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Collective Awareness Platforms for Sustainability and Social Innovation

"Individually, we are one drop. Together, we are an ocean."
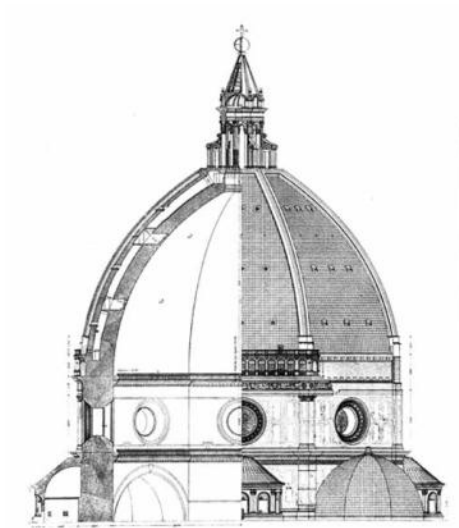*Ryunosuke Satoro*

"the Internet of the future seen by the children of today" drawing made by primary class children for the Paradiso contest

fabrizio.sestini@ec.europa.eu

https://ec.europa.eu/digital-agenda/en/collective-awareness-platforms

what is the biggest <u>artefact</u> ever built by mankind?

what is the biggest <u>artefact</u> ever built by mankind?

tecnology / infrastructures

sociology

Life and Humanistic Sciences

art

policy / economy

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Savana capitalism prayer:

- *Every morning in Africa, a Gazelle wakes up. It knows it must run faster than the fastest lion or it will be killed.*

- *Every morning a Lion wakes up. It knows it must outrun the Gazelle (and the other Lions) or it will starve to death.*

- *It doesn't matter whether you are a Lion or a Gazelle. When the sun comes up, you'd better be running.*
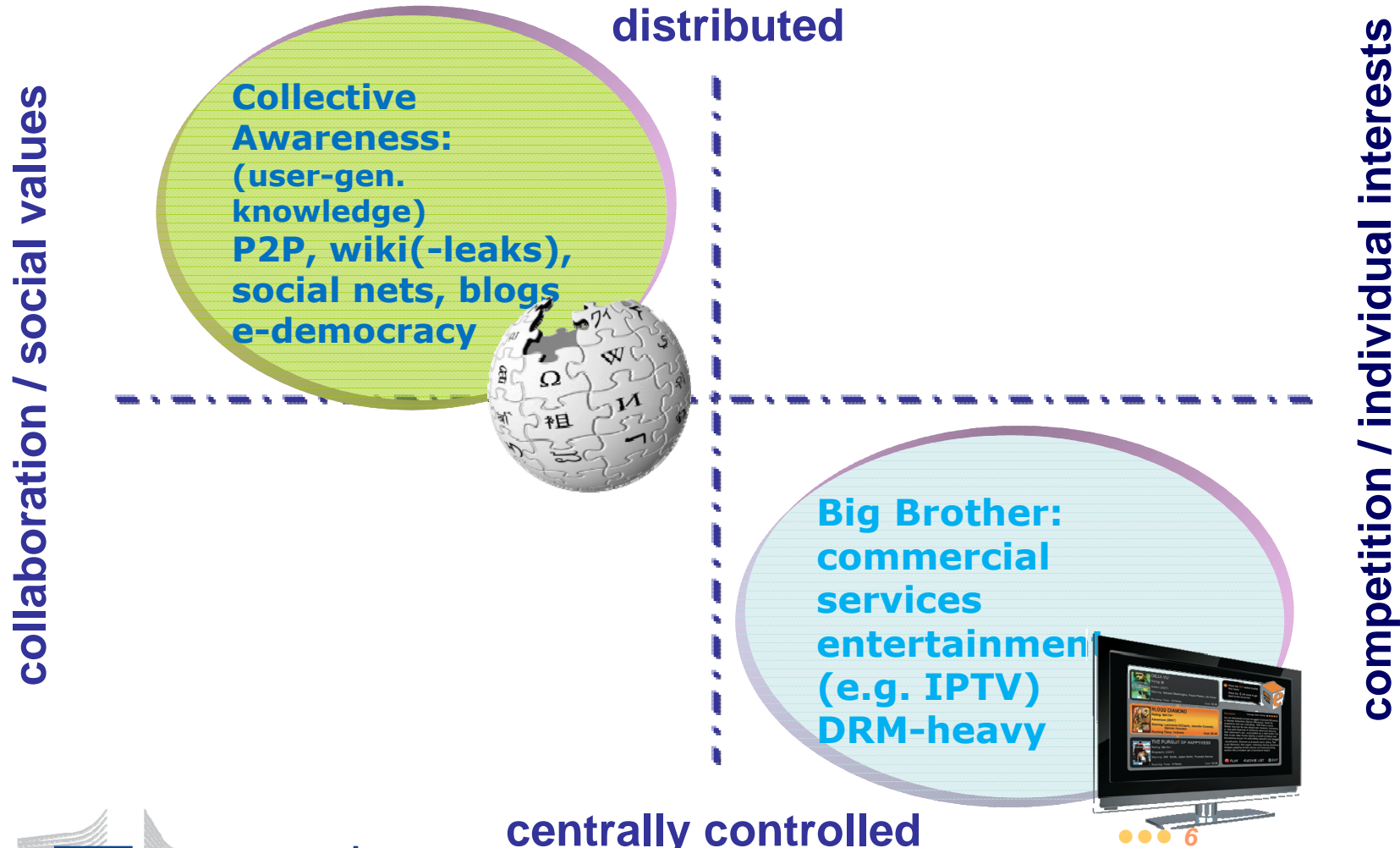
Competition vs. Cooperation

