striking example of such hurdles is the fact that several community ISPs have been precluded from using public broadband networks funded with taxpayers money. In France, many local governments invested in rolling-out fiber networks in both urban and rural areas. These networks built and managed by a private company contracted by the public authority, a company which then lease access to traditional access providers. ISPs then sell their Internet access offers to

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subscribers. Yet, the fee charged to access the network is designed for big commercial ISPs, and is often much too prohibitive for nonprofit community networks. Several French community ISPs in the Federation FDN have been unable to afford such fees, and are being denied access on a preferential basis. There is also an issue of transparency. In at least one reported case, the network operator even refused to communicate the its price listing to an interested CN. In a neighboring country, a community ISPs similarly underlined "the lack of collaboration with public administrations" in securing access to landline infrastructure.

Short-term policies: the case of radio spectrum

Another other connected issue in current telecom policies are short-term policies, many of which can be linked to the issue of what economists call "regulatory capture," that is the fact that regulators and policy-makers listen to and serve those they are supposed to regulate and who have the resources to develop full-fledged lobbying strategies.

Let's look at the issue of spectrum management. Here, as in many other areas, regulatory capture by commercial interests leads to regulatory choices that systematically overlook the potential of more flexible and citizen-centric policies. The allocations the so-called "digital dividend" (i.e. the frequencies left vacant by the switch from analog to digital television) is a textbook case. In France for instance, it was proposed to use part of the spectrum dividend to create new digital TV channels and develop mobile television as well as digital radio (neither of these two technologies has taken off thus far). The remaining half of these "golden frequencies" of the UHF band (sought-after for their long-range propagation) was then auctioned off to telecom operators for their 4G mobile Internet access offers (the lucrative license auctioning took place between October 2011 and January 2012 and brought €3,5bn to the French state). Similar policies have been devised in other European countries.

In the process, one option has never been seriously considered: extending "unlicensed" access to some of these frequencies – that is, effectively turning them into a commons open for all to use. Long thought to be unreasonable because of the risk of radio interferences, opening up the spectrum to multiple, non-coordinated radio users has actually been experimented on a worldwide basis more than a decade ago for the WiFi frequencies. Needless to say, it has proved to be a very wise policy choice. At the time, those frequencies were referred to as "junk bands," because few actually thought they could have valuable applications. It supports about half of the Internet communications worldwide. Even exclusive licensees in the telecom sector providing Internet access over 3G and 4G increasingly resort to WiFi's open spectrum to offload their Internet traffic.

In many regards, though property-based allocations of spectrum and exclusive licensing still have the upper hand, they have often come short of fostering public interest goals, by creating a very significant underutilization of public resource. Moreover, not only does the regulatory focus on exclusive licensing create an enormous opportunity cost by favoring established players over innovative new-entrants (such as CNs), it has even been argued by human rights NGOs that it may actually breach the international law on freedom of expression.

Meanwhile, despite the successes of WiFi and the fact that, as Yochai Benkler has shown, market adption favors open spectrum policies, unlicensed access remains marginal. For CNs, this is worrying considering that they are increasingly victims of the rapid growth of WiFi traffic. For instance, Guifi.net and Freifunk report having a hard-time maintaining the quality of their network in urban areas because of the saturation of the 5GHz frequency bands. In some instances, they theoretically would be allowed to use the other portion of spectrum open to unlicensed uses in the 2,4 GHz band; yet, this constitutes a niche market for manufacturers of radio transmitters, and the gear necessary to deploy wireless networks in these bands is simply too costly for them.

Another issue for CNs is linked to the topography of their environment: WiFi bands have some important technical limitations, in particular in terms of propagation, and signals are easily blocked by tall buildings or trees. In ushc cases, CNs are faced with the choice of either renouncing to create a new radio link in a given location, or push the emission power levels beyond the legal limits to overcome these obstacles. A change in spectrum policy would therefore be much welcome.

