

GFIW 2012

# **INTERNET: ART & SCIENCE**

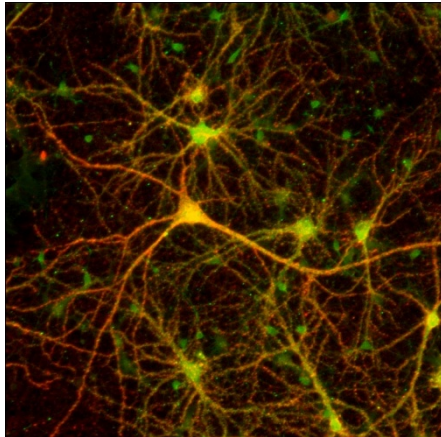
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University of Thessaly & CERTH  
Volos, Greece

# EINS in FIRE

- FIRE: Future Internet Research and Experimentation  
EU initiative on future internet architectures
- Focus on
  - a) Forward looking internet architecture research
  - b) Experimental networking infrastructure development to
- EINS: a network of excellence in FIRE focused on  
INTERNET SCIENCE
- Other EINS facts: 33 partner institutions, 5Meuro, 42 months
- Disciplines in scope: networking, sociology, anthropology, humanities, law, political science, psychology, complex systems

# Human History: Is all about networks...

Biological Networks



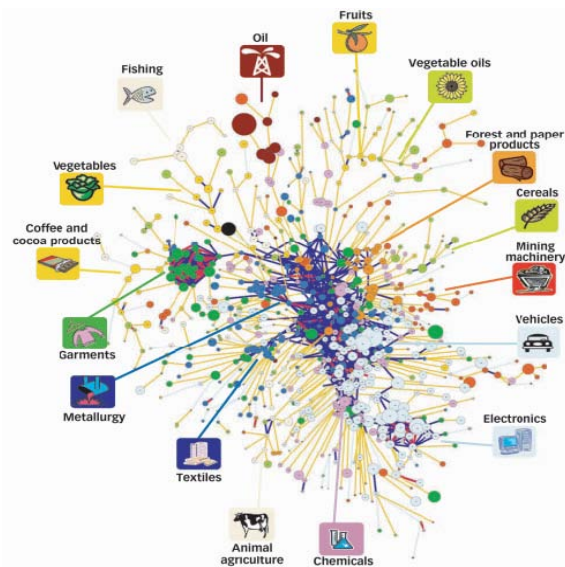
Transportation Networks



Cultural Networks



Economic Networks



Power grid



Social Networks



# Internet: Is just another network?

From a technical artifact



to a central element of our social fabric



Internet becomes closely interwoven with major societal movements and environmental challenges

## Internet-Human Interactions:

- Human Activity shapes the network
- Network impacts on human behavior
- *Which are the reciprocal influences linking the Internet and broader socioeconomic systems ?*
- *Which are the prospects and limitations associated with our attempts to extend the current Internet and how we can influence its future development?*

→ The above are at the heart of Internet Science

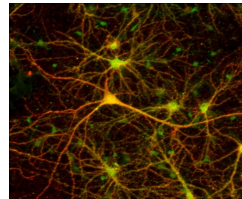


# Network Science

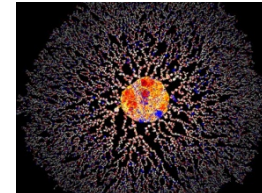
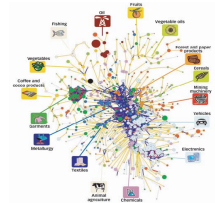
- Abstraction for all networks



- Study network representations of physical, biological and social phenomena



- Observe the similarities and differences among different types of networks



- Discover the fundamental rules that apply to a large class of networks
- Enable predictions on network evolution
- Employ methods from complex systems, statistical mechanics, random networks, etc to develop the field

# Web Science

## ■ Stemmed from www



- Understand online communities
- Study online social networks and mutual impact with human social communities
- Analyze the human interactions inherent in social media
- Develop accountability and other mechanisms for enhancing privacy and trust on the Web
- Building consensus under e-democracy and e-governance

## and its economic perspective

- Consider the new economic models and businesses/SMEs enabled by WWW

## and game theoretic perspective

- Behavioral choices at nodes formulate decisions to make, break, use or alter network links

# BIG DATA

- Data is Big because of the Internet:
  - a) automates data collection: sensors, social networks...
  - b) facilitates transport, archiving and access
- Entities never measured before become measurable  
i.e. human contacts, sentiment analysis
- Traditional theoretical fields i.e. sociology, acquire a quantitative science perspective
- Data mining, machine learning, complex systems, ...  
are about to become the “math” of those transformed fields

# Internet Science is even more....

## Network Science



## Web Science



## Internet Science ?



- Neither Network Science nor Web Science aim at a broad holistic understanding of the co-evolution of Internet and Society...
- There are many more aspects which can influence this process and affected by it at
  - technological
  - infrastructural
  - human
  - political
  - governmental
  - societal levels...