	A	B
Co-existence	0	0
Parasitism	+	-
Competition	-	-
Cooperation	+	+

- *Symbioses are common in nature*
- *Cooperation can be used to compete*
  - **birds dancing or giving gifts, humans competing for prestige through cooperative actions**
- *All human societies are results of cooperation*
  - **Competition enables natural selection in times of abundance**
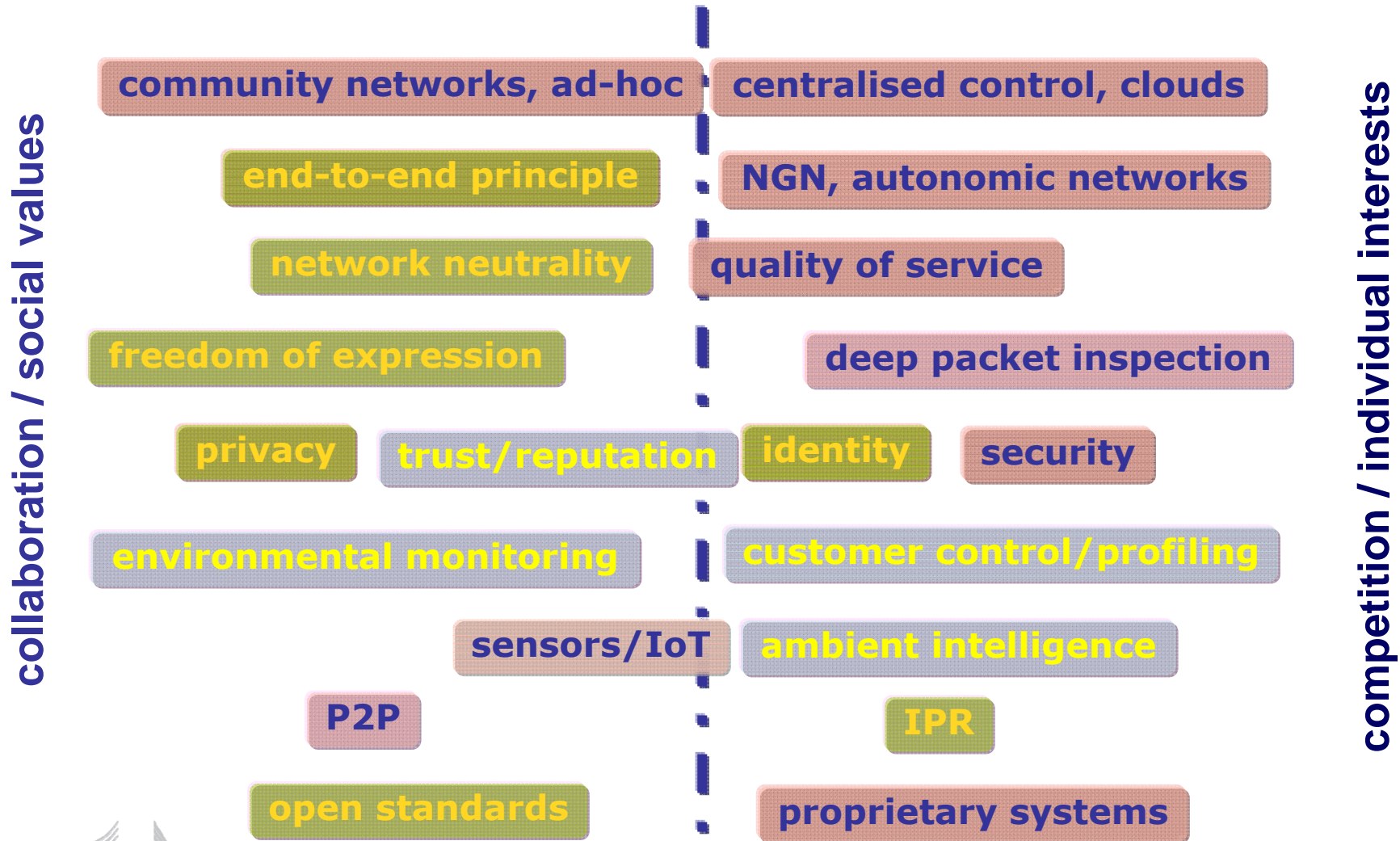 - **Cooperation allows for survival in times of scarcity**