New software restrictions on radio equipment

A more recent regulatory challenge for CNs (and many other actors in the radio field) relates to recent change in legislation in both the US and the European Union. In the EU, a directive on radio equipment was adopted in 2014, and is currently being transposed at the national level. Article 3.3 of this directive might put in jeopardy the ability to flash radio hardware with "unauthorized" software (unauthorized by the manufacturer that is). As the Free Software Foundation Europe explains in its analysis, this provision "implies that device manufacturers have to check every software which can be loaded on the device regarding its compliance with applicable radio regulations (e.g. signal frequency and strength). Until now, the responsibility for the compliance rested on the users if they modified something, no matter if hardware- or software-wise."

How does this impact CNs? By shifting the responsibility for legal compliance onto manufacturers, the latter could decide to protect themselves by locking down the device they sell (as is happening in the US). This would prevent CNs from installing custom software on the radio equipment that support their infrastructure. Second, FSFE notes that, anticipating on this legal shift, manufacturers have already "installed modules on their devices checking which software is loaded." According to the organization, "this is done by built-in non-free and non-removable modules disrespecting users' rights and demands to use technology which they can control." There is a fear that such software will evolve towards a built-in spying system checking on the user's behavior or location, which needless to say runs counter to fundamental rights and more generally to the political values defended by CNs.

In the past few months, in Sweden, France, Germany and elsewhere, radio professionals and hobbyists as well as CNs and digital rights group have urged policymakers to ensure that national transposition texts will clarify that radio hardware must remain open to free software and other forms of technical tinkering. Unfortunately, such last-minute advocacy effort might have come too late.

Towards a public policy for the telecom commons

These hurdles already hint at policy reforms aimed at supporting the development of community networks. Here are few other items that should be put on the agenda.

Lifting unnecessary regulatory burdens

First, there is a range of regulations which make CN's work and very existence significantly and often unnecessarily difficult. In a country such as Belgium for instance, the registration fee that telecom operators must pay to the NRA is at 676€ for the first registration, plus 557€ every following year (for those whose revenues are below 1M€). In France, Spain or Germany, it is free, which may explain why the movement is much more dynamic in these countries. Registration procedures could therefore be harmonized at the EU level, and ensure that they are free for nonprofit ISPs.

Promoting open WiFi

Second, several laws seek to prevent the sharing of Internet connections amongst several users by making people responsible (and potentially liable) for all communications made through their WiFi connection. This is the case in France, for instance, where the 2009 three-strikes copyright law against peer-to-peer file-sharing (the infamous HADOPI) also introduced a tort for improperly securing one's Internet connection against the unlawful activity of other users. As a result of such legal rules, many community ISPs who would like to establish open WiFi networks in public spaces, such as parks and streets, refrain from doing so. A case regarding the so-called "secondary liability" of the provider of an open WiFi hostpot currently pending before the EU Court of Justice – the McFadden case – could soon bring useful clarifications.

Expanding the spectrum commons

Third, as I have already suggested, it is not just Internet wireless access points that can be shared, but also, the intangible infrastructure on which radio signals travel. WiFi, as unlicensed spectrum, is a key asset for CNs willing to set up affordable and flexible last-mile infrastructure, but it is currently very limited. In the US, the FCC has initiated promising policies in that field in the past years. But for the moment, the EU has shied away from similar moves.

Yet, in 2012, the EU adopted its first Radio Spectrum Policy Programme (RSPP). During the legislative process, the EU Parliament voted in favor of ambitious amendments to open the spectrum to unlicensed uses. Even if some of these amendments were later scrapped by national governments, the final text still states for instance that "wireless access systems, including radio local area networks, may outgrow their current allocations on an unlicensed basis. The need for and feasibility of extending the allocations of unlicensed spectrum for wireless access systems,

including radio local area networks, at 2,4 GHz and 5 GHz, should be assessed in relation to the inventory of existing uses of, and emerging needs for, spectrum (...)." On mesh networks, it adds that "member states shall, in cooperation with the Commission (...) take full account of (...) the shared and unlicensed use of spectrum to provide the basis for wireless mesh networks, which can play a key role in bridging the digital divide."

