

# **Analysing Value in Digital Commons**

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## **Commons-based Peer Production (CBPP)**

- CBPP as a new model of production emerged with Internet and the digital revolution (Benkler, 2002; 2006)
- Original examples: Free and Open Source Software (FLOSS) and Wikipedia
- Different approach to regulation of property in the digital age

# **Success new licenses**

FLOSS: hundreds of thousands of projects and millions of developers on Github or SourceForge

Creative Commons estimated in 2015:  
1 billion of works licensed

# Expansion of Common-based Peer Production



## Tackling Value in CBPP

- Its approach to property destabilizes the conventional ways of measuring and realizing economic value
- Sharing, open access, rights of use don't permit to sell, to price, to market
- As exchange value, its value is invisible or even negative
- Few attempts: try to convert its value in monetary equivalents
- They did not build on the CBPP specific logic of value production

## **CBPP as a paradigmatic case for Informationalism**

- The application of exchange value and monetary metrics is problematic in economies centered on information, knowledge, networks and digital technology.
- The fact that CBPP, despite had to spread in an adverse institutional environment, which has neglected or rather hampered its development, has expanded – included among a growing ecosystem of commercial companies - is a proof of its strenght
- CBPP as a paradigmatic venue for exploring alternative approaches aimed to make visible, assess, regulate value production in informationalism (Castells, 1999)

## **Some challenging characters of digital and information goods**

Once produced the marginal costs of additional copies tend to zero;

It is not rival; it is not destroyed by its use; it can be re-used; it can be re-combined;

These goods enter in the economic metabolism as raw materials, intermediate goods, capital goods, final goods.

CBPP makes of exploitation of the not-rival, re-usable and recombinable, easily sharable character of information goods a leverage in its productive logic

While these same features, insofar undermine exclusive property, excludability, scarcity, represent a threat in the logic of exchange value

# CBPP commercial adoption

- Surprising: decommodification as strategy
- Sign of productivity
- Investigate hybrids

# Open Source Business Models

Aggregated investments of commercial companies in Linux are estimated to exceed \$1 billion a year

(Vanhaverbeke & Chesbrough, 2014)

# Competitive Strategy

## I Catch up a dominant player

- I IBM-Linux

- Napster-Firefox

- Google-Android

- Pursuit of network effects

- Generation of an ecosystem around your platform/technology

- Tesla

- Development of expertise and absorptive capacity

# Shared Costs and Reduced Risks

Especially in conditions of uncertainty, rapid change, interdependence and complexity in technological development and innovation

- Share costs of R&D, risks, resources, capabilities
- Collaborate in non-differentiating components
- Reduce costs of access to resources, expand customers and gain price flexibility
- Avoid lock-in and get independence from monopolistic supplier/platform and monopolistic rents

# Collateral markets

- Selling services on the top of a Commons
  - Customization
  - Training
  - Certification
  - Documentation
- Dual licensing
  - Open Core / Proprietary add-ons
- Adjacent markets - products
  - Hardware
- Two-sided markets
  - advertising
  - data

CBPP is growing interstitially within existing economy

It generates a process of de-commodification  
that is in contradiction with the existing value regime

Expanding a sphere of activities and resources belonging to the “circulation of the  
commons”  
that are invisible or intangible in monetary terms

It requires to move toward the recognition of multiple regimes of value

Even new forms of capitalism operate through different regimes of value

(i.e. Sharing economy – Informational capitalism)

Platforms  
Ecosystems  
Networks

# Heterarchy

Model of governance that is able to recognize, organize and harness “multiple logics of worth”

# **Visualize multiplicity of regimes of value**

- Exchange value - Tangible
- Nonmonetary value - Intangible

## **Developing a nonmonetary framework for assessing value**

- Practical reasons: limited time and resources and methodology and ultimate scope of the research
  - Conceptual reasons: money is a capitalistic technology and recognizes and measures value by market exchanges
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# Five Non monetary Dimensions of analysis

Dimension of analysis	Possible Indicators
<b>Community building</b>	Size of the community generated around a project Intensity and frequency of the interactions within the community
<b>Social use value</b>	Usage of a resource generated by a project, measured by numbers of visits, web references, copies, downloads.
<b>Reputation</b>	Visibility in the Web Number of links to the project website Rating, appreciations, fans in the social networks
<b>Mission accomplished</b>	Degree of achievement of the declared mission or objective
<b>Ecological / derivative value</b>	Longitudinal and spatial tracking of the propagation of the relevant "unit of value".

