

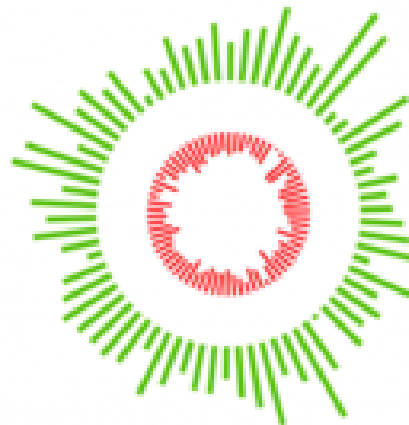
The value of open knowledge

Evidence from the Wikimedia movement

OSCAL 2015

Tirana, Albania

Kiril Simeonovski





What is the value of knowledge?



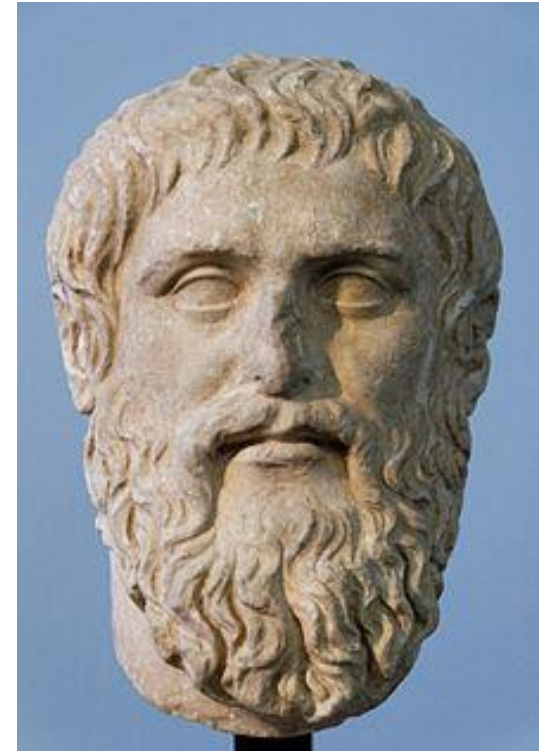
Meno problem: what is it about knowledge (if anything) that makes it more valuable than mere true belief?



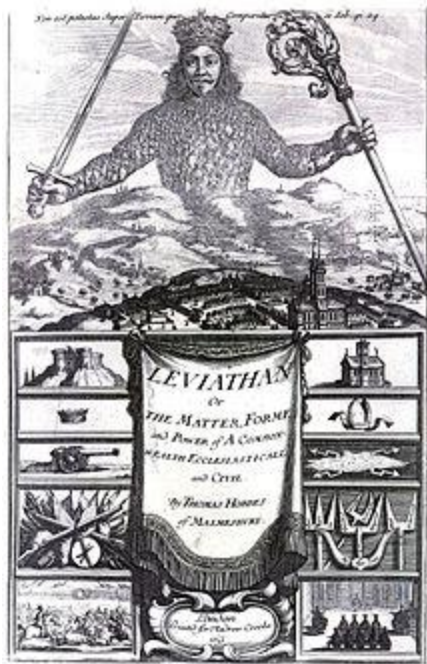
primary value problem

secondary value problem: why knowledge is more valuable than any proper subset of its parts?

tertiary value problem: why knowledge is more valuable, in kind and not merely in degree, than that which falls short of knowledge?



Plato (428/427 BC – 348/347 BC)



“ipsa scientia potestas est”

— Sir Francis Bacon, *Meditationes Sacrae* (1597)

“scientia potestas est”

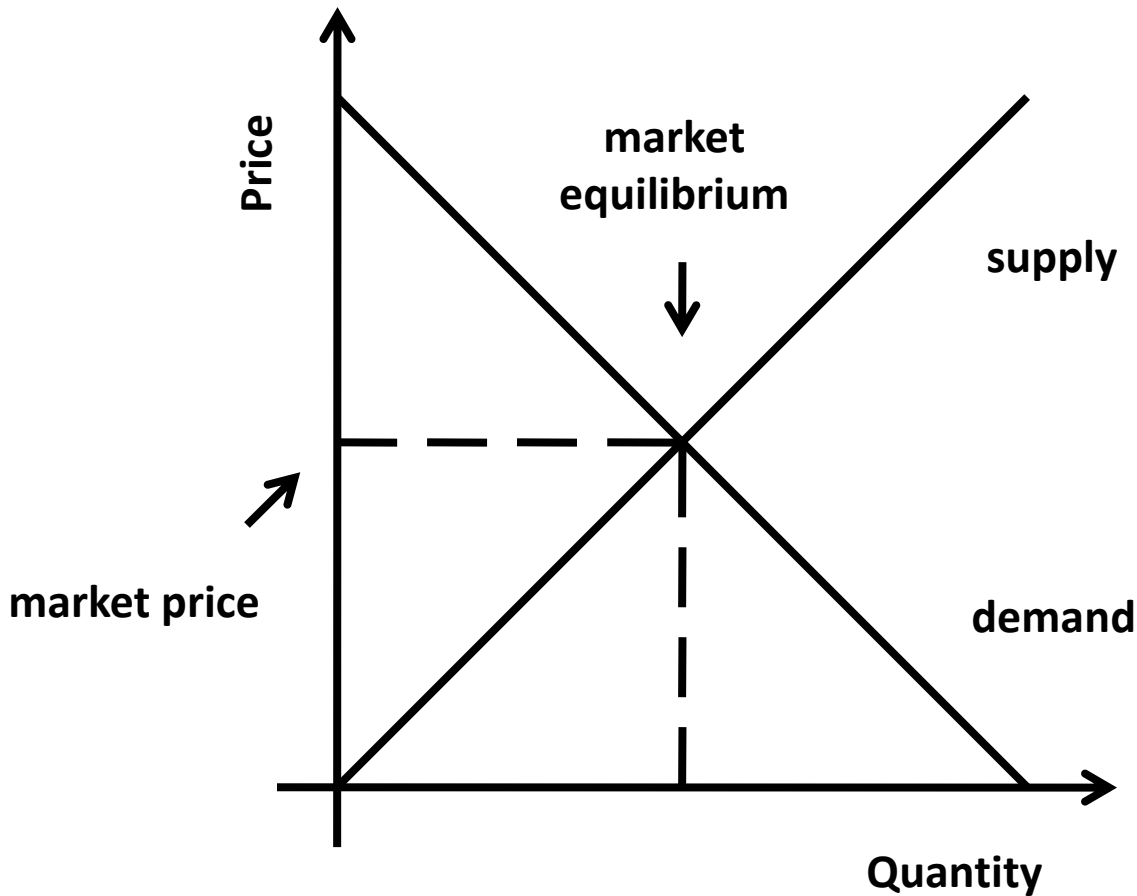
— Thomas Hobbes, *Leviathan* (1668)

***Leviathan* by Thomas Hobbes**

20th century: knowledge in business context, knowledge economy, knowledge management

