

netCommons
Network Infrastructure as Commons

netCommons Political and Ethical guidelines for an Alternative Internet

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Executive summary

This deliverable D4.4 puts forward political economy and policy guidelines, which can contribute to fostering an alternative Internet that is more participatory, co-operative and community-oriented. The two sets of guidelines build on ethics discussed in Chapter 2, and on [netCommons D5.4 \(Aug. 2018\)](#), [netCommons D4.1 \(Dec. 2016\)](#), [netCommons D4.2 \(Jan. 2018\)](#), and [netCommons D4.3 \(Aug. 2018\)](#).

netCommons implicitly assumes that it is good to advance and supply network commons. Two questions derive:

1. How can network commons and digital commons be ethically justified?
2. Why is it morally good to advance the commons and digital commons?

The answer to these questions lies within the domain of computer ethics, as Chapter 2 explains. Computer ethics discusses moral questions that concern computer technology and tries to formulate principles that can be used for reflecting on how digital resources (infrastructures, software and content) should, or should not, be used. Community networks supply access to communication and computing infrastructure as a common good. They are thus classifiable in a generic way as a digital common, although they differ substantially from traditional digital commons in that they are considered infrastructures that not only create and store, but also process, handle, and transmit information.

The commons and the digital commons are applications of the notion of the “common good”. In ethics, this notion has been especially discussed in virtue ethics, an approach that goes back to Aristotle. For Aristotle, the common good has to do with sharing. Alasdair MacIntyre, the most well-known contemporary Aristotelian philosopher, relates Aristotle’s notion of the common good to the notion of communication. The means of communication (including computers and computer networks) mediate human communication. How they are organised and governed is an important moral question for contemporary information societies. In network commons, the ownership, control and decision-making of digital networks are shared in a community. Furthermore, the community shares the common moral value that network commons are an important way of organising digital infrastructures. Thus the network commons are an expression of moral virtues such as benevolence, generosity, altruism, sociability, camaraderie, friendship, and co-operation. Commons-based peer production, such as setting up and participating in community computer networks, is a way of advancing a good society by fostering Aristotelian virtues.

Chapter 3 uses the main conclusions of Deliverable 5.4 (the survey of 1000 users and their Internet-related concerns) and engages with the current picture of the Internet. The Internet, we argue, is contradictory: although it contains elements of the commons, it is dominated by the principles of commodification and commercialisation, monopoly structures, and non-transparent privacy-unfriendly processes in handling user information. Next, this section introduces the policy workshop organised and conducted at the University of Westminster on 15 May 2018, which brought together a number of stakeholders to discuss political economy and legal aspects of the current and an alternative Internet, the place of CNs in it, as well as the opportunities and limits for/to change.

Chapter 4 presents the political economy guidelines by building on the main aspects of the discussions carried out during the workshop, and by making links with the philosophical discussion on digital ethics, and the pragmatics and structural constraints that hinder the digital commons. Likewise, Chapter 5 builds on D4.1, D4.2, and D4.3 and presents a set of legal and regulatory guidelines as to how some of the ethical prerogatives can be encased in legal developments.

Compacting the guidelines down to a bullet list they can be summarised as follows:

Economic:

- Connectivity and access to resources for all should be guaranteed, together with challenging Internet monopolies and fostering diversity at the layers of applications and services,
- Users and communities should be involved in the definition of their information and communication needs, and the design of relevant technologies (services, applications);

Political:

- Internet access and provision of network services should respect the protection of the privacy of users' data, and provide opportunities for active user involvement in the management of their data, as well as the necessary skills for such involvement,
- The public sector should have an important role in Internet investment, Internet regulation, as well as in ensuring that mechanisms for learning, education, engagement and training of citizens are available;

Cultural:

- Internet access and provision of network services should be underpinned by a community culture, which provides mechanisms for recognition, respect, diversity and common learning through commons-based peer production;

Legal/Policy:

- Community Networks should be invited to the policy table,
- Unnecessary regulatory and financial burdens for Community Networks should be lifted,
- Civil and criminal liability for people sharing Internet access should be limited,
- The spectrum commons should be expanded,
- Open-access rules on private and public telecom infrastructures should be updated,
- Free software and user freedom in radio equipment should be protected,
- Other measures supporting the development of Community Networks should be explored.

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List of Acronyms

ADSL	Asymmetric Digital Subscriber Line
B4RN	Broadband for the Rural North
BT	British Telecommunications Public Limited Company
CN	Community Network
DoA	Description of Action
EC	European Commission
EECC	European Electronic Communications Code
EU	European Union
FFDN	Federation French Data Network
FLOSS	Free/Libre Open Source Software
FTTH	Fiber-To-The-Home
GDPR	General Data Protection Regulation
HAT	Hub of All Things
INCA	Independent Networks Cooperative Association
ISP	Internet Service Provider
LTE-U	Long Term Evolution – Unlicensed
MEP	Member of the European Parliament
NRA	National Regulation Authority
SLA	Service Level Agreement
UNHCR	United Nations High Commission for Refugees
VSD	Value-Sensitive Design

1. Introduction

This deliverable proposes two sets of guidelines that stem from the research and analysis carried out in the past two years:

- New political-economy based policy and ethical guidelines that can help foster a participatory, co-operative and community-oriented Internet in the context of a sustainable and fair participatory information society supportive of societal innovation processes;
- Policy recommendations towards EU and member-states legislations that they should facilitate, not impede, the development of CNs. These include a number of dimensions –from liability, to spectrum policy, to legal requirements for telecom operators such as data retention and privacy policies– that are apt to the specific needs and values of grassroots networks.

The deliverable has two main inputs:

- First, the results and conclusion of [netCommons D5.4 \(Aug. 2018\)](#) on the concerns of 1000 competent users regarding their Internet engagement and mediation of their information and communication needs. The results of this survey were presented to a policy workshop organised by netCommons in M29, where a number of different stakeholders related to the Internet generally and the commons and Community Networks (CNs) in particular have come together to discuss and debate on the principles, shapes and forms of an alternative Internet. The workshop has informed this deliverable towards the reunion of the two outputs of the deliverable through the production of a number of ethical recommendations to policy-makers to promote an alternative Internet, namely one that is more oriented towards the commons and is more democratic, participatory and community-based;
- Second, other deliverables of Work Package 4, led by CNRS and to which UoW and Trento University contributed. That Work Package mapped out clearly the legal environment of Community Networks and helped identify recurring hurdles across European jurisdictions. It was complemented by [netCommons D5.1 \(Dec. 2016\)](#) and [netCommons D1.5 \(Feb. 2018\)](#) which looked at the policy challenges faced by alternative communication network across history and documented the political advocacy actions that European Community Networks engaged in over the past few years. This official netCommons material leading to policy guidelines was refined and developed through collaboration with other partners (Chapter 5 offers an overview of this process). In particular, the experience with CNs during the project, and the interaction with their members, allowed to shed light on specific needs that would be otherwise difficult to perceive and granted a proper intertwining of the socio-legal aspects with the constraints and possibilities offered by technology.

Structure of the deliverable

Chapter 2 approaches philosophically the issue of ethics in digital space by drawing on Aristotelian ethics and its application to the digital sphere through the promotion of the theory of the digital commons. Section 2.1 digs into the history of ethical foundations and morality to understand the need for the common good. Readers well versed in philosophy, or already convinced of the ethical goodness of the commons, can well just read the summary of this Chapter.

Chapter 3 engages with the current picture of the Internet, which is argued as contradictory, containing elements of the commons but also being dominated by the principles of commodification and commercialisation, monopoly structures, and non-transparent dominant procedures in handling user information, with severe pri-

vacy consequences; in doing so it elaborates on some of the conclusions of deliverable D5.4, i.e., the survey of 1000 users and their Internet-related concerns. This serves as input to the policy workshop organised and conducted at the University of Westminster on 15 May 2018, which brought together a number of stakeholders to discuss political economy and legal aspects of the current and an alternative Internet, the place of CNs in it, as well as the opportunities and limits for/to change.

Chapter 4 presents the content of the discussions carried out during the workshop at M29 and consequent to the Internet survey. These are structured so that links can be made between the philosophical discussion on digital ethics and the pragmatics and structural constraints that hinder the digital commons. The intention is to come up with a set of political economy-based policy recommendations for a more ethical Internet.

Chapter 5 backs these up with a set of policy guidelines, which are translated into legal and regulatory measures encasing some of the ethical prerogatives. In doing so, it helps to liaise ethical and policy principles. The Legal and Policy guidelines deriving from this deliverable have been released in November 2018 as a self-standing document entitled "Enabling the Telecommons: Guidelines for Policy-Makers"¹, and they were presented by the netCommons team during a panel at the Internet Governance Forum on November 12th, in Paris and featured in a blogpost on the London School of Economics "Media & Policy" project blog.²

Chapter 6 concludes with a concise presentation of the guidelines, organised together as a whole, and makes links with the overall netCommons project.

¹<https://netcommons.eu/?q=content/netcommons-guidelines-telecom-policy-makers>

²<http://blogs.lse.ac.uk/mediapolicyproject/2018/11/27/eu-telecom-reform-paves-way-for-policies-tailored-for-community-networks/>

2. The Ethics of the Commons

In network commons, such as CNs, aspects of the commons include “*the openness of access to the infrastructure (usage)*”, “*the openness of participation*” (construction, governance, maintenance, evolution, goals) in the “*development of the infrastructure and its community*” netCommons D1.2 (Sept. 2016). “*When these fundamental principles are applied to an infrastructure, they often result in networks that are collective goods, socially produced, and governed as common-pool resources. Thus, a CN could be viewed as a collective good or a peer property, in which participants contribute and share their efforts and goods (routers, links, and servers) to build a computer network*” netCommons D1.2 (Sept. 2016). “*CNs represent an emerging kind of community organization engaged in producing ‘commons-based resources’, based on the creative adoption of new technologies of communication by emerging collectives of citizens and organisations who pool their resources and coordinate their efforts. Even if community networks are a relatively new phenomenon (two decades), they reflect ideals and political beliefs about the engagement of citizens in the civil society developed in the course of a long history of grassroots community organizing in Europe and United States. [...] CNs are distributed infrastructures usually built and self-managed by grassroots organizations of people, including hackers, geeks, engineering students, political activists and citizens. These networks are oriented to strengthen the access to a neutral network for digital communication, which is conceived by its developers as a political alternative to the global business-oriented governance of Internet*” netCommons D1.3 (June 2017).

These analysis employ terms such as participation, commons, engagement, or grassroots that have a philosophical and ethical foundation, forming one of the foundational aspects of the netCommons project, but so far these elementary aspects have been simply given for granted, without a proper discussion and a framing into a comprehensive theoretical structure. We therefore need this reflection on ethics in order to answer the question: **Why is it important to advance network commons?**

The network commons are digital commons at the level of technological infrastructure. But digital commons also exist at the level of software Free/Libre Open Source Software (FLOSS) and digital content (e.g., Creative Commons). The digital commons is a term that can extend to a range of digital resources, namely network infrastructures, software and digital content. When one speaks of all three levels together, then one can speak of the “digital commons” or “common digital resources”. A general ethics of the digital commons covers all three levels, and includes applicability of philosophical insights to network commons.

Ethics is besides metaphysics, ontology and aesthetics one of the subfields of philosophy. It is a philosophy of morality. “*The field of ethics (or moral philosophy) involves systematizing, defending, and recommending concepts of right and wrong behaviour*” Fieser (2018). “*In order to gain knowledge about what to do in a practical situation we need true or reasonable moral principles to apply to the case under scrutiny*” Tännsjö (2013), p. 4. Morality refers descriptively to “*certain codes of conduct put forward by a society or a group [...] , or accepted by an individual for her own behaviour*” and normatively to “*a code of conduct that, given specified conditions, would be put forward by all rational persons*” Gert and Gert (2017).

Some form of morality underlies all research. It motivates research themes of academic projects, studies, articles, talks, events, debates, etc. The netCommons project deals with CNs, a form of network commons. The basic moral assumption all of netCommons researchers, the CNs members we have interacted with, the Advisory Board Members, and the same European Commission (EC) that funded the project based on its Description of Action (DoA) do is that network commons are morally good and should be advanced. From a philosophical point of view, netCommons therefore needs to ask (and possibly answer): How can network commons and the digital commons be ethically justified? Why is it morally good to advance the commons and the digital commons? Why does the community of digital commoners, those who find the digital commons

(including network commons) define and justify advancing the digital commons as important normative code of conduct? If we know why the commons are morally good and what arguments can be used for justifying their importance, then we obtain foundations of how to justify the merits and significance of specific digital resources, especially Community Networks.

Section 2.1 outlines some foundations of ethics of the commons. Section 2.2 relates the notion of communication to the commons. Section 2.3 discusses the ethics of the digital commons. Section 2.4 draws some conclusions on this discussion.

2.1. Ethical Foundations

What is Computer Ethics?

Justifying why digital and communication ethics is a task for computer ethics. But what is computer ethics? It is a philosophical field of study where ethics, communication studies and computer science intersect. Norbert Wiener, Donn Parker, Joseph Weizenbaum, and Walter Maner were some of the early pioneers of computer ethics Bynum (2001). For Maner (1980), computer ethics studies how computer technology aggravates, transforms or creates ethical problems.

James Moor argues that computer ethics deals with the question of “*how computer technology should be used. Computers provide us with new capabilities and these in turn give us new choices for action. Often, either no policies for conduct in these situations exist or existing policies seem inadequate. A central task of computer ethics is to determine what we should do in such cases, that is, formulate policies to guide our actions*” Moor (1985), p. 266. Computer ethics studies computing’s “*complex social, ethical, and value concerns*” Johnson (2004), p. 65. Computer ethics is “*the analysis of the nature and social impact of computer technology and the corresponding formulation and justification of policies for the ethical use of such technology*” Moor (1985), p. 266. Internet ethics (sometimes also termed cyberethics, a term that today sounds somewhat opaque) is about metanorms that guide “*acting well in this new realm of cyberspace*” Spinello (2010), p. 2; see also Ess (2013) and Tavani (2011).

