Future Internet strategy:
Beyond Technologies, for Human Society

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

Fabrizio.Sestini @ ec.europa.eu

#Global Future Internet Summit, Seoul, 1 Dec. 2011

European Commission DG Information Society & Media

http://cordis.europa.eu/fp7/ict/fire/future-internet-and-society_en.html

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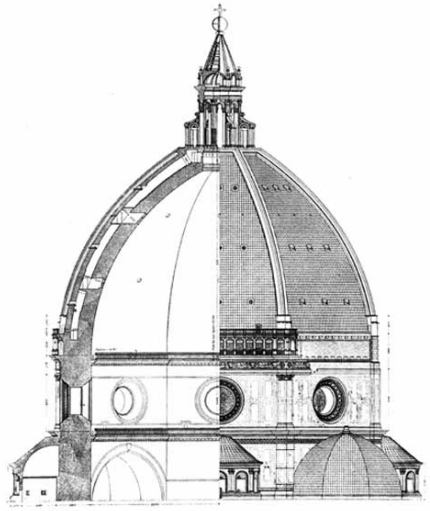
ion"

what is
the biggest artefact ever built by mankind?

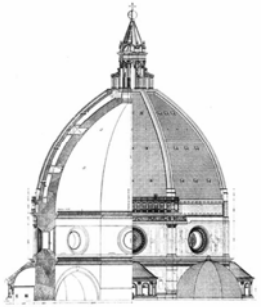


what is
the biggest artefact ever built by mankind?

tecnology / infrastructures

sociology

Life and Humanistic Sciences



art

policy / economy

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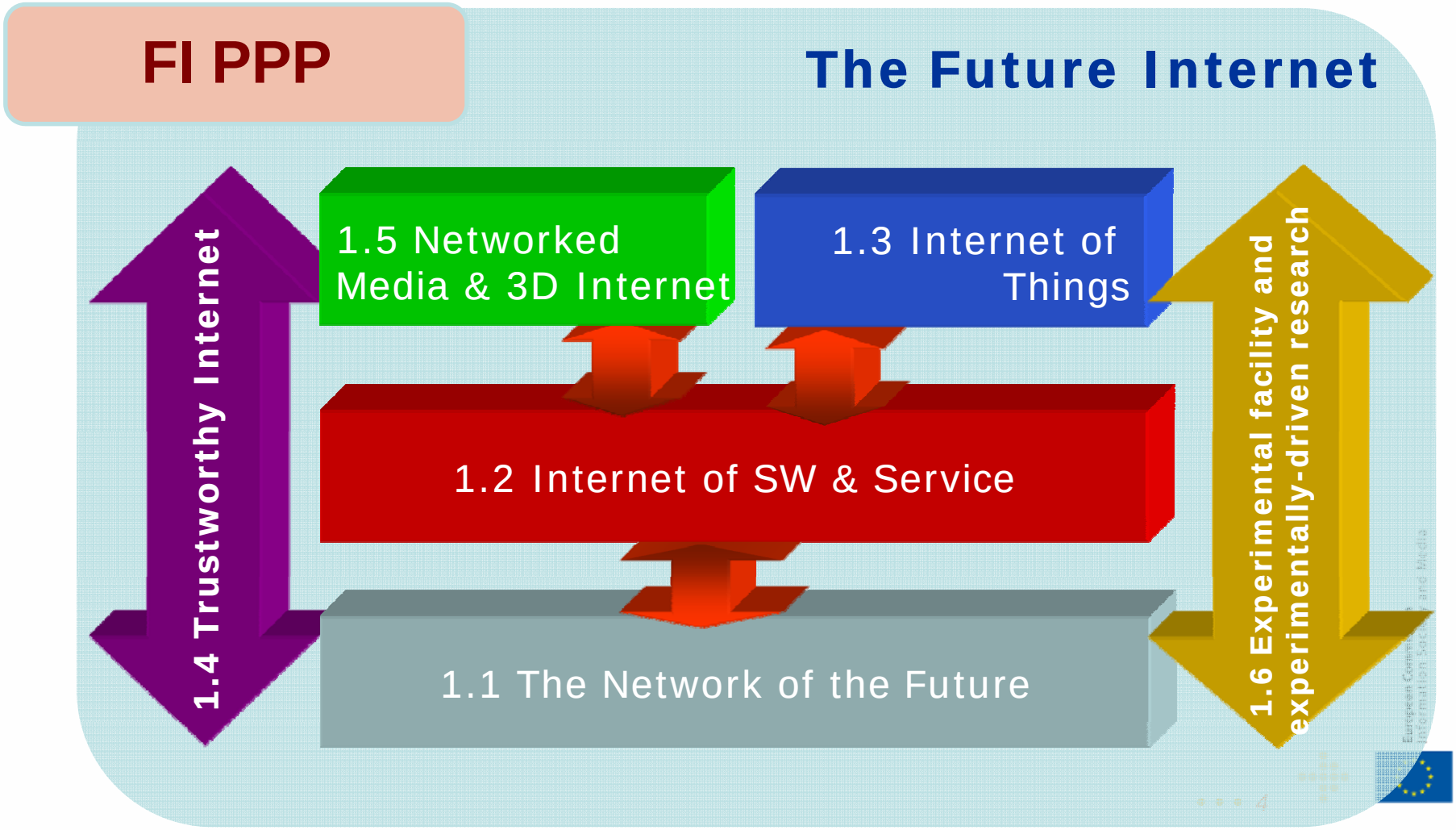
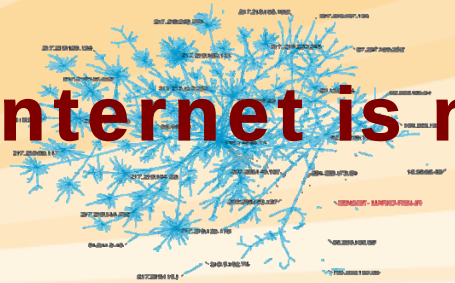
EU ICT research 2006/2013 in Future Internet