Market economy

Supply and demand for goods

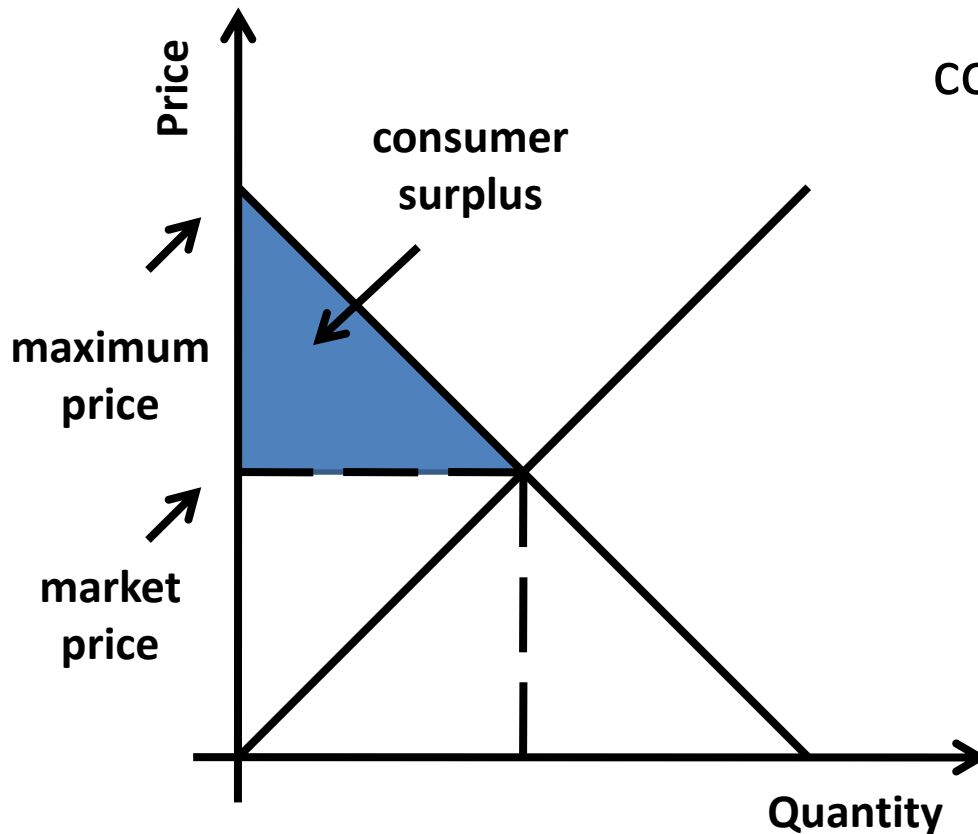


Accounting definition

value of good = market price

Economic definition

value of good = maximum price a consumer is willing to pay



consumer surplus = excess value





scarcity

~~abundance~~ of resources



producers cannot produce
immense quantities



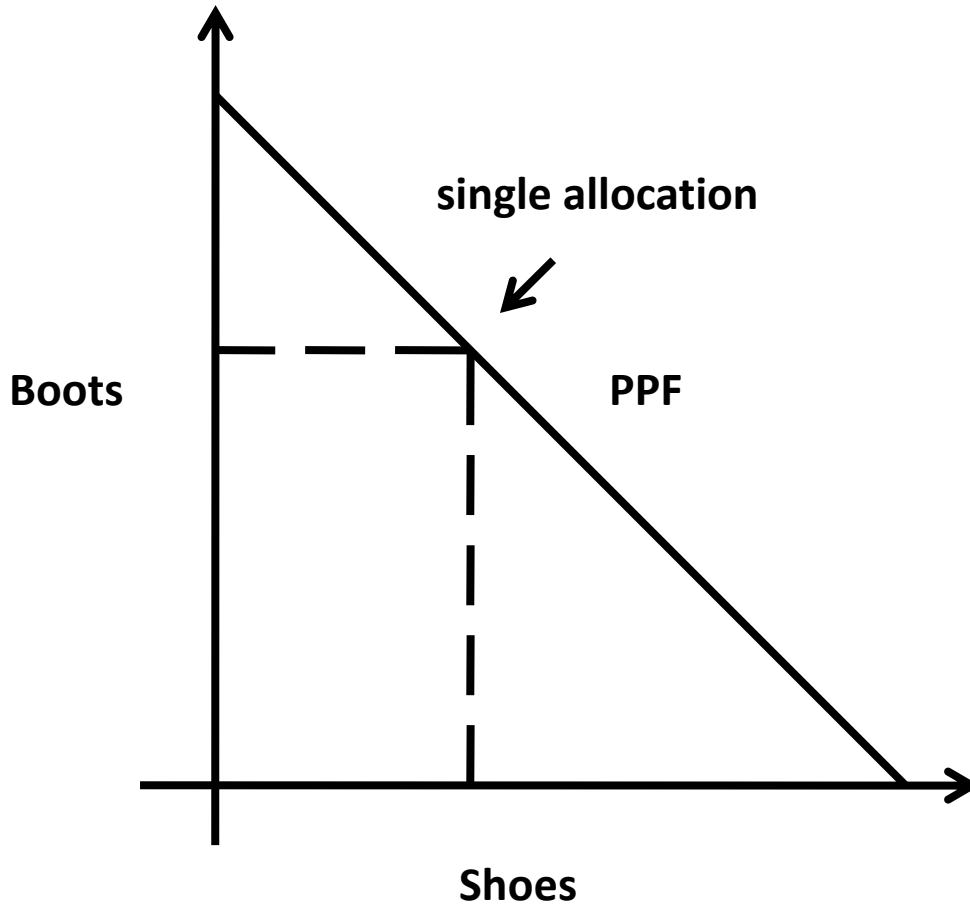
allocation between goods



production-possibility
frontier



Production-possibility frontier (PPF)



scarcity vs. abundance



... OR ...



... AND ...

Knowledge economy

Knowledge is very different from physical products (Stewart, 1996).

Knowledge:

- can be in more than one place at one time
- selling it does not diminish the supply
- buyers only purchase it once
- producers only sold it once
- it cannot be recalled

Knowledge market

Knowledge market (Stewart, 1996; Simard, 2006, 2013):

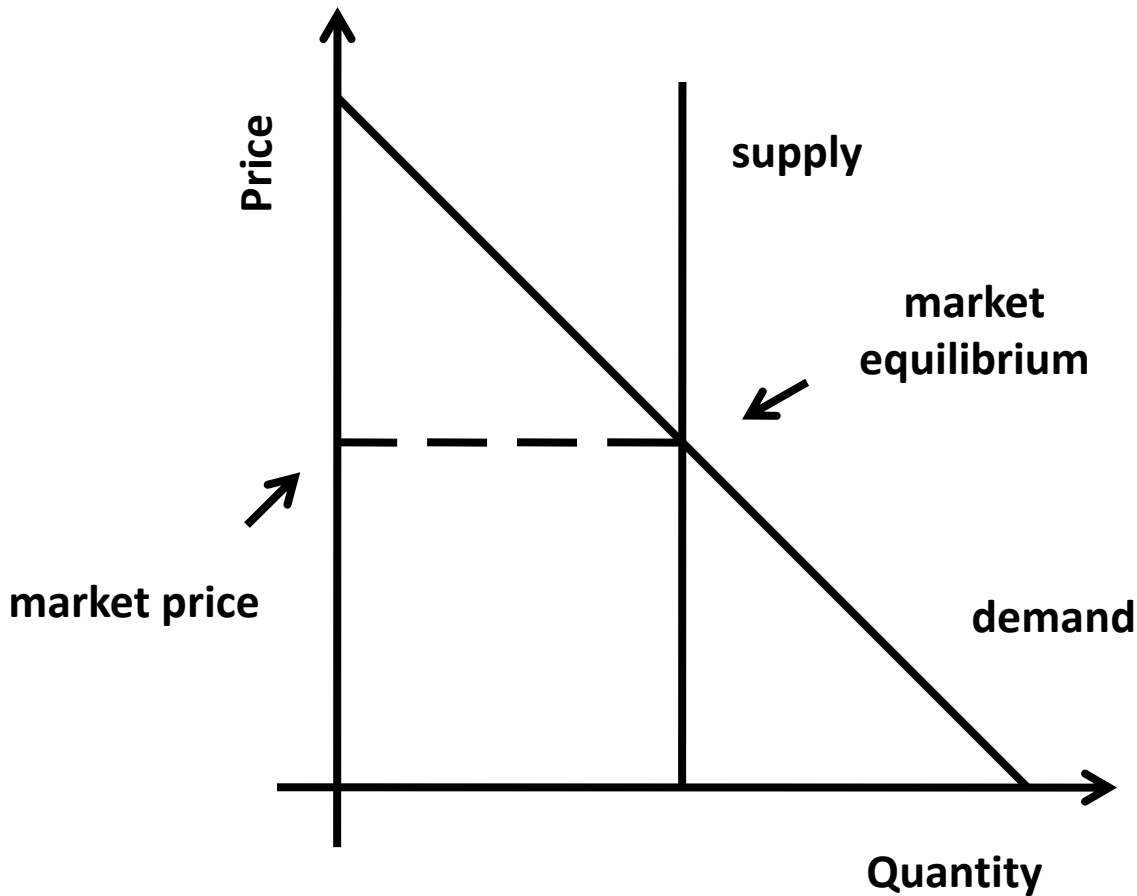
- mechanism for enabling, supporting, and facilitating the mobilisation, sharing, or exchange of information and knowledge among providers and users