Three Forms of Ethics: Virtue Ethics, Deontology, Consequentialism

Virtue ethics, deontology, and consequentialism are three major approaches in ethics Fieser (2018). One can attempt to justify the moral superiority of digital commons over digital commodities based on any of these and other approaches (see Table 2.1). In this deliverable, the focus is on Aristotelian virtue ethics, because the common interest and the common good play a key role in Aristotelian approaches, which resonates with the analysis of the digital common’s ethical foundations. For Aristotle, the common good is the collection and unity of a range of different common goods. The common good means a general organisation of life that benefits all in a community. A particular common good is a particular organisation of an aspect of life so that all members of the relevant community benefit.

Virtue Ethics: Aristotle

Virtue ethics goes back to Aristotle. It deals with how to achieve and design education that brings about moral beings that act in manners that bring about happiness and a good society. For Aristotle (2002), a virtue is “*an active condition that makes one apt at choosing*” (§ 1007a) between options so that society can achieve “*what is best and what is done well*”. Virtues pertain “*either to thinking or to character*” (§1103 a) and have to do with “*living well and acting well*” (§ 1098b) so that happiness is advanced. Aristotle (2013b) (§§ 1220b-1221a) identifies fourteen virtues: mildness, courage, shame, temperance, righteous indignation, justice, liberality, truth, friendliness, dignity, endurance, magnanimity, magnificence, prudence.

Approach	Description	Application to the digital common
Virtue ethics	This approach says that humans should strive for and practice moral excellence in order to create a good individual and community life. It therefore argues for moral education in the development of virtues such as wisdom, courage, temperance, justice, fortitude, generosity, self-respect, good temper, or sincerity.	Fostering digital commons is the realisation of the virtue of creating the common good in the digital sphere.
Deontology	Humans have individual rights and duties that should guide their behaviour. Kant's Golden Rule: Treat others like you want to be treated by others.	If one expects to access digital resources created by others as commons, then one should create, organise and govern as commons the digital resources one is involved in.
Consequentialism	An action is morally right or morally preferable over another action if its consequences produce more good than harm in comparison to other actions.	If advancing digital commons produces better consequences and outcomes than fostering private or public goods in the realm of the digital, then a specific digital resource or practice should be organised as common good.

Table 2.1: The application of three ethical approaches to the digital commons.

Deontological Ethics: Kant

Deontology has to do with duties. The term “deontology” comes from the Greek word *δέον* that means duty. It is a kind of ethics that does not focus on the consequences of action, but on the question of whether those acting have the right kind of motives. It wants to identify principles that guide moral action. Immanuel Kant is the most well-known representative of deontological ethics. He based the development of his moral philosophy on the German philosopher Samuel Pufendorf. Kant's ethics is based on an absolute rule that is termed the Golden Rule. It says: Treat others like you want to be treated by them.

“Act only according to that maxim by which you can at the same time will that it should become a universal law. [...] Act as though the maxim of your action were by your will to become a universal law of nature. [...] So act that you use humanity, whether in your own person or in the person of any another, always at the same time as an end, never merely as a means” Kant (2012), pp. 71–87.

The Golden Rule is an absolute ethical principle. It understands itself as a rule of conduct applicable to any situation. For Kant, the Golden Rule is the embodiment of freedom and a principle for advancing freedom. Jürgen Habermas (2008), p. 140, argues that Kant's categorical imperative is reflected in the insight that freedoms are only limited by the freedom of others. Habermas (2011), p. 14, says that Kant's principle of autonomy and his categorical imperative is present in the first paragraph of the Universal Declaration of Human Rights': “*All human beings are born free and equal in dignity and rights*”.

The Golden Rule fails in situations where people are willing to suffer, tolerate violence against themselves, or die if they were in the positions of others. Kant's ethics is transcendental in the sense that it is grounded in the category of freedom as the highest and absolute principle. For Kant moral freedom means that humans resist their instincts and desires and hence restrict absolute freedom of action by giving themselves rules of conduct that enable true freedom. The Categorical Imperative is considered as an expression of freedom, good will would be oriented on freedom. Another absolute rule is the Rule of Golden Mean by Aristotle which says that happiness can be found by choosing the middle way between extremes.

Consequentialism: Bentham

Consequentialism is a form of ethics, in which the moral rightness or wrongness of an action is determined by its consequences. An action is morally right if, on the whole, its consequences are more positive than negative. Jeremy Bentham's utilitarian ethics is the best-known version of consequentialist ethics.

For Bentham (2000), utility has to do with pain and pleasure (p. 14). Action can “*augment or diminish the happiness of the party whose interest is in question*” (p. 14). Bentham considers an action morally good if it increases the happiness for the largest number of people in a community. “*The general tendency of an act is more or less pernicious, according to the sum total of its consequences: that is, according to the difference between the sum of such as are good, and the sum of such as are evil*” (p. 61). He gives a utilitarian definition of ethics: “*Ethics at large may be defined, the art of directing men's actions to the production of the greatest possible quantity of happiness, on the part of those whose interest is in view*” (p. 225). “*Now private ethics has happiness for its end: and legislation can have no other. Private ethics concerns every member, that is, the happiness and the actions of every member, of any community that can be proposed; and legislation can concern no more*” (p. 227).

A common criticism of consequentialism is that it violates equality and personal rights and can advance inhumanity: Consequentialism “*is not egalitarian because it does not care whether happiness is distributed equally or unequally among people. If the greatest total can be created only by exploiting the miserable to make the happy even happier, then such consequentialism would seem to say that you should do it. [...] Consequentialism may ask us to meddle too much into other people's business. [...] suppose that by using your grandmother's pension to contribute to efficient and thoughtful charities you can develop permanent clean water supplies for many distant villages, thus saving hundreds of people from painful early deaths and permitting economic development to begin. You need only keep her bound and gagged in the cellar and force her to sign the checks. Consequentialism would seem to say that you should do this, but moral common sense says that you should not. [...] Consequentialism seems to tell us to make all our decisions by thinking about overall consequences. But that way of thinking about life is, one might think, inhuman and immoral. When someone asks you a question, you should not stop to calculate the consequences before deciding whether to answer truthfully. If you decide by looking to the consequences, you are not really an honest person*” Haines (2018), § 3.c.

The Common Good

In ethics, the concept of the common good is the one that stands closest to the notion of the commons. Therefore, if we want to ethically justify commons and digital commons, then the notion of the common good is the right philosophical starting point.

John Rawls defines the common good as “*certain general conditions that are in an appropriate sense equally to everyone's advantage*” Rawls (2009), p. 217. Why should one care about the common good? “*Many philosophers believe that there is something morally defective about a private society¹. [...] [The] members of a political community have a relational obligation to care about their common affairs, so the fact that they are exclusively concerned with their private lives is itself a moral defect in the community. [...] A conception of the common good provides us with an account of what is missing from the practical reasoning of citizens in a private society, and it connects this with a wider view about the relational obligations that require citizens to reason in these ways. [...] Members of a political community stand in a social relationship, and this relationship also requires them to think and act in ways that embody a certain form of mutual concern. The common good defines this form of concern*” Hussain (2018).

The “*common good has played an important role in Western political thought since its beginnings in ancient Greece*” Jade (2018), p. 5. Philosophers who wrote about the common good include Plato, Aristotle, Thomas Aquinas, John Locke, J.J. Rousseau, Adam Smith, G.W.F. Hegel, John Rawls and Michael Walzer (see Hussain

¹By a private society, Rawls means a society, in which humans enter social relations in the economic and political world primarily in order to gain personal advantages, i.e. to advance their personal interest.

(2018), Jade (2018)). Aristotle is “*a foundational thinker*” of the common good (Jade (2018), p. 2). Given this foundational character and importance of Aristotle for thinking about the common good, it makes sense to take a closer look at the Aristotelian concept of the common good.

Different Concepts of the Common Good

Hussain (2018) distinguishes between joint activity, and private individuality conceptions of the common good. The first argue that members of a community have common interests that arise from their membership of and joint activities in the community. Representatives include Plato, Aristotle, Charles Taylor, or Michael Sandel. Private individuality theorists of the common good argue that members of a political community have an interest to guarantee certain common goods (such as liberal freedoms, democracy, the rule of law, internal and external defence) in order to lead lives as private individuals. Representatives are for example Jean-Jacques Rousseau, Adam Smith, Georg W.F. Hegel, John Rawls, or Michael Walzer.

The first approach is more social, communal and collectivist, the second liberal-individualist. Knight (1998) further differentiates these two approaches to the common good into communitarianism, liberalism, and Aristotelianism. He sees Aristotelianism not as a form of communitarianism, but a particular form of ethics that is opposed to both communitarianism and liberalism. In the same book on moral theory, MacIntyre argues that the common good can be defined either as the end of community members’ “*shared activities*” (p. 239), or as the sum of individual goods in an association (pp. 239–240), or as activities in a polis, where individual and common goods are inseparable (p. 241). For MacIntyre, both the first (communitarian) and the second (liberal) concepts fail. He argues that in the modern state, the liberal individualist and minimalist understanding of the common good comes into conflict with the social good that is based on a communitarian concept of the common good. This means that the individualist maximisation of self-interest can undermine the social good. MacIntyre recommends setting-up “*a community of enquiry and learning*” (p. 251). He thereby means a community whose knowledge and development is dynamic. It empowers the learning and curiosity of its members and also learns and develops as a community itself through empowering its members and cohesion and synergies emerging from the interactions of the community members.

Aristotle’s Notion of the Common Good

Aristotle analyses the commons in the context of the virtues of friendship and justice: “*To whatever extent that they share something in common, to that extent is there a friendship, since that too is the extent to which there is something just. And the proverb ‘the things of friends are common’ is right, since friendship consists in community*” Aristotle (2002), § 1159b. The “common advantage” is called “just” (§ 1160a). Democracies in contrast to tyrannies advance the common good: “*So friendships and justice are of small extent in tyrannies, but in democracies they are of greater extent, since many things are common to people who are equal*” (§ 1161b).

Aristotle (2002) discusses the violation of the common good in the context of the virtue of generosity. It “*is not characteristic of someone who does good for other to have a ready hand for taking benefits from them*” (§ 1120a). Wasteful people are stingy in that “*they are driven to provide for themselves from other sources*” (§ 1121a). They “*take money carelessly and from everywhere*” (§ 1121b). Aristotle discusses justice and injustice in book V of the Nicomachean Ethics Aristotle (2002). He stresses that justice can either be understood as that which is lawful or that which is equitable, but that the two are different things. The unjust person is “*greedy for more*” (§ 1129b). If “*one makes a profit, it is referred to no vice other than injustice*” (§ 1130a). Aristotle distinguishes between distributive, corrective, reciprocal and universal justice (that advances the common good) McCarthy (1990), chapter 2. Justice and injustice are for Aristotle matters of proportionality and dis-proportionality. An “*unjust person has more, while the one to whom injustice is done has less of something good*” Aristotle (2002), § 1131b. Injustice means that someone has “*an excess for oneself of what is simply beneficial and a deficiency of what is harmful*” (§ 1134a). So, Aristotle argues that injustice means that a certain individual, group or groups has a kind of exclusive control of a good over others.

Aristotle (2002) not just opposes injustice to justice, but also to friendship and love, which are social relations where humans benefit and do good things for others without instrumental interests. The common arises from friendship and community: In “*every sort of community there seems to be something just, and also friendship*” (§ 1159b). The political community aims at an advantage “*that extends to all of life*” (§ 1160a). Aristotle (2013a), (§ 1279a) terms a community where “*the multitude governs with a view to the common advantage*” a **polity**, a term that in modern English identifies any form of political organization.

Aristotle (1999) (§ 1048a) sees potentiality as being “capable of something” and being “capable of causing motion”. Potency is also the source of dialectic because whatever is potential “*is itself capable of opposite effects*” Aristotle (1999), § 1051a. In a good society, the full potentials of human beings and society are actualised. In essence, humans are co-operative, social, societal beings, who strive for solidarity and a good life. A particular societal condition enables or hinders the realisation of society’s and human potentials. The commons are conditions that aim at the realisation of societal and human potentials.

In an Aristotelian view, the commons are goods that all humans require in order to live a good life. The good life of the individual is only possible in a good society that enables the good life for all. Achieving a good society that benefits all requires the common good. Without being able to live a good life, humans are not fully developed humans and they are denied those common goods that humans and society require to flourish and thereby realise their potentials.

Alasdair MacIntyre: A Contemporary Aristotelian Version of Common Good Theory

Alasdair MacIntyre is the leading representative of contemporary Aristotelian ethics. Knight (1998) understands the common good as a “*community in which each individual’s achievement of her or his own good is inseparable both from achieving the shared goods of practices from contributing to the common good of the community as a whole*” (pp. 240–241). The common good needs to take into account politics (the polis as political community), culture (common learning), and the economy (common production, common ownership, common access).

MacIntyre (2016) gives a range of examples for work towards the common good at the local level. “*The common good of those at work together are achieved in producing goods and services that contribute to the life of the community and in becoming excellent at producing them*” MacIntyre (2016), p. 170. Family members “*pursue their goods as family members by enabling the other through their affection and understanding to achieve her or his goods. Parents pursue their goods as family members by fostering the development of the powers and virtues of their children, so that those children may emerge from adolescence as independent rational agents*” (p. 169). In schools, teachers “*achieve their own good qua teachers and contribute to that common good by making the good of their students their overriding good, while their students contribute to the shared education of their class by their class participation, so achieving their own good*”.

MacIntyre (1999), p. 156, argues that we can only achieve the common good if our “*social relationships of giving and receiving*” are governed by “*social and political forms*” that advance the common good. He argues that three conditions must be fulfilled:

1. Institutionalised forms of deliberation are needed so that “*shared rational deliberation*” allows taking common decisions;
2. Justice needs to be enabled so that each is working and giving “*according to her or his ability*” and each receives “*so far as is possible, according to her or his needs*” (p. 130), which would have to especially take into account “*those who are are most dependent and in most need of receiving –children, the old, the disabled*” (p. 130);
3. everyone should “*have a voice*” in the community (p. 130).