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Future Internet scenarios

distributed

collaboration / social values

competition / individual interests

Collective Awareness:
(user-gen.
knowledge)
P2P, wiki(-leaks),
social nets, blogs
e-democracy

Big Brother:
commercial
services
entertainment
(e.g. IPTV)
DRM-heavy

centrally controlled

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ethical aspects of
technological / application / policy choices

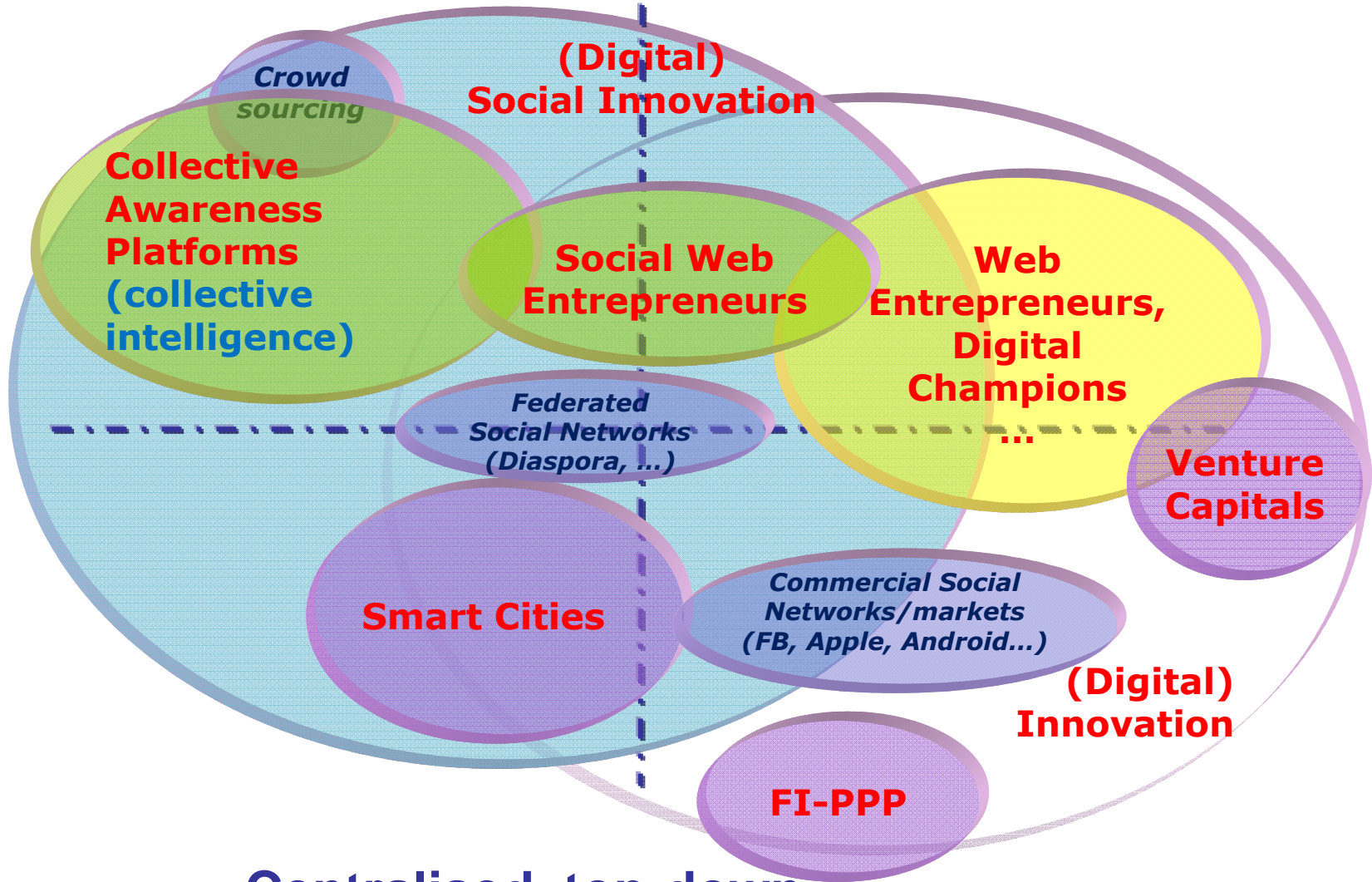collaboration / social values

competition / individual interests

community networks, ad-hoc

centralised control, clouds

end-to-end principle

NGN, autonomic networks

network neutrality

quality of service

freedom of expression

deep packet inspection

privacy · trust/reputation · identity · security

environmental monitoring

customer control/profiling

sensors/IoT

ambient intelligence

P2P

IPR

open standards

proprietary systems

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Innovation… ?

Grassroots, distributed

Collaboration / social values

Competition / economic interests

(Digital) Social Innovation

Crowd sourcing

Collective Awareness Platforms (collective intelligence)

Social Web Entrepreneurs

Web Entrepreneurs, Digital Champions …

Federated Social Networks (Diaspora, …)

Venture Capitals

Smart Cities

Commercial Social Networks/markets (FB, Apple, Android…)

(Digital) Innovation

FI-PPP

Centralised, top-down

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Future Internet & sustainability: an ethical question?

We are facing the convergence of multiple crises

- **Financial, Environmental, Energy, Social**

How can Internet help the transition towards a more sustainable future?

- **Environmental-friendly way of living**
  - **Product ranking, Life footprint, efficiency**
- **Sustainable economic development**
  - **Empowering people, new market models, new IPR**
- **Participative global governance**
  - **Based on cooperation, sharing, low-cost access**

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What is "Collective Awareness"?