Free-based knowledge markets:



Knowledge economy

Supply and demand for knowledge

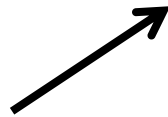


Accounting definition

value of knowledge = market price

Economic definition

value of knowledge = inherent value attributed by a consumer



driven by usefulness
of knowledge



different people value it
differently

same
knowledge = $\begin{bmatrix} V_1 \\ V_2 \\ \dots \\ V_n \end{bmatrix}$

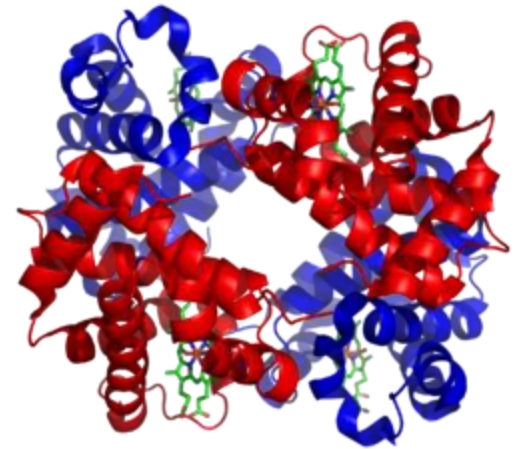




movement of stock prices

- high value for economists
- low value for biologists

- high value for biologists
- low value for economists



hemoglobin
concentration in red
blood cells

Knowledge economy

Two approaches:

1. knowledge as commodity
2. knowledge as public good

Knowledge as commodity

Artificial scarcity

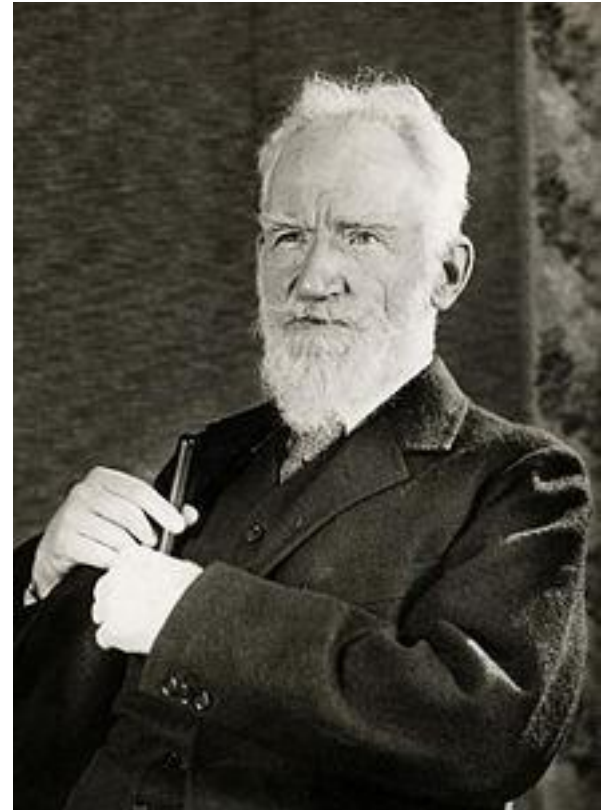
- abundance can be created BUT
- scarcity is more preferable

MB of scarcity > MB of abundance

intellectual property → scarcity of knowledge

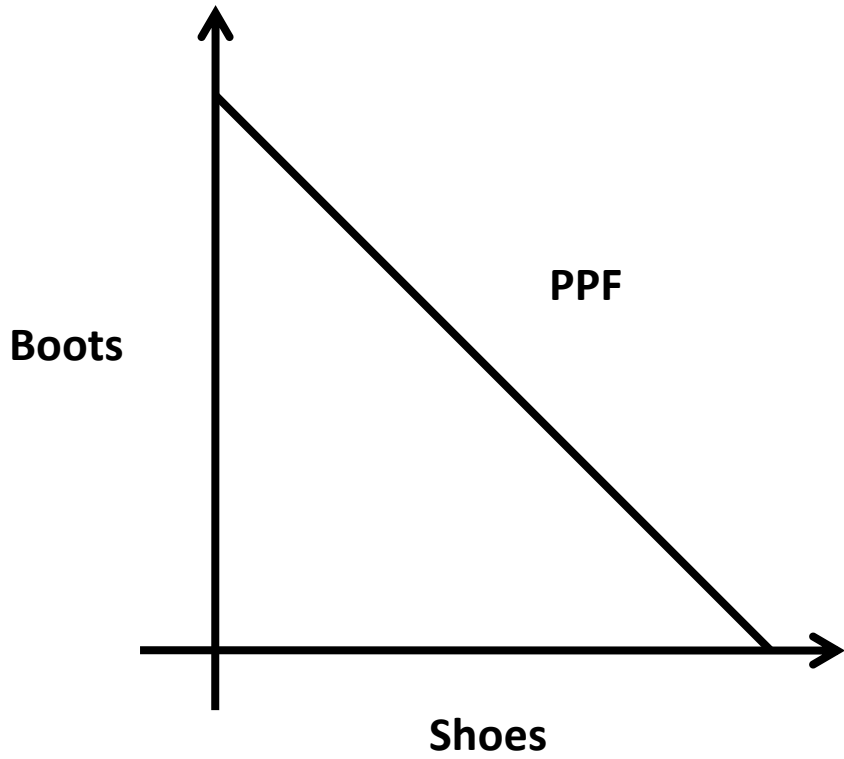
“If you have an apple and I have an apple and we exchange apples then you and I will still each have one apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas.”