Taken together, such a concept of the commons stresses the political commons (participation and democracy in decision-making), the economic commons (wealth and self-fulfilment for all), and the cultural commons (voice and recognition of all).

2.2. Communication: A Common Aspect of Humans

Humans as Communicative Beings

MacIntyre (2007), chapter 15, argues in *After Virtue* that the unity of human life can only be obtained through conversations that create social relations. This is just another formulation for saying that humans are communicative, social beings. MacIntyre (2016), p. 26, argues that human language has four crucial features: i) It enables reflection and justifications, ii) It enhances the communication of intentions and responses, iii) It makes envisioning alternative futures possible, and iv) It allows narrating stories (pp. 26–27). Language enables humans to pose ethical questions about what is good (p. 225).

Language has syntactic (form, rules), semantic (meaning, content) and pragmatic (effect, purposeful use in social contexts) aspects. Through communicative social relations, humans learn to evaluate, modify and reject their judgements MacIntyre (2016), p. 83) and to reflectively organise desires and the quest for wants and needs in order to achieve a variety of goods (p. 96). Humans are therefore moral beings that live through communication: “As a practical reasoner, I have to engage in conversation with others, conversation about what it would be best for me or them or us to do here and now, or next week, or next year” (pp. 110–111). To achieve the common good, humans need to co-operate, not just communicate (p. 114). Michael Tomasello (2010), based on evolutionary psychology, confirms this insight that co-operation is a key factor of humans that allows them to develop.

Humans strive to achieve individual and common goods by reflective and anticipatory judgement, learning through communicating judgements, practically enacting and modifying their judgements in everyday life, and working together with others. Given that humans are story-telling beings, they can learn “to live against the cultural grain” and “to act as economic, political, and moral antagonists of the dominant order” from “the stories of those who in various very different modern social contexts have discovered what had to be done, if essential human goods were to be achieved, and what the virtues therefore required of them, so making themselves into critics and antagonists of the established order” MacIntyre (2016), p. 238.

Humans are rational, ethical, communicating, producing, social and societal beings who try to achieve a good life. In this context, Aristotle (2013a), § 1253a, argues that there is a connection of speech, ethics, and community. Etymologically, there is a connection of community and communication that goes back to the Latin words *communitas* and *communis*.

The Good Society

Aristotle saw that there is an inherent connection of the commons, communication and community. Communication creates common meanings and definitions within a community. The desire for a good life is a common feature of all humans. But given that humans are social beings living in society, the good life cannot be achieved individually, but only collectively, socially and politically. I can only lead a good life if all are enabled to lead good lives. A good society is for Aristotelians a society where humans control the economic, the political and the cultural system, goods and structures that together form society in common so that everyone is empowered to lead a good life. A good society is a society of the commons.

Aristotle and MacIntyre stress that a good society that enables the happiness of all cannot be achieved individually, but only through human communication in social relations. Humans depend on each other and they mediate and organise this dependence through communication. Organising the means of communication –including communication networks– not as monopolies controlled by single companies, but by a whole community that commonly controls, owns, organises, governs, communicates and lives in these networks, is the best way for enabling everyone in a community to have access to communication channels that support communication with other community members. Governing communication networks as commons enables wide access to communication capacities. Common access and common governance of communication channels also needs to be combined with the ethical imperative that these networks should be used in manners that benefit everyone. Es-

establishing happiness and a good society presupposes communication in a community. Governing the means of communication as a commons is a condition that enables moral communication and supports the achievement of a good society.

2.3. Digital Communications and the Common Good

Benkler and Nissenbaum on the Virtue Ethics of Commons-Based Peer Production

In the realm of digital communications, one can govern computer networks/infrastructure, software and content as commons. What Benkler (2006), p.60 terms ‘commons-based peer production’ can operate at all three levels. Benkler and Nissenbaum (2006), p.414, argue that “*commons-based peer production is an instance of an activity that not only enables the expression of virtuous character but serves as a training ground for virtue*” and “*holds the potential to add to the stock of opportunities for pro-social engagement*”. They use virtue ethics for discerning four clusters of virtues that motivate commons-based peer production. The first two clusters focus on the development of the commoners’ self (self-regarding virtues), the third and the fourth on the development of others (social virtues):

Virtue cluster 1: Autonomy.

“Participation in peer production constitutes an arena of autonomy, an arena where they [the commoners] are free to act according to self-articulated goals and principles” Benkler and Nissenbaum (2006), p. 405;

Virtue cluster 2: Creative production.

“Peer production opens up new avenues for creative, productive practices. [...] peer production offers a medium for contributing our thoughts, our knowledge, our know-how [...] to a meaningful product,” p. 406.

Virtue cluster 3: Benevolence, charity, generosity, altruism.

Peer production is often motivated by “*the pleasure or satisfaction of giving –generosity, kindness, benevolence,*” p. 408.

Virtue cluster 4: Sociability, camaraderie, friendship, co-operation, civic virtues.

Peer production means the virtue of giving “*to a commons, a community, a public, a mission, or a fellowship of which the giver is a part*”, “*to be part of a collective effort*”, and “*to give or produce something of value to all,*” p. 408.

Alasdair MacIntyre and the Digital Commons

Benkler and Nissenbaum argue based on MacIntyre (2007), p.213 that humans face structural constraints, which in the context of commons-based peer production means that “*incumbent firms*” Benkler (2006), p. 418 tend to resist and oppose commons-based peer production. Benkler and Nissenbaum’s four clusters of virtues of the commons are focused on individual and social virtues. Political action that fosters conditions under which commons-based peer production can thrive is an additional political virtue.

Fostering digital and communication commons is a way of fostering preconditions of a good society in general. Benkler and Nissenbaum add that participating in commons-based peer production means virtuous action in itself that is based on autonomy, creativity, benevolence, charity, generosity, altruism, sociability, camaraderie, friendship, co-operation, civic virtues. Commons-based peer production, such as setting up and participating in community networks, is a way of advancing a good society by fostering Aristotelian virtues.

The Digital Commons in the Context of the Economic, the Political and the Cultural Systems of Society

In what contexts do computers help to advance the good life or damage lives? And what is the role of modern telecommunication networks in defining the good or the bad? These questions can be answered in respect to the use of computers and computer communications at the level of society, i.e., applications of computing resources that affect all members of society. The important criterion for assessing computing and information transmission and handling ethically is the question if, how, and to which degree computers and computer-based communications are used for advancing a good economic, political and cultural life for all, or are used for damaging economic, political and cultural lives.

The economy has to do with questions of production and ownership. As economic beings, humans strive for a life that guarantees the satisfaction of their needs and allows self-fulfilling work. The digital commons are inclusive by providing humans access to resources, including communication resources. Politics is a system that organises the process of taking collective decisions that are binding for all members of society. As political beings (citizens), humans strive to influence political decisions based on their interests. For doing so, legal systems that organise rights, responsibilities and freedom are necessary. Using computing resources for fostering the political good requires the support of projects that aim at using digital resources for advancing participation in democracy. Participation aims at forms of empowerment that include all to a meaningful degree in political decision-making and foster a public sphere, where inclusive, sustained political debate is possible and is not limited by hierarchies that are based on the unequal control of wealth, power, skills and reputation. Culture is the system in society that enables humans to make meaning of society and to define their identities, which requires voice, visibility, mutual understanding and recognition. As cultural beings, humans strive for recognition. Digital media that help fostering the cultural good help all humans to make their voices heard, to achieve common understandings, and to achieve recognition. Humans all strive for recognition, but have different worldviews, identities and lifestyles. A common culture is not a unitary culture, but one that constructs the unity in the diversity of worldviews, ways of life, and identities that is needed for respect and understanding. A common culture avoids both the extremes of cultural imperialism (unity without diversity) and cultural relativism (diversity without unity).

A contemporary Aristotelian digital media ethics is based on the insight that fostering the digital commons is a way for advancing the common good and a good life for all humans. Communication requires community and the commons. Governing communication resources as common (including network commons, software commons, and content commons in the realm of digital communication) enables good conditions for access and participation of humans in community communication, which is a precondition for moral action and the establishment of a good society that advances the common good. Fostering and participating commons-based peer production is itself virtuous action because it helps to advance virtues such as autonomy, creativity, benevolence, charity, generosity, altruism, sociability, camaraderie, friendship, co-operation, and civic virtues that are at the foundation of a good society.

The quest for the common good has today also been instrumentalised and bent to specific and not global goals. So, for example, Facebook defines its mission as giving “*people the power to build community and bring the world closer together*” and helping people “*discover the world when we connect*”². And Google says in its mission statement that its task is to create “*opportunity for everyone*” and “*to develop services that improve the lives of as many people as possible*”³. The two companies use the language of the commons (“build community”, power to the people, “we connect”, “opportunity for everyone”), which downplays the fact that Google and Facebook have been frequently criticised for privacy violations, user surveillance, together holding an oligopoly in online advertising, avoiding to pay taxes, and supporting the spread of fake news that threaten to undermine democracy. Some scholars have therefore started characterising the likes of Google and Facebook

²Quotes taken from <https://www.facebook.com/pg/facebook/about/> accessed on November 17, 2018. Interestingly enough these statement of public good are available only to customers that do have a Facebook account and log-in, so we cannot really account them as a public document.

³https://www.google.co.uk/intl/en_at/about/our-commitments/, public page, accessed November 20, 2018.

not as social media, but as anti-social media (Mair, Clark, Fowler, Snoddy, and Tait (2018), Vaidhyathan (2018)). When someone speaks the language of the commons does not always mean that the projects they refer to is a commons.

The Ethics of Community Networks

In respect to community networks, it has been observed, and it is analysed and reported by netCommons, that they are virtuous because they “*enable self-provisioned and self-organized ways to build and ensure social connection and access to knowledge, content, communication*” netCommons D1.2 (Sept. 2016), p. 64. Benkler (2006) argues that commons-based peer production increases more rapidly the capacity of users to communicate information, is more cost-effective, advances faster technological innovations, adapts better to changing consumer preferences, and tends to be more robust and technically secure. These are technological and economic advantages. Elsewhere Benkler (2003) argues that commons-based communications resources enhance freedom from “*the constraints imposed by the requirements of markets*” and have “*democratic advantages*” (p. 8). “*Building a core common infrastructure is a necessary precondition to allow us to transition away from a society of passive consumers buying what a small number of commercial producers are selling. It will allow us to develop into a society in which all can speak to all, and in which anyone can become an active participant in political, social, and cultural discourse*” Benkler (2003), p. 9. It is clear that this societal reasoning maps to the concept of *network neutrality*, well studied in netCommons in the context of techno-legal aspects tackled by WP4 and reported on in D4.1, D4.2 and D4.3. Benkler (2006), p. 152, sees wireless commons, but we can well extend this narrow (from a technical point of view) concept to a broader networking commons, encompassing not only spectrum and wireless communications, but the entire infrastructure of a local network, including devices, functions and basic services, also as a challenge to the “*near-monopolistic structure*” of Internet access. Benkler sees a broad range of advantages of wireless commons (and other commons). There are technical, economic, and democratic advantages. In Aristotelian terms, he argues that network commons advance the virtues of justice, friendliness/sociality, and democracy.

2.4. Conclusion

Computers and computer networks enable new ways of organising information, communication and cooperation. Given that computing has become a central resource in modern society, the use of computers for organising cognition, communication and cooperation has become part of human needs. Humans have certain cognitive needs (such as being loved and recognised), communicative needs (such as friendships and community) and cooperative needs (such as working together with others in order to achieve common goals) in all types of society. In a digital and information society, computing and communication devices and services are vital means for realising such needs. Computers are always used in societal contexts; however, computer use as such does not necessarily foster the good life, but can also contribute to damaging human lives. When it was shown in the Cambridge Analytica scandal that Facebook and other social media have been used for targeting users with fake news in order to try to manipulate elections, it became evident how a specific organisation of online platforms –namely the combination of digital capitalism, authoritarian politics and neoliberalism– threatens the common political good of democracy.

Advancing the good life for all with the help of computers requires a particular organisation and design of computing resources and most of all of communication and information manipulation resources, granting equalitarian, non-polarized, free and neutral access to both (local) access and global means.

Combining insights from Aristotle and Alasdair MacIntyre helps us to argue why advancing network commons is morally important. Humans are moral, rationally producing, communicating, social and societal beings, who can only achieve their goals in relation to other humans. We can only achieve individual goals together with others. If achieving individual goals damages the life of others by exploiting or dominating them, then the

common good is damaged because society will entail groups of humans who are compelled to lead damaged lives. A good society enables the good life for all.

The approach of disclosing computer ethics in Brey (2010) aims at disclosing how “*morally opaque practices*” (p. 51) are present and hidden in and designed into computer technologies. It is based on the insight that technologies embed moral values and therefore have politics. Value-Sensitive Design (VSD) is a complementary approach that aims at designing computer technologies based on moral values such as privacy, freedom from bias, autonomy, human welfare, etc. (Friedman, Kahn, and Borning (2008)). VSD must take into account that technologies operate in a societal context and that their ethical redesign therefore needs to come along with political changes, i.e., the redesign of society.

Moor (1998) asks what Aristotle would do if he were alive today and a computing professional. Aristotle would not just be an active contributor and supporter of Community Networks, Wikipedia, free software and other digital commons projects, he would program free software and create digital commons, including Community Networks. If Aristotle were alive today, he would see the digital and network commons as important conditions for a good society.

The above ethical principles are inputs towards a political economy approach to an alternative Internet. This approach has to include the wherewithal to **translate ethical principles into transformative practices**. The remaining of this Deliverable builds on the ethical principles and attempts to make them operational into useful political economy policy; moreover blending into these ethical principles the thorough regulatory and legal analysis developed in WP4, it presents a set of legal and regulatory guidelines encasing the ethical prerogatives in legal developments.