# Internet and Pervasive Technologies

- Cloud Computing



- Virtualised Environments



- Internet of things



- Pervasive Sensor Networks



# Security & Privacy Concerns critical in Pervasive Technologies

Internet serves increasingly critical applications

Financial Transactions → Business Operations

- Reasons for failure:

- Human mistakes
- Software/hardware faults
- Intelligent and orchestrated malicious attacks
- Political Acts



- Impact of failures → Dramatic for economies and societies

- Storage of Personal Data → Significant Privacy Issues

- *2012 State of the Network Global Study* by Network Instruments:

- 60 % of organizations expect that half their applications will run in the cloud inside of the next 12 months.
- Cloud adoption is growing and so are the security concerns

➤ Pervading Technologies need to be very carefully designed before becoming part of Internet critical infrastructure

# Internet Vulnerability

- *Just after midnight on January 28, 2011, the government of Egypt, rocked by three straight days of massive antiregime protests organized in part through Facebook and other online social networks, did something unprecedented in the history of 21st-century telecommunications: **it turned off the Internet**. Exactly how it did this remains unclear, but the evidence suggests that five well-placed phone calls—one to each of the country's biggest Internet service providers (ISPs)—may have been all it took.*

*Scientific American*

# Call for a Decentralized Internet

- Data stored on the users' own server:

- **FREEDOMBOX**

- <http://freedomboxfoundation.org/>

- **Commotion**

- <http://tech.chambana.net/projects/commotion>

- **OpenGarden**

- <http://opengarden.net/>

- **Diaspora**

- <https://joindiaspora.com/>

- **Thimbl**

- <http://www.thimbl.net/>

# Platform for Internet Freedom Fighters

[Code](#) [Learn](#) [Discuss](#) [Contribute](#) [Donate](#)

## FREEDOMBOX



### Enabling private conversations online

We're building software for smart devices whose engineered purpose is to work together to facilitate free communication among people, safely and securely, beyond the ambition of the strongest power to penetrate. They can make freedom of thought and information a permanent, ineradicable feature of the net that holds our souls.

*Eben Moglen*

[Learn more about FreedomBox](#)

- FreedomBox integrates privacy protection on a cheap plug server so everybody can have privacy. Data stays in your home and can't be mined by governments, billionaires, thugs or even gossipy neighbors. Is about:
- Email and telecommunications that protects privacy and resists eavesdropping
- A publishing platform that resists oppression and censorship.
- An organizing tool for democratic activists in hostile regimes.
- An emergency communication network in times of crisis.



# Internet and Human Psychology

## ■ Cyberpsychology

- focus on the effect of the Internet and cyberspace on the psychology of individuals and groups



- Online identity, online trust and reputation, online relationships, addiction to computers and Internet, online gender-switching
- People have less reasons to leave their homes and interact face to face. The Internet allows people to:
  - more easily work from their home
  - to form and sustain friendships and even romantic attachments from their home (Internet Dating)
  - banking from their home
  - to vote and engage in political and social issue based discussions with others (from home)

# Social Networking Sites and Narcissism

- Web sites offer a **gateway and controlled environment for self-promotion** via self-descriptions, vanity via photos, and large numbers of shallow relationships; friends are counted and in some cases ranked
- Carpenter's study on 294 students, aged between 18 and 65, "Narcissism on Facebook: Self-promotional and Anti-social Behavior," published in the journal *Personality and Individual Differences*:
  - Direct link between the number of friends you have on Facebook and the degree to which you are a "socially disruptive" narcissist
  - People who score highly on the Narcissistic Personality Inventory questionnaire had more friends on Facebook, tagged themselves more often and updated their newsfeeds more regularly
  - Narcissists responded more aggressively to derogatory comments made about them on the social networking site's public walls and changed their profile pictures more often



