

Transitioning to a Social Knowledge Economy

By Michel Bauwens et al., Quito, June 30, 2014 (version 1.0)

Background on the FLOK Project

The National Plan for Good Living of Ecuador recognizes and stresses that the global transformation towards knowledge-based societies and economies requires a new form for the creation and distribution of value in society. The National Plan's central concept is the achievement of 'Buen Vivir' ('Sumak Kawsay', in Kichwa language) or 'good living'; but good living is impossible without the availability of 'good knowledge', i.e. 'Buen Conocer' ('Sumak Yachay', in Kichwa language). The third national plan for 2013-2017 explicitly calls for an open-commons based knowledge society[1].

President Correa himself exhorted young people to achieve and fight for this open knowledge society[2].

The FLOK Society is a joint research effort by the Coordinating Ministry of Knowledge and Human Talent (with Minister Guillaume Long), the SENESCYT, i.e. the 'Secretaría Nacional de Educación Superior, Ciencia, Tecnología e Innovación' (with Minister Rene Ramirez) and IAEN, i.e. the 'Instituto de Altos Estudios del Estado' (with rector Carlos Prieto) to develop transition and policy proposals to achieve such an open commons-based knowledge society. The FLOK Society team leaders are Daniel Vazquez and Xabier Barandiarán, with Michel Bauwens, as research director, assisted by five research stream coordinators and the assistant coordinator Daniel Araya.

FLOK refers to:

- **Free**, meaning freedom to use, distribute and modify knowledge in universally available common pools;
- **Libre** stresses that it concerns free as in freedom, not as in 'gratis';
- **Open** refers to the ability of all citizens to access, contribute to and use this common resource.

A free, libre and open knowledge society therefore essentially means organizing every sector of society, to the maximum degree possible, into open knowledge commons, i.e. the availability of common pools of knowledge, code and design that are acceptable to all citizens and market entities, to create dynamic and innovative societies and economies, where knowledge is available without discrimination to all who need it to develop their civic and economic activities.

The aim of the research plan is to combine the best advice from the global commons, and Ecuadorian civil society, in order to propose an integrated transition plan and the associated policy framework and proposals.

The research plan builds on the original FLOK Proposal[3], i.e. Designing the FLOK Society, by Xabier E. Barandiarán & Daniel Vázquez. It builds on this proposal and specifically calls for an integrative or 'wholistic' approach, which goes beyond technology, and calls for measures that take

into account different aspects of social change that need to occur if not simultaneously, then at least linked through a positive feedback loop, in which various measures reinforce each other. It also broadens and deepens the call by looking at commons-based infrastructures not just for knowledge, but for other social and productive activities.

The Framing of the Proposal

The Three Value Models and the transition to a Social Knowledge Economy

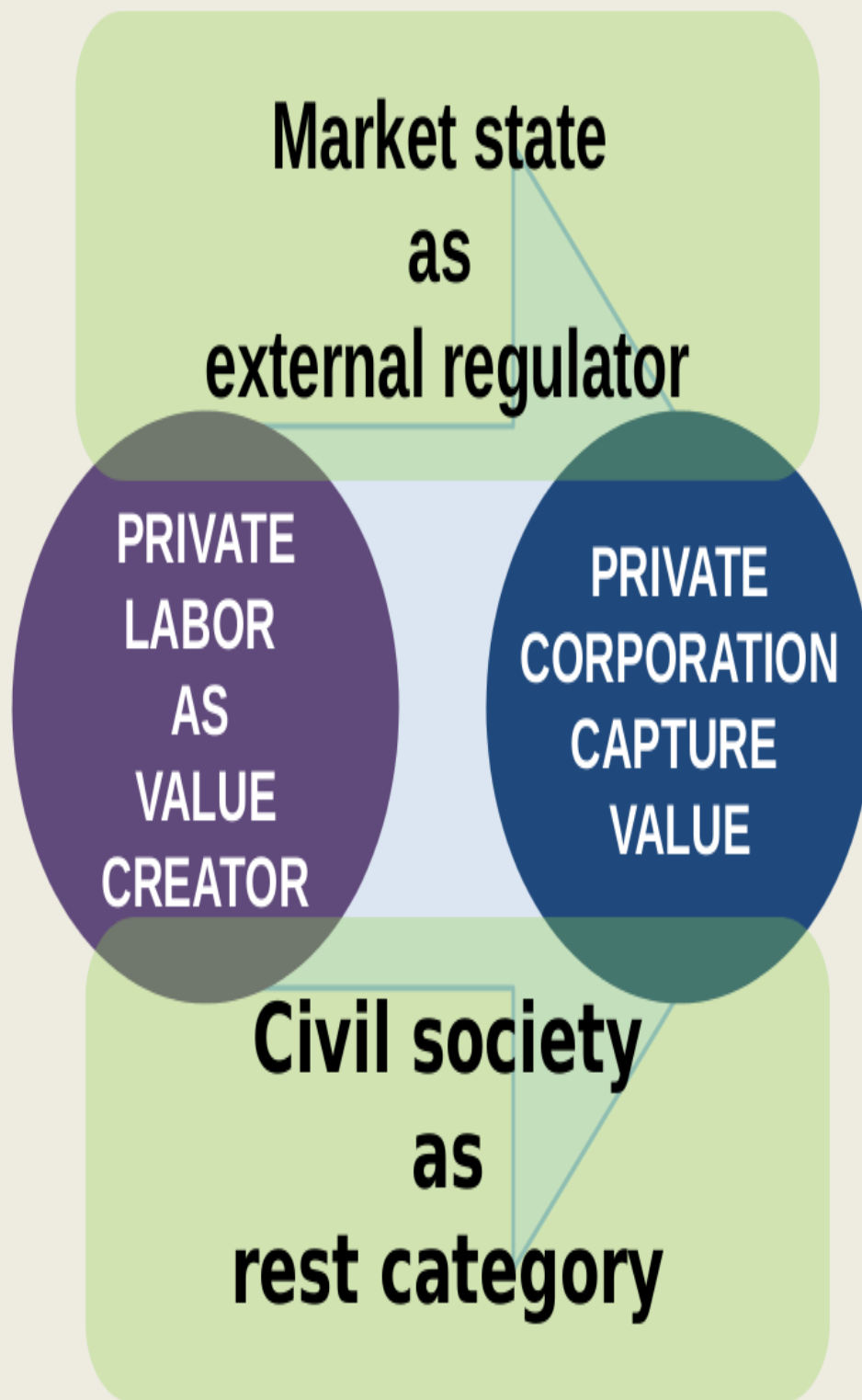
In order to frame the transition to a 'social knowledge economy' or a FLOK-based societal model, we use a framing of three particular 'value extraction and distribution' systems, which determine how economic value is created, extracted, and distributed.

The traditional capitalist value model is of course well known, but the emergence of a knowledge society has already changed these dynamics to a fundamental extent.

In the traditional model, before the era of networked and cognitive production, private capital actors invest in capital and labour, and sell the industrial and consumer products with a surplus value.

But the new models of cognitive capitalism work with different models of value extraction and distribution, and we distinguish three different models, which includes the post-capitalist model of the social knowledge economy. In the context of this Commons Transition Plan, we define cognitive capitalism generically as that model of capitalism where the ownership and control of information flows is the key factor for the extraction of value [\[4\]](#).

TRADITIONAL PROPRIETARY CAPITALISM



Michel Bauwens

Of the three models we will distinguish, one form is still dominant, but rapidly declining in importance; a second form is reaching dominance, but carries within itself the seeds of its own destruction; a third is emerging, but needs vital new policies in order to become dominant.

The first model: 'Classic' Cognitive Capitalism based on IP extraction

The first form is the classic form of cognitive capitalism, based on a "rentier" capitalism that extracts rent from Intellectual Property, and in which financial capital dominates. A good description of this form is McKenzie Wark's *Hacker Manifesto* (2004), in which he describes the logic of "vectoral capitalism", where the 'vectors' of communication are in the hands of mass media and the multinational corporations that organize production. This first form of cognitive capitalism was dominant in the first era of networked computing, before the emergence of the civic internet and the web, when the networks were exclusively in the hands of multinational companies and/or governments and their centralized public channels. In this system, the profit of capital is increasingly dependent on 'intellectual property' regulations that keep technical, scientific, commercial and other forms of knowledge artificially scarce, and therefore allow the realization of super-profits. The profits of purely industrial production have become low, but the benefits of IP and the control of the networks of production through IT, allow for the generation of huge monopolistic profits. This first form of cognitive capitalism is far from dying, is still in fact dominant, but is nevertheless undermined in the second era of networked computing, where internetworks are now diffused throughout society, and the vectors of production can no longer be monopolized. Furthermore, the ubiquity of digital technology, and its ability to reproduce informational products at reduced marginal cost, severely undermines the maintenance of an intellectual property regime based on maintaining artificial scarcity, through legal repression or technological sabotage (such as the use of Digital Rights Management [\[5\]](#)).

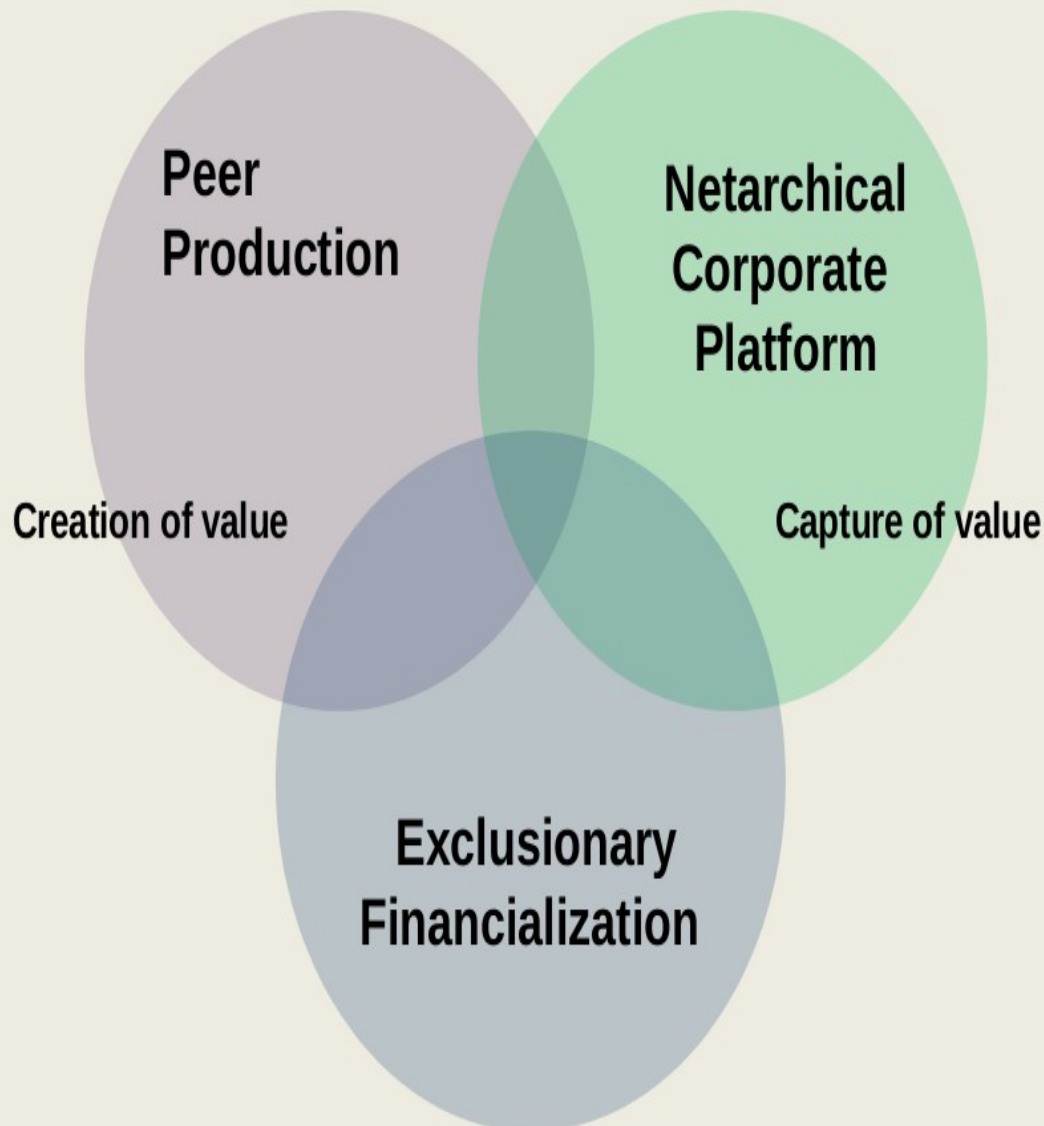
The second model: Netarchical Capitalism based on the control of networked platforms

Indeed, the second era of massively networked computing, born with the publicly accessible internet, has undermined the control of the "vectoral" class, and created a new class of controllers, that of "netarchical capital", the type of capital investment that controls proprietary social media platforms, but that nevertheless enables direct peer to peer communication between individuals.

This second form of netarchical capitalism, is a form where capital no longer controls the direct production of information and communication, but extracts value through its new role as platform intermediary. This model relies much more marginally on IP protection, but rather allows p2p communication but controls its possible monetization through the role and the ownership of the platforms for such communication. Typically, as in proprietary social media such as Facebook or Google, the front end is peer to peer, i.e. it allows p2p sociality, but the back end is controlled, the design is in the hands of the owners, as are the private data of the users, and it is the attention of the user base that is marketed through advertising. The financialisation of cooperation is still the name of the game. This form is a hybrid form however, because it also allows the further growth of p2p sociality in which media exchange and production is largely available to an ever large user base.

This form thus co-exists with multiple forms of grassroots p2p production and exchange, and sees for example the emergence of more monetary diversity, in the form of more localized complementary or community-driven currencies which act as defenders of local economic flows; and in the form of a global reserve crypto-currency like Bitcoin, a shadow currency that is useful as a 'civic' post-Westphalian currency but at the same time exhibits the features of financial capitalism in an exacerbated fashion. Netarchical capitalism suffers from a severe 'value crisis', in which the logic of use value strongly emerges and grows exponentially, but in a demonetized form. The remaining monetized value rests on speculative valuation of cooperative value creation by financial markets.

EMERGENT P2P UNDER COGNITIVE CAPITALISM



Michel Bauwens

The Value Crisis under conditions of netarchical capitalism

Neoliberalism was characterized by a particular 'value crisis' which exploded in the systemic crisis of 2008. Under the general conditions of the neoliberal regime, the wages of the workers have stagnated, and the part that goes to the owners of capital increased, creating a crisis of accumulation, which was solved through credit. When corporations, governments and the general consumer's credit became over-extended, by 2008, the neoliberal system entered into a systemic crisis. Already under neoliberalism, the material value of the assets of production, are but a small part of the evaluation of a company's value, and the excess value can be considered already as a form of extraction of the human immaterial cooperation. Under conditions of cognitive capitalism,

especially under its netarchical form, this value crisis is exacerbated.

The period since the 1990s, when civic internetworks became increasingly available to the wider population, and commons-based peer production, and other forms of networked value creation became possible, saw the birth of a mixed regime.

Through the different forms of peer production and networked value creation, use value is increasingly created independently of the private industrial and financial system, and takes place through the civic contributory form, where immaterial use value is deposited in common pools of knowledge, code and design.

In 'pure' peer production, which we can call a form of 'aggregated distribution' of labor, contributors, voluntary or paid, contribute to a common pool where the immaterial value is deposited; for-benefit associations, such as the FLOSS Foundations, enable the continued cooperation to occur; and entrepreneurial coalitions of mostly for-profit capitalist enterprise, capture the added value in the marketplace. In this model, though there is continued creation of use value in the commons, and thus, 'an accumulation of the commons' based on open input, participatory processes of production, and commons-oriented output which is available to all users; capital accumulation continues through the form of labour and capital in the entrepreneurial coalitions. But an increasing amount of voluntary labour is extracted in this process. In the sharing form of networked value, characterized by social media/networking taking place over proprietary platforms, the use value is created by the social media users, but their attention is what creates a marketplace where that use value becomes extracted exchange value. In the realm of exchange value, this new form of 'netarchical capitalism' (the hierarchies of the network) may be interpreted as hyper-exploitation, since the use value creators go totally unrewarded in terms of exchange value, which is solely realized by the proprietary platforms. Finally, in the form of crowdsourced marketplaces, what we call 'disaggregated distribution' because the workers are isolated freelancers competing without collective shared IP, capital abandons the labour form and externalizes risk on the freelancers. According to preliminary research by 'digital labor' researcher Trebor Scholz [6] the average hourly income in some cases does not exceed 2 dollars per hour, which is way below the U.S. Minimum wage. A typical example is the skills marketplace TaskRabbit, where the workers cannot communicate with each other, but clients can.