Approx. budget: 2 billion euro



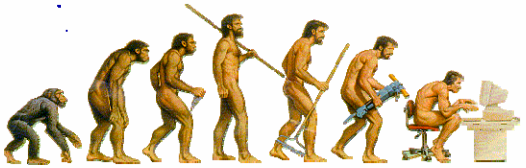


Internet is not just about technology…

- **Economic** transformation
  - Productivity gains in standard businesses
  - New businesses/SMEs, new advertisement paradigms, energy grids
  - New economic models (skype, google, apple, cloud, …)

- **Social** expansion
  - Ubiquitous access to information (copyrighted or free: wikipedias, googlemaps, …)
  - Online social networking (Linkedin, Facebook, Twitter, …)
  - Personal expression (Youtube, Flickr, …)

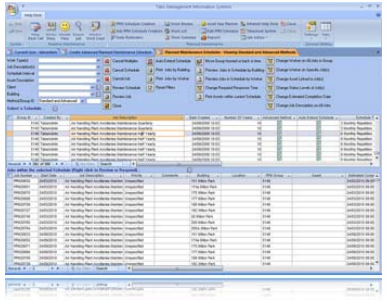
- **Psychological** change
  - Internet time (affecting workstyles and lifestyles)
  - Globalisation, multilinguality, Augmented Reality
  - Online Trust



- **Legal** Impact
  - Redefinition of Privacy and Identity
  - Copyrights in the digital era
  - Cybercrime

two questions…

- the present Internet: was it …



planned?

or just serendipitous?

- the future Internet: what will it look like?