# Opinions



- 👉 Carol Craig, social scientist and chief executive of the Centre for Confidence and Well-being: *“Young British were becoming more narcissistic and Facebook provides an ideal platform for nurturing the disorder”*
- 👉 Soraya Mehdizadeh, researcher from York University in Toronto: *“If individuals with lower self-esteem are more prone to using Facebook, the question becomes, 'Can Facebook help raise self-esteem by allowing patients to talk to each other and help each other in a socially interactive environment?' I don't think it's necessarily a bad thing that people with low self-esteem use Facebook.”*
- 👉 Christopher Carpenter *“If Facebook is to be a place where people go to repair their damaged ego and seek social support, it is vitally important to discover the potentially negative communication one might find on Facebook and the kinds of people likely to engage in them. Ideally, people will engage in pro-social Facebooking rather than anti-social me-booking...the 'dark side' of Facebook requires more research in order to better understand Facebook's socially beneficial and harmful aspects in order to enhance the former and curtail the latter”*

# Internet and Human Memory

- Human memory is adapting quickly to the advent of Internet and search engines (Prof. Betsy Sparrow, Science Magazine)
  - subjects are significantly more likely to remember information if they think they will not be able to find it later
  - people seem to be better at remembering where to find a certain piece of information than the information itself.
- Transactive memory: Dependent Human memory, i.e., rely on our family, friends and co-workers as well as reference material to store information for us.
  - may change the way we learn and study
  - might change the educational value of group project



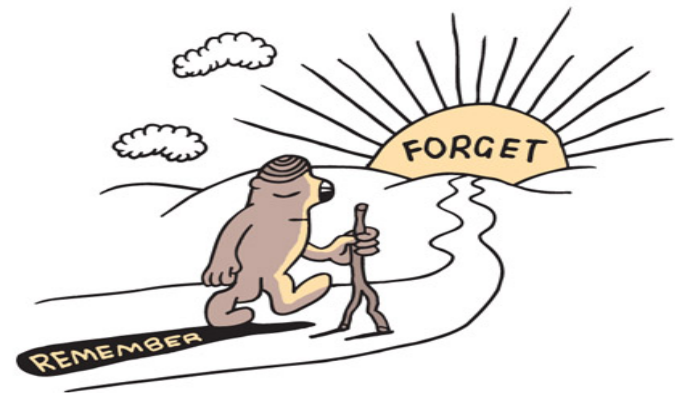
# Opinions on Sparrows' Study

- Jonah Lehrer author and journalist writes at Wired: *“for most of human history, the only other reliable source of information were other people. What these experiments reveal is that we treat the search engine like a particularly clever friend.”*
- Lehrer, the author of “Proust Was A Neuroscientist” explains that this is easier to understand if you think of the human mind as a computer. *“Although we like to think of our cortical hard drive as infinite in capacity, it’s actually pretty constrained, which is why we’re always looking for ways to not remember stuff”.*
- Sparrow: *“Everybody worries about what this might be doing to their ability to remember but I don't think our brains are any better or worse, we're just organized differently.”*



# The right to forget and be forgotten

- Artificialisation or externalisation of human memory (Murata 11)
  - organisational databases and the Web are now considered to substitute a large part of human memory
  - eternal, unambiguous human memory relies outside human brains, continually updated by electronic surveillance systems, relentlessly used for providing personalised services by business organisations and for public security and safety and people's reliable livelihoods by public organisations.
- Is the future of people an extension of the past?
- Is there a bright side of forgetting?
- Why should we loose the right to forget/be forgotten?



# Opinions...

- *“If we fail to establish the right to appropriate forgetting/being forgotten, it would become difficult for us to construct our own identity and narrative at our discretion”* (Ricoeur 2000)
- *“Our most creative and conceptual thinking often emerged from the complexity of the connections among the memories stored in our mind. Biological memory is the seat of the unique self as well as the foundation of a rich culture. If we outsource our memory to external databases, we begin to destroy that foundation”* (Carr 2010)
- *“Thanks to the Total Recall Revolution we will soon be able to be released from the fate of forgetting and thereby live an affluent and happy life in a humane manner”* (Bell and Gemmel 2009 - the MyLifeBits project (<http://research.microsoft.com/en-us/projects/mylifebits/>) at Microsoft advocate the advantages and benefits of recording one's entire life digitally)