Under the regime of cognitive capitalism, use value creation expands exponentially, but exchange value only rises linearly, and is nearly exclusively realized by capital, giving rise to forms of hyper-exploitation. We would argue that it creates a form of hyper-neoliberalism. While in classic neoliberalism, labour income stagnates, in hyper-neoliberalism, society is deproletarized, i.e. waged labor is increasingly replaced by isolated and mostly precarious freelancers ; more use value escapes the labour form altogether.

Under the mixed regime of cognitive capitalism in its netarchical form , networked value production grows, and has many emancipatory effects in the social field of use value creation, but this is in contradiction with the field of exchange value realization, where hyper-exploitation occurs. This is what we mean when we say that there is an increased contradiction between the proto-mode of production that is peer production, and associated forms of networked value creation; and the relations of production, which remain under the domination of financial capital.

In this new hybrid form, a sector of capital, netarchical capitalism, has liberated itself to some significant degree of the need for proprietary forms of knowledge, but it has actually increased the level of surplus value extraction. At the same time, use value escapes more and more its dependency on capital. This form of hyper-neoliberalism creates a crisis of value. First, the part of exchange-value mediated labor, diminishes compared to the role of direct use value creation, making capital increasingly superfluous and parasitical; second, the forms of value creation explode, but the continued reliance on monetized exchange value does not allow for the realization of that value by the use value producers; profits in the industrial economy, diminish as well, making the financial sector and its reliance on IP rent, the increasingly dominant power; at the same time, the power of

IP rent extraction is undermined by direct use value creation. In any case, all these trends create a crisis for the accumulation of capital; the feedback loop between use value creation, and the exchange-value capture, ideally redistributed either as wages or through social payments, is broken; over-reliance on debt renders massive lending moot as a solution. Capital becomes more reliant on the externalities of social cooperation, yet fails to reward it. As the concept of 'value' becomes increasingly unclear and complex (and de-linked from a clear correlation to hourly labor), financial capitalism attempts to realize the value of this social cooperation through speculative mechanisms instead, but which then potentially increase the amount of fictitious capital in the system (the fictitious capital is actually the unrealized use value that is no longer rewarded because of the value crisis). These correlated issues are examined in depth by Adam Arvidsson and Nicolai Peitersen in their book on the Ethical Economy (2013).

We could call this value regime neo-feudal, because it relies increasingly on unpaid 'corvee' and creates widespread debt peonage. Finally, ownership is replaced by access, diminishing the sovereignty that comes with property, and creating dependencies through the one-sided licensing agreements in the digital sphere.

Towards a third model: a mature 'civic' peer-to-peer economy

The third is the hypothetical form we believe we may successfully transition to, if we succeed in rebuilding transformative social movements, and hence succeed also in transforming the state so that it can act as a Partner State which facilitates the creation of new civic infrastructures. In this model, peer production is matched to both a new market and state model, create a mature civic and peer-based economic, social and political model, where the value is redistributed to the value creators. These changes have been carried forward in the political sphere by a emerging commons movement, which espouses the value system of peer production and the commons, driven by the knowledge workers and their allies.

THE POST – CAPITALIST SCENARIO

STABLE COMMONS ALLIED TO SOCIAL
ECONOMY



Michel Bauwens

Solving the value crisis through a social knowledge economy

Since the mixed model seems to create untenable contradictions, it becomes necessary to imagine a transition to a model where the relations of production are not in contradiction with the evolution of the mode of production. This means a system of political economy which would be based on the

recognition, and rewarding, of the contributive logic at work in commons-oriented peer production.

If we look at the micro-level, we recommend the intermediation of cooperative accumulation. In today's free software economy, open licences enable the logic of the commons, or even technically, 'communism' (each contributes what he/she can, each uses what is needed), but created a paradox: 'the more communistic the license, the more capitalistic the economy', since it specifically allows large for-profit enterprises to realize the value of the commons in the sphere of capital accumulation. Hence, ironically, the growth of a 'communism of capital'.

We propose to replace the non-reciprocal 'communistic' licenses, with socialist licenses, i.e. based on the requirement of reciprocity.

Hence, the use of a peer production license [7], would require a contribution to the commons for its free use, at least from for-profit companies, to create a stream of exchange value to the commoners/peer producers themselves; in addition, commoners would create their own market entities, create added market value on top of the commons, realize the surplus value themselves, and create an ethical economy around the commons, where the value of the production of rival goods would be realized. Such ethical entrepreneurial coalitions would likely enable open book accounting and open supply chains, that would coordinate the economy outside of the sphere of both planning and the market. The ethical entrepreneurial coalitions could expand the sphere of the commons by the use of commons ventures, such as in the 'venture communist' model proposed by Dmytri Kleiner. In this model, cooperatives in need of capital would float a bond that would allow the purchase of means of production. These means of production would belong to the commons; in other words, the machines would be rented from the common pool, but this rent would also be redistributed to all the members of the commons. In this binary economic form, the commoners-cooperators would receive both a wage from their cooperative, but also an increasing part of the common rent. (In addition, all citizens would benefit from a basic income provided by the Partner State). Such entrepreneurial coalitions, intrinsically in solidarity with their commons, could also move to practices such as open accounting and open logistics, which would allow for widespread mutual coordination of their productive capacities, hence ushering a new third model of allocation that would be neither a market, nor a planning system, but a stigmergic coordination system. (In such a system, action and production are coordinated through open mutual signalling in a fully transparent system. [8]) In other words, the stigmergic coordination, which is already operating in the sphere of 'immaterial' production such as free software and open design, would gradually be transferred to the sphere of 'material' production. To the degree that such stigmergic systems create the possibility of resource-based economic models, such spheres of the economy would be gradually demonetized and replaced by measurement systems (i.e. commodity currencies with 'store of value' systems would gradually disappear).

However, such changes at the level of the micro-economy would not survive a hostile capitalist market and state without necessary changes at the macro-economic level; hence the need for transition proposals, carried by a resurgent social movement that embraces the new value creation through the commons, and becomes the popular and political expression of the emerging social class of peer producers and commoners - allied with the forces representing both waged and cooperative labor, independent commons-friendly entrepreneurs, and agricultural and service workers.

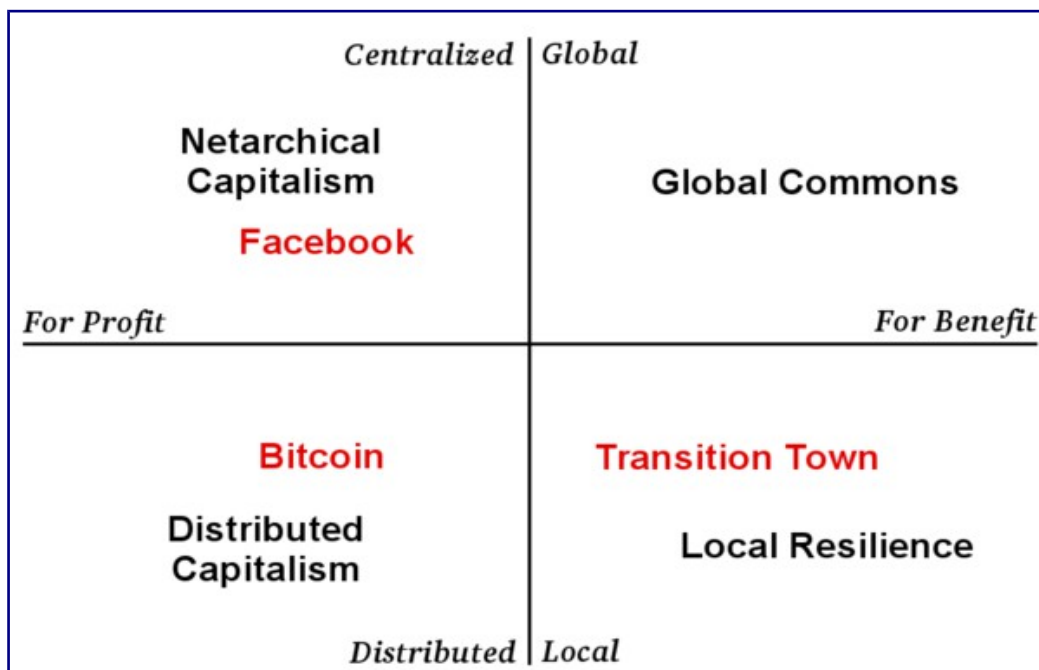
Four Technology Regimes

Value regimes are more or less associated with technology regimes, since the forces at play want to protect their interests through the control of technological and media platforms, which encourage certain behaviours and logics, but discourage others. The powers over technological protocols and value-driven design decisions are used to create technological platforms that match proprietary interests.

Thus, even as peer to peer technologies and networks are becoming ubiquitous, ostensibly similar p2p technologies have very different characteristics which lead to different models of value creation and distribution, and thus different social and technological behaviours. In networks, human behaviour can be subtly or not so subtly influenced by design decisions and invisible protocols that are designed in the interest of the owners or managers of the platforms.

The following graphic is organized around two axes, which determine at least four distinct possibilities.

The first top-down axis distinguishes centralized technological control (and a orientation towards globality) from distributed technological control (and a orientation towards localization); the horizontal axis distinguishes a for-profit orientation (where any social good is subsumed to the goal of shareholder profit), from for-benefit orientations (where eventual profits are subsumed to the social goal).



The four potential scenarios are discussed here:

Netarchical Capitalism as a technological regime: peer to peer front end, hierarchical back-end

Netarchical capitalism, the first combination (upper-left quadrant), matches centralized control of a distributed infrastructure with an orientation towards the accumulation of capital. Netarchical capital is that fraction of capital which enables and empowers cooperation and P2P dynamics, but through proprietary platforms that are under centralized ownership and control. While individuals will share through these platforms, they have no control, governance or ownership over the design and the protocol of these networks/platforms, which are proprietary. For examples, think of Facebook or Google. Typically under conditions of netarchical capitalism, while sharers will directly create or share use value, the monetized exchange value will be realized by the owners of capital. While in the short term it is in the interest of shareholders or owners, this also creates a longer term value crisis for capital, since the value creators are not rewarded, and no longer have purchasing power to acquire the goods that are necessary for the functioning of the physical

economy.

Distributed Capitalism as a technological regime: the commodification of everything

The second combination, (bottom-left quadrant) called “distributed capitalism”, matches distributed control but with a remaining focus on capital accumulation. The development of the P2P currency Bitcoin, the Kickstarter crowdfunding platform, and the privately owned sharing platforms, are representative examples of these developments. Under this model, P2P infrastructures are designed in such a way as to allow the autonomy and participation of many players, who are allowed to interact without the classic intermediaries, but the main focus rests on profit-making. In Bitcoin, all the participating computers can produce the currency, thereby disintermediating large centralized banks. However, the focal point remains on trading and exchange through a currency designed for scarcity, and thus must be obtained through competition. The conscious deflationary design of the currency insures a permanent increase in value, and thus encourages hoarding and speculation. On the other hand, Kickstarter functions as a reverse market with prepaid investment. Under these conditions, any Commons is a byproduct or an afterthought of the system, and personal motivations are driven by exchange, trade and profit. Many P2P developments can be seen within this context, striving for a more inclusionary distributed and participative capitalism. Though they can be considered as part of, say, an anti-systemic entrepreneurialism directed against the monopolies and predatory intermediaries, they retain the focus on profit making. Distribution, here, not meant locally though, as the vision is one of a virtual economy, where small players can have a global compact, and create global aggregations of small players. However, despite the ideals expressed by the political and social movements associated with such a model (such as anarcho-capitalism and Austrian School of Economics), in practice, these dynamics inevitably lead to consolidation and concentration of capital.

Resilience Community Platforms Designed for Re-Localization

The following model associates distributed local control of technological platforms with a focus on the community or Commons, and aims to create “resilience communities” that can withstand the vagaries of an unstable global marketplace. (the bottom-right quadrant). The focus here is most often on relocalization and the re-creation of local community. It is often based on an expectation for a future marked by severe shortages of energy and resources, or in any case increased scarcity of energy and resources, and takes the form of lifeboat strategies. Initiatives like the Degrowth movement or the Transition Towns, a grassroots network of communities, can be seen in that context. In extreme forms, they are simple lifeboat strategies, aimed at the survival of small communities in the context of generalized chaos. What marks such initiatives is arguably the abandonment of the ambition of scale and the focus on strong and resilience local communities. Though global cooperation and web presence may exist, the focus remains on the local. Most often, political and social mobilization at scale is seen as not realistic, and doomed to failure. In the context of our profit-making versus Commons axis though, these projects are squarely aimed at generating community value. A generic critique of this model is that it does not generate counter-power or a counter-hegemony for the model, as the globalization of capital is not matched or kept in check by a counterforce of the same scale. Hence the need for a second alternative model, which also recognizes the importance of scale and pays attention to the dynamics of global power and governance.

The Global Commons Scenario as the desired alternative

The “Global Commons” approach (upper-right quadrant) is against the aforementioned focus on the local, focusing on the global Commons.

Advocates and builders of this scenario argue that the Commons should be created for, and fought for, on a transnational global scale.

Though production is distributed and therefore facilitated at the local level, the resulting micro-factories are considered as essentially networked on a global scale, profiting from the mutualized global cooperation both on the design of the product, and on the improvement of the common machinery. Any distributed enterprise is seen in the context of transnational phyles, i.e. alliances of ethical enterprises that operate in solidarity around particular knowledge Commons, on a global and not simply local scale. Thus, though the production is local, the social, political and economic organisation is global, and able to create a counter-power at that scale.

In addition, political and social mobilization, on regional, national and transnational scale, is seen as part of the struggle for the transformation of institutions at every level of scale. Participating enterprises are vehicles for the commoners to sustain global Commons as well as their own livelihoods. This latter scenario does not take social regression as a given, and believes in sustainable abundance for the whole of humanity.

Cognitive/Netarchical Capitalism vs. an Open-Commons based Knowledge Society

It may be useful here to directly compare two synthetic and countervailing scenarios. On the one hand, the for-profit driven scenarios that are in harmony with the present political economy of capital; and on the other hand, the alternative scenario of the social knowledge economy based on FLOK principles.

So: What exactly is an open-commons based economy and society?

To understand it we must first look at the older social and economic model that it replaces.

The neoliberal and capitalist economic forms combine three basic elements, fundamental choices that guide their operation.

The first is the belief that the earth's resources are infinite, which allows an idea of permanent and compound economic growth in the service of capital accumulation. Neoliberal capitalism is therefore based on a illusion of a fake or 'pseudo-abundance'; and its growth mechanism is dedicated to the senseless accumulation of material riches.

The second is the belief that the flow of knowledge, science and culture should be privatized, and therefore serves the exclusive benefit of property owners. Knowledge is made to serve capital accumulation and the profits of the few. The privatization of knowledge through excessive copyrights and patent regimes have a dramatically slowing effect, and allow for a exclusionary financialization. This leads to the creation and maintenance of artificial scarcity. While markets can be considered to be a allocation mechanism for scarce and rival goods (a scarcity allocation mechanism), contemporary IP-proprietary capitalism is a scarcity-engineering mechanisms which creates and increases scarcities.

Finally, the two first elements are configured in such a way that they do not serve social justice, equality, and benefits for all, but rather the benefits and profits for the few. Under cognitive capitalism, the fruits of social cooperation are enclosed and financialized, and the majority of the population has to pay for knowledge that is largely socially produced. Only those with money can benefit from technical and scientific innovations.

Then, we must look at the positive counter-reactions that have emerged and which have been particularly strengthened after the crisis of neoliberalism, which was felt by southern countries in the previous decades, but became global in 2008.