3. Addressing the Internet as a Multi-Layered Environment – the London policy workshop

The initial development of the Internet has been that of a network of networks sharing the same logical and technological architecture that would connect users in different ways to address their communication needs, while giving to any user the freedom to develop new applications, thanks to the technological choices on the communication architecture. The history and culture of the Internet has been very much in the spirit of the ethical principles of the commons, until a certain point in time. Foster and McChesney indeed trace this evolution from what used to be a public wealth realm towards an increasing commercialisation and a massive concentration of capital in a small number of firms involved in the Internet industry [Foster and McChesney \(2011\)](#).

The contemporary Internet is contradictory. On the one hand, it is dominated by commercial providers in connectivity and provision of network, communication and information services; an Internet where information is expensive and inaccessible or accessible to different groups in different terms, conditions, and cost. On the other hand, it features alternative communication and information providers and presents elements of the commons, which are closer to its original development phase. These include the technical possibility to develop new applications and services, at least insofar as network neutrality is preserved.

Similar contradictions are observed from the point of view of the user. There are different kinds of users and their engagement with information on the Internet varies according to dimensions such as length of time, frequency, skills and most importantly the kind of information and communication content and activity they are engaged in. In that respect, for many the Internet is a shopping mall or an entertainment multiplex; for others, it is a space where daily activity can be carried out; for others, a wealth of information resources that can be accessed through search engines or particular websites; yet for others, a space to organise activity and communication. All these activities can be part of the single user in different mixes, or can be mutually exclusive each one belonging to different categories of users.

A conceptualization of the alternative Internet, one which is more participatory, community-based and democratic, calls for engagement with this very contradictory picture as a starting point. As part of the netCommons project we conducted and analysed the results of the online survey of 1000 respondents about concerns associated with Internet usage, as expressed by selected groups of competent and frequent Internet users (academics/researchers, young people/students, university administrators, IT professionals), the results are presented and discussed at large in [netCommons D5.4 \(Aug. 2018\)](#). A key conclusion from the survey has been that respondents are aware of the increasingly commercial, monopoly and ad-driven character of the Internet and the ways in which such character mediates the information received and personal data are manipulated.

One way to think of the alternative would be to de-throne what exists and re-establish something new, more participatory and more democratic. If Google, Facebook, Amazon and YouTube are prominent in the Internet in its current form, then the alternative would be an Internet without them, or with them marginalised, or, in any case, not in a position of monopoly or oligopoly. Following the same logic, if connectivity is provided today by 4-5, often fewer, telecommunications operators per country, then the alternative would be an Internet where the access infrastructure is provided by a wealth of actors following different technological and commercial solutions, including cooperative Internet Service Providers (ISPs), Community Networks, solutions with a dominance of local applications in parallel with others that privilege global access and connectivity. The feasibility of such scenarios has been questioned by many users in our survey who believe that big companies and their services are too dominant.

If, then, we are not in a position of changing the Internet, but just to grapple within it, then a more fruitful way would be to accept the contradictions and rethink alternative ways of addressing problems. Indeed, we need to think of the **structural and legal constraints that the current Internet presents** and which impede the economic, political and cultural aspects of the digital commons, as conceptualised ethically in the previous section.

Indeed, the survey that we conducted exposed some of **user concerns about the commercial and monopoly character of large parts of the Internet and the implications for their information and communication needs**. In particular, the users appear concerned about the ways in which their data are handled by big corporate platforms; the overwhelming presence of advertisements in their online engagement, as well as the quality of information they receive and their capacities for pluralism, diversity and democratic choice. According to respondents, Google and Facebook, the emblematic platforms dominating search engines and the social media:

- Decide on the terms of access of the service;
- Manipulate user data in ways that are non-transparent;
- Sell and share data with other commercial and government organisations, in non-transparent ways, with privacy implications;
- Filter information and knowledge through opaque algorithms and according to commercial and political interests, with implication for the quality and objectivity of information of the received;
- Cannot be regulated easily as they are too big and have degrees of freedom;
- Are inclined towards commercialisation and shape the character of the Internet;
- Limit user choices with regard to Internet engagement and shape ways of communicating, while becoming indispensable services due to critical mass of users.

Clearly, such concerns show that **engagement with the Internet as it stands now comes against the ethics of the digital commons and the language of digital rights**. This does not mean that the Internet is currently without alternative organisational models, entities or practices. But it does mean that the latter are not very visible or dominant. Accepting the current picture necessarily means that the alternatives can be designed, implemented and gradually grow on the Internet as plants in a soil that is in principle fertile, but has not been exploited, or rather, has been restricted to the growth of only certain bio-cultures. Such new plants will need time to take roots and grow and then generate seeds and expand over larger scales. **The alternative Internet can only emerge with time and it will depend on a critical mass of users deploying and engaging in the alternative activities (connecting in new ways, using new services, addressing new needs and adopting new practices)**.

On 15 May 2018 the Communication and Media Research Institute and the Westminster Institute for Advanced Studies hosted a policy workshop that brought together a range of stakeholders for discussing political economy aspects of the current and the alternative Internet, the place of CNs in it, as well as the opportunities and limits for/to change. The workshop drew on research conducted within the netCommons project; specifically, research on sustainability challenges of CNs, as well as the results of the survey ([netCommons D5.4 \(Aug. 2018\)](#)) collecting concerns about the Internet and views of the respondents vis-à-vis CNs as alternatives. The workshop brought together stakeholders representatives from the world of policy making, community networks and civil society. They included participants from community network organisations such as Balancing Act, B4RN, Community Broadband Network, Free2Air, Guifi.net, Independent Networks Cooperative Association (INCA), Sarantaporo.gr, Senza Fili Senza Confini, or Wansdyke as well as representatives from organisations such as Association for Progressive Communications, Commons Network, Information Society S.A. in Greece, Ofcom, the Dutch Pirate Party, and the United Nations High Commission for Refugees (UNHCR) (see Appendix A for full list of participants).

The workshop addressed **central issues involved in the organisation and design of the Internet engagement in ways more democratic, participatory and community-based**. Specifically, whether the digital commons pose viable models for the organisation of the Internet's infrastructure, software, platforms and content; and

3. Addressing the Internet as a Multi-Layered Environment – the London policy workshop

what policies and measures are needed for strengthening the commons as alternatives to Internet monopolies, surveillance, privacy violations, and targeted ads. It discussed forms of ownership (public/private/community), access, data management, in relation to the standard Internet and CNs in particular, as well as legal issues and obstacles in providing Internet services through community organizational models.

The structure of the workshop has been the following:

1. A round table introduction of all participants, together with their relevance and experience of standard or community organisational models for Internet provision;
2. A short presentation by Christian Fuchs on the political economy of the Internet;
3. A short presentation by Dimitris Boucas and Maria Michalis of the results of the survey included in the deliverable D5.4;
4. two long afternoon sessions of roundtable discussions which made the central activity of the day.

The discussions were audio-recorded and video-taped (after obtaining the permission of the participants), they were subsequently transcribed and generated the basic output informing part of the current deliverable¹. These discussions were lightly mediated based on a background document which had been communicated to the participants in advance and acted as a guide for the discussion themes.

The workshop focused on the ethical sides of the alternative Internet. This was done with a view to highlighting the broader ethical issues related to the Internet and the telecommunications landscape and the possibilities for alternative communication practices, including those organised by CNs. The results of the discussion have been encapsulated in the set of ethical guidelines which, informed by the unfolding work of WP4 overall, have been linked to more concrete policy guidelines for CNs. The ethical guidelines and the relevant discussion are presented in Chapter 4, followed by the policy guidelines in Chapter 5.

¹Besides what is reported in this deliverable, the audio and video recording and the full transcript of the workshop discussions are safely stored at the University of Westminster repository.

4. Alternative Internet: Political Economy Guidelines

A contemporary Aristotelian digital media ethics is based on the premise that fostering the digital commons is a way for advancing the common good and a good life for all humans. The common good needs to take into account the economy (common production, common ownership, common access), politics (the polis as political community), as well as culture (common learning).

This chapter presents political economy ethical guidelines for a participatory, co-operative and community-oriented Internet as informed by the philosophical discussion on digital media ethics and the common good.

Informed by the ethics of the digital commons discussed in Chapter 2 in light of modern ethical philosophy, it is organised in terms of the economic, political and cultural aspects and relevant constraints coming against the realisation of the digital commons of information and communication. The presentation of the five key guidelines, evidenced in red, is underpinned by quotes and views expressed in the London policy workshop¹. The five basic guidelines that have emerged are a remarkably simple summary of a much more complex reasoning. This is indeed interesting and powerful at the same time, as it means that the realisation of an ethical telecommunication ecosystem can be crystallised in conceptually straightforward measures. Furthermore, these findings indicate that Community Networks can be one of the key elements to realise a comprehensive digital commons.

4.1. Economy

The economy has to do with questions of production and ownership. As economic beings, humans strive for a life that guarantees the satisfaction of their needs and allows self-fulfilling work. The economy of the digital commons presupposes connectivity, access to resources and fulfillment of information and communication needs for all users and communities. Two recommendations pertain to the economic sphere.

1. Access as a Right

Connectivity and access to resources for all should be guaranteed, together with challenging Internet monopolies and fostering diversity at the layers of applications and services.

The key problem to be solved to meet this recommendation is the structure of the Internet market that restricts the digital commons by making access dependent on commercial provision which might result in high costs or cases of market failure. In addition, efforts to provide infrastructure as commons are confronted by commercial provision of the large telecom companies.

“In the first wave of broadband in the UK, we were involved in over 200 projects with local communities through the Access to Broadband Campaign and the Community Broadband Network (CBN)

¹When making references to direct quotes of the workshop participants, we provide their initials in parentheses following the quote. A list of the full names of the participants and the correspondence between full names and initials is provided in Appendix A. After writing down these quotes and putting them into the narrative of this section we have communicated the output back to the participants and have obtained their consent that these quotes indeed reflect their views. On a few occasions participants have suggested alternative phrasing, which they felt it better communicated their opinions and statements.

social enterprise; many of these didn't survive once commercial providers realised that there was money to be made. Local projects did prove demand however.” (BC)

“Recently, interest in alternative networks has created the opportunity for new approaches including cooperative models. There are a number of examples of collaboratively owned infrastructure in North West England that enable access to infrastructure at whatever level you want to access.” (BC)

This does not mean that alternative providers are not active:

“I run INCA, set in 2010, which represents the alternative Internet providers in the UK, both commercial and community, both fibre and wireless. We did a survey of alternative providers earlier this year and found that they cover 1.5 million households with fibre to the premises (that is double what BT/Openreach cover). Add to this about 2 million wireless connections (although these are harder to pin down). Our members build fibre or wireless networks or both, so there is a lot of investment in the sector.” (MC)

Still, the dominant impression is one of **lack of competition at the infrastructure level**, broadly conceived:

“There is no real infrastructure competition. Right from the basic infrastructure levels; for instance, there is only one dominant Internet protocol, TCP/IP. Likewise, all the way up to operating systems – for example - Apple and Microsoft. We need to understand competition at different layers and see where CNs can make a difference.” (BC)

At the high layers of the Internet there is, in theory, more competition, as the investment costs are not of the same order as those for providing infrastructure. However, the **monopoly or oligopoly character of the Internet means that services are provided mainly by the big corporate players**. In terms of the ethics of the commons, network and service monopolies and oligopolies violate the advancement of the economic good because single economic actors have big advantages at the expense of others and concentrate economic power.

“Somebody provides the infrastructure and then the major players sit on top of it and make money.” (IM)

“There is no point to try and build some alternative application space to FB or Google. Their scale is vast. Likewise, to compete with Apple on hardware.” (BC)

CNs can enable access to the Internet in cases of market failure (e.g., geographical areas or populations where commercial providers are unable or not willing to invest):

“The logic of fibre networks is that the return of investment is very long term so it does not make sense commercially for telecoms companies driven by short term profit-making especially in rural areas. But for communities it does, because they are looking into connecting their community and they are in it for the long term.” (BC)

The issue of sustainability of such community networks has also been raised. For some:

“Self-sustainability for CNs is necessary: not to rely on grants but to be able to operate on income that you generate.” (NK)

“Self-sustainability and growth of CN from grassroots is important. I represent a CN in the north-west of Italy, very remote area. We had difficulty in engaging people –they were old and not very knowledgeable – we organised courses and we built the first model and then replicate it in other villages – in 4 years we reached 86 villages, 4000 people (villagers mainly) working to expand this. All very remote zones. The funding came from the people” (DT)

There are other ways to achieve sustainability:

“It is good to have an ecosystem around connectivity to generate some profit for sustainability purposes.” (RR)

“There are always different models; for example the Digital Exchange. It is cooperatively owned, a mutual, one member one vote, it allows members access to the infrastructure at every level. The one in Brighton (<http://bdx.coop/>) clusters small enterprises together and provides connectivity. The one in Greater Manchester we are building now has fibre which they own. That is connected through to the Digital Exchange. It is making its own money. We also have the so-called thin layer model in Tameside; there is a cooperative alliance where each participant owns its infrastructure, e.g., the council, the NHS etc., and can rent it out for access to others at low rates.” (BC)

The discussion of community networks and connectivity has raised also other issues:

“There is always the need for connectivity as there is at least the need for communication, if not entertainment, education and so on. The issue is how many companies you should have in a rural area. The best is one shared infrastructure below level 3 and have many services on top. CNs can help a lot with level 3 or below but from level 3 up (which includes all services, e.g., Facebook, Google) consumers want to have many different services. Important to have freedom of choice. If you have only one company e.g., for operating system it is not good.” (RR)

Community networks which simply provide Internet connectivity, then, cannot make much difference in the current oligopoly and monopoly character of the Internet:

*“For me, just providing connectivity is a kind of carriage-before-horse approach and a form of neo-colonialism. We go to areas and we offer infrastructure and become missionaries for telcos and service providers. Is the endgame universal access to all services (ubiquity) or are we going to be **more involved** in the understanding of needs? Do we want to maintain the sense of locality or we will become equivalent consumption units in this service landscape?”* (AB)

2. Users’ involvement

Users and communities should be involved in the definition of their information and communication needs, and the design of relevant technologies (services, applications)

From an ethical standpoint, governing the design processes of communication resources as common sets off favourable circumstances for participation of humans in community communication, which is a precondition for a good society for all. Participation in decision-making is an important aspect of the political common good. Many participants in the London workshop argued that the need for connectivity and information should not be determined ex ante by some elite or technological competent group or some company. Users and communities should be involved from the design stage.