—George Bernard Shaw

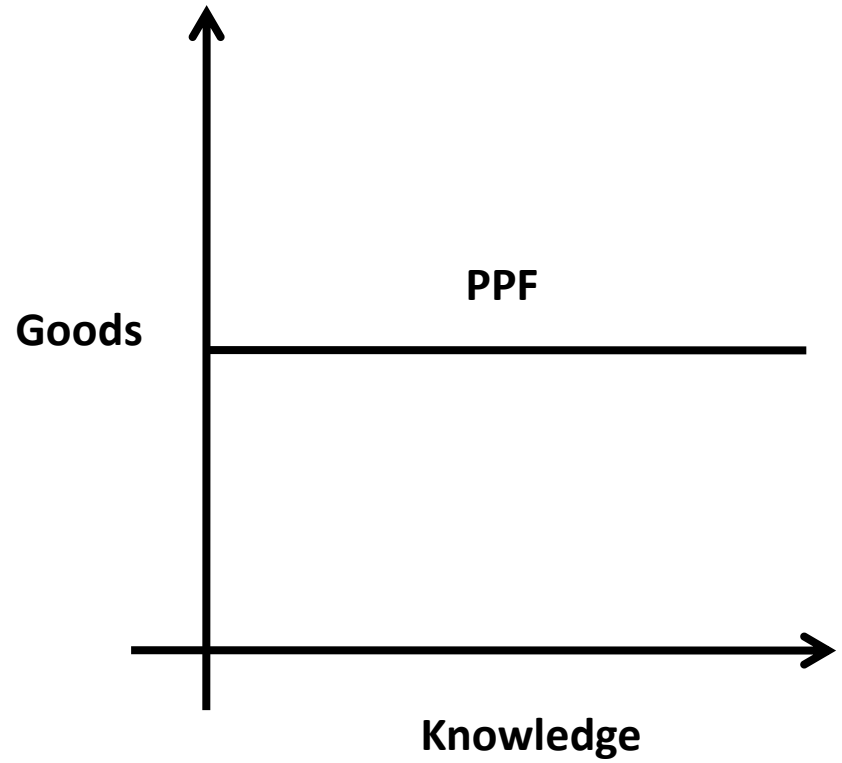


George Bernard Shaw (1856 – 1950)

PPF for goods



PPF for knowledge



Knowledge as public good

Knowledge is:

- non-rivalrous good
- non-excludable good



Copyright laws privatise only the expression of ideas, and leave the ideas themselves unprivatised, unregulated, and public.

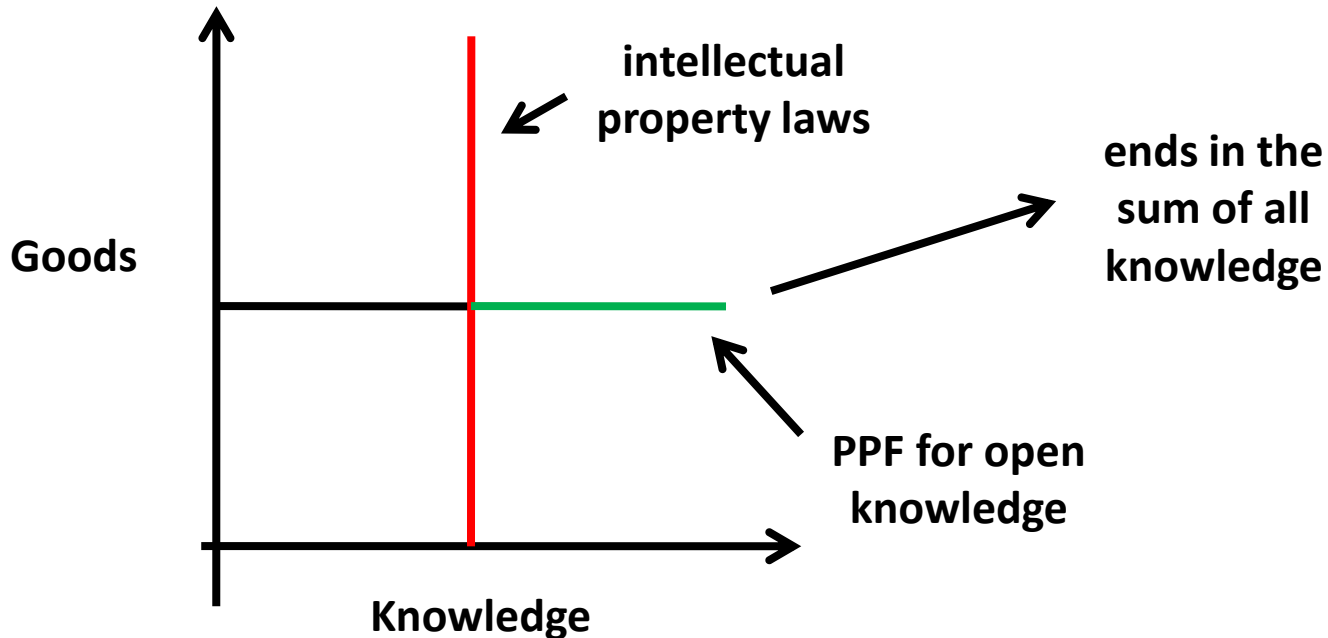
Open knowledge economy

knowledge = intellectual property + open knowledge

intellectual property → scarcity

open knowledge → non-scarcity

PPF for open knowledge





What is the value of open knowledge?