- **Gathering of big data about what's going on and other people's actions**

  - **From humans as well as from sensors**

  - **Made available to all citizens as open data**

  - **Enriched and interrelated with other sources of information/statistics/simulations**

- **Providing an extended awareness of the social world, the environment and the consequences of our actions, nudging our behaviours towards:**

  - **Environmental-friendly lifestyles**

  - **New economic models**

  - **Participative global governance**

"Tell me and I'll forget; show me and I may remember; involve me and I'll understand."
(Chinese proverb)

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What are "Collective Awareness Platforms"?

- **Using *collective awareness* to support better informed and sustainability-aware decisions**
  - **affecting behaviours at individual and/or collective level**
  - **faster and more effectively than traditional "advice"**
  - **in specific or generic "platforms"**

- **Based on converging trends:**

  - **IoT - collecting data from environment**

  - **Social networks - interaction**

  - **Wikis – coproduction of new knowledge**

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Approach

- **Harnessing the ICT network effect**

    – **to create collective intelligence**

- **Sustainability as a goal**

    – **beyond GDP, Low Carbon economy, natural resources, social equality, inclusion**

- **Behavioural changes**

    – **At personal, collective and corporate levels**

    – **Self-regulation based on collective awareness**

- **Bottom-up**

    – **And coordinated**

- **Beyond commercially-driven platforms**

    – **That can produce new business models and (social) innovation**

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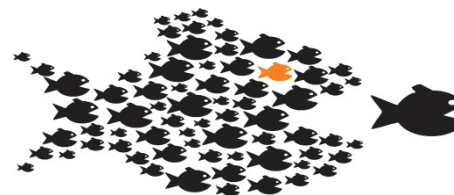
What changes can CAPS achieve?

- **More balanced food, better health**
  - ranking/labelling/customised advice/social feedback

- **Low carbon, energy savings**
  - Sustainable consumption, environmental monitoring...