“There have been quite a few projects in Africa where people had not been asked and they were failures. The community needs to be asked, as the designer cannot design on behalf of the community. In addition, there are always people who will be resistant to the I, often people marginalised (e.g., vulnerable women) and their needs to be taken into account.” (DS)

“If Internet provision is done in a participatory way then we have seen that it works, it gives common purpose Sarantaporo.gr started as a hobby of the members of a small team, some from the area; they realised that the villagers could not visit the website they had built to promote the area. They started provision in the area and this happens now in 12 villages. It is to some extent maintained by the community there.” (NK)

Some qualified the general view adding more nuance: are communities and users able to define needs and do they have the means to satisfy them?

“I agree that demand has to come from below. If there is very low income, however, how do we create a structure that gives them something meaningful? Many people do not know what they want or what they need, which might be different.” (RS)

“Buzzwords like ‘smart cities’ –collecting data about citizens in ways that we cannot understand... Important for public to get involved in the design stage– what happens with their data about electricity, are they subjected to burglary and so on.” (AB)

Community networks can address such problems to some extent:

“We aspired at a commercial model of high quality, very fast, built by the community and at a low cost... A big social spin-off has been the building of community spirit as people talk to each other in the process of building the network. And people also become interested in the project and they support each other in building and understanding the use of the network. So, the project has had a lot of spin-offs in the process and is very sustainable, strongly cash flow positive.” (BF)

The philosophy of the Broadband for the Rural North (B4RN) community network is quite a liberal one, assuming that relevant service and applications are available and users can exercise their choice:

“It is up to the people to buy whatever services they want to use from the cloud, we never built any services on top.” (BF)

For some, by contrast, it is important to move away from the dominant service and application providers:

“We need to be aware of the increasing centralisation of the internet and how commercial interests dominate, for example you could see the move to the Cloud as another way of commercial capture of the internet.” (BC)

“There is an example of a community network which blocked Google services, because they did not want people to use this. It is interesting as a philosophy, but some would say that it is not the right way to do this and you should find different ways to dissuade people from using popular services.” (AB)

Many would like to be proactive in addressing community and user needs and not leave them to the market forces:

“We should be getting communities beyond the connectivity stage and see what the issues that matter for these communities are. I am involved in the charity Connecting Generations in Bath Spa where we have established links with the local business school to connect local communities; more importantly to identify what services these communities need and how to build a social and care community.” (DB)

Community networks can clearly play a role in the development of meaningful services for the community and in the development of the local economy:

“If we have ownership and control of the network infrastructure, it is very easy and cheap to build health services on top of that. If you go to an incumbent and tell them that you want to add a 1 Gbit circuit, they will ask for a lot of money. But if you go to a CN operator they will see a service to the community and there might be sponsors for this. You build additional services, e.g., council services, intelligent traffic control, health services at marginal cost.” (BC)

*“Indeed, as we do not operate for profit, but with **value to the community as criterion**, when somebody comes with a request like this we would give access to the infrastructure.” (BF)*

“A recent Ericsson study shows three phases of local economy development from fibre build; first, the jobs it generates, which is short term but valuable, for building the fibre; second, the SMEs benefit in two ways: they and gain efficiency benefits as they do things quicker; they also gain a benefit through increased sales; the third, this is more about transformative ways, doing new things in new ways, adding local services as at very low marginal cost; this makes local applications, like local media, possible again.” (BC)

Community networks operate with the philosophy of the commons but can have diversity in the models adopted, ranging from voluntary and non-profit to some degree of profit-making:

“Ostrom talks about the commons; every reality is different but some principles are the same, e.g., participatory. Non-profit is not always the case, as if you have an ecosystem around the network it has to be cost-based, people provide Service Level Agreements (SLAs) and these will be for profit. The big difference is that it is not extractive economy (take money and put it somewhere else) but it is inclusive economy.” (RR)

“If you are cost-oriented the logic is about inclusive economy as opposed to exclusive economy. Value generated should stay in the community, the opposite would be to move value from the poor to the strong. The other difference, is organic, real economy vs. speculative economy. Telefonica operates speculatively because of scarcity and they may charge hugely a large client as opposed to serving more clients and the community. They do not operate according to the cost and make a profit margin, so we need to switch from that logic, that paradigm.” (RR)

4.2. Politics

Two of the recommendations pertain to the domain of Politics. Using information technology and the Internet as resources for fostering the political good requires the deployment of such digital resources for advancing participation in democracy. Participation aims at forms of empowerment that ideally include all in political decision-making and foster a public sphere, where inclusive, sustained political debate is possible and is not limited by hierarchies that are based on the unequal control of wealth, power, skills and reputation. Such a public sphere forms a political community (polis) that advances the political good.

The commercial structure of the Internet comes against the ethics and ideals of the public sphere and equal participation in decision-making both regarding technology regulation and wider political issues and choices. The dominance of large corporate information filtering platforms, and the unregulated cyberspace of inaccurate information, propaganda, cheap journalism and fake news act as structural constraints to the realisation of the digital commons from a politics viewpoint. Participation in social media creates a pseudo-democratic feeling, but this participation is subject to ideological manipulation according to the political and economic interests of the large platforms. Additionally, this kind of engagement reduces individuals to consumers and at the same time compels them to share their data in ways that are beyond their control and subjected to the commercial interests of the large platform providers and other companies.

A digital public sphere based on the philosophy of the commons requires the provision of opportunities for online engagement with political issues. This, however, is predicated on the realisation of certain ‘digital citizenship’ rights, including the right to accessing relevant information and the right to have one’s own data protected and privacy guaranteed.

3. Privacy and Data Management

Internet access and provision of network services should respect the protection of the privacy of users’ data, provide opportunities for active user involvement in the management of their data, as well as the necessary skills for such involvement.

The participants in the London policy workshop expressed concerns about the non-transparent manipulation and exploitation of user data.

“Security of data has to do with the management and communication and also ownership of the infrastructure. There might be a group managing the lower layers, and also a different group managing the level of applications. What is done with collected logs of operational information, for instance, is of huge importance for data protection of users. Different groups have different policy on data retention, some they do not keep logs at all. But it is the clarity of the terms and conditions that is the most important aspect. It is an obligation of the groups providing access. The data aggregators hold this responsibility. Even if you are a pipe provider, you will have organisations asking how you use the user data.” (AB)

CNs can educate users and enhance their skills vis-à-vis control of their data, enhance privacy options, and more generally a more informed engagement with the Internet. Learning as part of participation in networks is an aspect of the cultural good (common learning) within the political realm.

“It is important to consider the educational choices that are needed and the community can do that in order for people to make decisions better for their needs. This is an area where community-based endeavours can make a difference as they are expected to care more about the specific units in the community, while the commercial providers will not actually care about them.” (NK)

“The openness that some community networks offer, gives the users the opportunity to participate in a way that is not otherwise possible as their communication needs are mediated by large telecommunications groups. ‘Active participation involves knowledge transfer’.” (AB)

“Security of data is a big problem. . . We provide a newsletter, security sessions every week.” (BF)

“We have the same kind of workshops, e.g cryptography in Amsterdam.” (TG)

“I work for a global project where people offer their time to explain to others how they can attain better control of their data, e.g., cryptography. There is a lot of cultural awareness on this after Snowden. The change in statistics of people attending these meeting is impressive.” (AB)

*“There is a great advantage in CNs, in that they promote **active citizenship**. There are these positive externalities, which you do not have in the case of commercial providers, which treat citizens as users and consumers.” (NK)*

“I worked in a project with the Open University where people came together to imagine what they could do with infinite bandwidth and zero costs. There is something called Hub of All Things (HAT); this is where you put all your data and you decide whom you sell it to and what for and whether it is free or for money.” (BC)

The issue of monetisation of user data by large corporate platforms invited different views. Some would not necessarily see such practices as unethical:

“I am excited about Facebook because it exemplifies the idea of proximity that comes with the network. But of course, all technologies have their dark side. Zuckerberg mentioned something in his testimony that, if Facebook is to be free and available to everybody, they sell ads and for this reason we have to understand the needs of the customer. So, is our concern that FB and Google use our data or how they do it?” (NK)

“From the companies’ perspective; the monetisation they will do can be seen as ok as long as they stay without limits. But in case of a government to see personal information, I think is not acceptable because it is against freedom.” (RR)

The issue also carries certain responsibilities on the part of the user who decides to use these platforms:

“From a personal/user side, people need to be educated. People need to understand that if you are in the public space companies will be able to get your information so you need to take measures; they need to be critical and take measures.” (RR)

“If you want to use the service and accept the conditions is this unethical?” (NK)

Yet, many would see this as a power imbalance problem, which favours the big corporate players against the individual user:

“It is not just about signing a contract. You know that if you do not agree you are excluded. My daughter who is 21 and her peers would not afford to be excluded, it would be like being excluded from life.” (IM)

“And I do not accept the ‘giving consent’ argument, as nobody will read the terms and conditions and many will not have the education to understand them.” (TG)

“The principle should be ‘informed consent’. And there has to be some document with explanation how and for what purpose the collection and transmission of data is.” (AB)

Clearly, the responsibility for active citizenship, an essential requirement for the realisation of a digital public sphere and (digital) democracy, cannot rest solely on the shoulders of the individual. The severe structural constraints posed by the current form of the Internet necessitate political decisions and policies emanating from the institutional level. Such policies can provide circumstances of digital political participation and the promotion of the digital commons from a political point of view by regulating the Internet landscape and by investing in public projects and citizen education and training.

4. Public Involvement

The public sector should have an important role in Internet investment, Internet regulation, as well as in ensuring that mechanisms for learning, education, engagement and training of citizens are available.

Public policy and the state can **provide investment for Internet access for all citizens**, but also **investment for the provision of services** that are of use for the citizens. It can **regulate** towards a character of the Internet that is less monopolistic and more pluralistic (e.g., by passing anti-trust laws and by providing incentives to alternative providers at all levels, but also by enforcing technical interface and protocol standards that guarantee a diverse ecosystem of inter-operating applications). It can promote an Internet that respects the user (e.g., through relevant personal data protection legislation and administration). Last, it has a role to play in **providing education** and skills to the users so as to be able to take advantage of the Internet and also to use it in ways that needs are enhanced and their own personal data are protected.

The public sector is often called in to address market failure:

“In Liverpool there are certain geographical areas that are discriminated against. Municipality concerned about poorer families and children who cannot afford £30 per month. The commercial providers, as a result, will not put fibre there, so there is the argument for public provision of broadband.” (BC)

While large initial investment for high quality infrastructure is necessary to address connectivity problems and provide inclusion, there are significant public benefits in doing so:

“The public sector needs to understand that by giving away their assets to the private sector they are reducing our ability and our resilience as a country to deal with the Internet and the chances of the future. It is the biggest issue that we face and most politicians do not have an idea. The state definitely can save huge amounts of money if they have a well-connected society. For example, if you save a number of bed days in hospital by doing remote medicine and stop someone from going to hospital you save thousands of euros.” (BC)

The state approach to connectivity can range from purely public projects, to public and private collaboration and can have a local, municipal, or national scope. Significantly, it can and should involve collaboration with community network providers, as this would enhance the sustainability and legitimacy of the latter.

Still, the involvement of the public sector needs to be beyond connectivity and include the level of applications, services, and content more generally:

*“I am President of a public company in Greece operating IT projects for the government. We just spent 160 million euros for a private-public partnership project to build fibre in Greece in places where nobody would bring Internet. But my concern is that providing only the network is not enough. What you provide is access to Google, YouTube and so on. There is nothing else in terms of practical or actual value, apart from shopping and entertainment. For me it is not enough to provide access, **you have to build things around it**. A relevant question is what kind of demand you want to address. It makes a difference whether it is for blockbuster entertainment, shopping, or education. The question is related to what should be provided as public provision of information and what should be seen as a private and commercial information service.” (IM)*

Indeed, a number of applications of relevance to citizens, including health, education, electronic government, cultural activities, information provision, can emanate from the state, both the central government authorities, but also the municipal and the local level. Historically, states have been among the most significant consumers, initiators and overall funders of technological projects, and the Internet should be no exception. The increasing presence of state and state projects, services and applications can gradually shape the character of the Internet away from its commercial nature and towards a more citizen-centred network, where citizenship can be exercised both as obligation and as right. Active citizenship, the conscious and knowledgeable involvement in the public affairs is a cornerstone to aspire to and a prerequisite for a public sphere in the spirit of the digital commons.

Public sector involvement in regulation and governance of the Internet industry is also indispensable:

“The current governance, multi-stakeholder model of the Internet has problems. It is a model of governance by the insiders, and wider communities are excluded. It also involves permission-less innovation: the argument is that if innovation needs to seek the permission of public officials, then we will result in fewer services, lower quality goods, higher prices, less growth –so innovation should be left free to experiment– without permission. This is what Facebook have done with privacy. A regulatory question is the extent to which innovation is desirable if it comes from those insiders.” (DS)

The public sector should be more involved in issues of Internet regulation both to address the exclusion of communities and users, as well as for protecting user data and privacy:

“Many of these issues about personal data, e.g., not to receive spam, are issues to be resolved by the Internet community at large, i.e. regulatory issues.” (BF)

“We need mechanisms and resources to control our data. General Data Protection Regulation (GDPR) research is very important at the moment.” (AB)

The Internet is a space of empowerment when communication needs are met, but also of disempowerment, when, for instance citizens do not have the necessary education and skills to take part. State authorities need to engage in public policy to develop and provide education and skills.