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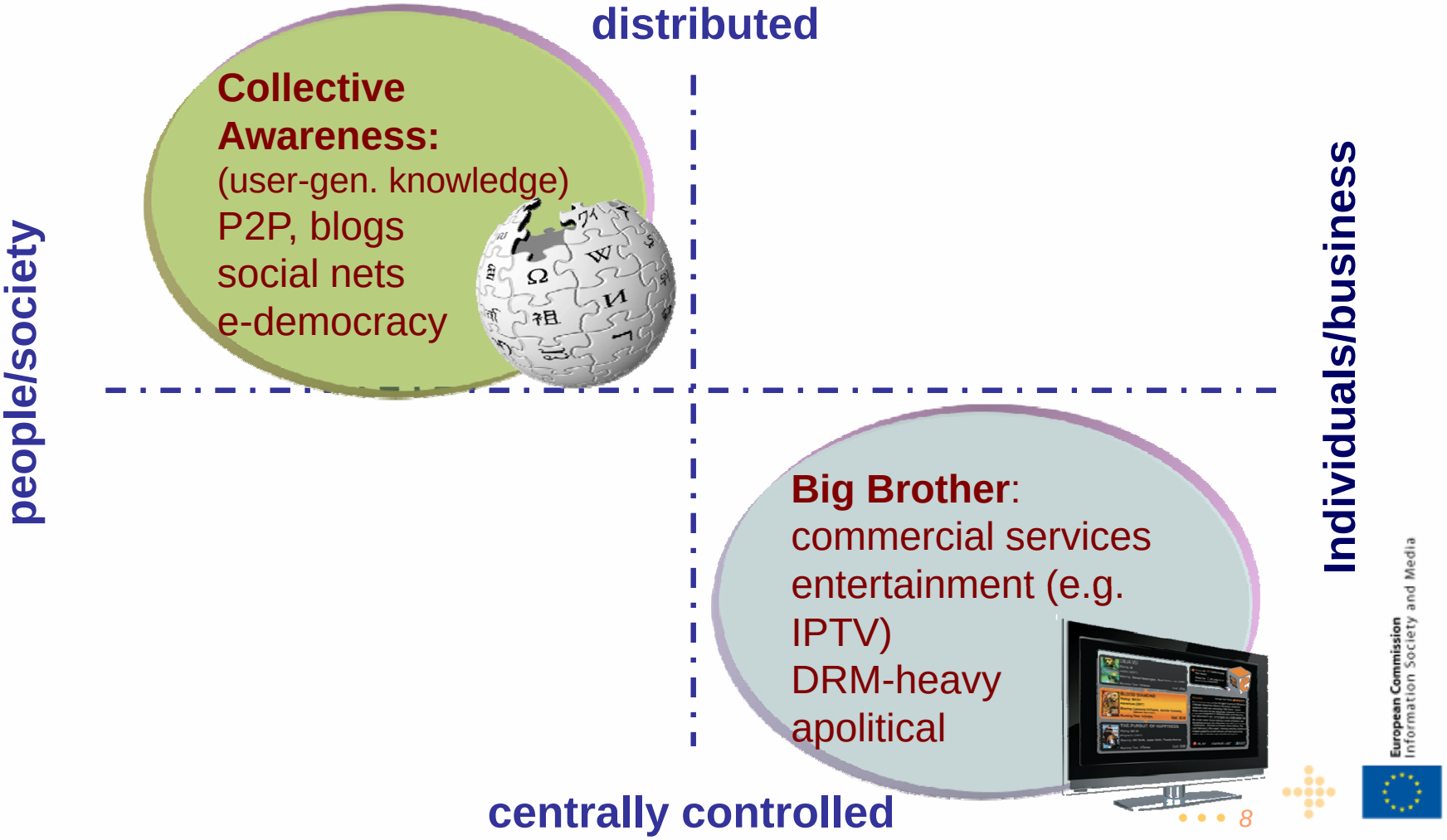
Future Internet & sustainability: an ethical question?