A first reaction has been the recapture of the state by citizen movements, such as particularly in the Andean countries like Ecuador.

The second is a re-emergence and flowering of new economic forms based on equity, such as the cooperative economy, the social economy, and the solidarity economy. The new progressive governments, and a few others, are all committed to the strengthening of these more socially just economic forms.

Third, we have seen the emergence of a sharing economy, which is mutualizing physical infrastructures (though often in the form of private platforms) in order to re-use and make available the enormous amount of surplus material and resources that have been created in the last thirty years. Apart from the explosion of carsharing and bikesharing, they often take the form of 'peer to peer marketplaces', allowing citizens to create more fine-grained exchanges of their surplus.

Fourth, and perhaps most importantly, we have seen, thanks largely to the potentiality of the global networks, the emergence of commons-based peer production. Globally and locally, productive communities of citizens have been creating vast common pools of knowledge, code (software), and design, which are available to all citizens, enterprises and public authorities to further build on. Often, these productive knowledge commons are managed by democratic foundations and nonprofits, which protect and enable the common productive infrastructure of cooperation, and protect the common pool of knowledge from exclusionary private enclosure, most often using open licenses; they are sometimes called 'for-benefit associations'. Very often, these productive communities co-exist with a dynamic entrepreneurial coalition of firms co-creating and co-producing these common pools, thereby creating a dynamic economic sector. It is very common for these open eco-systems to displace their proprietary-IP based competitors. A U.S. report on the 'Fair Use Economy', i.e. economic activities based on open and shared knowledge, estimated its economic weight in that country to be one-sixth of GDP.

Yet there is also a paradox: it is most likely that it is the capitalist forms that first see the potential of the new commons-based economic forms, and ally with them; on the other hand, cooperative economic forms rarely still practice and co-produce open knowledge pools. However, there is an emerging trend to transform the existing cooperative tradition based on single-stakeholder governance, into multi-stakeholder governance, and which introduce the care of the common good in their statutes.

What this means is that the emerging global knowledge economy, can today take two competing forms.

In the first form of the knowledge-economy, under the regime of cognitive capitalism, we have on the one hand the continuation of proprietary IP, and the realisation of economic rent by financial capital; combined with a new form of 'netarchical' capital, which enables but also exploits social production. It is not difficult to see that the riches of giants like Facebook and Google are based on the hyper-exploitation of the free labour of the citizens using their social networks.

The other, more desirable form of the knowledge-based economy is based on open commons of knowledge, but which are preferentially linked to an ethical and equitable economy. This is the form of knowledge economy and civilisation that is most compatible with the vision of the Ecaudorian government that emerged from the citizens' revolution, and with the values expressed by the National Plan in its various iterations.

The Socio-Economic Implications of a Social Knowledge Economy

John Restakis offers the following positive description of the social knowledge economy [\[9\]](#):

In the current debate concerning the rise and consequences of “cognitive capitalism” a new

discourse is developing around the concept of a “social knowledge economy”. But what does a social knowledge economy mean and what are its implications for the ways in which a society and an economy are ordered?

Cognitive capitalism refers to the process by which knowledge is privatized and then commodified as a means of generating profit for capital. In this new phase of capitalism the centralization and control of knowledge overtakes the traditional processes of material production and distribution as the driving force of capital accumulation. In the past, capitalism was concerned primarily with the commodification of the material. Essential to this process was the gradual enclosure and privatization of material commons such as pasturelands, forests, and waterways that had been used in common since time immemorial.

In our time, capitalism entails the enclosure and commodification of the immaterial – knowledge, culture, DNA, airwaves, even ideas. Ultimately, the driving force of capitalism in our age is the eradication of all commons and the commodification of all things. The colonization and appropriation of the public domain by capital is at the heart of the New Enclosures. This process is sustained and extended through the complex and ever-evolving web of patents, copyright laws, trade agreements, think tanks, and government and academic institutions that provide the legal, policy, and ideological frameworks that justify all this. Above all, the logic of this process is embedded in the values, organization, and operation of the capitalist firm.

By contrast, a social knowledge economy is based on the principle that knowledge is a commons that should be free and openly accessible for the pursuit of what Rene Ramirez describes as “good living”, not as an instrument of commercial profit. Knowledge is perceived as a social good.

This pursuit of a social knowledge economy is seen as the key to transforming Ecuador’s economy from its dependence on the North and on multi-national corporations to one in which free and open access to knowledge builds economic independence, innovation, and the means to better serve the common good. It is knowledge mobilized to serve social, not private, ends.

As René Ramirez has said,

“Unlike cognitive capitalism that only recognizes private ownership of knowledge, what is sought in the socialism of good living takes into account public, mixed, collective ownership – and of course also private, (i.e., a range of forms of intellectual property) and that its mode of production is mostly collaborative (networks) with and for society and humanity.”^[10] What is left unanswered is how existing socio-economic institutions help or hinder the power of knowledge to play the transformative role assigned to it.

A starting point for answering this question is the recognition that knowledge in a society – its creation, utilization, and value – is a construct that is moulded by the social and economic forces that define the power relations in a community. Knowledge has always been at the service of power. Cognitive capitalism, the process by which human knowledge is both privatized and commodified, results from the domination and power of capitalist economic and social relations, and in particular, the undemocratic and privatized nature of economics, markets, and the organizational structure of firms.

In previous ages knowledge was also controlled and monopolized, to the extent that it was possible, by king or church. Today’s information technology, combined with global corporate power, has made such centralization and control far easier and far more extensive.

If the character and use of knowledge in a society is a product of existing power relations, the pursuit of a social knowledge economy must also entail a re-visioning and re-aligning of social, political, and economic relations such that they, in turn, embody and reinforce the values and principles of what knowledge as a commons implies. Absent this, how would a social knowledge economy operate, or be sustained, in an overwhelmingly capitalist economy?

Where are the social and economic spaces in which an open knowledge commons could be used in

the service of the broader community or for collective aims? What kinds or organizations are needed to in order for knowledge to be used in this way? What are the conditions necessary for them to thrive? How can they provide a counterweight to the overwhelming power and influence of capital? Without strong civic institutions committed to the idea of the commons and the public good, open knowledge systems are vulnerable to appropriation and ultimate commodification by capitalist firms as is currently the case with the internet itself. The recent ruling of the U.S. Federal Communications Commission in the United States undermining net neutrality [\[11\]](#) is a major advance in the privatization of what has until now been an equitably accessible global commons of information.

An economy in which knowledge is a commons in the service of social ends requires the corresponding social and economic institutions that will mobilize and protect knowledge for the realization of these ends. The operation of a social knowledge economy ultimately depends on social and economic institutions that embody the values of commons, reciprocity, and free, open and democratic association that are pre-requisites for the pursuit of social ends. In short, a social knowledge economy ultimately rests on social economy values.

Ramirez puts it this way:

“There are scholars from the ivory tower that would have us believe that you can separate the world of reason and ideas from the world of the material and political economy that exists globally. This not only demonstrates the lack of understanding of what is currently happening on our planet but the absence of political realism to find a real social transformation.”[\[10\]](#)

Just as cognitive capitalism depends on the manifold institutional supports supplied by government policy, legislation, free market ideology, and the collective power of firms and the institutions that serve them, even more so does a social knowledge economy require the corresponding civic and economic institutions that can support and safeguard the value of commons, of collective benefit, of open and accessible markets, and of social control over capital. These civic institutions are embodied in the structure of democratic enterprises, of peer-to-peer networks, of non-profits and community service organizations, of mutually supporting small and medium firms, and of civil society and the social economy itself. It is these social and economic structures, based on the principles of reciprocity and service to community, that can best utilize knowledge as a commons and safeguard its future as an indispensable resource for the common good and the wellbeing of humanity as a whole.

The identification of these institutions and of the public policies needed for their development and growth is the overarching aim of this research.

Discussion: IP and patents impede and slow down innovation

By George Dafermos:

Intellectual property rights and their supposed role in cognitive capitalism

"Capitalist knowledge economies use intellectual property (IP) rights as means of enclosing knowledge and as mechanisms by which to realise the extraction of monopoly rents from knowledge that has been thus privatised. That is ideologically justified as follows: exclusive IP rights provide incentives for individuals and companies to engage in research and develop new products and services. That is, they promote innovation: the expectation of profitable exploitation of the exclusive right supposedly encourages economic agents to turn their activities to innovative projects, which society will later benefit from (e.g. Arrow 1962). But is that actually an accurate description of the function of IP rights in capitalist knowledge economies? Do they really spur innovation?"

A synopsis of empirical evidence on the effect of exclusive intellectual property regimes on innovation and productivity

To answer this question, it is instructive to look at the available empirical data on the effect of exclusive IP rights on technological innovation and productivity. The case of the United States is indicative of a capitalist knowledge economy in which the flow of patents has quadrupled over the last thirty years: in 1983 the US Patent Office granted 59.715 patents, which increased to 189.597 in 2003 and 244.341 in 2010 (US Patent Office 2013). Looking at these numbers begs the question: how has the dramatic increase in the number of patents issued by the US Patent Office over time impacted technological innovation and productivity in the US? Well, according to the US Bureau of Labor Statistics, the annual growth in total factor productivity in the decade 1970-1979 was about 1,2%, while in the next two decades it fell below 1%. In the same period, R&D expenditure hovered around 2,5% of GDP (***). In short, what we see is that the dramatic increase in patents has not been paralleled by an increase in productivity or innovation. No matter which indicator of productivity or innovation we use in the analysis, we are invariably led to the conclusion that 'there is no empirical evidence that they [patents] serve to increase innovation and productivity, unless productivity [or innovation] is identified with the number of patents awarded' (Boldrin and Levine 2013, p. 3; also, see Dosi et al. 2006).

Another argument often voiced by proponents of exclusive IP rights in defense of patents is that they promote the communication of ideas and that, in turn, spurs innovation. They claim that if patents did not exist, inventors would try to keep their inventions secret so that competitors would not copy them (e.g. Belfanti 2004). From this standpoint, the solution to the problem is a trade between the inventor and society: the inventor reveals his innovation and society gives him the right to exploit it exclusively for the next twenty or so years. Hence, the argument goes, to the extent that they replace socially harmful trade secrets, patents promote the diffusion of ideas and innovations (Moser 2013, pp. 31-33). In reality, however, patents have exactly the opposite effect, encouraging ignorance and non-communication of ideas. In what has become a standard practice, 'companies typically instruct their engineers developing products to avoid studying existing patents so as to be spared subsequent claims of willful infringement, which raises the possibility of having to pay triple damages' (Boldrin & Levine 2013, p.9; Brec 2008). Even if that were not always the case, the way in which patent documents are written actually renders them incomprehensible to anyone except lawyers (Brec 2008; Mann & Plummer 1991, pp. 52-53; Moser 2013, p. 39).

The real function of intellectual property rights in cognitive capitalism: how do capitalist firms actually use them? What, however, more than anything else disproves the claimed positive effect of patents on innovation and creativity is the way in which patents are actually used by capitalist firms. In a capitalist knowledge economy, patents are used primarily as (a) means to signal the value of the company to potential investors, (b) as means to prevent market-entry by other companies (so they have strategic value independently of whether they are incorporated in profitable products) and (c) as weapons in an 'arms-race', meaning they are used defensively to prevent or blunt legal attacks from other companies (e.g., see Boldrin & Levine 2013; Cohen et al. 2000; Hall & Ziedonis 2007; Levin et al. 1987; Pearce 2012). It would take a heroic leap of logic for any of these applications of patents to be seen as productive. On the other side, there is a plethora of cases in which the effect of patents on innovation and productivity has been undoubtedly detrimental. Indicatively, consider how Microsoft is currently using a patent (no. 6370566) related to the scheduling of meetings in order to impose a licensing fee on Android mobile phones (Boldrin & Levine 2013***). In this case, patents become a mechanism for sharing the profits without any participation in the actual process of innovation. As such, they discourage innovation and constitute a pure waste for society. Interestingly, not that long ago, Bill Gates (1991), Microsoft founder, argued that 'if people had understood how patents would be granted when most of today's ideas were invented, and had taken out patents, the industry would be at a complete standstill today...A future startup with no patents of its own will be forced to pay whatever price the giants choose to impose'. It is ironic, of course, that Microsoft, not being able to penetrate the mobile telephony market, is now using the threat of patent

litigations to raise a claim over part of Google's profits.

The way in which patents are used in capitalist knowledge economies makes it blatantly obvious that 'in the long run...patents reduce the incentives for current innovation because current innovators are subject to constant legal action and licensing demands from earlier patent holders' (Boldrin & Levine 2013, p.7). This becomes readily understood, considering that technological innovation is essentially a cumulative process (Gilfillan 1935, 1970; Scotchmer 1991): Cumulative technologies are those in which every innovation builds on preceding ones: for example, the steam engine (Boldrin et al. 2008; Nuvolari 2004), but also hybrid cars, personal computers (Levy 1984), the world wide web (Berners-Lee 1999), YouTube and Facebook.

But if patents have at best no impact and at worst a negative impact on technological innovation and productivity (Dosi et al. 2006), then how is it possible to explain – especially from the legislator's side – the historical increase in patents and the expansion of IP-related laws? Many analysts have pondered this question. The conclusion to which they have been led is rather unsettling: the actual reason behind the proliferation of patents and the expansion of IP-related laws consists in the political influence of large, cash-rich companies which are unable to keep up with new and creative competitors and which use patents to entrench their monopoly power."

Discussion: the role of Indigenous Peoples and (Neo)Traditional Knowledge

Arguments for the specific role of (neo)-traditional knowledge and peoples in a social knowledge transition

By adopting and adapting the concept of Buen Vivir, which originated in traditional communities, as an inspiration for policy by a contemporary national state, Ecuador has brought an important innovation in policy-making.

Such neotraditional approaches, if they are based on a mutual dialogue, are a very important part of a transition to a social knowledge economy. In the following section, we make the case why this is so important.

*** The Main Argument: the common immateriality of traditional and post-industrial eras**

It is not difficult to argue that modern industrial societies are dominated by a materialist paradigm. What exists for modern consciousness is material physical reality, what matters in the economy is the production of material products, and the pursuit of happiness is in very strong ways related to the accumulation of goods for consumption. For the elite, its powers derive essentially from the accumulation of capital assets, whether these are industrial or financial. Infinite material growth is really the core mantra of capitalism, and it is made necessary and facilitated by the very design of the contemporary monetary system, where money is mostly created to interest-driven bank debt.

But this was not the case in traditional, agriculture-based societies. In such societies, people of course do have to eat and to produce, and the possession of land and military force is crucial to obtain tribute from the agricultural workers, but it cannot be said that the aim is accumulation of assets. Feudal-type societies were based on personal relations consisting of mutual obligations. These are of course very unequal in character, but are nevertheless very removed from the impersonal and obligation-less property forms that came with capitalism, where there is little impediment for goods and capital to move freely to whomever it is sold to.

In these post-tribal but still pre-modern societies, both the elite and the mass body of producers are united by a common immaterial quest for salvation or a similar core spiritual pursuit like enlightenment, etc ... , and it is the institution that is in charge of organizing that quest, like the Church in the western Middle Ages or the Sangha in South-East Asia, that is the determining

organization for the social reproduction of the system. Tribute flows up from the farming population to the owning class, but the owning class is engaged in a two-fold pursuit: showing its status through festivities, where parts of the surplus is burned up; and gifting to the religious institutions. It is only this way that salvation/enlightenment, i.e. spiritual value or merit in all its forms, can be obtained. The more you give, the higher your spiritual status. Social status without spiritual status is frowned upon by those type of societies. This is why the religious institutions like the Church of the Sangha end up so much land and property themselves, as the gifting competition was relentless. At the same time, these institutions serve as the welfare and social security mechanisms of their day, by ensuring that a part of that flow goes back to the poor and can be used in times of social or natural emergencies.

In the current era, marked by a steady deterioration of eco-systems, is again undergoing a fundamental and necessary shift to immateriality.

Here are just a few of the facts and arguments to illustrate my point for a shift towards once again a immaterial focus in our societies.