# Internet affects also the way we read and think?

- Study on Online Research Habits by scholars from UCL reports: *“It is clear that users are not reading online in the traditional sense; indeed there are signs that new forms of “reading” are emerging as users “power browse horizontally through titles, contents pages and abstracts going for quick wins. It almost seems that they go online to avoid reading in the traditional sense.”*
- M. Wolf a developmental psychologist at Tufts University: *“We are not only what we read, we are how we read .... When we read online we tend to become mere decoders of information. Our ability to interpret text, to make the rich mental connections that form when we read deeply and without distraction, remains largely disengaged ”*
- Reading style promoted by the Net puts “efficiency” and “immediacy” above all
  - Is it possible to weaken our capacity to read deeply? What are the consequences?
  - we still await the long-term neurological and psychological experiments that will provide a definitive picture of how Internet use affects cognition

# Internet and Governance

- Understanding governance contributes to a better understanding of success and failure of internet systems
- Regulatory and governance mechanisms to account for:
  - participation
  - democratic values
  - network growth and complexity interoperability
  - security
  - privacy
- Draw lessons from social scientific analysis
  - ensure the continued mapping of the standards process to Internet user needs and evolving markets



# E-Governance Platforms

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**On Challenge.gov, the public and government can solve problems together.**

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### MyMoneyAppUp IdeaBank Challenge

by **U.S. Department of the Treasury**

Share your ideas for a mobile app to help Americans control and shape their financial futures.



5 winners announced



\$2,500 in prizes



1,441 followers



LEARN MORE

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## Recent Challenges



# E-Governance Platforms

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繁體中文 日本語 NEDERLANDS ITALIANO עברית TÜRKÇE POLSKI ROMÂNĂ

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THE WORLD IN ACTION

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## ABOUT US

Avaaz is a global web movement to bring people-powered politics to decision-making everywhere.

## WHAT WE DO



**A transnational community that is more democratic, and could be more effective, than the United Nations.**

— *Suddeutsche Zeitung*

Avaaz—meaning "voice" in several European, Middle Eastern and Asian languages—launched in 2007 with a simple democratic mission: organize citizens of all nations to close the gap between the world we have and the world most people everywhere want.

## IN THIS SECTION:

► [What Is Avaaz?](#)

► How we work

► [Our Community](#)

► Member Stories

## CAMPAIGN HIGHLIGHTS



### Breaking the Middle East Blackout

Funded by donations from almost 30,000

Avaazers, an Avaaz team is working closely with the leadership of democracy movements in Syria, Yemen, Libya and more to get them high-tech phones and satellite internet modems, connect them to the world's top media outlets, and provide communications advice. We've seen the power of this engagement — where our support to activists has created **global media cycles with footage and eyewitness accounts** that our team helps distribute to CNN, BBC, Al Jazeera and others. The courage of these activists is unbelievable — a skype message read 'state security searching the house, my laptop battery dying, if not online

# Fight for Internet Freedom



- Stop Online Piracy Act (SOPA) and Protect IP Act (PIPA)
  - United States Bills to expand the ability of U.S. law enforcement to fight online trafficking in copyrighted intellectual property and counterfeit goods
- Critics:
  - the bills' language is overly broad and could force the shutdown of sections of popular U.S. websites including YouTube, Reddit and Wikipedia, where users share links and content, some of which is pirated.
  - SOPA and PIPA threatens prosperity, online security and freedom of expression
- **Jan. 18<sup>th</sup> 2012:** thousands of sites went dark to protest SOPA & PIPA
  - a successful, massive one-day protest by millions of Web users and hundreds of thousands of sites, including Google, Wikipedia and Reddit.
- Prof. Lessig of Law and Leadership at Harvard Law School and director of the Edmond J. Safra Center for Ethics at Harvard University:
  - *"the battle over SOPA may have been won, but the war's far from over. The general idea behind the bill can resurface anytime in a new bill with a different name and the tech community as well as citizens concerned about Internet freedom need to remain ever vigilant for the next attempt to clamp down on Internet freedom in the name of copyright protection and intellectual property"*
- **March 2012:** A new report from US administration brings SOPA goals back

# Europe & ACTA

- Anti-Counterfeiting Trade Agreement (ACTA) was written by the U.S. and Japan in 2006 to provide countries with a new way to cooperate on counterfeiting and intellectual property investigations
- ACTA has been labeled by some as a “global SOPA,” an international version of the U.S. Stop Online Piracy Act
- Feb. 2012: The highest court in the European Union has been asked to determine if ACTA is legal



it will create a new, uniform way for countries that sign the treaty to cooperate on counterfeiting and intellectual property investigations; creating a single code of law among participating countries will make criminal investigations easier



<http://ec.europa.eu/trade/tackling-unfair-trade/acta/transparency/>



disastrous consequences for free speech, technological innovation and an open international Internet. largely secretive negotiations and operated outside international bodies such as the United Nations or World Trade Organization