4.3. Culture

Voice, visibility, mutual understanding and recognition are essential ingredients of one’s identity and part of the cultural arrangements of a society. The dominance of large corporate platforms creates feelings of mutuality, sharing and common purpose and culture. Google search engines and other applications (e.g., google maps) bring proximity and annihilate space. Social media platforms, such as Facebook, act as ‘structures of common

difference' in the anthropological sense. They appear as hosting diversity and diverse content in democratic ways and as creating not a unitary culture, but rather a multitude of worldviews which co-exist in equal ways. Video-sharing platforms like YouTube promote cultural exchanges and cultural products. Common ownership of Apple or Microsoft computers and deployment of their standard operating systems generate communities of users.

Yet, all the above hide divisions that obstruct the generation of cultural digital commons. Filtering information through search engines means that there is unequal visibility and unequal chances of voices to be heard and achieve recognition. Selecting information to be presented to different categories of users promotes cooing and establishment of unitary views rather than pluralism and diversity. Sharing under conditions of advertisements encase human creative peer activity in consumerist garments. With this in mind, the fifth recommendation pertains to the cultural dimension, and in particular the education and peer production sphere of constructing a community culture.

5. Learning and Cultural Production

Internet access and provision of network services should be underpinned by a community culture which provides mechanisms for recognition, respect, diversity and common learning through commons-based peer production.

Commons-based digital media can help all humans to make their voices heard, to achieve common understandings, and to achieve recognition. Fostering commons-based peer production helps to advance virtues such as autonomy, creativity, benevolence, charity, generosity, altruism, sociability, camaraderie, friendship, co-operation, and civic virtues.

The London workshop addressed the issue that communication services and information content are mediated by monopoly search engines, social media, content sharing sites and the implications for the possibility of the digital commons from a cultural point of view. Strong views were expressed about the need to provide non-commercial cultural codes:

“The commons movement wants to challenge power structures. We need to translate the commons into political practice and deconstruct marketing language. We need to try and provide an alternative narrative. Continuously changing the language to make things palatable is a key issue. Community networks would challenge reality by using new language and this is what makes them interesting.” (TG)

“BT has stolen some of the language when they say that they build community networks and they mean BT community networks. Language capture is indeed very important.” (BC)

As mentioned by MacIntyre (2016), language enables humans to pose ethical questions about what is good. It is indispensable in the capacity of humans to act as antagonists of the dominant order, so it cannot but be all important in the discussion of the digital commons.

“We adopt their language, the marketing discourse because we talk about how people connect to Facebook, how many likes there are and what they think. Everybody is interested in the attention economy, but this is a creation by Facebook and Google. The Cambridge Analytica scandal was also used by Facebook and Google as it generated hatred and it could be used to sell advertisements. A lot of campaigns about deleting Facebook struggle to find what alternative we can have to FB. But why do you need an alternative to Facebook? They make us feel that this is important. We need to be more radical. For example, if we say that ‘we make our own cloud’ we just adopt Amazon’s discourse.” (TG)

Nonetheless, recapturing the language, though necessary, might not be a sufficient condition for change towards a more commons-based culture:

“Google is so embedded now that you cannot go back. Facebook and Google maximise surplus value in the late stage of surveillance capitalism.” (AB)

Such realisations, however, do not preclude the possibilities for working towards the realisation of an alternative, commons-based culture and practice:

“We have lost the battle but there are still things we can do. Let us not fight the battles that we cannot win. I am not saying that we should not fight. But we have to change the language and the tactics in order to fight. We have to look into what the incumbents are doing, what language they are using and then think of alternatives based on that. Rethink, for example how health care works in the European Union (EU). We know the demographics, and we know we can do a lot with Community networks and technology, especially when cost of bandwidth tends to zero and latency tends to zero. There are also lots to be done with open source; Techmums, for instance, is an initiative of women who want to return to work and they do coding and open source.” (BC)

But there is a certain degree of pessimism as to the possibilities of mobilisation of the population towards the search for the alternative Internet organisation:

“We have to be a bit more pragmatic. According to OfCom data, the 16-24 age group is much less likely to think about security and privacy online than the average adult (32% vs. 40%). And only 53% of UK adults know how YouTube or Google make their money. One bad thing is that the government has reduced money for media studies in the UK.” (BC)

“The good thing is that local government has realised that by ceding digital infrastructure to private providers they are missing out on important economic and social benefits. So, we must think of alternative ways, we must not let the language be captured and we must pay attention to the community needs (whatever they might be), which must drive the process.” (BC)

The philosophy of the digital commons, presented theoretically, and the discussion of political economy aspects and the relevant guidelines for policy-makers give rise to a number of legal issues that are indispensable for some of the political economy guidelines to be promoted. The following section presents such guidelines.

4.4. Conclusion

The political economy and ethical guidelines for a participatory, co-operative and community-oriented Internet discussed above derive from the philosophical discussion on digital media ethics and the common good. This discussion includes aspects of the economy, politics and culture.

The economic dimension of the digital commons presupposes connectivity, access to resources and fulfilment of information and communication needs for all users and communities. The current character of the Internet, however, restricts the digital commons by making access dependent on commercial provision, with high costs and lack of coverage compromising connectivity. At the same time, there is a distinct lack of competition at most layers of the Internet architecture. **Connectivity and access to resources for all should be guaranteed, together with challenging Internet monopolies and fostering diversity at the layers of applications and services.** Community networks which simply provide Internet connectivity are part of the solution, but cannot make a big difference in the current oligopoly and monopoly character of the Internet.

Furthermore, the need for connectivity and information, while taken for granted, should not be determined ex ante by some elite or technological competent group or some company. The design processes of communication arrangements, should be carried out with the user and the community in mind, so as to indeed serve real communication needs and enhance participation in Internet usage. **Users and communities should be involved in the definition of their information and communication needs, and the design of relevant technologies**

(services, applications). Community networks can clearly play a role in the development of meaningful services for the community and in the development of the local economy and in this way generate value to the community.

The political dimension of the digital commons would promote Internet usage for fostering the political good and a democratic public sphere. The current Internet character restricts this possibility, as it is based on hierarchies and power differentials. These have implications on democratic participation and user empowerment, not least because they compromise and commercialise user data, a situation that comes against the right to accessing relevant information and the right to have one's own data protected. **Internet access and provision of network services should respect the protection of the privacy of users' data, provide opportunities for active user involvement in the management of their data, and the necessary skills for such involvement.**

Community networks can and do play a role in the realisation of such 'digital citizenship rights', but their function has to be complemented not only by active alternative user practices enhancing privacy and data protection, but also by support at the institutional level. Policies can provide circumstances of digital political participation and the promotion of the digital commons by regulating the Internet landscape and by investing in public projects and citizen education and training. **The public sector should have an important role in Internet investment, Internet regulation, as well as in ensuring that mechanisms for learning, education, engagement and training of citizens are available.**

Commons-based digital media can help all humans to make their voices heard, to achieve common understandings, and to achieve recognition. The current character of the Internet communicates sentiments of proximity, mutuality, community, democratic voice and visibility of content, together with diversity and respect for difference. However, these are false impressions, mediated as they are by large corporate platforms the purpose of which is profit-making and treating users as communities of 'users' to extract value from commercialising their data. **Internet access and provision of network services should be underpinned by a community culture which provides mechanisms for recognition, respect, diversity and common learning through commons-based peer production.** Fostering commons-based peer production helps to advance virtues such as autonomy, creativity, benevolence, charity, generosity, altruism, sociability, camaraderie, friendship, co-operation, and civic virtues. Community networks are one important mechanism for promoting these values, but they have to be supported by other institutional and civil society entities to maintain their sustainability and make the cultural advances of the digital commons more visible.

The following chapter draws on the discussion at the London workshop and the ethical guidelines presented above to suggest more concrete policy guidelines which promote the community networks agenda in the current telecommunications and internet landscape, with a view to contributing to a more democratic, participatory and community-oriented Internet.

5. Enabling the Telecommons: Policy Guidelines for Policy-Makers

In this chapter, we move from ethics to actual policies aimed at boosting the development of Community Networks. Over the past three years, netCommons has partnered with Community Networks (CNs) across Europe and other civil society organisations to work on the ongoing reform of EU telecom rules. As the legislative process draws to a close these efforts have paid out: EU telecom policy-makers can no longer ignore the merits and special regulatory needs of these grassroots initiatives. We start this section by offering some context on the implication of netCommons in this legislative debate, in partnership with CNs and advocacy groups. We then offer policy guidelines we have developed in partnership with these organisations.

Both intend to support the legal sustainability of CNs as commons, and document how netCommons has been developing with CNs a set of legal, regulatory and policy recommendations aiming at, on the one hand, lifting policies which prevent CNs as alternative Internets to flourish, and on the other hand, expand their basis and commons-based assets and foundations.

5.1. Developing the policy guidelines: an overview of the process

Whether it is by bridging the digital divide, fostering scientific and engineering experiments, helping local hosting and service providers come together to mutualise investments and share costs, or by supporting digital literacy and technological sovereignty, Community Networks have achieved considerable results.

Yet, as netCommons researchers have shown in other deliverables, policy-makers at the European level tend to only see CNs as playing a “gap-filling” role, that is intervening where market actors are failing to provide (decent) connectivity (see [netCommons D2.2 \(Jan. 2017\)](#)). In this section, we offer policy guidelines to help telecom policy-makers support the development of Community Network. But first, we describe the process through which these guidelines were developed.

To address the legal and policy hurdles undermining the growth and development, more than 30 European CNs wrote an open letter to EU telecom policy makers in March 2017. This process has been widely reported on in D4.2, Chapter 3, and D4.3, Section 2.4.5. It entailed sustained interaction between netCommons partners –in particular CNRS and UoW– as well as several external stakeholders, including Community Networks from across Europe (with FFDN, Guifi.net, Freifunk and Ninux providing key contributions).

The letter came at a particular, strategic moment of the EU policy-making process. The EU Parliament was then initiating the legislative process on several proposals reforming the legal framework for telecom regulation across the bloc, culminating with the adoption of the European Electronic Communications Code (EECC). Coming with a list of regulatory demands, the signatories were hoping to seize an opportunity to get recognition from EU lawmakers for their work.

At the time, the task seemed difficult. The original proposal of the EU Commission aimed to boost investment in so-called “Very High Capacity networks” relying on Fiber-To-The-Home (FTTH) architectures, ensuring a equal development of EU regions and warding off a so-called “investment gap”. But to do so, the proposed solutions aimed to further break away from pro-competition policies that have been the hallmark of EU telecom policy since the privatisation of public telecom provider in the 1990s. By lifting regulation weighing on dominant telecom operators, the proposal created a risk of entrenching the trend towards the oligopolisation of telecom markets. It paid very little attention to alternative telecom providers, much less to Community Networks managed as a commons.

To influence the policy-making process, several CNs like Federation French Data Network (FFDN) and guifi.net teamed up with netCommons and La Quadrature du Net, a French digital rights advocacy group. Together, they suggested amendments aimed at translating the open letter's recommendations into legal provisions, and assessed the various amendments tabled by EU Parliament committees working on the issue:

- Committee on Industry¹;
- Committee on civil liberties²;
- Committee on consumer protection³.

As we got closer to a vote, a detailed brief⁴ was written to explain how tabled amendments would impact CNs. After a crucial committee vote in September 2017 on which netCommons and its allies commented⁵, the EU Parliament directly entered into negotiations with Member States with the goal of reaching an agreement on a final text.

A netCommons workshop organised on the premises of the EU Parliament on October 17th, 2017 ensured that key Member of the European Parliaments (MEPs) taking part in these negotiations understood the potential of CNs and the urgency to lay the ground for a recognition of these initiatives by EU policy-makers⁶. That trilogue⁷ process took almost a year, concluding in June 2018.

The final agreement, which netCommons has been able to review before its publication in mid-December,⁸ brings significant improvements to the regulatory framework, echoing some of the crucial demands formulated by CNs in the open letter:

- The new EU telecom framework lifts administrative burdens for Community Networks;
- Regulators are asked to invite Community Networks to the policy table. Article 3.3.e) agreed upon in the latest negotiations posit that National Regulation Authority (NRA), national governments and EU policy-makers should “take due account of the variety of conditions relating to infrastructure, competition, end-user and consumers circumstances that exist in the various geographic areas within a Member State, including local infrastructure managed by individuals on a not-for-profit basis”. This language covers most, if not all, of CN models and suggests that regulators should actively mobilize the knowledge of Community Networks in the development of telecom policy;
- Regulators will still be able to safeguard competition on FTTH networks. The notion of “regulatory holidays” favoured by incumbent operators and the EU Commission has been significantly delimited, and NRAs will have the tool they need to ensure that private networks rolled out by large players remain open to smaller players, including CNs, on reasonable financial and technical terms;
- Unlicensed access to spectrum is encouraged by new provisions. This is key for wireless Community Networks who have difficulties to operate in urban areas where WiFi bands are getting increasingly saturated, but more generally to build resilient and affordable long distance wireless networks;
- Policy-makers and telecom providers are banned from hindering the right to share one's Internet connection. This is key for CNs like Freifunk which rely on the ability of subscribers to traditional telecom operators to share their connections with people in their vicinity.

Beyond EU law, netCommons' policy work had another success: Following exchanges and meetings with the

¹https://wiki.laquadrature.net/Paquet_Telecom_2017/amendements_ITRE

²https://wiki.laquadrature.net/Paquet_Telecom_2017/amendements_LIBE

³https://wiki.laquadrature.net/Paquet_Telecom_2017/amendements_IMCO

⁴<https://netcommons.eu/?q=content/notes-european-electronic-communications-code-decisive-votes-european-parliament>

⁵<https://www.laquadrature.net/en/2017/10/03/government-oligopolization-telecom/>

⁶<https://www.netcommons.eu/?q=content/eu-parliament-workshop-community-networks-and-telecom-regulation>

⁷Trilogues, in the EU jargon, are informal tripartite meetings attended by representatives of the European Parliament, the Council and the Commission. More information at http://ec.europa.eu/codecision/stepbystep/glossary_en.htm.