- 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

Future Internet scenarios

(See also the Oxford Internet Institute Study on Technological, Social and Economic aspects of FI, http://cordis.europa.eu/fp7/ict/fire)



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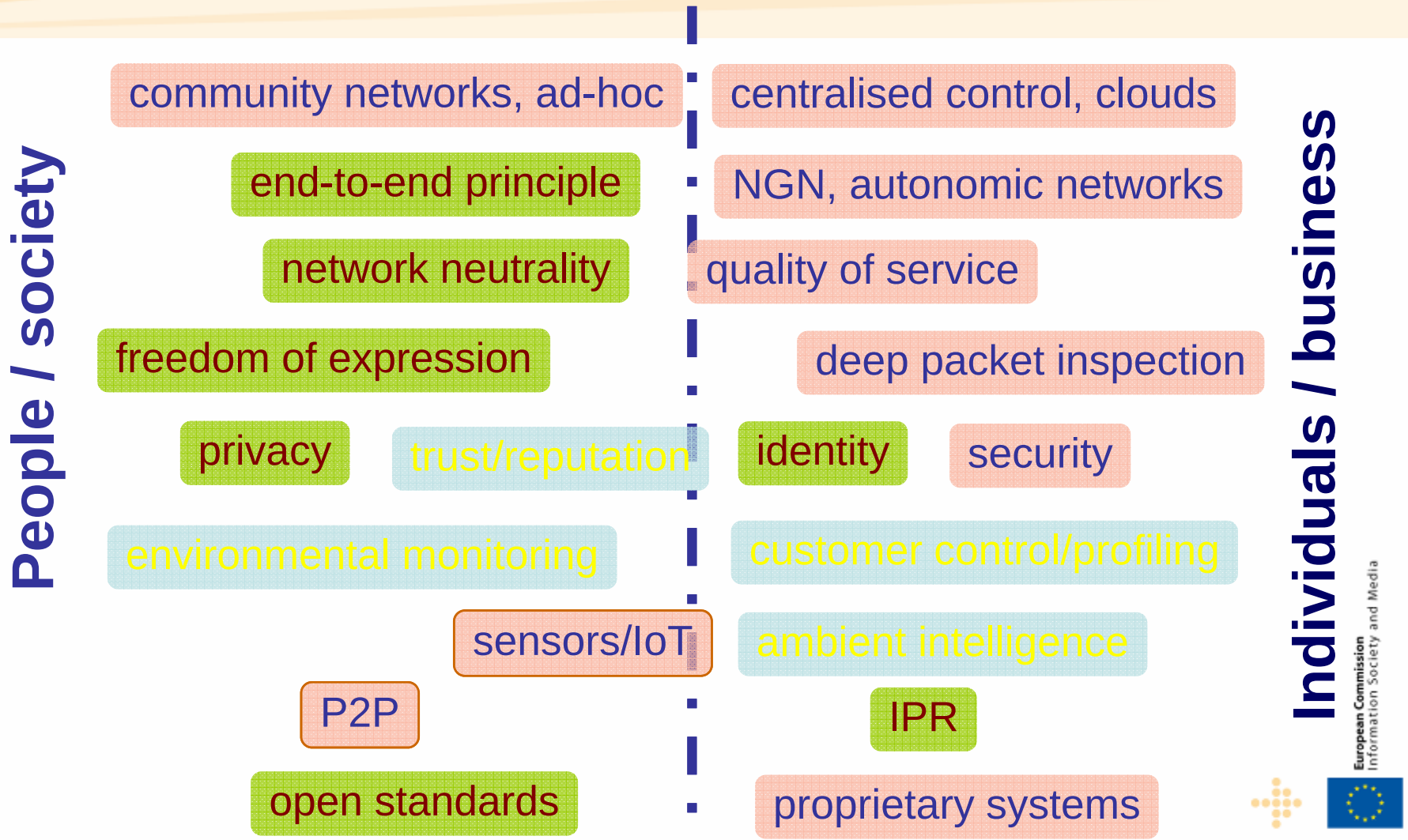
Technological and Policy choices have Social and Economic impacts