- **Smart Cities**
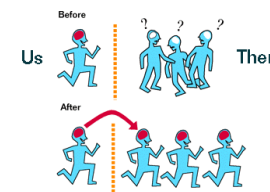 - Social innovation, smart transport, emergency...

- **Safer, better Internet**
  - Crowdsourcing, open social media

- **New democracy, participation**
  - Politics, inclusion, youth, elderly...

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An example: "The Eatery"

- *tracking the feeding habits of millions of people through mobile phone cameras*
  - Correlating this massive data with healthiness indicators
- *generating precise and personalised suggestions to improve individual habits or diets*
  - Instead of traditional nutritional advice
- *sharing and comparing individual food preferences over social networks*
  - Exploiting peer pressure to drive durable behavioural changes

network effect: healthiness as well as obesity can be "contagious"!!!

more examples...

- **Collaborative Consumption**: *lending, exchange, swapping and bartering made to operate at scale, across geographic boundaries*
  - **Airbnb:** rent a place from other people
  - **Freecycle:** grassroots movement of people giving stuff for free
- *Getting facts/**evidence** from citizens for better decision making (at personal or institutional levels)*
  - **Safecast:** collecting data about radiation through individual devices
  - **Alliance for useful evidence,** embedding evidence in the decision making process
  - **Crowdmap (based on Ushahidi),** to collect and map information from cellphones, news and the web
  - **Localmind:** to send questions and receive answers about what is going on—right now—at places you care about
- *Driving sustainable **behaviours** and lifestyles*
  - **Nike+ FuelBand:** tracks physical activity through a wearable accelerometer and syncs up with a motivational web and mobile experience
  - **Urban Eco Map:** encouraging eco-conscious decision-making at a local level
- *Developing **alternative collaborative approaches** to problem solving*
  - **Kickstarter, Opengenius:** open-source crowdfunding platforms for startups or scientific research
  - **Evoke:** serious games to develop and refine ideas to change the world
- **Connecting** *citizens, doing things together*
  - **Glancee:** discovers what friends or interests you have in common, combining fb and wikipedia

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CAPS: hard ICT needs (beyond Apps)

- Interfaces with sensors, IoT

- Management of Open Data

  - from sensors and people

- Usability, interfaces for inclusion

- Integration of different systems / networks

  - open source, open hardware, free software

- Enabling unrestricted communications for inclusion

  - opportunistic, community networks, …

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CAPS: scientific needs

multidisciplinary understanding: hard and soft sciences

- simple online reputation mechanisms
  - based on identity but preserving privacy
- Understanding new collective models for value creation beyond monetisation
- Understanding motivations and incentives for online collaboration
- Impacts of social networks on sustainable collective behaviours

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enabling bottom-up approaches in a regulatory framework

- *Ensure fundamental rights* of the citizens

  - **E.g. quality guarantees from collective systems**

- *Verify compatibility with policies*

  - **on open data, network neutrality, competitiveness, copyright, open government**

- *Redesign the regulatory toolbox to enable the full potential of collaborative and collective innovation*

  - **Creating a level playing field for CAPS, in line with treaties**

- *Demonstrating new forms of self-regulation instead of compliance*

  - **based on individual situational and contextual awareness of global social constraints**

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Obj. 5.5: CAPS objectives (1/2)

a) Supporting multidisciplinary experiences/pilots of **grassroots digital social innovation platforms** involving citizens and communities **(STREPs, 9M€)**

- **Societally, environmentally and economically sustainable solutions to societal challenges (e.g. in direct democracy, health, environment, sustainable lifestyles, etc.)**
- **Collective decision making tools based on the combination of social networks, wikis, IoT**
- **Empowering existing (local or global) communities of citizens**
- **Using free software, open hardware, open data**

b) Providing seed money supporting **bottom-up social innovation** and education initiatives **(1 IP with open calls, 3M€)**

- **based on crowdsourcing and network intelligence principles**
- **empowering web innovators, research teams, communities and entrepreneurs**
- **activities selected on the basis of excellence and crowd-funding criteria**

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Obj. 5.5: CAPS objectives (2/2)

Coordination Actions, 3M€:

c) Engaging citizens and society at large:

- distil best practices from existing initiatives, creating synergies and critical mass
- assess impact of CAPs on communities
- achieve a multi stakeholder approach (helping social entrepreneurs benefit from seed funding)
- discuss ethical aspects, e.g. fundamental rights such as quality guarantees
- link with policy/regulatory activities e.g. on privacy, identity, open data, NN, copyright, etc.