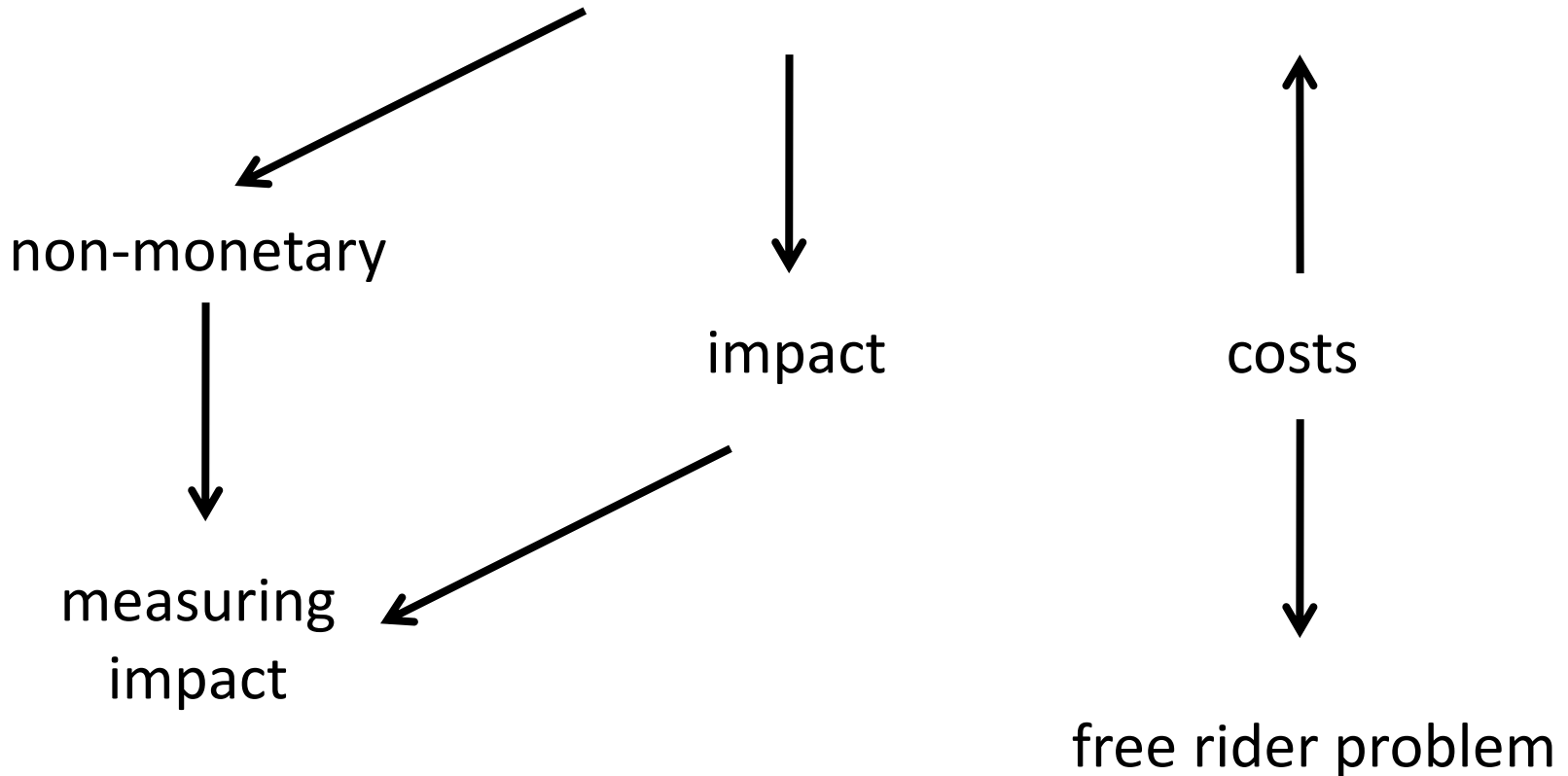


~~Accounting definition~~

~~value of knowledge = market price~~

Economic definition

value of knowledge = inherent value attributed by a consumer



Open Knowledge Index

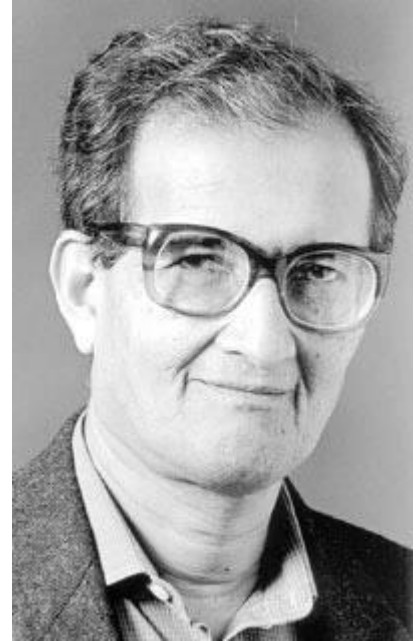
Three dimensions of open knowledge:

1. Capability
2. Legislation
3. Open Knowledge Society

Capability

Capability measures whether individuals have the capability to access and process data and knowledge (Sen, 1999).

problem of digital divide



Amartya Sen (b. 1933)

Proxies for measurement:

- Fixed broadband Internet subscribers (per 100 people) (OECD)
- Newspaper circulation rate (World Bank)
- Press freedom (Reporters without Borders)
- Tertiary education rate (World Bank)

Legislation

Open public administration is one of the most important administrative law principles (Bugarcic, 1975).

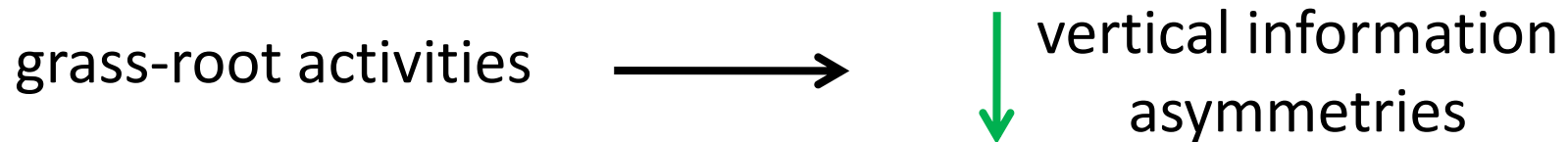
open government  citizens' access

Proxies for measurement:

- Years since first Freedom of Information legislation (OECD “Citizens as Partners”)
- Depth of Freedom of Information legislation (OECD)
- Open Budget Index (Open Budget Partnership)
- Effective access to information (World Bank)

Open Knowledge Society

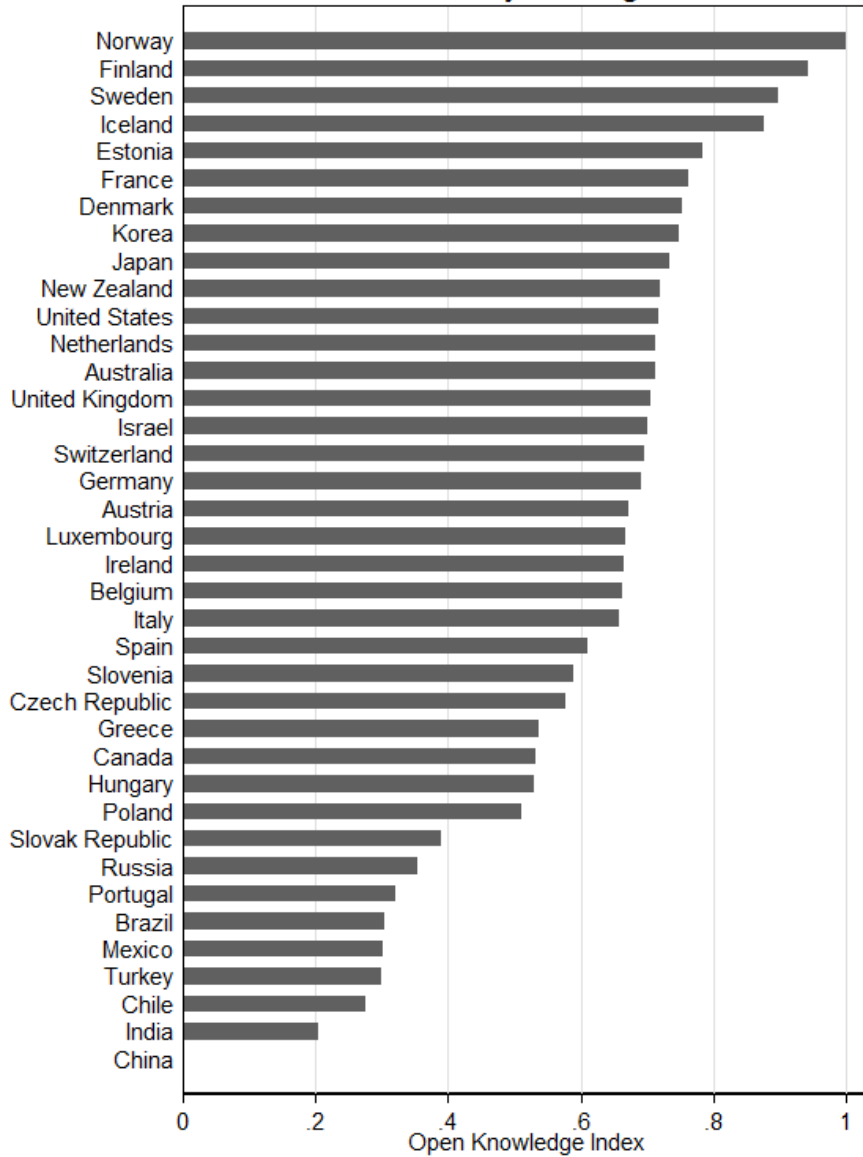
Civil society, as the fourth pillar, has become increasingly involved in activities traditionally occupied by governments, international organizations and established NGOs (Develtere and De Bruyn, 2009).