(OII Study, MIT workshop)

	Collective Awareness 	Big Brother 
Internet infrastructure	Current architecture ad hoc / mesh, user driven	Vertically integrated specialized nets
Technological developments	Interoperability Distributed control Generalized wiki	NGN or "clean slate" for streaming Walled gardens
Security and Privacy	Privacy / identity more than security Online Reputation	Strong Security, proprietary
Policy	Light / no IPR protection Transparency	Strong IPR protection
Standards	Open or Open source standards Multi-cultural support	Competing closed standards may prevail National customisation
Network Neutrality	Key, to enforce	Just a burden

ethical aspects of technological / application / policy choices



"The Perfect Storm"*

Professor Sir John Beddington
Chief Scientific Advisor to UK Government

- Research shows a whole series of events coming together in the next 15 years:
  - The world's population will rise from 6bn to 8bn (33%)
  - Demand for food will increase by 50%
  - Demand for water will increase by 30%
  - Demand for energy will increase by 50%

- Foresees each problem combining to create a "perfect storm" in which the whole is bigger, and more serious, than the sum of its parts.

*BBC TV programme 24th of August 2009

What can **ICT** do to help the transition towards a more **sustainable** future?

- Environmental-friendly way of living
  - Improving energy efficiency
  - Monitoring environmental changes
  - Distributed grid of renewable energy production
- Sustainable Internet economy
  - Empowering individuals
  - Distributed information production
  - New opportunities and market models
- Participative Distributed governance
  - Effective cooperation
  - Knowledge sharing across borders
  - Low-cost access

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Platforms for Collective Awareness and Action

- platforms for social innovation, supporting informed and sustainability-aware decisions, based on an extended awareness of the environment and of the consequences of our actions

- Harnessing concepts from:
  - IoT -> collecting data from environment
  - Facebook -> social interaction
  - Wikipedia -> production of new knowledge

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Approach

- Sustainability
  - Beyond GDP, Low Carbon economy

- Self-regulation
  - Based on collective situational awareness

- Bottom-up
  - And coordinated

- Non commercially-driven platforms
  - That can produce new business models and (social) innovation

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Applications:

- Informing consumer decisions
  - Product ranking/labelling/development

- Prompting behavioural changes
  - Life Footprint, more efficiency

- Virtual communities for change
  - Social Innovation

- Access to simulations/statistics
  - Visual Analytics style

- Anticipating societal changes

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Just some examples:

- **SUNSET**: exploiting social networks to manage urban mobility in a sustainable manner
- **Eyeonearth**: collecting environmental information from social networks
- **Ecosearch**: a search portal supporting the environment
- **Freecycle**: grassroots and nonprofit movement of people who are giving stuff for free
- **AVAAZ**: connecting citizens to drive sustainable political decisions

http://ec.europa.eu/information_society/activities/collectiveawareness/links/index_en.htm

Which framework to develop Collective Awareness Platforms for Social Innovation and Sustainable Social Changes?

- Developing pilots of grassroots social innovation platforms
  - to trigger novel sustainable forms of societal organisation, based on sharing and collective action
- Basic research on key issues enhancing societal trust in collective knowledge
  - Innovative trust mechanisms, based on reputation
  - Models and simulations based on real-world data ("Science of Global Systems")
- Multidisciplinary research on key techno-social issues ("Internet science")
  - Privacy, monitoring, cloudification, neutrality, etc.
- Coordination actions and NoEs to distil best practices and link with policy/regulatory aspects
  - Supporting the emergence of new forms of self-regulation
  - Discussing ethical aspects, quality guarantees
  - Creating critical mass

how to achieve multidisciplinarity?