d) Integrating the scientific base for the multidisciplinary understanding of CAPs, addressing:

- innovative mechanisms for value creation beyond monetisation
- reputation
- motivation and incentives for online collaboration and sustainable behaviour
- innovative licensing
- open government
- new forms of "self-regulation" (based on awareness of global constraints)

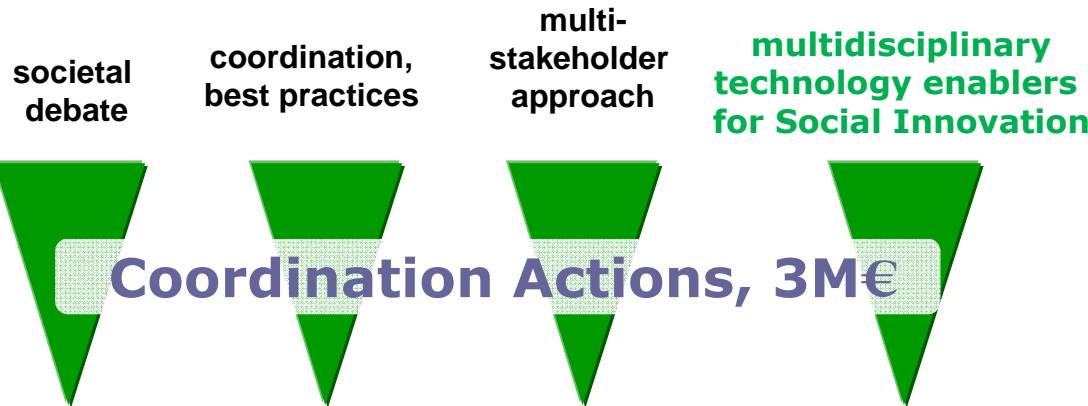European Commission | Communications Networks, Content & Technology

instruments

- *STREPs*
  - **Small, agile, min. 3 partners/3 countries**
  - **Covering different methodologies and topics**
  - **Indicative: 0,7 - 2M€, 12-36 months, 3-8 partners**
- *IP*
  - **3M€, min. 3 partners / 3 countries, 2-3 years**
  - **Main role: opening cascade calls to fund new social innovation initiatives (85% of budget)**
  - **Coordination and visibility (8% of budget)**
- *CSAs*
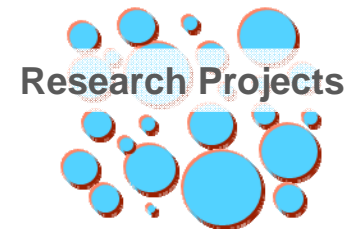 - **Min. 1 partner (SA), 100% funding**
  - **Indicative: 3 partners, 0,2 – 1 M€, 1-3 years**

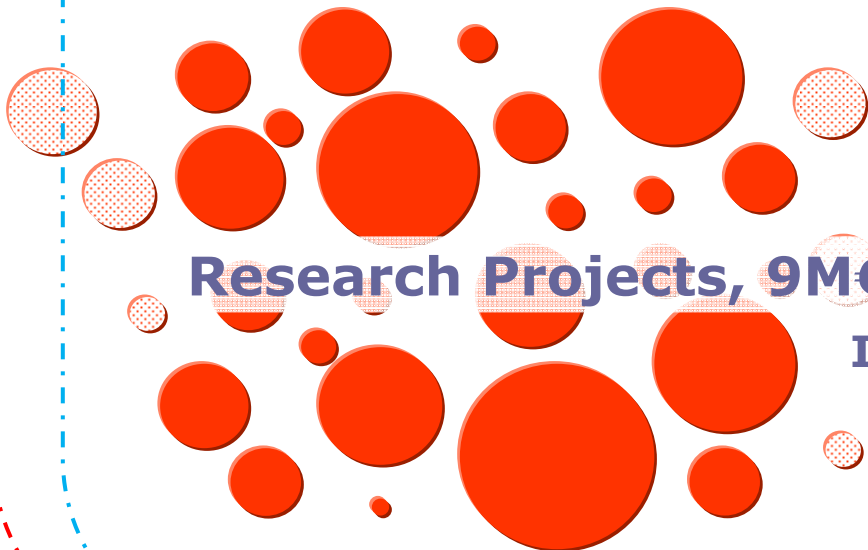*No rigid prescription (beyond eligibility criteria)*