The cosmopolitan elite of capital has already transformed itself for a long time towards financial capital. In this form of activity, financial assets are moved constantly where returns are the highest, and this makes industrial activity a secondary activity. If we then look at the financial value of corporations, only a fraction of it is determined by the material assets of such corporation. The rest of the value, usually called “good will”, is in fact determined by the various immaterial assets of such corporation, it’s expertise and collective intelligence, it’s brand capital, the trust in the present and the future expected returns that it can generate.

The most prized material goods, such as say Nike shoes, show a similar quality, only 5% of its sales value is said to be determined by physical production costs, all the rest is the value imparted to it by the brand (both the cost to create it, and the surplus value created by the consumers themselves).

The shift towards a immaterial focus can also be shown sociologically, for example through the work of Paul Ray on cultural creatives, and of Ronald Inglehart on the profound shift to postmaterial values and aspirations.

For populations who have lived for more than one generation in broad material security, the value system shifts again to the pursuit of knowledge, cultural, intellectual and spiritual experience. Not all of them, not all the time, but more and more, and especially so for the cultural elite of ‘cultural creatives’ or what Richard Florida has called the Creative Class, which is also responsible for key value creation in cognitive capitalism.

One more economic argument could be mentioned in the context of cognitive capitalism. In this model of our economy, the current dominant model as far as value creation is concerned, the key surplus value is realized through the protection of intellectual properties. Dominant Western companies can sell goods at over 100 to 1,000 times their production value, through state and WTO enforced intellectual rents. It is clearly the immaterial value of such assets that generate the economic streams, even though it requires creating fictitious scarcities through the legal apparatus.

We have argued before that this model is undermined through the emergence of distributed infrastructures for the production, distribution and consumption of immaterial and cultural goods, which makes such fictitious scarcity untenable in the long run. The immaterial value creation is indeed already leaking out of the market system. While we need such a transition towards a focus on immaterial value, it also creates very strong contradictions in the present political economy, one of the main reasons why a shift towards a integrated social knowledge economy, is a vital necessity.

*** The Second Argument: the nature of post-deconstructive trans-modernism**

Industrial society, its particular mental and cultural models, are clearly antagonistic to tradition. The old structures must go: religion is seen as superstition, community is seen as repressive of

individuality, and tradition is seen as hampering the free progress of dynamic individuals. This makes modernism both a very constructive force, for all the new it is capable of instituting in society, but also a very destructive force, at war with thousands of years of traditional values, lifestyles and social organization. It attempts to strip individuals of wholistic community, replacing it with disciplinary institutions, and commodity-based relations.

The subsequent postmodernist phase, is a cultural (but also structural as it is itself an expression of capitalist re-organization) reaction against modernity and modernism. Postmodernism is above all a deconstructive movement. Against all 'reification' and 'essentialisation', it relativises everything. No thing, no individual stands alone, we are all constituted of fragments that themselves are part of infinite fields. Through infinite play, the fragmented 'dividual' has at its disposal infinite constitutive elements that can be recombined in infinite ways. The positive side of it, is, that along with freeing us with fictitious fixed frameworks of belief and meaning, it also re-opens the gates of the past and of tradition. Everything that is usable, is re-usable, and the war against tradition ends, to make place for pragmatic re-appropriation. But as the very name indicates, postmodernism can only be a first phase of critique and reaction against modernity and modernism, still very much beholden to it, if only in its reactivity to all things modern. It is deconstructive, a social regression of the collective ego that can only receive ultimate therapeutic meaning if it is followed by a reconstructive phase. For postmodernism to have any ultimate positive meaning, it must be followed by a trans-formative, reconstructive phase. A trans-modernism if you like, which goes 'beyond' modernity and modernism. In that new phase, tradition can not just be appropriated any longer as an object, but requires a dialogue of equals with traditional communities. They are vital, because they already have the required skills to survive and thrive in a post-material age.

*** The Third Argument: the problematic nature of un-changed tradition**

Using or returning to a premodern spiritual tradition for transmodern inspiration is not a path that is without its problems or dangers: it can very easily become a reactionary pursuit, a fruitless attempt to go back to a golden age that has only existed in the imagination.

The core problem is that many spiritual traditions all occurred within the context of exploitative economic and political systems. Though the exploitation was different, most traditional spirituality and its institutions developed in systems that were based on tribute, slavery, or serfdom. These systems usually combined a disenfranchised peasant population, a warrior or other ruling class, in which the traditional Church or Sangha played a crucial role for its social reproduction. For example, Buddhism only became acceptable to the 'mainstream' society of its time when it accepted to exclude slaves. Despite its radical-democratic potential, it became infused with the feudal authority structure that mirrored the society of which it was a part. These spiritualities are therefore rife with patriarchy, sexism and other profoundly unequal views and treatments of human beings.

Though the logic was profoundly different from capitalism, these forms of exploitation, and their justification by particular religious or spiritual systems and institutions, should prove to be unacceptable to contemporary (post/trans-modern) consciousness. Perhaps a symmetrical but equally problematic approach would be the pure eclecticism that can be the result of postmodern consciousness, in which isolated parts of any tradition are simply stolen and recombined without any serious understanding of the different frameworks. Another problem we see is the following: contemporary communication technologies, and globalized trade and travel, and the unification of the world under capitalism, have created the enhanced possibility for a great mixing of civilizations. Though contact and interchange was always a reality, it was slow, and its different civilisational spheres really did exist, which created profoundly different cultural realities and individual psychologies. To be a Christian or a Buddhist meant to have profoundly different orientations towards life and society (despite structural similarities in religious or spiritual organization). But a growing part of the human population, if not the whole part, is now profoundly exposed to the

underlying values of the other civilisational spheres. For example, Eastern Asian notions have similarly already profoundly impacted western consciousness. In this context, rootedness in one's culture and spiritual traditions can no longer be separated with a global cosmopolitan approach and a continuous dialogue with viewpoints and frameworks that originate elsewhere. Increasingly global affinity networks are becoming as important as local associations in influencing individuals and their identity-building.

*** Fourth Argument: the road to differential post-industrial development**

I believe it would be fair to say that contemporary capitalism is a machine to create homogeneity worldwide, and that this is not an optimal outcome, as it destroys cultural biodiversity. In its current format, which got a severe shock with the current financial meltdown, which combines globalization, neoliberalism and financialization, it is also an enormous apparatus of coercion. It undermines the survivability of local agriculture and creates an enormous flight to the cities; it destroys long-standing social forms such as the extended family, and severely undermines traditional culture. Of course, I do not want to imply that all change or transformation is negative, but rather stress that it takes away the freedom of many who would make different choices, such as those who would want to stay in a local village.

It is here that neotraditional approaches offer real hope and potential. Instead of the wholesale import of global habits and technologies, for which society has not been prepared and which is experienced as an alien graft, it offers an alternative road of choosing what to accept and what to reject, and to craft a locally adapted road to post-industrial development.

It reminds us of Gandhi's concept of Swadeshi and appropriate technology. He rejected both western high tech, which was not adapted to many local situations, but also unchanged local agrarian tradition and technology, which was hardly evolving. Instead, he advocated appropriate technology, an intermediary level of technology which started from the local situation, but took from modern science and technology the necessary knowledge to create new tools that were adapted to the local situation, yet offered increases in productivity.

Neotraditional economics could take a similar approach, but not limited to an attitude to technology selection, but to the totality of political and social choices. In this way, in harmony with local values, those aspects can be chosen, which increase the quality of livelihoods, but do not radically subvert chosen lifestyles and social forms. It represents a new approach which combines the high tech of globalized technical knowledge, with the high touch elements of local culture. For example, it becomes imaginable to conceive of local villages, adapting localized and small-scale manufacturing techniques based on the latest advances in miniaturization and flexibilisation of production technologies, and which are globally connected with global knowledge networks.

*** Fifth Argument: Adapting to Steady-State Economies in the Age of the Endangered Biosphere**

The essence of capitalism is infinite growth, making money with money and increasing capital. An infinite growth system cannot infinitely endure with limited resources in a limited physical environment. Today's global system combines a vision of pseudo-abundance, the mistaken vision that nature can provide endless inputs and is an infinite dump, with pseudo-scarcity, the artificial creation of scarcities in the fields of intellectual, cultural and scientific exchange, through exaggerated and ever increasing intellectual property rights, which hamper innovation and free cooperation.

To be sustainable, our emerging global human civilization and political economy needs to reverse those two principles. This means that we first of all need a steady-state economy, which can only grow to the degree it can recycle its input back to nature, so as not to further deplete the natural stock. And it requires a liberalization of the sharing and exchange of technical and scientific

knowledge to global open innovation communities, so that the collective intelligence of the whole of humankind can be directed to the solving of complex problems.

The first transformation is closely linked to our contemporary monetary system and alternative answers can be found in the traditional conceptions of wealth of pre-industrial societies.

For example, traditional religions associated with agriculture-based societies and production systems, outlawed interest. There is a good reason for that: when someone extends a loan with interest, that interest does not exist, and the borrower has to find the money somewhere else [12].. In other words, to pay back the interest, he has to impoverish somebody else. This of course, would be extremely socially destructive in a static society, and therefore, it could not be allowed to happen, which explains the religious injunction against interest.

However, in modern capitalist societies, a solution has been found: growth. As long as the pie is growing, the interest can be taken from the growing pie. The problem however, is that such a monetary system requires growth, infinite growth. Static businesses are an impossibility, since that would mean they cannot pay back the interest.

Now that we have reached the limits of the biosphere, now that we need again a steady-state economy, we need interest-free monetary systems, and paradoxically, the religious injunctions again make sense.

This is just one of the connections between the transmodern challenges, and the value of traditional, and religious systems rooted in the premodern era, such as Buddhist Economics, and of course, the traditions of 'Buen Vivir'.

We could take many other examples: for example, modern chemical agriculture destroys the quality of the land, and depletes it, so that here also, premodern traditional practices become interesting again. However, as we stated in the third argument, and refined in the fourth argument: since tradition is also problematic, it cannot be simply copied, it can only be used in a critical manner.

An example of such a critical approach is the appropriate technology movement. In this approach, it is recognized that traditional technology as such is insufficient, that hypermodern technology is often inappropriate in more traditional settings, and that therefore, an intermediate practice is needed, that is both rooted in 'tradition', i.e. the reality of the local situation, but also in modernity, the creative use of technological solutions and reasoning, so as to create a new type of 'appropriate' technological development.

*** Conclusion: Can the ethos of the social knowledge economy be mixed with neotraditional approaches?**

With the emergence of the social knowledge economy and commons-based peer production, and practices like open and distributed manufacturing, a new alliance becomes possible: that between the most technologically advanced open design communities, with the majority of the people who are still strongly linked to traditional practices. Through such an alliance, which combines the traditional injunction for a steady-state economy in harmony with natural possibilities, a differentiated post-industrial future can be created, which can bypass the destructive practices of industrial-era modernism, and can create an 'appropriate technology' future, whereby more traditional communities can more freely decide what to adapt and what to reject. While on the other hand, transmodern open design communities can learn from the wisdom of traditional approaches. Such an alliance needs an ideological vehicle, and Buen Vivir is its expression.

The potential role of commons-based reciprocity licenses to protect traditional knowledge

Reciprocity-based licenses for traditional knowledge

Today, indigenous and other communities who want to share their knowledge for the good of the

rest of humanity are in somewhat of a moral bind.

If they share their knowledge without any IP protection, or if they share their knowledge using the classic open licenses from the free software movement, such as the General Public License, they intrinsically allow any outside forces, include the monopolistic multinationals, to profit from their knowledge and traditions, without any guaranteed reciprocity, and they may not benefit themselves from the wealth that is generated from their contributions.

On the other hand, if they use a license like the Creative-Commons Non-Commercial license, they allow sharing, and the spreading of benefits through the shared knowledge, but also reduce the potential for economic development based on that knowledge.

Finally, not sharing the knowledge at all, would prevent the rest of humanity from benefitting from potential new medicines that could save millions of human lives.

It is therefore important to introduce in the debate the possibility of reciprocity-based open licenses.

Let's first summarize the issue as it has evolved in the economies based on free software, open design and open hardware. These fields are dominated by fully open licenses such as the GPL, which allow anyone to use the code, but obliges those that modify the code, to add it to the common pool, so that all may benefit from it. While this had led to an exponential growth of free and open source software, it has also subsumed this new model of open, commons-based peer production to an economic development that is dominated by large companies. Hence, the mode of peer production is not autonomous and not able of self-reproduction, since commons-contributors are obliged to work as labor for capital. Hence, we have the paradox that licenses which allow for full sharing, in practice promote the accumulation of capital. In the cultural sphere, one of the answers for this has been the invention and use of the Creative Commons Non-Commercial License. These type of licenses allow anyone to use and reproduce the cultural product, on the condition that no commercial profit is intended and realized. This solution raises two issues. One is that such a license does not create a real commons, but only a scale of sharing that is determined by the producer of the cultural product; in other words, there is no common creation of a common pool. The second is that it prohibits further economic development based on that protected work.

Is there an alternative to this conundrum, Dmytri Kleiner has proposed a Peer Production License, which has already been discussed by open agricultural machining communities such as Adabio Autoconstruction in France. The PPL basically allows worker-owned and commons-contributing entities to freely use the common pool of knowledge, code, and design, but demands a license fee from for-profit companies that want to use the same common pool for the realization of private profit. Hence, several advantages. One is a stream of income from the private sector companies in direction of the commons; the second is that economic development is not prohibited, but simply conditioned on reciprocity; finally, there is the added possibility that those entities that sign on to the license and the common pools that it protects, could create a powerful entrepreneurial coalition based on ethical principles.

While the precise wording of the present PPL may not be appropriate 'as is' for traditional and indigenous communities, it opens up the possibility to create adapted reciprocity-based open licenses for traditional knowledge.

This would offer several advantages:

- 1) the traditional communities would be willing to share and thus the knowledge would benefit humanity as a whole
- 2) it would allow economic development based on that knowledge
- 3) the contracted reciprocity would benefit and profit to the traditional communities
- 4) members of traditional communities could themselves become active in the solidarity economy through ethical market entities that are based on the use of such licenses

5) traditional communities and their own ethical market entities could unite in entrepreneurial coalitions using the same common pools

6) these traditional communities could unite with ethical market entities active in other parts of the world, confident in the common values and principles that are enshrined in the reciprocity-based open licenses

Discussion: Gender Aspects

There is a remarkable structural similarity between the role of women in the domestic 'contributory' sector and the structural situation of peer production (as a really existing social knowledge economy) in the dominant economy.

Women contribute more than than males for the well-being of the family commons, and this work is mostly (nearly always) un-remunerated. Contributors to the commons also often volunteer their contributions for the commons. If women want to insure their own self-reproduction and a more equal place in the family, they must find work in the capital-labour nexus, as must peer producers in the social knowledge economy. Neither the domestic care economy nor the production of social knowledge currently allow for the self-reproduction of their owners.

Though many structural constraints for family equality (equality within the family) have been removed, it is very often the cultural constraints that determine that women are producing more homework than their male partners. Similarly, in the peer production economy, though it is structurally open for all to participate, it is most often male-dominated and these male-dominated cultures create not just inertia but sometimes real impediments for female participation.

This shows that the transition to a social knowledge economy must be accompanied by strong policies that solve the structural conditions of women in society and the economy. And within the already existing communities that produce social knowledge, the forces that strive for gender equality must be supported, and the structural and cultural elements that maintain gender inequality must be tackled. It is not enough for a transition project to simply enable participation in social knowledge creation and use, it must promote the equipotential participation of all citizens, and create the conditions for it. A failure to do this may lead to the opposite effect, i.e. the creation of further inequalities due to the non-participation of women in the social knowledge economy.

Introducing the new configuration between State, Civil Society and the Market

What can we learn from the already existing social knowledge economy

The social knowledge economy is not an utopia, or just a project for the future. It is rooted in an already existing social and economic practice, that of commons-oriented peer production, which is already producing commons of knowledge, code, and design, and it has produced real economies like the free software economy, the open hardware economy, the free culture economy, etc... In its most broad interpretation, concerning all the economic activities that are emerging around open and shared knowledge, it may have reached already 1/6th of GDP in the USA, employing 17 million workers, according to the Fair Use Economy report.