- Integrating life and human sciences needs **incentives**, e.g.:
  require participants from at least 4 of these areas
  - computing, communications, software, identification
  - complex systems, game theory, physics
  - knowledge management, semantics, philosophy
  - environment, energy, transport, mobility
  - sociology, anthropology, ethnology
  - security, trust, privacy, law, economics
  - psychology, perception, multimedia user interfaces
  - art, cultural expression, content creation, architecture, history
- Any other ideas... ?

expected impact

- Bottom-up emergence and take-up of more sustainable **organisational changes**
  - harnessing the “network effect” and the resulting collective awareness
- To **strengthen civil society** by improving social and sustainability aspects of all kinds:
  - Economic perspectives
  - Working conditions
  - Inclusion
  - Education
  - Community development
  - Health
  - Environment, energy
  - Quality of life at large

Open issues

- How to move from ICT gadgets to sustainability tools?
- Can online communities drive individual behaviour changes? What research needs to be done?
- How to achieve critical mass? need agents of change?

http://ec.europa.eu/information_society/activities/collectiveawareness

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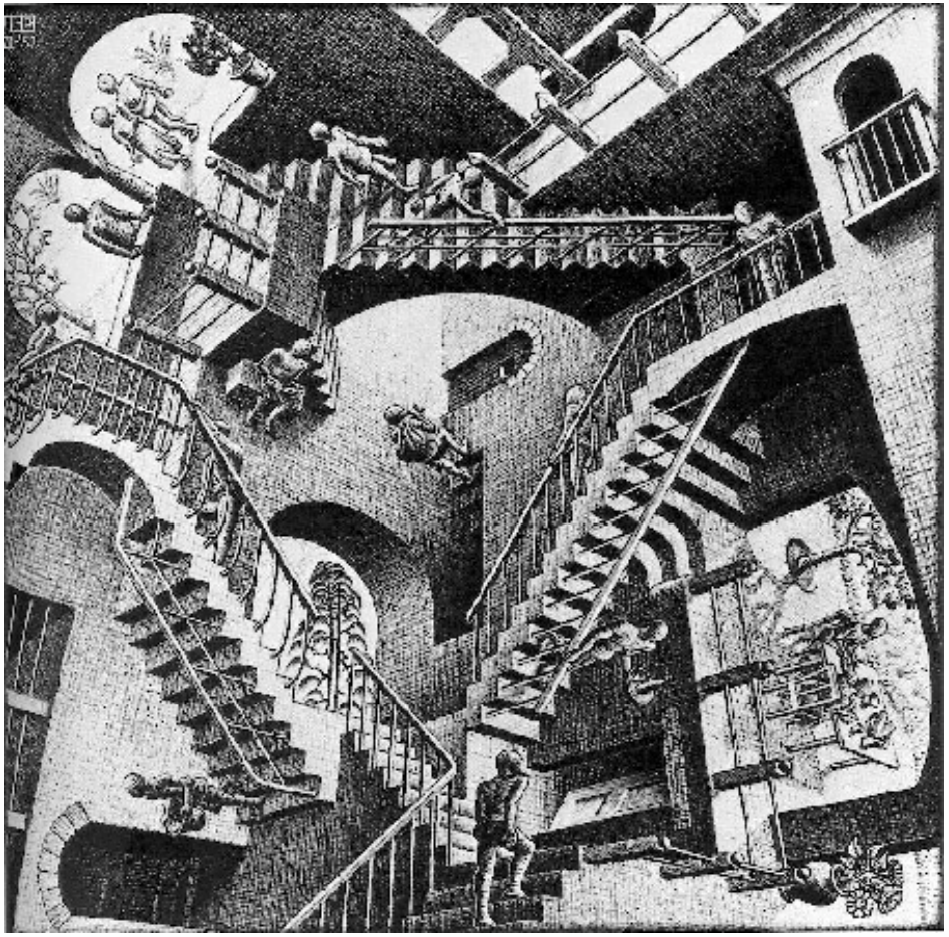
Thanks!



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