Proxies for measurement:

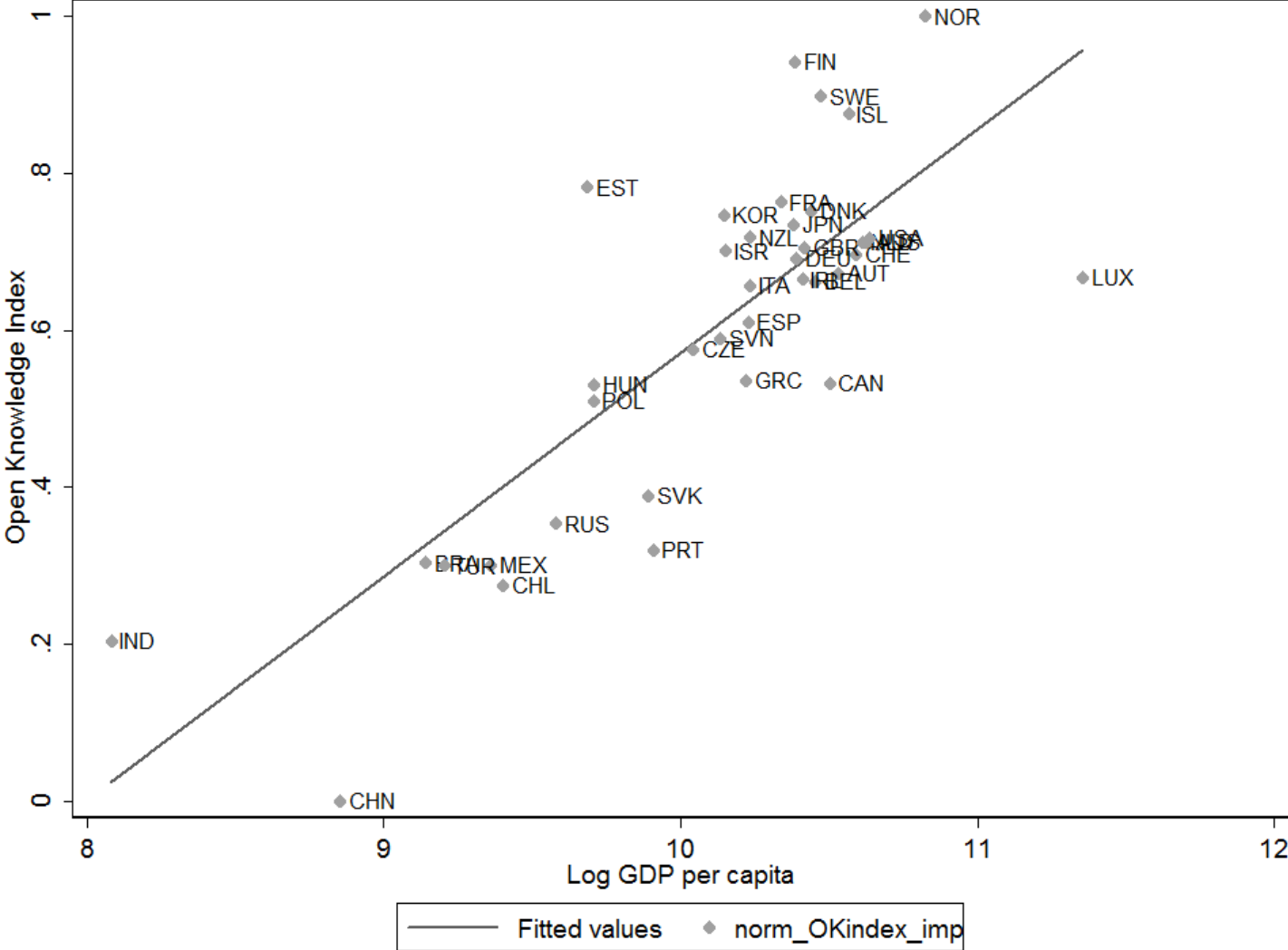
- Number of Wikipedia edits per 100.000 inhabitants (Wikipedia)
- Open Source Index (Red Hat)
- GI Civil Society Index (World Bank)

Country Ranking

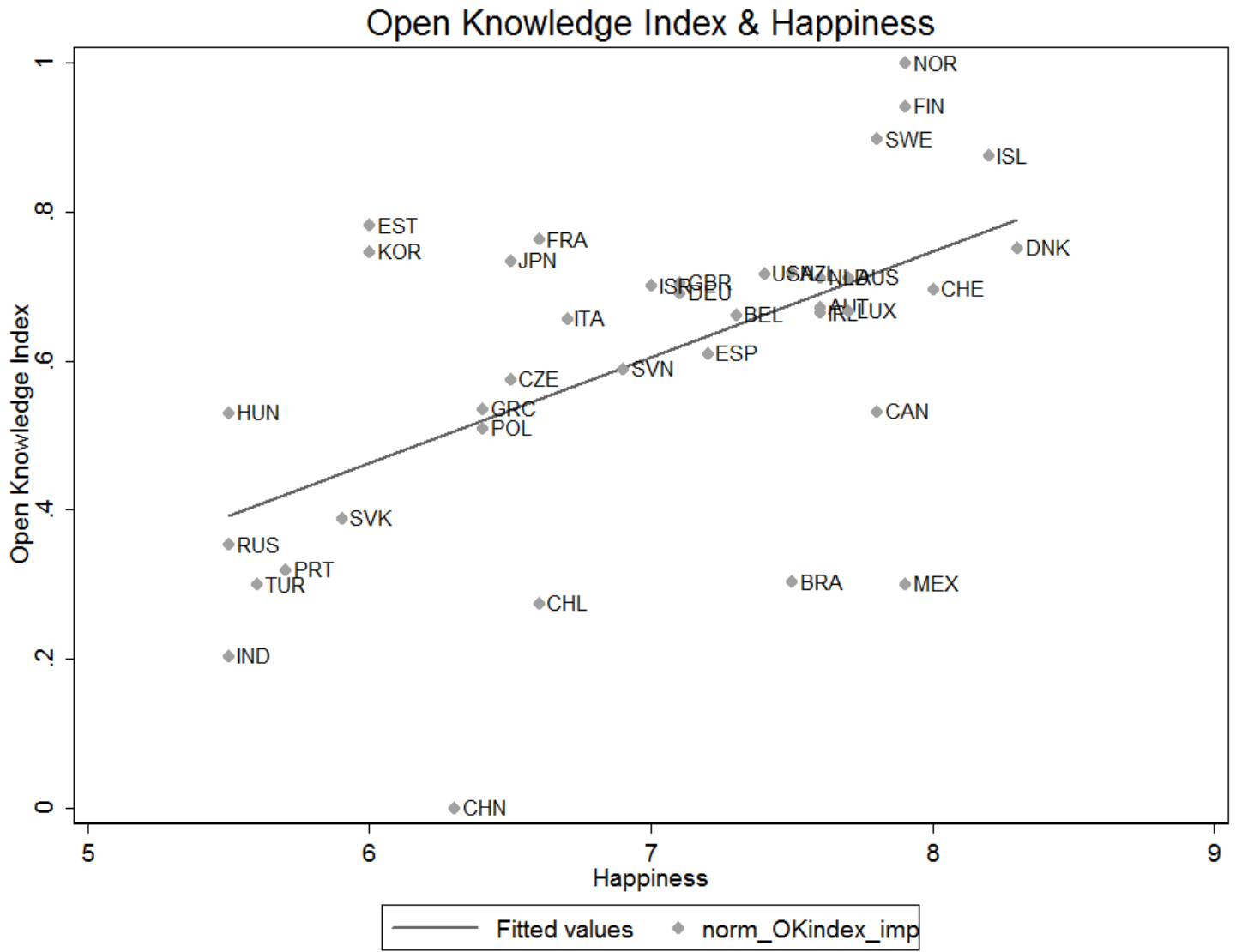


cross-section of 38 countries in 2009-2010, comprising OECD and the BRIC countries