A lot is known about the micro-economic structures of this emerging economic model, which we can summarize as follows:

- at the core of this new value model are contributory communities, consisting of both paid and unpaid labour, which are creating common pools of knowledge, code, and design. These

contributions are enabled by collaborative infrastructures of production, and a supportive legal and institutional infrastructure, which enables and empowers the collaborative practices

- these infrastructures of cooperation, i.e. technical, organisational, and legal infrastructures, are very often enabled, certainly in the world of free software commons, by democratically-run Foundations, sometimes called FLOSS Foundations, or more generically, 'for-benefit associations', which may create code depositories, protect against infringements of the open and sharing licenses, organize fundraising drives for the infrastructure, and organize knowledge sharing through local, national and international conferences. They are an enabling and protective mechanism.
- finally, the successful projects create a economy around the commons pools, based on the creation of added value products and services that are based on the common pools, but also add to it. This is done by entrepreneurs and businesses that operate on the marketplace, and are most often for-profit enterprises, creating a 'entrepreneurial coalition' around the common pools and the community of contributors. They hire the developers and designers as workers, create livelihoods for them, and also support the technical and organisational infrastructure, including also the funding of the Foundations.

On the basis of this generic micro-economic experiences it is possible to deduce adapted macro-economic structures as well, which would consist of a civil society that consists mainly of communities of contributors, creating shareable commons; of a new partner state form, which enables and empowers social production generally and creates and protects the necessary civic infrastructures; and an entrepreneurial coalition which conducts commerce and create livelihoods.

The new configuration

In the old neoliberal vision, value is created in the private sector by workers mobilized by capital; the state becomes a market state protecting the privileged interests of property owners; and civil society is a derivative rest category, as is evidenced in the use of our language (non-profits, non-governmental). Nevertheless, the combination of labor and civic movements has partially succeeded in socialising the market, achievements which are now under threat.

In the new vision of cognitive capitalism, the networked social cooperation consists of mostly unpaid activities that can be captured and financialized by proprietary 'network' platforms. Social media platforms almost exclusively capture the value of the social exchange of their members, and distributed labor such as crowdsourcing more often than not reduce the average income of the producers. In other words, the 'netarchical' version of networked production creates a permanent precariat and reinforces the neoliberal trends.

In the contrary vision of a open-commons based knowledge economy and society, value is created by citizens, paid or voluntary, which create open and common pools of knowledge, co-produced and enabled by a Partner State, which creates the right conditions for such open knowledge to emerge; and preferentially ethical entrepreneurial coalitions which create market value and services on top of the commons, which they are co-producing as well. The ideal vision of an open-commons based knowledge economy is one in which the 'peer producers' or commoners (the labor form of the networked knowledge society), not only co-create the common pools from which all society can benefit, but also create their own livelihoods through ethical enterprise and thereby insure not only their own social reproduction but also that the surplus value stays within the commons-cooperative sphere. In this vision, the social solidarity economy is not a parallel stream of economic production, but the hyper-productive and hyper-cooperative core of the new economic model.

Thus in the new vision, civil society can be seen as consisting as a series of productive civic commonses, common pools of knowledge, code and design; the market consists of preferentially actors of the cooperative, social and solidarity economy which integrate the common good in their organisational structures, and whose labor-contributing members co-produce the commons with the civic contributors. Finally, in this vision, the Partner State enables and empowers such social cooperation, and creates the necessary civic and physical infrastructures for this flowering of innovation and civic and economic activity to occur.

The Partner State is not a weak neoliberal state, which strips public authority of its social functions, and retains the market state and repressive functions, as in the neoliberal model; it is also not the Welfare State, which organizes everything for its citizens; but it is a state that builds on the welfare state model, but at the same time creates the necessary physical and civic infrastructures for social autonomy, and for a civic production model that combines civic immaterial commons and cooperative social solidarity enterprise.

The ethical economy and market, is not a weak and parallel economy that specializes in the less competitive sectors of the economy; on the contrary, the ethical market is the core productive sector of the economy, building strong enterprises around competitive knowledge bases. It is however, at the service of civil society and co-construct the open knowledge commons on which society and commerce depends.

Why is this a post-capitalist scenario?

Capitalist-driven societies produce for exchange value, which may be useful, or not; and continuously strives to create new social desires and demands.

By way of contrast, the open-commons based knowledge economy consists a productive civil society of contributors, citizen contributors who continuously contribute to the commons of their choice based on use value motivations; it is around these use-value commons that an ethical market and economy finds its place, and creates added value for the market. The commons is continuously co-produced by both citizen contributors and paid ethical labor from the cooperative / social sector. In this scenario, the primary driver is the sphere of abundance of knowledge available for all, which is not a market driven by supply and demand dynamics; but around the immaterial abundance of non-rival or even anti-rival goods, is deployed a market of cooperatives and social solidarity players which add and sell scarce resources on the marketplace.

In this same scenario, the state is no longer a neoliberal market-state at the service of property owners, but is at the service of civil society, their commons, and the sphere of the ethical economy. It is not at the service of the private capital accumulation of property owners, but is at the service of the value accumulation and equitable value distribution taking place in the commons-cooperative sector. It is at the service of the *buen vivir* of its citizens, and the good knowledge they need for this. Instead of a focus on public-private partnerships, which excludes participation from civil society; a commons-supporting partner state will look at the development of public-social or public-commons partnerships. Where appropriate the Partner State looks at the possible commonification of public services. For example, following the model of Quebec and Northern Italy in creating Solidarity Cooperatives for Social Care, in which the state enables, regulates the direct provision of care by multi-stakeholder governed civil society based organisations. It is very likely that once the state undertakes the support of a commons-based civic and ethical economy in the sphere of knowledge, that it will also look at the development of institutional commons in the physical sphere. For example, developing commons-based housing development policies, which keep social housing outside of the speculative sphere. A society and state which desires to develop a commons in the immaterial sphere of knowledge, will also look at expanding the commons sphere in other spheres of human activity.

An example may show why this may be sometimes necessary. In the sphere of free software

production, nearly all free software knowledge communities have their own for-benefit association which enables the cooperation, protects the licenses, etc ... This is mostly likely because engagement requires knowledge and access to networks, which have been largely socialized in our societies. But open hardware developers have not developed such associations, and are more dependent on the companies selling hardware. This is because open hardware requires substantial material resources which need to be purchased privately, which favours the owners of capital and weakens the productive community that contributes to the commons. In such a scenario, the idea that open hardware developers could mutualize their means of production, would re-establish more balance between developers and company owners. Our illustration also mentions the commons-oriented ownership and governance forms which can assist citizens in having more control over crucial infrastructures such as land and housing.

Discussion: The role of the capitalist sector

What is the role of the capitalist sector in such a scenario?

The first key issue here is the creation of a level playing field between the social solidarity sector and the private sector. Whereas the social solidarity economy voluntarily integrates the common good in its statutes and operations, and is as it were 'naturally commons-friendly', the private capital sector is regulated so that its denial of social and environmental externalities is mitigated.

The Partner State encourages transitions from extractive to generative ownership models, while the association of private companies with the commons will assist them in adapting to the new emerging models of co-creation and co-design of value with the commoners. Hyper-exploitation of distributed labour will be mitigated through new solidarity mechanisms. As the mutual adaptation between the commons sector, the cooperative sector and the capitalist sector proceeds, the remaining capitalist sector should be increasingly socialized in the new practices, as well as ownership and governance forms. The aim is to create a level playing field, in which hyper-exploitation of social value becomes a gradual impossibility, and in which extractive rent-taking becomes equally impossible and counter-productive through the existence of well-protected open commons.

The second key issue concerns the self-reproduction capabilities of the commons contributors. Under the dominance of neoliberal, cognitive and netarchical capitalist forms, commoners are not able to create livelihoods in the production of open knowledge commons, and under most open licenses, private companies are free to use and exploit the common knowledge without secure return. This obliges many and most commoners to work for private capital. What needs to be achieved is a new compact between the commons and the private companies, that insures the fair distribution of value, i.e. a flow of value must occur from the private companies to the commons and the commoners from whom the value is extracted. Models must be developed that allow privately owned companies to become fair partners of the commons. In the end, no privately-owned company, using its own research staff and proprietary IP, will be able to compete against open ecosystems that can draw on global knowledge production and sharing; this process of fair adaptation must be encouraged and accompanied by both measures from the commons and their associated ethical enterprises, and by the Partner State, in a context in which all players can benefit from the commons. Private capital must recognize, and must be made to recognize, that the value there are capturing comes overwhelmingly from the benefits of social cooperation in knowledge creation: just as they had to recognize the necessity for better and fair pay for labour, they must recognize fair pay for commons production.

A description of the new triarchy of the Partner State, the Ethical Economy and a Commons-based Civil Society

The concept of the partner state and the commonification of public services

Thus is born the concept of the Partner State, which is not opposed to the welfare state model, but 'transcends and includes' it. The Partner State is the state form which enables and empowers the social production of knowledge, livelihoods and well-being, by protecting and enabling the continuation and expansion of commons. The Partner State is the institution of the collectivity which creates and sustains the civic infrastructures and educational levels, and whose governance is based on participation and co-production of public services and collective decision-making. The Partner State retains the solidarity functions of the welfare state, but de-bureaucratizes the delivery of its services to the citizen. It abandons its paternalistic vision of citizens that are passive recipients of its services. The Partner State is therefore based on wide-spread participation in decision-making, but also in the delivery of its services. Public services are co-created and co-produced with the full participation of the citizens.

The means to this end is the 'commonification of public services' through public-commons partnerships. Public-private partnerships do not only add to the cost of public services, and create widespread distrust and need for control to counterbalance the profit-interests of the partners, but are essentially anti-democratic as they leave out the participation of the citizenry.

In a commentary, Silke Helfrich defines the general relationship of the state with the commons as such:

"For me the role of the state is at least fourfold:

not only

- to stop enclosures, but to trigger the production/construction of new commons by
- (co-) management of complex resource systems which are not limited to local boundaries or specific communities (as manager and partner)
- survey of rules (chartas) to care for the commons (mediator or judge)
- kicking of or providing incentives for commoners governing their commons - here the point is to design intelligent rules which automatically protect the commons, like the GPL does (facilitator)".

David Bollier adds that:

"The State already formally delegates some of its powers to corporations by granting them corporate charters, ostensibly to serve certain public purposes. Why can't the state make similar delegations of authority to commons-based institutions, which would also (in their own distinct ways) serve public purposes? If the key problem of our time is the market/state duopoly, then we need to insist that the state authorize the self-organizing and legal recognition of commons-based institutions also. James Quilligan has called for commoners to create their own "social charters," but the legal standing of such things remains somewhat unclear.

The public value of state-chartered commons-based institutions is that they would help

- 1) limit the creation of negative externalities that get displaced onto others (as corporations routinely do);
- 2) declare certain resources to be inalienable and linked to communities as part of their identity;
- 3) assure more caring, conscientious and effective stewardship and oversight of resources than the

bureaucratic state is capable of providing; and

4) help commoners internalize a different set of stewardship values, ethics, social practices and long-term commitments than the market encourages.” (email, July 2012)

But it is Tommaso Fattori, a leading activist of the Italian Water Commons movement, which has the most developed concept of the commonification of public services:

"The field of Commons can be for the most part identified with a public but not-state arena, in which the actions of the individuals who collectively take care of, produce and share the Commons are decisive and fundamental.

In this sense, Commons and commoning can become a means for transforming public sector and public services (often bureaucracy-bound and used to pursue the private interests of lobby groups): a means for their commonification (or commonalization). Indeed, there are many possible virtuous crossovers between the traditional public realm and the realm of Commons.

Commonification goes beyond the simple de-privatization of the public realm: Commonification basically consists of its democratization, bringing back elements of direct self-government and self-managing, by the residents themselves, of goods and services of general interest (or participatory management within revitalized public bodies). Commonification is a process in which the inhabitants of a territory regain capability and power to make decisions, to orientate choices, rules and priorities, reappropriating themselves of the very possibility of governing and managing goods and services in a participatory manner : it is this first-person activity which changes citizens into commoners. Generally, there are a series of circumstances (including living space and time schedules, job precariousness and other difficult work conditions, the urbanization of land and the complexity of infrastructures) which do not physically allow the inhabitants of a large metropolis to completely self-manage fundamental services such as water utilities or public transport, bypassing the Municipalities and the public bodies (or managing without public funds to finance major infrastructure works): it is on the other hand possible to include elements of self-government and commoning in the distinct stages of general orientation, planning, scheduling, management and monitoring of the services. At the same time it is necessary to also give back public service workers an active role in co-management. Which means going the other way down the road as compared to the privatization of that which is “public”.

But there are also other overlaps possible between the idea of public and that of Commons, apart from the necessary creation of legislative tools which can protect and encourage Commons and commoning.

Several forms of Public-Commons partnership can be developed, where the role of state is realigned, from its current support and subsidising of private for-profit companies, towards supporting commoning and the creation of common value. This can be achieved through tax exemptions, subsidies and empowerment of sharing and commoning activities, but also, for example, by allocating public and state-owned goods to common and shared usage thanks to projects which see public institutions and commoners working together. This is a road which could be the beginning of a general transformation of the role of the state and of local authorities into partner state, “namely public authorities which create the right environment and support infrastructure so that citizens can peer produce value from which the whole of society benefits”.

Tommaso Fattori has offered an in-depth understanding of the precise relationship between the new state form and the commons:

"To understand in what sense and under what conditions public services can be considered commons, it is necessary to offer some brief notes on what is meant by public service and what by commons. In both cases it is difficult to be concise, because of the breadth of the debate on the

areas and the issues. Public Services. As is well known, in most legal systems, the laws do not provide any definition of what is meant by the concept 'public service'. In short, in the doctrinal reconstruction, there are two main positions: the subjective theory focuses attention on the public nature of the subject supplying the service, whereas the objective theory focuses attention on the public interest which distinguishes the activity performed. According to the subjective theory, the elements necessary to identify public service are the direct or indirect responsibility of the State or another public body for the service, and its supply for the benefit of its citizens. On the other hand, for the objective theory, the necessary element is that the service be provided to the collectivity and place public interest at its heart. The EU however prefers to duck the issue and speak of "services of general interest": services (both market and non-market) which are considered of central interest for the collectivity and that for this reason must be subjected to "specific obligations of public service". In these pages, by public services we mean the services of general interest, that is, that plethora of fundamental services which were once an integral part of welfare services but nowadays have mostly been privatized, following political decisions, or are supplied by public bodies but run along the lines of privatized companies. These services include, although this is not an exhaustive list, health services, schools and universities, power supply, transport and other local utilities such as the water or waste services.

Commons: The definition of what is meant by commons, and what commoning is, is more complex, as this is an area in which different approaches and paradigms clash. In very general terms, commons is everything we share; in particular gifts of nature and creations of society that belong to all of us equally, and should be preserved for future generations: material or immaterial, rival or non-rival, natural or artificial resources that elude the concept of exclusive use and build social bonds.¹ In addition to shared resources, there are another two fundamental building blocks of the commons: commoners and commoning. Commoners are all the members of a community, or even loosely connected groups of people, who steward and care for the shared resources, or produce common resources, adopting a form of self-government based on their capacity to give themselves rules (and incentives and sanctions to ensure they are respected, as well as mechanisms for monitoring and resolving conflicts)², called commoning. Commoning is a participatory and inclusive form of decision-making and a governance system for sharing, producing and reproducing commons in the interest of present and future generations and in the interest of the ecosystem itself, where natural commons are concerned.

Still in general terms, although almost all goods and resources can potentially become objects of sharing, after a choice and decision by people, and thus become "shared resources" or "commons", it is however probable that most of humanity would agree on a nucleus of resources which, at least in principle, "cannot not be commons", on pain of denying life itself and the possibility of free individual and collective development: primary, fundamental, natural or social resources, which range from water to knowledge.³ A future without couch-surfing, where all beds are given a monetary value and not shared, is certainly less desirable than a future with couch-surfing; but a future without access to water for all is unacceptable. These primary commons must not allow discrimination in access to them according to individual wealth, reintroducing the element of equality and fairness, as well as a relationship of care —rather than one of domination or subjection — between humanity and the rest of nature of which it is a part. These are resources which do not belong to and which are not at the disposal of governments or the State-as-person, because they belong to the collectivity and above all, to future generations, who cannot be expropriated of their rights. Distributed participatory management and self-government, inclusion and collective enjoyment, no individual exclusive rights, prevalence of use value over exchange value, meeting of primary and diffuse needs: commons, in this understanding, means all these things."