In late-2012, as EU lawmakers were finalising on the RSPP, a study (pdf) commissioned by the EU Commission also called for a new 100 MHz of license-exempt bands (half in the sub 1 GHz bands and the other one at 1,4 GHz) as well as for higher power output limits in rural areas to reduce the cost of broadband Internet access deployment. It also warn against underutilization of current spectrum allocations (by the military, by incumbent operators, etc.). Since then, however, EU work on unlicensed spectrum and more flexible authorization schemes more accessible to community ISPs has stalled. A the national level too, save for a few exceptions, concrete steps have been virtually non-existent.

Open access to public networks

Fourth – and this also relates to what I was explaining before –, networks built with taxpayers money could also be treated as a commons, and should, as such, remain free from corporate capture. Regulators should ensure that nonprofit community networks can access publicly-funded and subsidized physical infrastructures without unnecessary financial or administrative hurdles. Accordingly, they should review existing policies and current practices in this field, providing transparent information to map publicly-funded networks, and mandate rules to allow for grassroots, nonprofit ISPs to use these on a preferential basis.

Offering targeted, direct public support

Of course, countless other policy initiatives can help support grassroots networks, such as small grants and subsidies to help these groups buy servers and radio equipment, communicate around their initiative, giving them access to public infrastructures (for instance the roof of a church to install and antenna), but also to support their research on radio transmission, routing methods, softwares or encryption. Like Guifi.net, the most successful of these groups suggest that even little governmental support – either municipal, regional or national – can make a big difference in their ability to successfully accomplish the ambitious objectives they set for themselves.

Inviting CNs to the policy table

But all of these policies point to an overarching issue, namely the need to democratize telecom policy and establish procedures that can institutionalize "subversive rationalization" in this fieldFr. In some countries, regulators have already started to reach out to community networks. In Slovenia, on one occasion, Wlan-SI was asked to contribute to policy discussion on a piece of telecom legislation. In Greece, the Athens Wireless Metropolitan Network has also been invited by the NRA to respond to consultations and in France, FFDN has sometimes been convened to technical meetings. However, save for a few exception (like the Net neutrality provisions introduced in

Slovenian law in late 2012), their input has so far never translated into actual policies. Then, in many other countries, such as Italy, even though city councils may occasionally actively support these organizations to the extent that they provide better Internet access to their citizens, regional governments and national regulators have so far largely neglected them. Finally, at the EU level, where much of telecom regulation applicable in Europe is ultimately crafted, community networks are virtually absent of policy debates.

Given the revival of CNs in the past years, it is not enough for regulatory authorities to treat citizens as mere consumers by occasionally inviting consumer organizations at the table. Regulators and policy-makers need to recognize that the Internet architecture is a contested space, and that citizen groups across Europe and beyond show that for the provision of Internet access, commons-based forms of governance are not only possible but that they also represent effective and viable alternatives to the most powerful telecom operators. What is more, their participants have both the expertise and legitimacy to take an integral part in technical and legal debates over broadband policy in which traditional, commercial ISPs are over-represented. They can bring an informed and dissenting view to these debates, and eventually help alleviate regulatory capture and allowing for policy-making to be more aligned with the public interest.

Of course, a potential problem is the fact that these are often run by volunteers whose lack of time and resources may sometimes make it difficult form them to participate as actively as the full-time and well-resourced lobbyists of incumbent operators. But overtime, as the movement grows, it may be able sustain its engagement with public authorities, especially if the latter adapts and establish *ad hoc* contact channels and remote participation mechanisms.

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Twenty years after the privatization of national networks in Europe, there is certainly a long way to go for telecom policy to balance the interests of all various stakeholders. But it is clear that community networks have an important role to play in this process. As we move forward with the netCommons project, I hope we can help the policy debate move in that direction.