Open Knowledge Index & GDP



strong positive correlation



weak positive correlation



Wikimedia

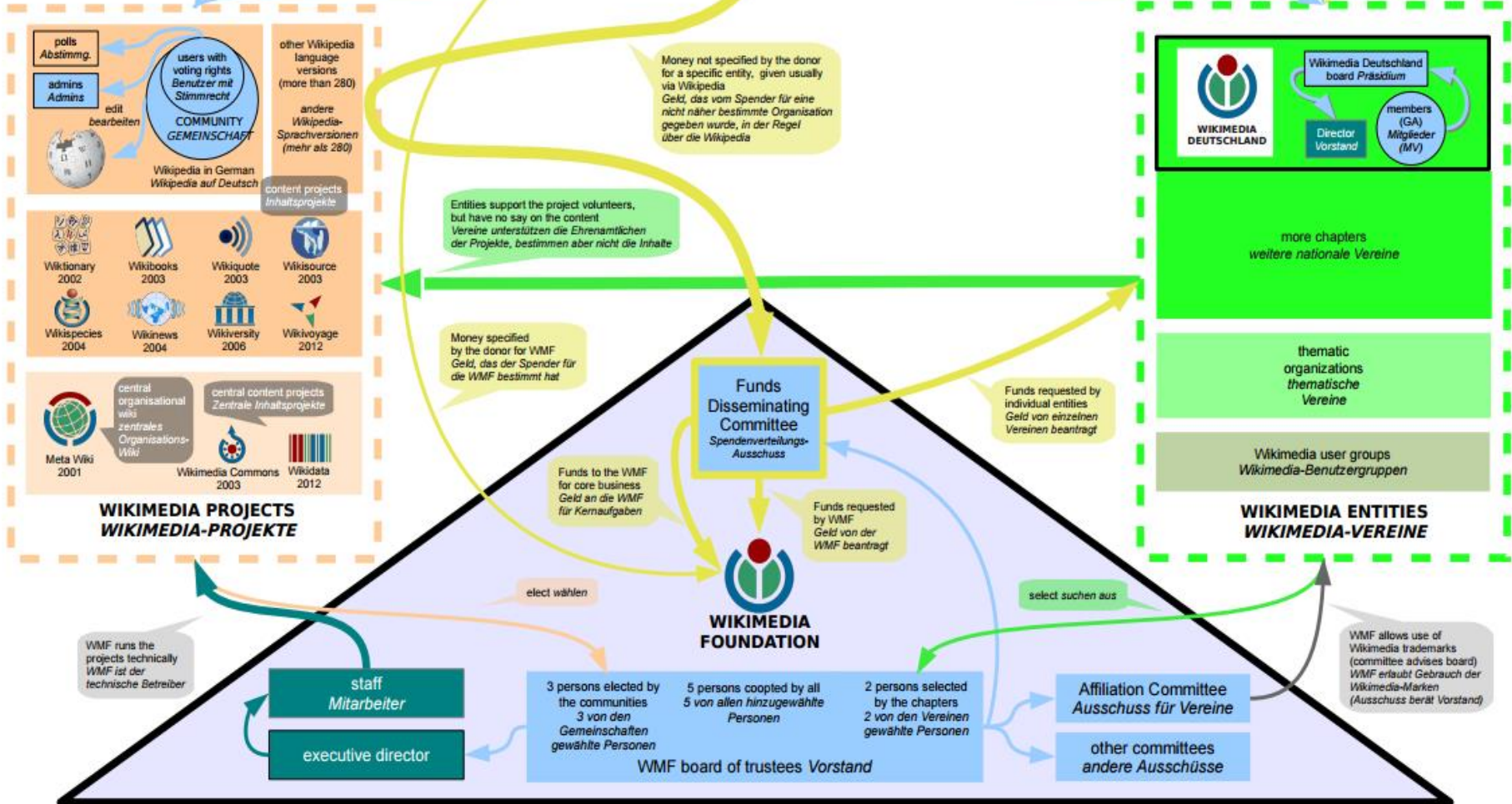
“Imagine a world in which every single human being can freely share in the sum of all knowledge. That's our commitment.”
—vision of the Wikimedia Foundation

global population Weltbevölkerung

people becoming editors of a wiki-website
Menschen, die Bearbeiter einer Wiki-Website werden

people becoming a member
Menschen, die Mitglied werden

Money specified by the donor for an entity, e.g. WMDE
Geld, das der Spender einem bestimmten Verein wie WMDE spendet

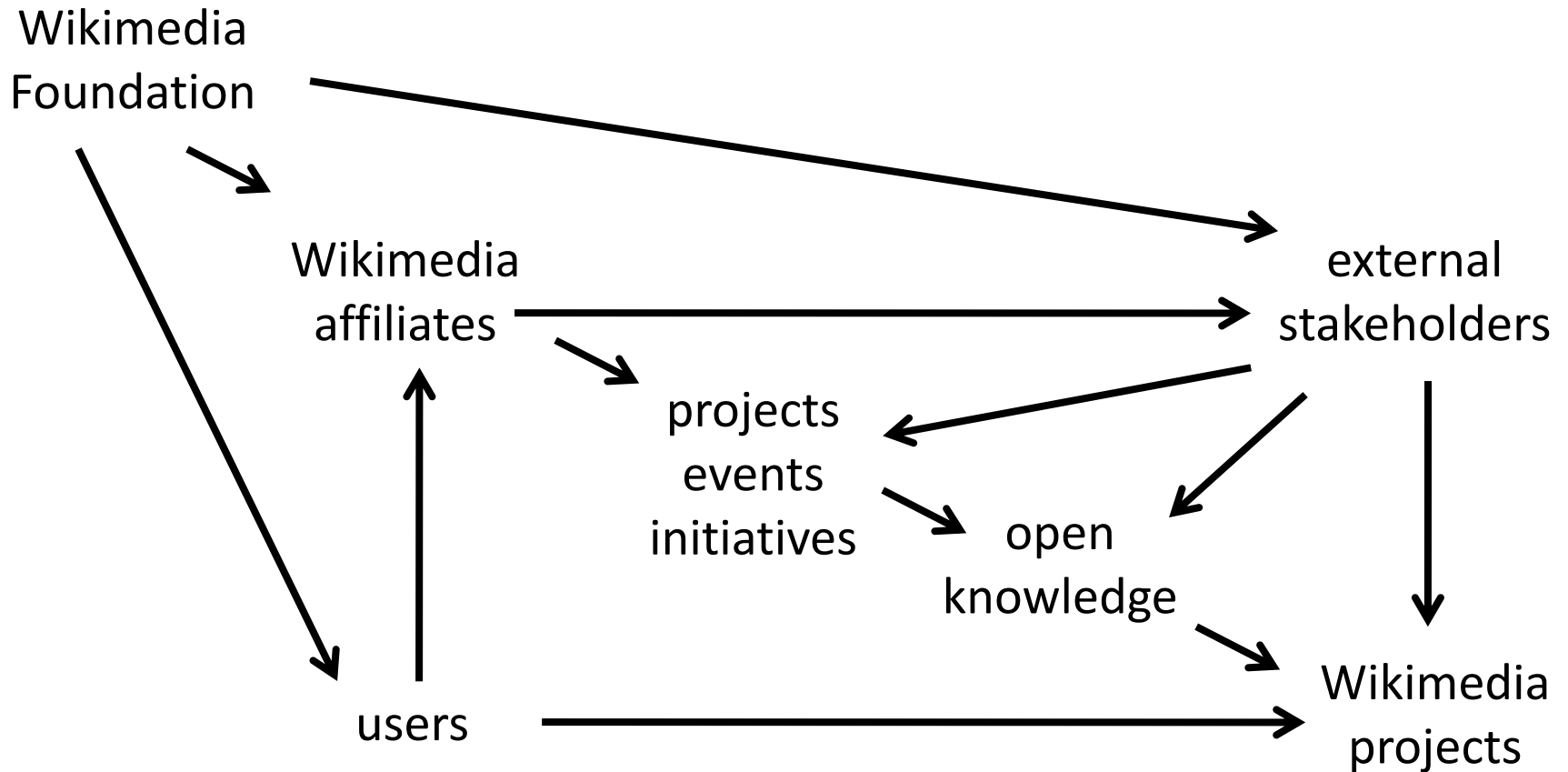


THE WIKIMEDIA MOVEMENT
DIE WIKIMEDIA-BEWEGUNG

WMM chart
Ziko van Dijk, CC-BY-SA
April 2013

Wikimedia movement

commons-based peer production (Benkler, 2002)





How to measure the value of the
Wikimedia movement?