One of the mechanisms for the delivery of commonified public services are through contracts between the state as funding and quality control mechanism, and "Solidarity cooperatives", which are multi-stakeholder coops, bringing together all parties involved in a particular

endeavor—workers, consumers, producers and members of the larger community—in a democratic structure of ownership and control. This new system of delivery has been pioneered in the field of social care, for health and support services for particular populations such as the elderly, the physically handicapped etc... and is particularly strong in northern Italy (Emilia-Romagna, the region around Bologna), as well as in Quebec. The examples are described in the policy report from John Restakis.

To conclude:

In a mature social knowledge economy, the state will still exist, but will have a radically different nature. Much of its functions will have been taken over by commons institutions, but since these institutions care primarily about their own commons, and not the general common good, we will still need public authorities that are the guarantor of the system as a whole, and can regulate the various commons, and protect the commoners against possible abuses. So in our scenario, the state does not disappear, but is transformed, though it may greatly diminish in scope, and with its remaining functions thoroughly democratized and based on citizen participation. In our vision, it is civil-society based peer production, through the Commons, which is the guarantor of value creation by the private sector, and the role of the state, as Partner State, is to enable and empower the creation of common value. The new peer to peer state then, though some may see that as a *contradictio in terminis*, is a state which is subsumed under the Commons, just as it is now under the private sector.

Source: Excerpts from a text prepared by Tommaso Fattori as part of the book-project "Protecting Future Generations Through Commons", organized by Directorate General of Social Cohesion of the Council of Europe in collaboration with the International University College of Turin. The text will be published soon in "Trends in Social Cohesion" Series, Council of Europe publications

The Ethical Economy

What exactly is the nature and the role of the ethical economy in the social knowledge economy?

First of all, the ethical economy "realizes" the value that is created by the 'commoners' in the common pools, by creating added value for the ethical market sector. The realized surplus goes directly to the workers who are also the contributors to the commons, thereby realizing their self-reproduction, independently of the classic capital accumulation economy. A new 'cooperative accumulation' process is thereby created that mediates between the commons and the classical capital sector, and directly serve the commons and the commoners.

The ethical economy can realize profits, but the realized profits serve a purpose, a mission, at the direct service of the creation of use value. It doesn't coincide therefore to the civic nonprofit sector, but is better called a Not-For-Profit sector, since the profits are subsumed to the social goal. This is in essence why the new sector is called an ethical economy, because the goals are not the accumulation of profit, but of 'benefits'. So a synonym is to talk about a 'for-benefit' sector.

The ethical companies, can take very different form, or 'open company formats', with their common goal being to contribute to the 'common good' generally, and to the commons specifically. They may be allied amongst themselves as entrepreneurial coalitions around certain specific common pools (but likely will use more than one commons). The different legal regimes may be B-Corporations, Fair Trade companies, social entrepreneurs, worker's or other form of cooperatives ... One of the key innovations has been the development of 'Solidarity Cooperatives', whose emergence has been described elsewhere by John Restakis. Solidarity Coops integrate the common good in their statutes, and are multi-stakeholder governed.

The ethical economy may be focused on relocalized production for reasons of sustainability, but its workers cooperate globally directed through the open design communities that are essential for their operations. Organizationally, they can be globally organized through models like solidarity franchising, or “Phyles”, i.e. through global community-supportive or mission-oriented ethical 'transnational' forms.

Discussion: Material and Immaterial Infrastructural Requirements for the Ethical Economy

The emergence and strengthening of the Ethical Economy as a core of the social knowledge society will require both material and immaterial infrastructural development.

The first is the development of a series of alternative 'corporate' structures, which are not linked to the realization of profit as a primary goal, but allow market entities to operate for social goals, missions, purposes, etc .. This is an area which we call Open Company Formats, and is a shift which is already well under way in various countries.

The second is the support to create viable “Open Business Models”. These are models for financial resilience and sustainability that are geared towards the recognition and development, and not the suppression, of socialized knowledge pools.

The third is the development of distributed finance, both crowdfunding directly from citizens, 'cloudfunding' directed to ethical finance partners, and state or public financing. An example of such financing is the 'Artistic Voucher System', which has been inscribed in the 'Organic Code for Social Knowledge' (COESC+1]. </ref>

The key issue is that without the super-profits realized through Intellectual Property rents, private risk capital will be much less keen to invest in patent-free innovations, and an alternative financial system needs to be built and supported through public policy frameworks.

Thus, a new legal, pro-sharing, pro-social knowledge, infrastructure needs to be developed as well, one which supports the ethical economy and its logic, and promotes and eases the mutualization of knowledge and other immaterial resources, and of the material infrastructures of production as well. A legal infrastructure is need which promotes and develops the 'sharing', 'cooperative' and other economic forms.

A technical infrastructure will be needed, not only a generic and open internet infrastructure, but the support for the development of collaborative platforms that are appropriate for the different industrial and economic sectors. An examples are the depositories of design objects that are needed in each sector; and the infrastructure for the interconnection of smart objects, the so-called Internet of Things. An infrastructure will be needed for both open and distributed manufacturing, and for distributed production of renewable energy, close to the place of need.

New forms of open value accounting will need to be developed in order to recognize the new forms of value creation in a commons-based contributory economy.

In this context, we see the role of the Partner State as being responsible for incubating the Ethical Economy through various support policies, which may take the following institutional form:

- The Institute for the Promotion and Defense of the Commons: this is an institute which promotes the knowledge about the commons and their legal and infrastructural forms, for example, the promotion and protection for the use of Commons-Based Licenses, such as the GPL, the Creative Commons, etc .. This Institute supports the creation of common pools of knowledge, code and design, both generically and for specific sectors and regions.

- The Institute for the Incubation of the Ethical Economy, supports the emergence of economic practices around the common pools of knowledge. It helps the civic and ethical entrepreneurs to create livelihoods around these common pools. It teaches entrepreneurial commoners what the possibilities are to create added value around the commons, and what the legal, commercial and technical enablers are. It promotes the creation of entrepreneurial coalitions in new sectors, and supports established ethical economy players to solve common problems.
- The Transition Income: before commons can create thriving ethical economies, a period of civil engagement and investment is needed, which may not immediately yield livelihoods. Thus, a structure can be created which can materially support the creators of new common pools to sustain themselves in such transition periods. This will be a vital mechanism in combatting precarity in the early stages of commons creation, before the entrepreneurial coalitions can take up their role in the new commons economies in various sectors.

The Commons-Based Civil Society

A contribution from John Restakis:

In its broadest and most accepted sense, civil society is the social impulse to free and democratic association, to the creation of community, and to the operations of social life, which includes politics. This is the sense of civil society that is used by writers such as Vaclav Havel. Civil society is distinguished from the state as it is from the operations of the private sector. Some writers also stress a distinction from the family as well.

For Havel and a long line of writers extending back to Aristotle, civil society remains the elementary fact of human existence. It is what makes human life possible. For Aristotle it was both the means and the end of human association as the pursuit of the good life, which is in essence a social life. And in this sense, it is the institutions that arise from civil society (the schools, the voluntary associations, the trade unions, the courts, the political parties, etc.) that provide the individual with the means to realize their own humanity and by so doing to perfect the whole of society in the process. The state is an outgrowth of this impulse.

As Thomas Paine wrote: “The great part of that order which reigns among mankind is not the effect of government. It has its origins in the principles of society and the natural constitution of man. It existed prior to government, and would exist if the formality of government was abolished. The mutual dependence and reciprocal interest which man has upon man, and all the parts of civilized community upon each other, create that great chain of connection which holds it together. In fine, society performs for itself almost everything which is ascribed to government.” Alex De Toqueville, visiting America in the late seventeen famously attributed the vitality of the young democracy to the richness and diversity of its associational life.

Within civil society, a huge portion of civic activities are carried out by organizations created to provide goods and services through collaboration, by people acting together to realize mutual interests. They constitute that sector which is composed of non-profit and voluntary organizations, service groups, cultural organizations such as choral societies, charities, trade unions, and co-operatives. This economic aspect within civil society has also been described as the civil economy, the third sector or the social economy.

For all these conceptions – the commons, civil society and civil economy – the notion of reciprocity is fundamental.

*** On Reciprocity**

Reciprocity is the social mechanism that makes associational life possible. It is the foundation of social life. In its elements, reciprocity is a system of voluntary exchange between individuals based on the understanding that the giving of a favour by one will in future be reciprocated either to the giver or to someone else.

Willingness to reciprocate is a basic signal of the sociability of an individual. Taken to an extreme, the complete unwillingness of an individual to reciprocate is tantamount to severing the bonds between themselves and other people. Reciprocity is thus a social relation that contains within itself potent emotional and even spiritual dimensions. These elements account for an entirely different set of motivations within individuals than behaviour in the classical sense of “maximizing one’s utility” as a consumer.

Reciprocity animates a vast range of economic activities that rest on the sharing and reinforcement of attitudes and values that are interpersonal and constitute essential bonds between the individual and the human community. What is exchanged in reciprocal transactions are not merely particular goods, services and favours, but more fundamentally the expression of good will and the assurance that one is prepared to help others. It is the foundation of trust. Consequently, the practice of reciprocity has profound social ramifications and entails a clear moral element. Reciprocity is a key for understanding how the institutions of society work. But it is also an economic principle with wholly distinct characteristics that embody social as opposed to merely commercial attributes. When reciprocity finds economic expression in the exchange of goods and services to people and communities it is the civil economy that results. It is in turn, a key principle underlying the formation and use of commons.

Civil economy organizations are those that pursue their goals, whether economic or social, on the basis that individuals’ contributions will be reciprocated and the benefits shared. Reciprocity and mutuality are the economic and social principle that define both the activities and the aims of these organizations - whether they are co-operatives, voluntary associations, or conventional non-profits. Their primary purpose is the promotion of collective benefit. Their social product is not just the particular goods or services that they produce, but human solidarity - the predisposition of people in a society to work together around mutual goals. Another name for this is social capital. And, as opposed to the capitalist principle of capital control over labour, reciprocity is the means by which a social interest - whether it takes the form of labour, or citizen groups, or consumers – can exercise control over capital. As a sub division of civil society, the use of reciprocity for economic purposes is what distinguishes the civil or social economy from the private and public sectors.

There is no question that the long-term success of the National Plan for Good Living, and the implementation of a social knowledge economy, will rely heavily on the strength and development of a civil economy in Ecuador that is strong, autonomous, democratic, innovative, and capable of playing the central role that is assigned to it both by the constitution and the Good Living Plan itself. The civil economy is the social and economic space that most reflects the values and principles of the socialist and civic ideals of the government and the source of those civil institutions that will, in the long run, defend and advance those ideals. Lest anyone forget, it was Ecuador’s civil society that gave birth to the Citizen Revolution, not the state. In the end, it will also be civil society and the vitality of its institutions that will safeguard its ideals.

For this reason, Ecuador’s public policy and legislation must serve as a vital political and legal resource for building the values, skills, and institutions that enable the civil economy to flourish and to provide the indispensable social foundations that will ultimately serve to transform the political economy of the country. In our view, progressive public policy and legislation with respect to the civil economy will serve as the primary mechanism for creating a new social contract and social praxis that reflects the complementary aims and purposes of the state on the one hand and the collective values of civil society on the other.

Beyond the market, beyond planning ?

The key role of Commons-Based Reciprocity Licenses

We are making here a key strategic argument about the precise interaction between the commons and the new ethical market sectors, through the intermediation of a new type of commons-license that supports the actual emergence of a reciprocity-based ethical economy:

Indeed, the labor/p2p/commons and other social change movements today are faced with a paradox.

On the one hand we have a re-emergence of the cooperative movement and worked-owned enterprises, but they suffer from structural weaknesses. Cooperative entities work for their own members, are reluctant to accept new cooperators that would share existing profits and benefits, and are practitioners of the same proprietary knowledge and artificial scarcities as their capitalist counterparts. Even though they are internally democratic, they often participate in the same dynamics of capitalist competition which undermines their own cooperative values.

On the other hand, we have an emergent field of open and commons-oriented peer production in fields such as free software, open design and open hardware, which do create common pools of knowledge for the whole of humanity, but at the same time, are dominated by both start-ups and large multinational enterprises using the same commons.

Thus, we need a new convergence or synthesis, a ‘open cooperativism’, that combines both commons-oriented open peer production models, with common ownership and governance models such as those of the cooperatives and the solidarity economic models.

What follows is a more detailed argument on how such transition could be achieved.

Thus, today we have a paradox, the more communistic the sharing license we use in the peer production of free software or open hardware, the more capitalistic the practice, with for example the Linux commons becoming a corporate commons enriching IBM and the like ... it works in a certain way, and seems acceptable to most free software developers, but is it the only way?

Indeed, the General Public License and its variants, allow anyone to use and modify the software code (or design), as long as the changes are also put back in the common pool under the same conditions for further users. This is in fact technically ‘communism’ as defined by Marx: from each according to his abilities, to each according to their needs, but which then paradoxically allows multinationals to use the free software code for profit and capital accumulation. The result is that we do have an accumulation of immaterial commons, based on open input, participatory process, and commons-oriented output, but that it is subsumed to capital accumulation. It is at present not possible, or not easy, to have social reproduction (i.e. livelihoods) within the sphere of the commons. Hence the free software and culture movements, however important they are as new social forces and expression new social demands, are also in essence ‘liberal’. This is not only acknowledged by its leaders such as Richard Stallman, but also by anthropological studies like those of Gabriela Coleman. Not so tongue-in-cheek we could say they are liberal-communist and communist-liberal movements, which create a ‘communism of capital’.

Is there an alternative ? We believe there is, and this would be to replace non-reciprocal licenses, i.e. they do not demand a direct reciprocity from its users, to one based on reciprocity. Call it a switch from ‘communist’, to ‘socialist’ licenses’.

This is the choice of the Peer Production License as designed and proposed by Dmytri Kleiner; it is not to be confused with the Creative Commons non commercial license, as the logic is different.

The logic of the CC-NC is to offer protection to individuals reluctant to share, as they do not wish a commercialization of their work that would not reward them for their labor. Thus the Creative

Commons 'non-commercial' license stops the further economic development based on this open and shared knowledge, and keeps it entirely in the not-for-profit sphere.

The logic of the PPL is to allow commercialization, but on the basis of a demand for reciprocity. It is designed to enable and empower a counter-hegemonic reciprocal economy that combines commons that are open to all that contribute, while charging a license fee for the the for-profit companies who want to use without contributing. Not that much changes for the multinationals in practice, they can still use the code if they contribute, as IBM does with Linux, and for those who don't , they would pay a license fee, a practice they are used to. It's practical effect would be to direct a stream of income from capital to the commons, but its main effect would be ideological, or if you like, value-driven.

The entrepreneurial coalitions that are linked around a PPL commons would be explicitly oriented towards their contributions to the commons, and the alternative value system that it represents. From the point of view of the peer producers or commoners, i.e. the communities of contributors to the common pool, it would allow them to create their own cooperative entities, in which profit would be subsumed to the social goal of sustaining the commons and the commoners. Even the participating for-profit companies would consciously contribute under a new logic. It links the commons to a entrepreneurial coalition of ethical market entities (coops and other models) and keeps the surplus value entirely within the sphere of commoners/cooperators instead of leaking out to the multinationals. In other words, through this convergence or rather combination of a commons model for the abundant immaterial resources, and a reciprocity-based model for the 'scarce' material resources, the issue of livelihoods and social reproduction would be solved, and surplus value is kept inside the commons sphere itself. It is the cooperatives that would, through their cooperative accumulation, fund the production of immaterial commons, because they would pay and reward the peer producers associated with them. In this way, peer production would move from a proto-mode of production, unable to perpetuate itself on its own outside capitalism, to a autonomous and real mode of production. It creates a counter-economy that can be the basis for reconstituting a 'counter-hegemony' with a for-benefit circulation of value, which allied to pro-commons social movements, could be the basis of the political and social transformation of the political economy. Hence we move from a situation in which the communism of capital is dominant, to a situation in which we have a 'capital for the commons', increasingly insuring the self-reproduction of the peer production mode.