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CAPS in ICT WorkProgramme 2013

societal
debate

coordination,
best practices

multi-
stakeholder
approach

multidisciplinary
technology enablers
for Social Innovation

Internet Science:
understanding techno-social
research issues

Coordination Actions, 3M€

Research Projects

**Obj. 1.7b
FIRE-IS 8M€
(+ existing NoE)**

**Obj. 5.5
CAPS 15M€**

Research Projects, 9M€

open calls

Integrated Project, 3M€

open calls

Integrated Projects

**Obj. 1.8
FI-PPP 100M€**

**seed money for
small actors in SI**
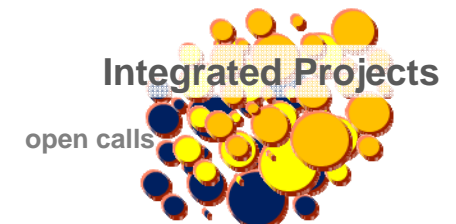
multidisciplinary experiments/pilots

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Key priorities for proposals

- *Innovativeness and effectiveness*
  - **Harnessing collective intelligence**
  - **Compared to existing "classical" solutions**
- *Social value / Social Innovation*
  - **number and type of citizens involved: young, elderly, ...**
  - **Positive impact on sustainability aspects**
- *User take-up and motivation*
  - **Involve real communities facing real problems**
- *Multidisciplinary approach and impact*
  - **Involve different partners from different disciplines (>3)**
- *Scalability*
  - **Capability to reach a critical mass**
- *Portability*
  - **to other application areas**

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How to be "multidisciplinary"?

include partners from at least 3 of:

ICT
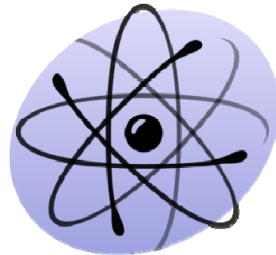
Physics

Legal

Economics

Innovation

Philosophy

Sociology

Psychology

History

Art

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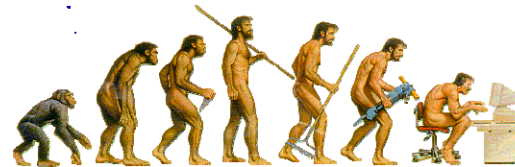
Network of Excellence in INTERNET SCIENCE

Coordinating and providing incentives for
open multi-disciplinary investigation of internet related topics,
merging technology, sociology, philosophy, economy, law, art, ...

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http://www.internet-science.eu/

Obj. 1.7b: experimentally-driven research in Internet Science

To support experimentally driven research, in particular to conduct multidisciplinary investigation of key techno-social issues (i.e. Internet Science) (STREPs, 8M€)

- **exploiting any relevant FIRE facilities,**

- **considering also benefits for citizens, ethical and sustainability aspects.**

- **Examples are network neutrality, privacy by design, identity management, security trade-offs, techniques to ensure free flow of information (e.g. circumventing censorship), cloudification, crowd-sourcing, reputation mechanisms, data ownership, data retrieval and openness, citizen involvement in content generation, new collective economic models for rewarding creators and talents, performance and quality of experience as perceived by final users and behavioural and societal changes.**

- **A multidisciplinary approach is encouraged to include beyond technologically oriented partners, also at least two participant entities with a main focus of activity addressing sociology, economy, law, content/culture, and/or perception/interfaces.**

- **Call coordinator: Ragnar Bergström, CNECT E3 (Net Innovation)**

Links between CAPS (obj. 5.5) and Internet Science (obj. 1.7b)

multidisciplinary investigation of key techno-social issues

- **addressing** reputation, network neutrality, identity, crowdsourcing, citizen involvement **in content generation, new collective economic models, privacy by design, behavioural and societal changes**

Open for Coordination Actions in CAPS objective 5.5

Open for multidisciplinary STREPs in IS objective 1.7b

(at least 2 non-ICT partners from sociology, economy,

law, content/culture, perception/interfaces)

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To know more / to network:

Website

(background docs, links, examples, etc.):

https://ec.europa.eu/digital-agenda/en/collective-awareness-platforms

Call deadline: 15 January 2013

Call coordinator:

fabrizio.sestini@ec.europa.eu