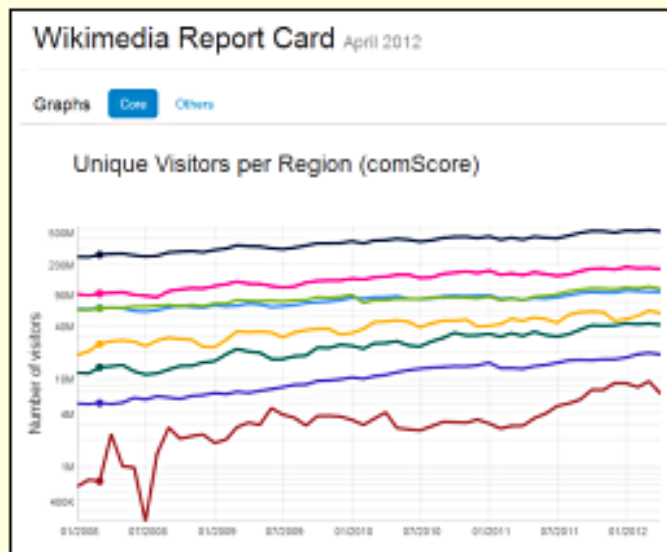


Wikimedia Statistics

[Monthly](#) | [Topical](#) | [About](#) | [Help](#) | [Search](#)

Monthly [New Report Card](#)

A compact overview over recent trends.
Charts can be customized by user.



Original Report Card (legacy)

Statistics per Wikimedia project

Detailed trends for each project.
Tables and charts cover the entire history.

 Wikipedia	 Commons	 Wikidata	 Wikivoyage
 Wiktionary	 Wikibooks	 Wikinews	 Wikiquote
 Wikisource	 Wikiversity	 Other Projects	

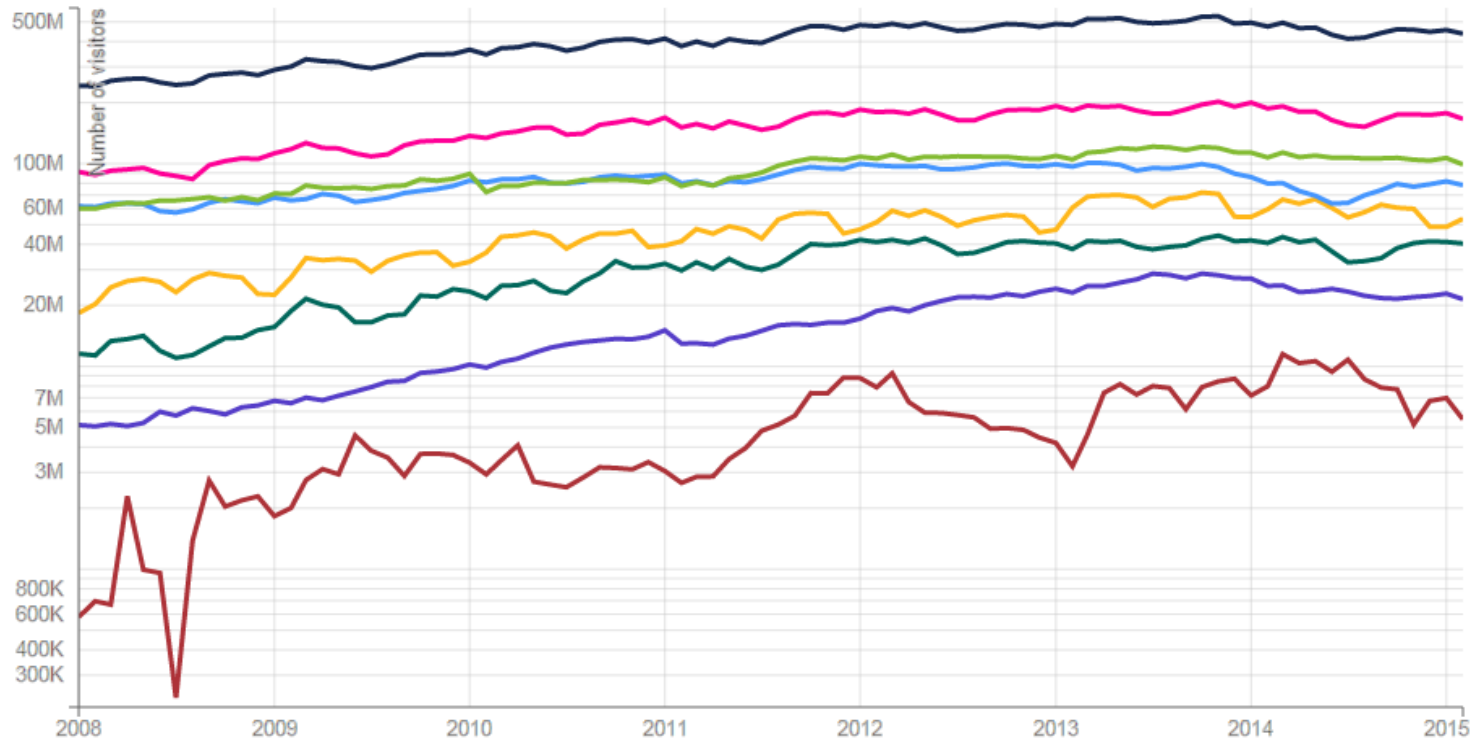
Wikimedia Report Card

437.39 Million

Feb 14 — Feb 15 -7.75%

Jan 15 — Feb 15 -4.01%

Unique Visitors per Region (comScore)



Jan 2008

World	242.55M
China	581.00K
Europe	91.04M
India	5.14M
Latin America	18.34M
Middle East/Africa	11.55M
North America	61.66M
Asia Pacific	59.96M

Metrics

	Orientation	Base
Community	<ul style="list-style-type: none">▪ unique visitors per region▪ page views (mobile + desktop)▪ size of database▪ new editors▪ active editors (5+ edits)	<ul style="list-style-type: none">▪ number of affiliates▪ number of people▪ number of projects, events and initiatives
Environment	<ul style="list-style-type: none">▪ quantity of materials released▪ quantity of books digitised▪ quantity of content created▪ quantity of multimedia created▪ number of copyright laws abolished	<ul style="list-style-type: none">▪ amount of donations raised▪ number of GLAMs involved▪ number of schools, faculties and institutes involved▪ number of other institutions involved

Future perspectives

- constituting composite indicators to measure the value generated within the Wikimedia movement
- how does the Wikimedia movement impact on the legislation dealing with intellectual property laws and freedom of sharing?
- the role of the Wikimedia movement in fostering economic growth