The PPL is used experimentally by Guerilla Translations! and is being discussed in various places, such as for example, in France, in the open agricultural machining and design communities.

There is also a specific potential, inside the commons-oriented ethical economy, such as the application of open book accounting and open supply chains, would allow a different value circulation, whereby the stigmergic mutual coordination that already works at scale for immaterial cooperation and production, would move to the coordination of physical production, creating post-market dynamics of allocation in the physical sphere. Replacing both the market allocation through the price signal, and central planning, this new system of material production would allow for massive mutual coordination instead, enabling a new form of 'resource-based economics'

Finally, this whole system can be strengthened by creating commons-based venture funding, so as to create material commons, as proposed by Dmytri Kleiner. In this way, the machine park itself is taken out of the sphere of capital accumulation. In this proposed system, cooperatives needing capital for machinery, would post a bond, and the other coops in the system would fund the bond, and buy the machine for a commons in which both funders and users would be members. The interest paid on these loans would create a fund that would gradually be able to pay an increasing income to their members, constituting a new kind of basis income.

The new open cooperativism is substantially different from the older form. In the older form, internal economic democracy is accompanied by participation in market dynamics on behalf of the members, using capitalist competition. Hence a unwillingness to share profits and benefits with

outsiders. There is no creation of the commons. We need a different model in which the cooperatives produce commons, and are statutorily oriented towards the creation of the common good, with multi-stakeholders forms of governance which include workers, users-consumers, investors and the concerned communities.

Today we have a paradox that open communities of peer producers are oriented towards the start-up model and are subsumed to the profit model, while the cooperatives remain closed, use IP, and do not create commons. In the new model of open cooperativism, a merger should occur between the open peer production of commons, and the cooperative production of value. The new open cooperativism integrates externalities, practices economic democracy, produces commons for the common good, and socializes its knowledge. The circulation of the common is combined with the process of cooperative accumulation, on behalf of the commons and its contributors. In the beginning, the immaterial commons field, following the logic of free contributions and universal use for everyone who needs it, would co-exist with a cooperative model for physical production, based on reciprocity. But as the cooperative model becomes more and more hyper-productive and is able to create sustainable abundance in material goods, the two logics would merge.

Mutual coordination mechanisms in the new 'ethical' entrepreneurial coalitions: Cybersyn [13] redux ?

Traditional economic debates are often between the options of state-initiated planning on the one side, and the allocation through market pricing signals on the other hand. But the social knowledge economy shows the increasing likely path of a third method of allocation, that of transparent mutual coordination. The first attempt to such a type of resource-based economy, in the Soviet Union of the 1960's, when the construction of a proto-internet was initiated, is well documented in the book by Francis Spufford, *Red Plenty*. The effort failed because the opposition of the bureaucratic forces in the state apparatus. The second attempt took place in Allende's Chile in the early seventies, under the advise and leadership of complexity thinker Stafford Beer, and was successfully used on a smaller scale to overcome a crippling strike of the transportation industry, where with 25% of the fleet, and using telexes for coordination, the strike was overcome. Thus the project Cybersyn was born, a project to mutually and democratically coordinate Chilean industry, but the project was destroyed through the military coup, and the effective bombing of its headquarters.

Nevertheless, under the impulse of the social knowledge communities, mutual coordination of complex activities is making a very strong appearance, even if it is limited at present to the production of 'immaterial' value, i.e. knowledge products. This emergence nevertheless has implications for a transition to a new type of economic coordination, that will co-exist with both state planning, which received a strong impulse in Ecuador, and traditional market pricing mechanisms.

Indeed, the really-existing social knowledge economy of commons-oriented peer production of free software, open design and hardware, is known to function according to the principle of mutual coordination, or "stigmergy". The open design communities that already exist construct and coordinate their construction of common pools of knowledge, code, and design, through mutual signalling systems because their infrastructures of cooperation are fully open and transparent.

In the world of physical production, we can see an emergence of open supply chains and open book accounting on a much smaller scale. Nevertheless, there is a historical opportunity for a emergence of mutual coordination of physical production, if the 'ethical entrepreneurial coalitions', which may emerge around the social knowledge economy, decide to share their accounting and logistical information streams, within those coalitions. In this scenario, which is hypothetical at present but could be an integral part of a mature p2p/commons oriented social knowledge economy, we would see the gradual emergence of a third way for the coordinated allocation of resources for economic production.

The historical and present importance of mutualization in times of increasing resource scarcity

Discussion: The issue of eco-system sustainability

Faced with the grave ecological crisis such as climate change and species extinction, but also in terms of impending resource crises, it is important to keep the historical perspective in mind of how humankind has faced such systemic crises in the past.

One of the paradoxes of globalized capitalism is indeed its reliance on economies of scale, which are in contradiction with the needs of the balance of the eco-system. In short, economies of scale create competitiveness through the production of more units at lower cost, which necessitates more energy and more resource use to be competitive.

What is needed in times of resource scarcity is the opposite approach: economies of scope, or in other words, “doing more with the same”. This is exactly how past civilizational crises were solved. Faced with the crisis of the Roman Empire, which was also a globalized system faced with a resource crisis, medieval Europe responded with a relocalization of production through the feudal domains, with the mutualization of livelihoods and production through the monastic orders, and a Europe-wide open design community, i.e. the unified culture of the Catholic Church and the exchange and distribution of technical knowledge through the monastic orders. Very similar responses can be seen in Japan and China.

Today, the response of the sectors of society that are most sensitive to the combined crises are very similar, i.e. the mutualization of knowledge through the open source movements, and the mutualization of physical infrastructures through the 'sharing economy'. Thus the shift to the social knowledge economy is also the vital and appropriate response to the crises of the ecosystems.

Why innovation should be located in open design communities

There are several reasons why it is crucial to move towards a system of open innovation that is located in common pools of knowledge, code and design, especially as it relates to the issue of sustainability.

The first and general reason is that patenting technology results in unacceptable delays for invention and diffusion, as shown by the studies cited by George Dafermos. In times of climate change, species extinction and other biospheric dangers, it would be highly damaging to keep the development and diffusion of such innovations under the control of private monopolies, if not to allow patented technologies to be shelved altogether for reasons like the protection of legacy systems or market share.

The second reason is equally structural and system. When innovation is located in corporate R&D departments, the design is always influenced by market and artificial scarcity considerations. In private R&D, planned obsolescence is not a bug, but a feature, a generalized practice. By contrast, open design, open hardware, open technology communities lack any motivation for planned obsolescence and design by their very nature for inclusion, modularity, and sustainability. A quick check of the 25+ open source car projects immediately shows that all of them have thought about sustainability as part of the design process.

Thus, open design communities have a much greater potential to design inherently for re-use, recycling, upcycling, circular economy processes, biodegradable material, interoperability, modularity, and other aspects that have direct effects on sustainability. Each innovation in this area is instantly available for global humanity through open access to the shared open pools of knowledge. Corporations and market entities which produce and sell on the basis of such designs,

are naturally aligned to the sustainability which is inherent in the open design processes.

Open design pools can be strategically allied to sustainable practices that increase this potential. For example, by allying itself with the 'sharing economy' practices of shared use in terms of consumption practices.

Open distributed manufacturing of open hardware comes with enormous cost savings; it is estimated that open hardware is generally produced at one eighth of the cost of proprietary hardware. For countries embarking on this road, this has important implications for the balance of payment, the neo-colonial dependency on the globalized neoliberal system. The cost-savings frees substantial resources that can be invested in other areas of development, to increase the diffusion of a particular good or service, etc ..

Finally, in terms of production, the combination of open design with distributed machinery can or will have a tremendous effect on the geography of production, by allowing a relocalization of production in micro-factories. Currently, studies show that the transportation of goods, is three-quarters of the real ecological cost of production. Many of these transportation costs can be eliminated by the stimulation of local and domestic industries that combine the generalisation of the micro-factory system with the global engineering by open design communities, under the general motto: 'what's heavy is local, what's light is global'.

The role of 'idle-sourcing' and the sharing economy

The emergence of the social knowledge economy, as a process of mutualization of immaterial resources, is also accompanied by the emergence of a 'sharing economy', i.e. a process of mutualization of material resources.

This sharing economy is emerging as a partly crisis-driven responses to the global economic crisis, and partly because current networked technologies drastically diminish the coordination and transaction costs necessary to manage such mutualization.

In one of the earlier book treatments on this emergence, i.e. Rachel Botsman's Rise of Collaborative Consumption, the author distinguishes three major categories of sharing:

- Product Service Systems like Bikesharing and Carsharing, based on a 'usage mindset' whereby you pay for the benefit of a product – what it does for you - without needing to own the product outright.
- Redistribution Markets like Freecycle and eBay, used or pre-owned goods are redistributed from where they are not needed to somewhere or someone where they are
- Collaborative Lifestyles like Couchsurfing, and the Lending Club: sharing and exchange of resources and assets such as time, food, space, skills, and money

The sharing economy is an important response to resource and energy scarcity challenges, and in particular to the enormous waste in material resources that is the result of a profit-driven consumptive economy. The sharing economy allows massive idle-sourcing, i.e. the re-use of little use material possessions. Mutualizing certain infrastructures, like car-sharing for examples, allows for substantial savings in the use of energy and material resources, necessary to fulfill certain functions like transportation.

The sharing economy is ideally supported and enable by a social knowledge economy, which allows open information about idle resources to be shared across user communities.

It is important however, to look at the ownership and governance issues underpinning this

emergence. One part of the sharing economy is driven by privately owned platforms that monetize such idle resources; another part of the sharing economy consist of social and non-profit initiatives that aim for non-monetary sharing of such resources.

The part of the sharing economy that is clearly driven by privately-owned, profit-driven platforms that act as intermediaries between users can clearly derail some of the advantages. For example, the use of dis-aggregated distributed labor, where isolated freelance workers are facing a demand side that is clearly empowered by the platform design, can exert a downward trend on wages.

A social knowledge policy should make sure that ownership and governance forms do not derail the free sharing of knowledge amongst all users, and needs to make sure that private ownership of platforms does not endanger such possibilities.

However, many of the activist forces in the sharing economy are working for socially progressive policies. This for example the case for the eBook "Guide": Policies for Shareable Cities, co-produced by Shareable magazine and the Sustainable Economies Law Center. Other policy productions, like for example the campaigns of Peers.org in the U.S., are the product of an organisation that blur the social contradictions between the users and the owners of the sharing infrastructures.

However, it remains a priority for a transition towards a social knowledge economy, to systematically enable and empower the mutualization of infrastructures that the emergent sharing economy represents, while matching it to ownership and governance forms that include the user communities.

A historical opportunity: The Convergence of Material/Technical P2P Infrastructures, Digital/Immaterial Commons, and Commons-Oriented Governance and Ownership Models

The transition towards a social knowledge economy is today favoured by a strong convergence of technological, social and technological trends and 'affordances', i.e. technological possibilities that can be embraced by emancipatory political and social forces.

The first is of course the peer to peer logic of open technical infrastructures like the internet, which allow for permissionless self-organisation and value creation by productive communities that can operate both on a local and global scale. The internet is in effect not just a communication medium, but more properly a production medium.

The second is the 'distribution' of the means of production through 3D Printing and other trends in the miniaturisation of machinery. This allows much lower entry barriers for the self-organisation of a civic and cooperative economy. This is the 'Internet of Manufacturing'. The so-called Sharing Economy allows for the mutualization of critical infrastructures and the 'idle-sourcing' of isolated and scattered resources. The Internet of Things allows for a more fine-grained control and the autonomy and interconnection of objects.

The third is the distribution of financial capital, through crowdfunding, social lending and other possibilities, which allow a more fine-grained allocation of investments by citizen's themselves. This the the Internet of Ethical Financial Capital.

The fourth is the development of renewable distributed energy, which allows for an Internet of Energy, and energetic autonomy at more local levels, such as village, neighborhood and even household.

Free software, open knowledge, open design show the possibilities for the increased networking and mutualization of immaterial resources. The three other forms of distribution point to a potential for the networking and mutualization of physical resources. In other words, we have a great potential to engineer a convergence of both the immaterial and material commons.

Thus we can envisage the social knowledge economy as enabling a vast series of interconnected knowledge commons, for every field of human activity, but which is enabled both by material conditions (the internet of manufacturing and energy), and immaterial conditions (metrics, legal frameworks, etc...).

However, as we have shown in our introduction to the value regimes, such commons can still be the subject of an 'extractivism of knowledge' which benefits privileged elite players. And as we have shown in our distinctions regarding technology regimes, the p2p technical affordances can be embedded in value-sensitive design that privileges certain players, like the owners of the platforms. The great danger is therefore that what we disintermediate and decentralize with one hand, can be re-intermediated by new dominant players through the other hand.

The promise of the social knowledge economy will therefore not be realized without profound changes in the regimes of property and governance.

This is why we must insist that the social knowledge economy, i.e. commons-oriented peer production by autonomous productive communities, goes hand in hand with both peer property and peer governance.

Today, social media like Facebook, search engines like Google, are in the hands of a new type of 'netarchical' oligopolies. Many enabling platforms, such as those for crowdfunding and social lending, are merely forms of distributed capitalism, functioning like reverse market mechanisms (such as the Kickstarter crowdfunding platform), that do not create and sustain commons.

Hence, the distribution of the means of knowledge creation and diffusion, of production machinery and financial capital, of distributed energy and of the vital land resources, needs to be matched by distributed and common ownership and land.

While the immaterial commons of non-rival and shareable goods can be protected by open licenses, the material production resulting from them should take place through ethical entities that are the property of the value producers themselves. There is today an emergence of a wide range of dynamic governance and property regimes, that can guarantee distribution and democratisation of decision-making power. Governance innovations such as the Viable Systems Model, sociocracy and holocracy, have been developed to allow for democratic decision-making in productive communities; Dynamic property regimes as as the FairShares Model of Enterprise, Solidarity Coops, Community Land Trusts, and many others, have been developed to common-ize and distribute property. The legal and regulatory frameworks of the social knowledge economy should facilitate the development and choice of such modalities. The key is to enable a pluralistic Commonwealth rich in choices, that have as key requirement both productive democracy and the integration of environmental and social externalities.

As we have seen above in our introduction to four distinct socio-technical regimes, p2p infrastructures and practices can be embedded in netarchical models (hierarchical control, ownership and governance of the enabled p2p social logic); distributed capitalism (monetising of idle and shareable resources), but also in local community and global commons oriented property and governance regimes.

Our recommendation is for the creation of two institutions that can insure democratic ownership and governance within the sphere of the immaterial and material commons:

*** The Institute for Pluralistic Ownership**

This institute, in cooperation with the Institute for the Commons presented above, assists individuals and communities and actors of the social knowledge economy to know the ownership alternatives that are available, facilitates access to that knowledge, to legal enablement, etc ... It can be modeled on successful civic initiatives like the Sustainable Economics Law Center in San Francisco, under the leadership of Janelle Orsi; and of the ShareLex movement in Europe.

*** The Institute for Pluralistic Governance**

This institute, in cooperation with the Institute for the Commons presented above, assists individuals, communities and actors of the social knowledge economy to know the governance alternatives that are available, facilitates access to that knowledge, to legal enablement, etc ... It helps find training in the human capabilities that favour multi-stakeholder forms of governance.