# 1. Community Building

Dimension of analysis	Rationale	Scope	Possible Indicators	Issues/Problems
<b>Community building</b>	People participation around a project can be considered as both a sign of perceived value and a generator of value (Wenger et al. 2011).	It allows to visualize, independently from monetary metrics, the value generated by economies of aggregation, such as those unleashed by network effects (Katz & Shapiro, 1985) or by several practices of sharing common resources or practices, i.e. cultural codes, protocols, platforms (Muegge, 2013).	Size of the community generated around a project  Intensity and frequency of the interactions within the community	There exist multiple forms of participation in each case; and they would deserve a differentiated assessment.  The comparability between different cases is difficult, particularly if they do not use the same technological platform.

# 2. Social Use Value

Dimension of analysis	Rationale	Scope	Possible Indicators	Issues/Problems
<b>Social use value</b>	CBPP is often characterized as finalized to the production of use-values rather than exchange values (Bauwens, 2005; Stalder, 2010).	This strategy, recognizing value independently from a price, permits to visualize the social value generated by the practices of open access to resources and the loss of value implied in the exclusion from access to a non rival resource.	Usage of a resource generated by a project, measured by numbers of visits, web references, copies, downloads.	It is not easy to use common indicators of usage among diverse cases, except for the more generic ones, such as visits or web references.  Comparability is easier among clusters of similar cases (i.e. P2P file sharing platforms, or wikis).

# 3. Reputation

Dimension of analysis	Rationale	Scope	Possible Indicators	Issues/Problems
<b>Reputation</b>	Reputation is a crucial source and measure of value in contemporary economy (Arvidsson & Peitersen, 2013). In CBPP reputation is both a motivator to participation and a regulative value within the communities and in their governance (Barbrook, 1998; Ghosh, 1998; Raymond, 2000; Lerner & Tirole, 2000; Lakhani & Von Hippel, 2003; Von Krogh et al., 2012).	Though reputation can be in part commercially manufactured, it remains a value that is co-produced in social and distributed settings. Even more this is true on the Internet, where are being experimented large-scale peer-to-peer based reputation metric systems (Jøsang et al., 2007).	Visibility in the Web  Number of links to the project website  Rating, appreciations, fans in the social networks	In many cases it would more adequate to differentiate the relevant publics/stakeholders rather than measuring size within the general public. Though, that would undermine comparability.

# 4. Mission Accomplished

Dimension of analysis	Rationale	Scope	Possible Indicators	Issues/Problems
<b>Mission accomplished</b>	<p>This strategy is increasingly applied in nonprofit organizations to assess their impact (Valentinov, 2010; Sowa &amp; al., 2004).</p> <p>It focuses on a self-defined definition of value, in terms of achievement of a substantive mission.</p> <p>It undermines comparability. However new “standards of evidence” and new “common methodologies and metrics” could progressively emerge and stabilize, at least within clustered areas (GECES, 2014).</p>	<p>This approach can accommodate the recognition of a plurality of perspectives on what constitutes value (Martinez-Alier &amp; al., 1998; Graeber, 2001).</p> <p>It allows to catch up with the <i>ad hoc</i>, problem solving, mission-driven logic of many CBPP projects, their working as economies of scope and their temporal durations.</p>	<p>Degree of achievement of the declared mission or objective</p>	<p>It can be difficult to isolate a single, overarching common objective. Moreover objectives can evolve.</p> <p>How to quantify and compare the degree of accomplishment? Who is going to assess it?</p>