<http://www.stopacta.info/>

# Europe & ACTA Cont.

- **Which countries already signed ACTA?**
- October 2011: Japan and United States, who crafted the treaty, together with Canada, Australia, New Zealand, Singapore and South Korea.
- January 2012: European Commission, in charge of negotiations, together with non elected representatives from 22 Member States: Austria, Belgium, Bulgaria, Czech republic, Denmark, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Slovenia, Luxemburg, Malta, Poland, Portugal, Rumania, Spain, Sweden and United Kingdom.
- To pass in the 22 EU member states where it was signed, ACTA needs to be formally ratified by the European Parliament.
- [ACTA was rejected by European Parliament on July 4th, 2012.](#)
- the agreement needs to be rewritten and significantly changed in order to be resubmitted for ratification.

# Internet and Society

- Internet can bring people together
  - In a neighborhood (help each other, be aware of and keep their responsibilities...)
  - To seek a common goal (act for happiness, loose weight...)
  - To share (tools, books, information, your home, experiences...)
  - To collaborate



# Internet for Society Platforms (1)

[LOGIN](#) | [REGISTER](#)

[DONATE](#) | [ABOUT US](#) | [NEWS & MEDIA](#) | [BOOKS](#) | [RESOURCES](#) | [UNHAPPY?](#)

SPREAD HAPPINESS



## ACTION FOR HAPPINESS

JOIN US

FOLLOW US ON &

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SEARCH

## Let's put the things that matter first

Join the movement. Be the change

THE MOVEMENT IS GROWING

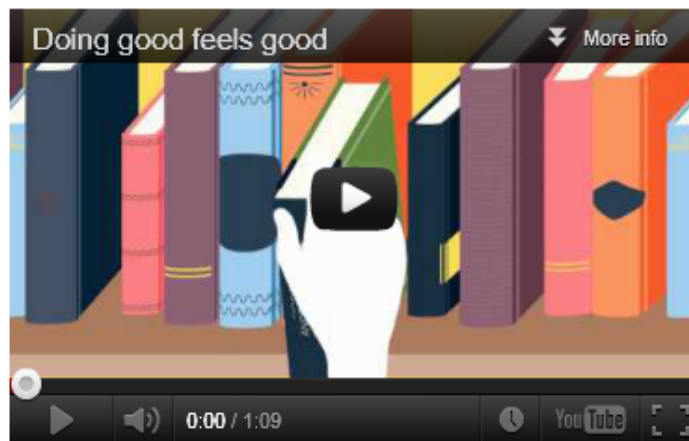
**22784 FROM 124 COUNTRIES**

[JOIN US](#)



### WHAT'S IT ALL ABOUT?

X



Action for Happiness is a movement for positive social change. We're bringing together people from all walks of life who want to play a part in creating a happier society for everyone.

For fifty years we've aimed relentlessly at higher incomes. But despite being much wealthier, we're no happier than we were five decades ago. At the same time we've seen an increase in wider social issues, including a worrying rise in anxiety and depression in young people. It's time for a positive change in what we mean by progress.

[Read more](#) | [Introductory Video](#) | [Make a donation](#)