Elements of Idealized and Integrative Full Transition Plan to a mature Social Knowledge Economy

This is a very synthetic summary of the logic of the transition strategy

Analysis

1. Under conditions of proprietary (industrial) capitalism

- Workers create value in their private capacity as providers of labour
- Deskilling of workers production knowledge; creation of managerial and engineering layers which manage collective production on behalf of the owners of capital
- Codified knowledge is proprietary and the value is captured as IP rent
- Owners of capital capture and realize the market value, partial redistribution in the form of wages
- Under conditions of capital-labour balance, the state redistributes wealth to the workers as consumers and citizens
- Under contemporary conditions of labour weakness, the state redistributes the wealth to the financial sector and creates conditions of debt dependence for the majority of the population

2. Under conditions of emerging peer production under the domination of financial and 'cognitive', 'netarchical' capitalism

- Civic voluntary contributors, paid labour and independent entrepreneurs create value codified in common pools of knowledge, code, and design
- Capital owners realize and capture the market value of both contributors and labour; proprietary network and collaboration platforms capture and realize the attention value of the sharers/contributors
- Capital owners profit from the benefits of disaggregated distributed labour (crowdsourcing)
- Capital co-create through the financing of labour and platforms, the continued accumulation of common pools of knowledge, code and design ; under conditions of precarity for the

voluntary civic contributors and unsupported commons-oriented entrepreneurship

- Commons are managed by for-benefit institutions which reflect the balance of influence between contributors, labour, and capital owners, but continue to expand the common pools; the commons sector lacks solidarity mechanisms to cope with precarity; civil society is still derivative to the market and state sectors
- The state weakens its public service and solidarity functions, in favour of its repressive functions and subsidizes financial capital ; the state only minimally co-creates the conditions for commons-oriented peer production, and redistribution to financial capital continues

3. Under conditions of strong peer production under civic dominance

- Civic voluntary contributors and autonomous cooperative labour create codified value through common pools ; labour and civic reskilling occur through commons-oriented distributed manufacturing which places value creators at the helm of distributed manufacturing and other forms of value creation
- Commons contributors create cooperative commons-oriented market entities that sustain the commons and their communities of contributors
- Cooperative and other commons-friendly market entities co-create common pools but engage in the cooperative accumulation on behalf of their members; commons contributions are codified in their legal and governance structures; Entrepreneurial coalitions and phyles (structured networks of firms working around joint common pools to sustain commons-producing communities) .
- Societal mutual coordination of production through open supply chains direct the market activities
- The commons-enabling for-benefit institutions become a core civic form for the governance of common pools; the associated market entities create solidarity mechanisms and income for the peer producers and commoners, supported by the partner state
- The state, dominated by the civic/commons sectors becomes a Partner State, which creates and sustains the civic infrastructure necessary to enable and empower autonomous social production
- The market becomes a moral and ethical economy, oriented around commons production and mutual coordination, supported by the Partner State functions
- The market sector is dominated by cooperative, commons-oriented legal, governance, and ownership forms; the remaining profit-maximizing entities are reformed to respect environmental and social externalities, including redistribution of extracted 'commons-benefits'
- Governance mechanisms are reformed towards commons-orientation and multistakeholder governance models; ownership models are reformed from extractive to generative models
- The Partner State model renews public service provision, solidarity mechanisms and social care through the commonification of public services and public-commons partnerships
- Social redistribution takes place through basic income provisions and reduction of necessary labour participation to create conditions for civic contributions and a contributory economy

Transition Dynamic

The State

- The State becomes a Partner State, which aims to enable and empower autonomous social production, which it also regulates in the context of common good concerns
- The State strives to maximal openness and transparency
- The State systematizes participation, deliberation, and real-time consultation with the citizens
- The social logic moves from ownership-centric to citizen-centric
- The state de-bureaucratizes through the commonification of public services and public-commons partnerships
- Public service jobs are considered as a common pool resource and participation is extended to the whole population
- Representative democracy is extended through participatory mechanisms (participatory legislation, participatory budgetting, etc..)
- Representative democracy is extended through online and offline deliberation mechanisms
- Representative democracy is extended through liquid voting (real-time democratic consultations and procedures, coupled to proxy voting mechanisms)
- Taxation of productive labour, entrepreneurship and ethical investing is minimized; taxation of the production of social and environmental goods is minimized ; taxation of speculative unproductive investments is augmented; taxation on unproductive rental income is augmented; taxation of negative social and environmental externalities is augmented
- The State sustains civic commons-oriented infrastructures and ethical commons-oriented market players
- The State reforms the traditional corporate sector to minimize social and environmental externalities
- The state engages in debt-free public monetary creation and supports a structure of specialized complementary currencies

The Ethical Economy

- Creation of a commons and common good oriented social / ethical / civic / solidarity economy
- Ethical market players coalesce around commons of productive knowledge, eventually using peer production and commons-oriented licenses to support the social-economic sector
- Ethical market players integrate common good concerns and user-driven and worker-driven multistakeholder in their governance models
- Ethical market players move from extractive to generative forms of ownership; open, commons-oriented ethical company formats are privileged
- Ethical market players practice open book accounting and open supply chains to augment

non-market coordination of production

- Ethical market players create a territorial and sectoral network of Chamber of Commons associations to define their common needs and goals and interface with civil society, commoners and the partner state
- With the help from the Partner-State, ethical market players create support structures for open commercialization, which maintain and sustain the commons
- Ethical market players interconnect with global productive commons communities (open design communities) and with global productive associations (phyles) which project ethical market power on a global scale
- The ethical market players adopt a 1 to 8 wage differential and minimum and maximum wage levels are set
- The mainstream commercial sector is reformed to minimize negative social and environmental externalities; incentives are provided that aim for a convergence between the corporate and solidarity economy
- Hybrid economic forms, like fair trade, social entrepreneurship, B-Corporations are encouraged to obtain such convergence
- Distributed microfactories for (g)localized manufacturing on demand are created and supported, in order to satisfy local needs for basic goods and machinery
- Institutes for the support of productive knowledge are created on a territorial and sectoral basis
- Education is aligned to the co-creation of productive knowledge in support of the social economy and the open commons of productive knowledge

The Commons Sector

- Creation of commons infrastructures for both immaterial and material goods; society is seen as a series of interlocking commons, that are supported by an ethical market economy and a Partner State that protects the common good and creates supportive civic infrastructures
- Local and sectoral commons create civil alliances of the commons to interface with the Chamber of the Commons and the Partner State
- Interlocking for-benefit associations (Knowledge Commons Foundations) enable and protect the various commons
- Solidarity Coops form public-commons partnerships in alliance with the Partner State and the Ethical Economy sector represented by the Chamber of Commons
- Natural commons are managed by public-commons partnership and based on civic membership in Commons Trusts

Political reconstruction of social movements in a conjuncture of post-industrial transformation

The shift to a open knowledge-based commons society also crucially depends on the reconfiguration of politics. This section is not directed specifically to the political situation in Ecuador, but aims to be a generic blueprint for re-constitution of political forces around a pro-commons agenda, based on a bottom-up process:

The proposal is to create three institutional coalitions, two for domestic use (local, regional, national) and one that aims to play a role in reconstituting global governance (supra-regional and global):

*** The 'local' civic/political institution: The Alliance of the Commons**

An alliance of the commons is an alliance, meeting place and network of p2p-commons oriented networks, associations, places; who do not have economic rationales. These alliances can be topical, local, transnational, etc ... An example is the initiative Paris Communs Urbains which is attempting to create a common platform for urban commons initiatives in the Paris region; another Parisian/French example is the freecultural network Libre Savoirs, which is developing a set of policy proposals around digital rights. (both examples were communicated to me by Lionel Maurel).

An alliance of the commons is a meeting place and platform to formulate policy proposals that enhance civic infrastructures for the commons. An alliance of the commons, could, in cooperation with the Chamber of Commons (see infra) or autonomously, produce a social charter to reconstitute political forces around a pro-commons political agenda.

*** The 'local' political-economy institution: The Chamber of the Commons**

In analogy with the well-known chambers of commerce which work on the infrastructure for for-profit enterprise, the Commons chamber exclusively coordinates for the needs of the emergent coalitions of commons-friendly ethical enterprises (the for-benefit, mission or purpose-driven, ethical/solidarity/social economy actors concerned with the common good and not profit or capital accumulation), but with a territorial focus. Their aim is to uncover the convergent needs of the new commons enterprises and to interface with territorial powers to express and obtain their infrastructural, policy and legal needs.

In cooperation with the civic alliance of the commons discussed above, the Chamber can produce social charters to reconstitute politics around the priorities of a commons-oriented ethical economy.

*** The global economic institution: the P2P/Commons Globa-local « Phyle »**

A phyle (as originally proposed by lasindias.net) is a coalition of commons-oriented, community-supportive ethical enterprises which trade and exchange in the market to create livelihoods for commoners and peer producers engaged in social production. The use of a peer production licence keeps the created exchange value within the sphere of the commons and strengthens the existence of a more autonomous counter-economy which refuses the destructive logic of profit-maximisation and instead works to increase benefits for their own, but also the emerging global commons. Phyles created integrated economies around the commons, that render them more autonomous and insure the social reproduction of its members. Hyperproductive global phyles that generate well-being for their members will gradually create a counterpower to the hitherto dominant MNO's. Phyles are necessary to project ethical economic power beyond the nation-state into the sphere of global governance that is presently dominated by multinational private for-profit companies.

*** In conclusion:**

In short, we need a alliance of the commons to project civil and political power and influence at every level of society; we need phyles to strengthen our economic autonomy from the profit-maximizing dominant system; and we need Chambre of the Commons to achieve territorial policy; legal and infrastructural conditions for the alternative, human and nature-friendly political economy

to thrive. Neither alone is sufficient, but together they could be a powerful triad for the necessary phase transition.

References

- Arrow K. (1962) 'Economic Welfare and the Allocation of Resources for Invention'. In Arrow, K. (Ed.) *The Rate and Direction of Inventive Activity: Economic and Social Factors* (pp. 609- 625). Princeton University Press
- Arvidsson, Adam and Peitersen, Nicolai (2013). *The Ethical Economy. Rebuilding Value After the Crisis*. Columbia University Press.
- Barandiarán, Xabier E. & Vázquez, Daniel (2013). *Sumak Yachay. Devenir Sociedad del Conocimiento Común y Abierto. Designing the FLOK Society*. v.1.5.2.
- Belfanti, Carlo (2004) 'Guilds, Patents, and the Circulation of Technical Knowledge: Northern Italy during the Early Modern Age'. *Technology and Culture* 45(3): 569-589
- Berners-Lee, T. (1999) *Weaving the Web*. Texere
- Boldrin, M., Levine, D.K. & Nuvolari, A. (2008) 'Do Patents Encourage or Hinder Innovation? The Case of the Steam Engine'. *The Freeman* Oct., pp. 14-17
- Boldrin, M. & Levine, D.K. (2013) 'The Case Against Patents'. *Journal of Economic Perspectives* 27(1): 3-22
- Brec, E. (2008) 'NIHilism and Other Innovation Poison'. MSDN Blogs, Nov 1. Retrieved from http://blogs.msdn.com/b/eric_brechner/archive/2008/11/01/nihilism-and-other-innovation-poison.aspx
- Burrough, Xtine (2012) *Net Works*, Routledge.
- Dosi, G., Marengo, L. & Pasquali, C. (2006) 'How much should society fuel the greed of innovators?: On the relations between appropriability, opportunities and rates of Innovation'. *Research Policy* 35(8): 1110-1121
- Gates, B. (1991) 'Challenges and Strategy'. Memo, Microsoft Corporation, May 16. Retrieved from <http://www.std.com/obi/Bill.Gates/Challenges.and.Strategy>
- Gilfillan, S.C. (1935) *Inventing the ship*. Follett publishing
- Gilfillan, S.C. (1970) *Sociology of Invention*. MIT Press
- Hall, B.H. & Ziedonis, R.H. (2007) 'An Empirical Analysis of Patent Litigation in the Semiconductor Industry'. University of California at Berkeley Working Paper. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.69.5271>
- Levin, R.C., Klevorick, A.K., Nelson, R.R. & Winter, S.G. (1987) 'Appropriating the Returns from Industrial Research and Development'. *Brookings Papers on Economic Activity* 3 (Special Issue on Microeconomics): 783–820
- Levy, S. (1984) *Hackers: Heroes of the Computer Revolution*. New York: Anchor Press/Doubleday
- Mann, C.C. & Plummer, M.L. (1991) *The Aspirin Wars: Money, Medicine, and 100 Years of Rampant Competition*. New York: Knopf
- Moser, P. (2013) 'Patents and Innovation: Evidence from Economic History'. *Journal of Economic Perspectives* 27(1): 23-44

- Nuvolari, A. (2004) The Making of Steam Power Technology: A Study of Technical Change during the British Industrial Revolution. PhD Dissertation, Eindhoven University of Technology
- Pearce, J.M. (2012a) 'Physics: Make nanotechnology research open-source'. Nature 491: 519–521
- Pearce, J.M. (2012b) 'The case for open source appropriate technology'. Environment, Development and Sustainability 14(3): 425-431
- Scholz, Trebor (2012). Cheaper by the Dozen: An Introduction to Crowdsourcing, pp. 47-54. Book chapter from: Xtine Burrough, Net Works, Routledge
- Scotchmer, S.(1991) 'Standing on the Shoulders of Giants: Cumulative Research and the Patent Law'. Journal of Economic Perspectives 5(1): 29-41
- Wark, McKenzie (2004). The Hacker Manifesto. Harvard University Press.

Related Documents

- The participatory version of the document, called "Transitioning to a Commons-Based Society", is available for comment at <https://floksociety.com/text/xMHsm6YpVgI/view/>. The comments have been reviewed and integrated in this document here.
- Please note the research methodology explanation has moved to another page at http://en.wiki.floksociety.org/w/Research_Methodology
- A spanish translation is available here at: <https://floksociety.com/text/dbZWEyiIW73/view/>
- [Bibliography for the Social Knowledge Economy](#)

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1. ↑ Plan Nacional del Buen Vivir 2013-2017, p.19 : “La Revolución del Conocimiento, que propone la innovación, la ciencia y la tecnología, como fundamentos para el cambio de la matriz productiva, concebida como una forma distinta de producir y consumir. Esta transición llevará al país de una fase de dependencia de los recursos limitados (finitos) a una de recursos ilimitados (infinitos), como son la ciencia, la tecnología y el conocimiento.”
 2. ↑ Speech at the Campus Party event, <https://www.youtube.com/watch?v=Zjajy-ia-SE>
 3. ↑ Sumak Yachay.Devenir Sociedad del Conocimiento Común y Abierto. Designing the FLOK Society. v.1.5.2. By Xabier E. Barandiarán & Daniel Vázquez, 2013.
 4. ↑ Here is a related definition: "Semiocapitalismo es el modo de producción en el cual la acumulación de capital se hace esencialmente por medio de una producción y una acumulación de signos: bienes inmateriales que actúan sobre la mente colectiva, sobre la atención, la imaginación y el psiquismo social. Gracias a la tecnología electrónica, la producción deviene elaboración y circulación de signos. Esto supone dos consecuencias importantes: que las leyes de la economía terminan por influir el equilibrio afectivo y psíquico de la sociedad y, por otro lado, que el equilibrio psíquico y afectivo que se difunde en la sociedad termina por actuar a su vez sobre la economía." Franco Berardi (Bifo); Retrieved at <http://www.lavaca.org/notas/quien-es-y-como-piensa-bifo/>)
 5. ↑ This subject is covered by the companion paper: Torres, Jenny. Open Technical Infrastructures (stream 4) - Free Software. Retrieved at <https://floksociety.com/text/pW2QAIp4w79/view/>

6. ↑ This research result, communicated orally, is as yet unpublished but is prefigured in the following publication: Trebor Scholz, "Cheaper by the Dozen: An Introduction to Crowdsourcing," pp. 47-54; a chapter from Xtine Burrough, Net Works, Routledge, 2012.
7. ↑ Text, details and discussion via http://p2pfoundation.net/Peer_Production_License
8. ↑ A scientific bibliography on stigmergy is available here at <http://p2pfoundation.net/Stigmergy#Bibliography>
9. ↑ For more details, see the paper by John Restakis: Institutions for social knowledge economy (stream 3) - Social Knowledge and the Social Economy; retrieved at <https://floksociety.co-ment.com/text/HBlnwquAi25/view/>
10. ↑ ^{10.0} ^{10.1} [Ramírez, R., Del capitalismo cognitivo a la economía social del conocimiento, TeleSurTV](#)
11. ↑ The ruling, FCC 14-61 is available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2014/db0515/FCC-14-61A1.pdf
12. ↑ http://p2pfoundation.net/What%27s_Wrong_with_the_Current_Monetary_System#7. Money as debt contributes to growth pressure.
13. ↑ Cybersyn was a democratic planning / mutual coordination project for Chilean industry, undertaken by Stafford Beer for the government of Salvador Allende, you can find details here at <http://p2pfoundation.net/Cybersyn>

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