# 5. Ecological Value

Dimension of analysis	Rationale	Scope	Possible Indicators	Issues/Problems
<b>Ecological / derivative value</b>	<p>In knowledge and information economy, “propagation” (Rullani, 2004), “potential value” (Wegner et al., 2011), “derivative value” (Mayer-Schönberger &amp; Cukier, 2013) can be regarded as the main source of value. It may refer to ideas, knowledge, software, organizational methods, skills, data, etc. when they propagate and are applied beyond the original context of production. In CBPP projects these inputs and outputs are critical to understanding their working or sustainability (Berlinguer &amp; al., 2013).</p>	<p>It tries to measure by nonmonetary metrics, values that in institutional economics are treated as “positive externalities”. Such a generative logic is clearly not exclusive of CBPP. However, propagation typically undermines commerciability (Rullani, 2004). And one of the main drivers of ecological value is the re-usability, non rivalry, recombability and generative nature of knowledge, information, data and digital goods.</p>	<p>Longitudinal and spatial tracking of the propagation of the relevant "unit of value".</p>	<p>It appears extremely elusive and challenging. At the same time this dimension seems extremely important and exemplar in CBPP.</p> <p>It struggles with one of the most important difficulties provided by these forms of production: the difficulty of defining precise and formal border for the units of analysis and therefore of account.</p>

# Web Metrics

Web data	Metric	Proxy
<b>Alexa Traffic Global Rank</b>	It ranks websites from 1 to 30 million	Social use value Reputation
<b>Alexa Total Sites Linking In</b>	Number of links (absolute number)	Reputation
<b>Google PageRank</b>	It ranks websites from 10 (actually the highest rank value is 9) to 1 (lowest).	Social use value Reputation
<b>Number of results by Google search</b> (domain name in brackets)	Number of results (absolute number)	Social use value Reputation Ecological value
<b>Twitter follower</b>	Absolute number	Reputation
<b>Facebook Likes</b>	Absolute number	Social use value Reputation

# Results Web Metrics

- The rankings relatively meaningful, though vague
- Each is different, though indicators also showed correlations
- Each has its own fits and failures, depending on the organizational features of the projects
- They work better with projects centralized in a single platform or website and less with projects with decentralized architectures and distributed on a multiplicity of platforms

# From monetary metrics to digital metrics

- Pervasivity of digitization and digital intermediation (humans, objects, processes, relationships, machines, nature)
- “Quantifiable predisposition” (Mayer-Schönberger & Cukier, 2013)
- Transforming perceptions of what is intangible, immaterial, invisible as opposed to material and measurable, as well as what is private and intimate as opposed to public and common
- Creating a new “datascape” (Latour, 2010) made of new “digital objects” (Rogers, 2015) that is generating new quantitative practices and new digital methods

New metrics of value are emerging  
New currencies

- Hits
- Links
- Likes

New digitally based standards of value are emerging and have a degree of “performative” power  
(i.e induce competitive comparisons, emulative adoptions and manipulations)

- There is a growing industry providing new standards
  - They are private companies, that use proprietary software and data (lack of transparency, limited accessibility and closed management)
  - The best metrics for scope and reliability are provided by the monopolies or oligopolies of the Web: Google, Amazon, Facebook, Twitter
  - Centralization, Privatization, Conflict of interest
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# What possibilities of democratization?

Drastic reduction of costs of production and distribution of information and communication

Data collection and processing drastically cheaper and easier can be applied to size and complexity until recently unconceivable

Lowering costs and barriers to experiment new social technologies of evaluation

How can we work in the direction of a democratization in the construction of new value standards?

Tracker Tracker to the URL of the 300 cases of the sample

It is a digital tool able to detect and classify the presence of more than 900 'fingerprints' of web technologies and cloud devices.

Can be used to obtain an overall picture and a mapping of the 'power concentrations and the political economy of the cloud.

I maintained in the visualization three categories: analytics, ads programs, and widgets or social plugin.

The visualization shows four kinds of nodes, each one differently colored: URL of the cases (gray), analytics services (pink), the widgets and social networks buttons (green), the ads services (azzurro, blue)

Traces of 4 economies. Only one is monetary. Again even here, a very similar centralization of power.