⁸<http://data.consilium.europa.eu/doc/document/PE-52-2018-REV-1/EN/pdf>

teams developing them, the UNESCO “Internet universality indicators” released in 2018 *UNESCO’s Internet Universality Indicators: A Framework for Assessing Internet Development (2018)* assess country performance based on the existence of an appropriate “legal framework for establishment of community networks”, thereby creating another incentive to develop telecom policies favoring CNs.

5.2. Towards policy guidelines for supporting European Community Networks

After two years of working with Community Networks and policy-makers, the netCommons project released in November 2018 as a self-standing document entitled “Enabling the Telecommons: Guidelines for Policy-Makers” *netCommons Policy Brief (Nov. 2018)*. They were presented by the netCommons team during a panel at the Internet Governance Forum on November 12th, in Paris and featured in a blogpost on the London School of Economics “Media & Policy” project blog.⁹

These guidelines are meant for European policy-makers working on the telecom sector, addressing various steps that can be taken to support the development of Community Networks and adapt the regulatory framework accordingly.

The document takes stock of the new rules agreed upon in the summer of 2017 at the EU level as a result of our work with European Community Networks and digital rights groups. These guidelines are meant to be appropriated by Community Networks to start a dialogue with regulators and other stakeholders.

5.3. Inviting Community Networks to the policy table

Although CNs have often partnered with municipalities and local public authorities, national and European regulators need to pay more attention to their activities when drafting regulation. Community Networks 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. Community Networks can bring an informed view to these debates, allowing for a policy-making process more attuned to the public interest.

This is all the more important considering that article 3.3.e) of the forthcoming European Code of Electronic Communications provides that:

“Member States, BEREC and the EU Commission, in fulfilling their missions pursuant to the code, should take due account of the variety of conditions relating to infrastructure, competition, end-user and consumers circumstances that exist in the various geographic areas within a Member State including local infrastructure managed by individuals on a not-for-profit basis.”

This language covers most, if not all, of CN models and suggests that regulators should actively mobilize the knowledge of Community Networks. CNs have both the expertise and legitimacy to participate in technical and legal debates over broadband policy, to make the underlying political issues more salient, and to bring an informed view of the effect of existing policies on the ground.

In sum, they bring a dissenting view that can only open up new policy paths, and stimulate a debate to ensure that telecom policy stays in tune with the public interest. Of course, for enabling real participation, there is a need for policy-makers to provide remote participation schemes and design consultation processes in a way that makes them available [accessible] to volunteer-based initiatives.

⁹<http://blogs.lse.ac.uk/mediapolicyproject/2018/11/27/eu-telecom-reform-paves-way-for-policies-tailored-for-community-networks/>

1. Inviting Community Networks to Policy Tables

Regulators should actively mobilize the knowledge of Community Networks and work on regulation with a view to facilitate the development of trans-local infrastructures built and managed on commons-based production schemes.

5.4. Lifting unnecessary regulatory and financial burdens

Many CNs are Internet access providers, offering access to the Internet to many users. But considering their small market size and special governance features, regulators should get rid of unnecessary regulatory burdens, such as fees or red-tape that are unnecessary or illegitimate when imposed on small and/or non-profit entities.

In Belgium for instance, the registration fee that telecom operators must pay to the National Regulatory Authorities (NRA) is at 676€ for the first registration, plus 557€ every following year (for those whose revenues are below 1M€, which is the case for many Community Networks). Even such small fees can hinder the growth of small networks that efficiently serve tens of households. In France, Spain and Germany, it is free, which might explain why the community network movement is much more dynamic in these countries. Likewise, taxes intended for large corporate firms in the telecom sectors should not apply to smaller, non-profit operators.

Fortunately, the new European Code of Electronic Communication contains recitals to that effect. Recital 48 for instance provides that:

“competent authorities should duly take into account, when attaching conditions to the general authorization and applying administrative charges, situations where electronic communications networks or services are provided by individuals on a not-for-profit basis. In the case of electronic communications networks and services not provided to the public it is appropriate to impose fewer and lighter conditions, if any at all, than are justified for electronic communications networks and services provided to the public.”

In the same spirit, recital 52 states that:

“to the extent that the general authorisation system extends to undertakings with very small market shares, such as community-based network providers, or to service providers whose business model generates very limited revenues even in case of significant market penetration in terms of volumes, Member States should assess the possibility to establish an appropriate de minimis threshold for the imposition of administrative charges.”

We therefore call on policy-makers to make the most of these new provisions and systematically explore what administrative charges, procedures or conditions should be revised to accommodate the special needs and capacities of Community Networks.

2. Lifting Regulatory and Financial Burdens

Regulators should get rid of unnecessary regulatory burdens, such as fees or red-tape that are unnecessary or illegitimate when imposed on small and/or non-profit entities network operators.

5.5. Limiting civil and criminal liability for people sharing Internet access

Several laws seek to prevent the sharing of Internet connections among several users by making people responsible (and potentially liable) for all communication made through their Wi-Fi connection, and create legal risks for people sharing their connection.

In Germany, rights-holders have used a “secondary liability” doctrine to dissuade people from sharing their Internet connection with other users in their vicinity, thereby chilling the growth of the Community Networks movement. In France too, copyright law imposes a form of secondary liability regime, hereby creating significant legal uncertainty for people sharing their network connections with other users. In 2017, two German courts have also made controversial application of the McFadden ruling to the European Court of Justice, holding individuals who had shared their Wi-Fi connection liable for copyright infringements committed by other users.

Here again, the new European Code of Electronic Communications brings useful developments in this regard, stressing in article 55.3 that:

“[policy-makers and telecom providers should not] restrict or prevent end-users from allowing reciprocally or more generally accessing to the networks of such providers by other end-users through radio local area networks, including on the basis of third-party initiatives which aggregate and make publicly accessible the radio local area networks of different end-users.”

The same article also reaffirms that “in any event”, the liability exemptions provided by “Article 12 of Directive 2000/31/EC shall apply”¹⁰.

Open WiFi sharing – and in particular the model pioneered by CNs like the Germany-based Freifunk – is now acknowledged and encouraged by this new provision. It should be used to ensure that the right to share one’s connection is effectively guaranteed. In the same spirit, where they exist like in Italy, telecom operators’ contract clauses that forbid subscribers to share their connections with others should be prohibited.

3. Limit Civil and Criminal Liability for People Sharing Internet Access

Policy-makers and telecom providers should not restrict or prevent end-users from allowing reciprocal networks use or more generally accessing to the networks by other end-users, including initiatives that aggregate and make publicly accessible the networks of different end-users.

5.6. Expanding the spectrum commons

It is not just Internet wireless access points that can be shared, but also the intangible infrastructure on which radio signals travel. WiFi, as an unlicensed portion of the spectrum and therefore a commons open to all, is a key asset for Community Networks willing to set up affordable and flexible last-mile infrastructure.

Unfortunately, these WiFi frequency bands are currently very limited. Not only are they getting increasingly subject to congestion in densely populated areas, they are also exposed to new technical standards that use the

¹⁰Article 12.1 of the directive on the information society establishes the so-called “mere conduit” principle: “Where an information society service is provided that consists of the transmission in a communication network of information provided by a recipient of the service, or the provision of access to a communication network, Member States shall ensure that the service provider is not liable for the information transmitted, on condition that the provider: (a) does not initiate the transmission; (b) does not select the receiver of the transmission; and (c) does not select or modify the information contained in the transmission.”

so-called ISM frequency band (like Long Term Evolution – Unlicensed (LTE-U)) that hamper the reliability of WiFi communications. Last but not least, existing frequency bands for WiFi (5.6 Ghz and 2.4 Ghz) have physical constraints that prevent them for being used for longer radio links. In the face of such challenges, a new approach to spectrum policy is needed whereby policy-makers expand unlicensed WiFi bands.

Other types of frequencies should also be made available either on an unlicensed (preferred scenario), or on an affordable and flexible authorization schemes. Such frequency bands for instance include so-called TV white spaces in lower frequencies (which allow for cheap and resilient long-distance links, for instance in rural areas), as well as the 12Ghz and the 60Ghz bands (for which radio equipment is affordable and which can help us build high-bandwidth point-to-point radio links). Once made accessible to Community Networks, they can help roll-out and expand cheap and resilient wireless infrastructures.

Shared and unlicensed access to the radio spectrum embodies the core principle of general authorization mechanism enshrined since 2002 at the EU level. In 2012, the European Radio Spectrum Policy Programme further called on policy-makers to assess the “need for and feasibility of extending the allocations of unlicensed spectrum” in the WiFi bands¹¹. That same year, a EU Commission study also called for a new 100 MHz of license-exempt bands as well as for higher power output limits in rural areas to reduce the cost of broadband Internet access deployment Forge, Horvitz, and Blackman (2012). But unfortunately, no concrete action has since been implemented.

In the upcoming European Code of Electronic Communications, new provisions also encourage shared and unlicensed use of spectrum (see article 4.4, 45.2, 46.1). Policy-makers must understand the need and urgency of implementing a reform of spectrum policy favoring unlicensed and shared access to this vital resource, and more generally innovative licensing schemes that could benefit Community Networks *Unleashing Community Networks: Innovative Licensing Approaches* (2018). For instance, in 2015, the Mexican NRA amended its frequency plan to set aside part of the 800 MHz band for “social purpose” licensing. To qualify for a social-use license, applicants must demonstrate that the spectrum would be used to service communities of 2,500 people or less, or communities located in a designated indigenous region or so-called “priority zone.” Community Networks like Rhizomatica have relied on this social purpose licensing to develop networks in areas not served by traditional telecom providers.

4. Expand the Spectrum Commons

The spectrum is inherently a public good, thus the portion of the spectrum shared as a commons or leased with exclusive use licenses but tailored for Community Networks should be steadily increased to meet their needs.

5.7. Updating open-access rules on private and public telecom infrastructures

As our societies transition to last-mile fiber-optic networks, there is a risk that Community Networks will be left behind. To promote competition, diversity, resilience and local empowerment in telecom markets, regulators should urgently update open access rules that once were the cornerstone of European telecom policy to make them fit for Fiber-to-the-Home (FTTH) networks. To do so, different strategies can be identified depending on whether existing infrastructure is privately owned or public.

In France, the first publicly available ISP was a non-profit organization called French Data Network (FDN). Created in 1992, FDN it still in operation today. But like many alternative landline ISPs, FDN does not have

¹¹See recital 25 of the decision 243/2012/EU of 14 March 2012 establishing a multiannual radio spectrum policy programme.

enough funding to deploy its own cables. It has to rent those of larger players.

Two kinds of access can be rented: either passive or active access. Passive access means that a provider actually rents access to the physical cables of another operator, installs its own equipment in key part of the network and manages every technical aspect of the access provided to users. Renting passive access is expensive and suited to providers who are able to reach out to large number of users in a given area, or to companies with very specific needs. The alternative is active access (also called “bitstream”), which amounts to simply renting part of a network already managed by another operator. It does not require to install equipment and is much cheaper. Even though it does not give as much technical control as passive access, it still allows ISPs such as FDN to provide the tailored services that its members and subscribers are looking for.

The problem is that whereas active access is now readily available in most Asymmetric Digital Subscriber Line (ADSL) markets, it is still a far-fetched dream for fiber networks. In France, only the four largest telecom firms are able to invest in fiber optic last-mile networks. Worse, these telecom companies are often alone in a specific area, which leads to a monopolistic situation from the perspective of end-users. The root cause is that there is currently no bitstream offers allowing smaller operators or Community Networks (CNs) to use the infrastructure rolled-out by these dominant players to provide their services to end-users.

Despite fears that it would reinforce monopolistic trends when it was first proposed, the Code of Electronic Communications was amended to safeguard regulatory room for manoeuvre. NRA will still be able to engage in asymmetric regulation (i.e. more stringent regulation of dominant market players). Most crucially for alternative providers like CNs, who do not have the financial power to join the so-called “co-investment agreements” (whereby large telecom companies come together as a cartel to deploy a joint FTTH network in a given area), “NRA should also safeguard the rights of access seekers who do not participate in a given co-investment.” Recital 165 also makes clear that access to NRA will retain the ability to impose active access obligations on network owners, when “access to passive [network] elements would be economically inefficient or physically impracticable.” Policy-makers should therefore use their powers to ensure that active access offers are available for Community Networks across local markets, especially when they review (and attach conditions to) co-investment agreements adopted by large telecom providers.

Another pressing issue is that of public networks. Like the radio spectrum, networks built with taxpayers money should be treated as a commons and, as such, remain free from corporate capture. Today, their management and exploitation is often delegated by public authorities to large network operators. These entities usually adopt aggressive and untransparent pricing schemes designed for incumbent players that make it extremely costly for small access providers to interconnect with these networks. It is unacceptable that citizen initiatives designed to serve the needs of populations whose connectivity needs are badly served by traditional telecom providers be kept away from public networks. Access to these networks for non-profit entities like Community Networks as well as small businesses should be guaranteed, at a reasonable and proportionate cost. To do so, policy-makers should also mandate that all public networks come with active access offers and pricing schemes that makes it possible for small players, in particular Community Networks, to offer services on these networks.

5. Update of Open-Access Rules on Private and Public Telecom Infrastructures

To promote competition, diversity, resilience and local empowerment in telecom markets, regulators should update open access rules that once were the cornerstone of European telecom policy to make them fit for Fiber-to-the-Home (FTTH) networks, with special attention given to infrastructures supported by taxpayers’ money.

5.8. Protecting free software and user freedom in radio equipment

In 2014, the European Union adopted Directive 2014/53 on radio equipment.¹² Although the Directive pursues sound policy goals, it might actually impair the development of community networks. Indeed, community networks usually need to replace the software included by the manufacturer in radio hardware with free and open source software especially designed to suit their needs, a collective process that improves security and encourages the recycling of hardware, among other benefits. Article 3.3(i) of the said Directive creates legal pressure for manufacturers of radio devices to ensure the compliance of the software loaded on these devices with the European regulatory framework. As a result, there is a strong incentive for manufacturers to lock down their devices and prevent third-party modifications of the hardware.

Policy-makers should provide a general exception for all free software installed on radio devices by end-users and operators (the latter being liable if their software lead to violations of the regulatory framework), so that users' rights are safeguarded. An alternative approach would be to exempt all WiFi routers from Article 3.3(i). Further, they should require router manufacturers to open their devices for installation of third-party, open source software. As an example of this, the FCC explicitly refers to free and open source software when stating that third-party software should not be prohibited. Manufacturers should also be required to enable the free and open source development communities with sufficient information of possible consequences that firmware changes may have.

6. Free Software and User Freedom in Radio Equipment should be Protected

Policy-makers should provide a general guarantee to enable free software installation on radio devices by end-users and operators, so that users' rights are safeguarded.

5.9. Exploring other measures supporting the development of Community Networks

Beyond the most urgent measures listed above, there is a wide range of policies that can foster the growth of Community Networks. They could for instance explore how Universal Service funds could be used to bring targeted support to Community Networks as a way of tapping into their experience in building cheap and resilient networks serving the needs of underserved populations.

There is a great deal that can be done to boost transparency, for instance by providing clear guidance on regulatory requirements and exemptions applicable to CNs, by compiling up-to-date databases on already existing infrastructure (passive/active offers available, licensing regime, spectrum availability etc.) or on programmed civil engineering work so as to reduce the cost of fiber deployment. By opening to the world of Community Networks, policy-makers, and NRA in particular, will be able to think of many creative measures to better fulfill their tasks and duties, and eventually better serve the public interest.

¹²Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC.

7. Other Measures

A wide range of policies can foster the growth of Community Networks, starting from using the funds for Universal Service, and they should all be thoroughly explored in light of local culture and needs.

The policy brief presenting these guidelines ends with the following note:

Community Networks have long faced a hostile regulatory framework. But since their various models have achieved considerable results, they are nevertheless an increasingly popular way for serving the connectivity needs of people and are starting to get the recognition they deserve. Much still needs to be done to lift the obstacles that hinder their development and allow Community Networks to unleash all their potential. Building on new European and international policy orientations, now is the time for policy-makers to work with these initiatives to ensure the sustainable development of telecom infrastructures.

6. Conclusions – Recommendations

Humans have certain cognitive needs, communicative needs and co-operative needs in all types of society. Information technology and the Internet are in principle tools to serve such needs, but they also enable new ways of organising information, communication and co-operation. The contemporary Internet does not necessarily promote the idea of the good life through an optimal and desirable satisfaction of information and communication needs. Indeed, the dominance of large corporate platforms has given rise to scandals but also ongoing controversies about privacy and the lack of control on the part of the user in particular.

Advancing the good life for all with the help of computers requires a particular organisation and design of computing resources and society. Combining insights from Aristotle and Alasdair MacIntyre, we have argued that advancing the digital commons is morally important. This is because human goals are better served through a framework of communication and cooperation that inscribes and maximises the common good, as opposed to sacrificing to self-interest and inequality.

In more specific economic terms, the digital commons are inclusive when providing humans access to resources, including communication resources. In political terms, they shape the polity, organisations and decision-making processes in democratic and participatory ways and promote a meaningful and sustainable public sphere. In cultural terms, they advance personal identity and diversity through understanding and recognition while maintaining a spirit of mutuality, common learning and common principles.

Community Networks serve the ideals of the commons in all three dimensions: **Economically**, as they are concerned with issues of access, content and services; **politically**, as they enable self-organized models and emphasise user autonomy and control of one's data; **culturally**, as they build social connections and advance mutual sharing of knowledge, common learning, education and experimentation with information technology and its possibilities.

Drawing on the ideas of governing communication resources as commons and using their economic, political and cultural aspects, we organised a policy workshop in London which discussed these ideas extensively through common understandings but also diverse opinions, very much in the spirit of the digital commons. The variety of experts, together with their common sensitivities, crystallised the roundtable discussions towards the output of a set of ethical political economy and legal guidelines that can serve as input to policy-makers so that community networks are supported. The former were also influenced by work netCommons presented in [netCommons D5.2 \(March 2017\)](#), while the latter were also shaped by legal work conducted throughout the netCommons project and appearing in the already mentioned deliverables D4.1, D4.2, D4.3, as well as in the upcoming D4.5, that presents a very comprehensive set of best practices for Community Networks.

The two sets of guidelines can be incorporated in the endeavour for a democratic, participatory and community-oriented Internet. Indeed, according to our premise that the starting point of an alternative Internet is the current character of the Net, the first set (ethical) guidelines are seen as meso- and macro-principles towards the economy, politics and culture of the alternative Internet informed by the digital commons theory. The second set (policy) guidelines can be seen as the more immediate policy steps (possibly resulting in legal encasements) that can facilitate the alternative Internet through promoting the agenda of community networks and the commons more generally. This narrative, then, draws on the ethics and philosophy of the digital commons and brings the two sets of guidelines together in a very compact and terse presentation reported in Table 6.1 and Table 6.2, collecting the recommendations and guidelines discussed in Chapter 4 and Chapter 5 in two plain, clear tables.

The material presented in this deliverable is intertwined with many Tasks in netCommons, thus it has sometimes repeated concepts and findings already reported in other deliverables. As mentioned, it draws on all the deliverables within WP5, in particular the results and analysis of the large survey of Internet users and their

concerns, but also on the work presented in [netCommons D5.5 \(Nov. 2018\)](#) on the right to the hybrid city, which includes some of the ideas of the commons from a rights and digital rights perspective. It is also relevant with the issues of sustainability of community networks, sustainability that is also detailed into economic, political and cultural terms, the latter encompassing what is often termed social sustainability. Indeed, sustainability of community networks is an implicit, and often explicit, concern of the current deliverable and has been discussed in the context of the alternative (i.e., sustainability of alternative Internet arrangements of some form). The deliverable has also the obvious and repeatedly mentioned links with legal work done throughout the project; as such, it also informs and intersects with the parallel work on the production of a comprehensive set of guidelines toward Community Networks (rather than toward policy makers as this one), reported in D4.5 at M36.

Aspect	Ethical guidelines
Economic	<p>1. Access as a Right: Connectivity and access to resources for all should be guaranteed, together with challenging Internet monopolies and fostering diversity at the layers of applications and services.</p> <p>2. Users' involvement: Users and communities should be involved in the definition of their information and communication needs, and the design of relevant technologies (services, applications).</p>
Political	<p>3. Privacy and Data Management: Internet access and provision of network services should respect the protection of the privacy of users' data, provide opportunities for active user involvement in the management of their data, and the necessary skills needed for such involvement.</p> <p>4. Public Involvement: The public sector should have an important role in Internet investment, Internet regulation, as well as in ensuring that mechanisms for learning, education, engagement and training of citizens are available.</p>
Cultural	<p>5. Learning and Cultural Production: Internet access and provision of network services should be underpinned by a community culture which provides mechanisms for recognition, respect, diversity and common learning through commons-based peer production.</p>

Table 6.1: Ethical guidelines reflecting aspects of a participatory, democratic and community-oriented Internet.

Aspect	Policy guidelines
Legal/policy	<p>1. Inviting Community Networks to Policy Tables: Regulators should actively mobilize the knowledge of Community Networks and incorporate into codes local infrastructure managed by individuals on a not-for-profit basis.</p> <p>2. Lifting Regulatory and Financial Burdens: Regulators should get rid of unnecessary regulatory burdens, such as fees or red-tape that are unnecessary or illegitimate when imposed on small and/or non-profit entities.</p> <p>3. Limit Civil and Criminal Liability for People Sharing Internet Access: Policy-makers and telecom providers should not restrict or prevent end-users from allowing reciprocal networks use or more generally accessing to the networks by other end-users, including initiatives that aggregate and make publicly accessible the networks of different end-users.</p> <p>4. Expand the Spectrum Commons: the spectrum is inherently a public good, thus the portion of the spectrum shared as a commons and leased with exclusive use licenses should be steadily increased to meet the Community Networks needs.</p> <p>5. Update of Open-Access Rules on Private and Public Telecom Infrastructures: To promote competition, diversity, resilience and local empowerment in telecom markets, regulators should update open access rules that once were the cornerstone of European telecom policy to make them fit for Fiber-to-the-Home (FTTH) networks, with special attention given to infrastructures supported by taxpayers' money.</p> <p>6. Free Software and User Freedom in Radio Equipment should be Protected: Policy-makers should provide a general guarantee to enable free software installation on radio devices by end-users and operators, so that users' rights are safeguarded.</p> <p>7. Other Measures: A wide range of policies can foster the growth of Community Networks, starting from using the funds for Universal Service, and they should all be thoroughly explored in light of local culture and needs.</p>

Table 6.2: Policy guidelines reflecting aspects of a participatory, democratic and community-oriented Internet.

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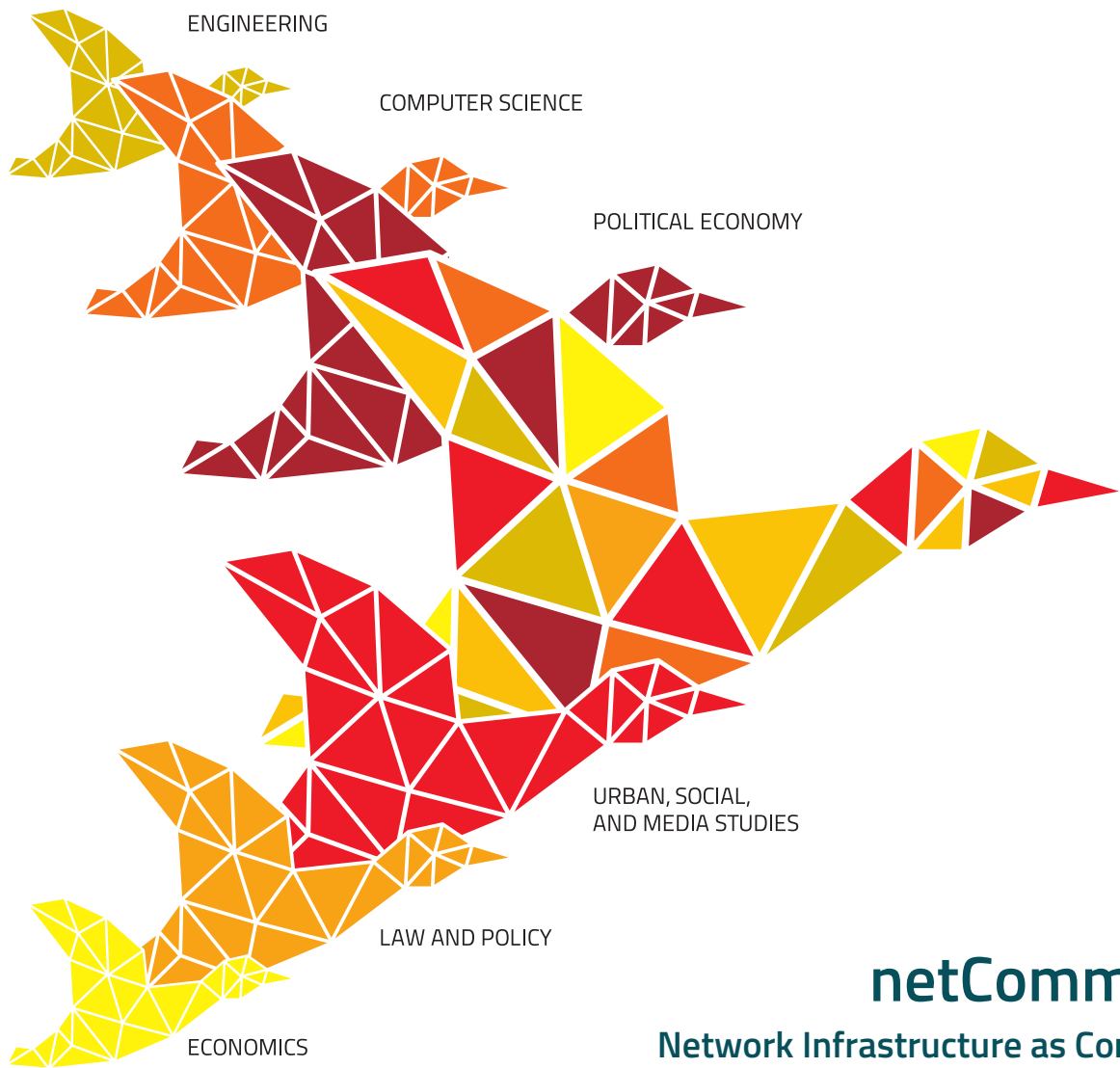
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A. List of participants in the London policy workshop on May 15 2018

Participant	[*]	Organization
Malcolm Corbett	(MC)	INCA
Russell Southwood	(RS)	Balancing Act Africa
David Souter	(DS)	APC
Adam Burns	(AB)	
Ramon Roca	(RR)	guifi.net
Nikos Kourtzis	(NK)	Sarantaporo and UNHCR
Barry Forde	(BF)	B4RN
Brian Condon	(BC)	
David Bland	(DB)	Wansdyke
Daniele Trincherò	(DT)	President of "Senza fili Senza Confini" community ISP
Tom Thatcher	(TT)	OfCom
Idomeneas Manolitsakis	(IM)	President of Information Society, Greece
Thomas de Groot	(TG)	Pirate Party, Netherlands
Virginie Aubree	(VA)	Univ of Trento
Melanie Dulong de Rosnay	(MD)	CNRS
Maria Michalis	(MM)	Univ of Westminster
Christian Fuchs	(CF)	Univ of Westminster
Peter Goodwin	(PG)	Univ of Westminster
Dimitris Boucas	(DBC)	Univ of Westminster

[*]: acronym used in this deliverable in transcripts of dialogues.



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