JOIN US



# Internet for Society Platforms (2)

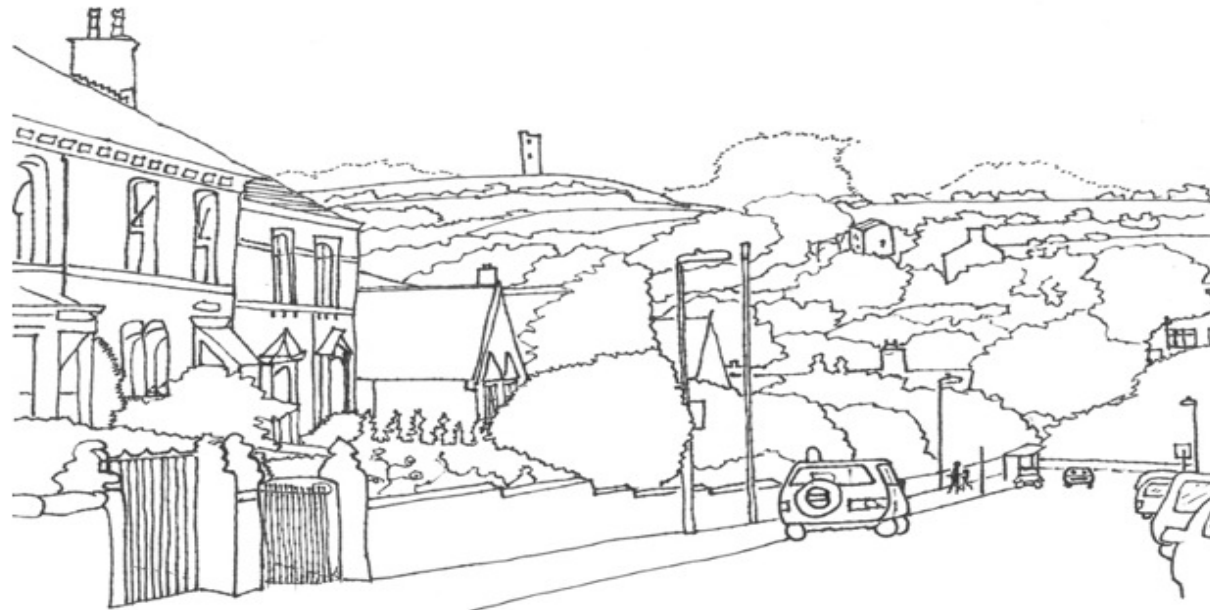
## Who Owns My Neighbourhood?

Already registered? [Sign in](#) | Want to take part? [Sign up](#)

[Home](#) [My Page](#) [About](#) [Blog](#) [RSS](#) [Contact us](#) [Help](#)

Find out who owns places near you, and help take responsibility for land, buildings and activities in your neighbourhood. This site features [Kirklees land ownership data](#) only at the moment.

Enter postcode or postcode sector (eg HD1):  ...or choose an area



Berry Brow by Alison Munday

### What's happening near you

[Local names: Batley Cemetery](#)

[Local organisation: Batley Cemetery Support Group](#)

[A community contact has been added to plot WYK837336](#)

[Another user has signed up for updates about plot WYK819138](#)

[A community contact has been added to plot WYK819138](#)

[Local names: Greenhead Park](#)

[Local history: The imposing Grade 2 listed Gledholt Methodist Church...](#)

[Another user has signed up for updates about plot 7048](#)

[A community contact has been added to plot 7048](#)

[Local organisation: Growing Newsome](#)

# Internet for Society Platforms (3)

**tyze**<sup>TM</sup>  
PERSONAL NETWORKS

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Email   
Password   
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## A private online community...

...Exactly what I needed to coordinate my support when I was diagnosed.  
-Rachel

[START FREE TRIAL](#)

### Your Tyze Network Includes...

**Calendar**  
Schedule everything from birthdays to appointments.

**Stories & Photos**  
Post stories and photos. Record vacations, ideas and hopes.

**Tasks**  
Use the contribute tool to ask for help & see what's needed.

**Shared Files**  
Quickly and easily share videos and documents.

**Private "Vault"**  
Store info accessible only to those you choose.

### Watch A Quick Video Tour



### Follow Us On...



# Internet for Society Platforms (4)



[How it works](#) | [Sign up](#) | [Log in](#) | [Become a TaskRabbit](#)

Get just about anything done by safe, reliable, awesome people.

 [Log in with Facebook](#)

OR

[Get Started](#)

## BROWSE TASKS

- [Delivery](#) >
- [House Chores](#) >
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**ELLIE M.**

 Background checked!

 Level

 (10 reviews)



### How TaskRabbit works

See how easy it is to outsource your Tasks and errands.



### Safety is Task #1

All TaskRabbits are background-checked and community reviewed.



### TaskRabbit for Business

Businesses are using TaskRabbit's Task and errand service to help with all kinds of office To-do's.



# Internet for Society Platforms (5)



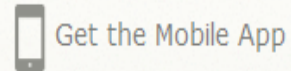
find a group near you

go

e.g. Tucson, Arizona

Welcome! The Freecycle Network™ is made up of 5,060 groups with 9,109,818 members around the world. It's a grassroots and entirely nonprofit movement of people who are giving (and getting) stuff for free in their own towns. It's all about reuse and keeping good stuff out of landfills. Each local group is moderated by local volunteers (them's good people). Membership is free. To sign up, find your community by entering it into the search box above or by clicking on 'Browse Groups' above the search box. Have fun!

# Internet for Society Platforms (6)



CouchSurfing helps you meet and adventure with new friends around the world.



Like Us on Facebook



Follow Us on Twitter



Read Our Blog

- Couch surfing isn't just a means of accommodation; it is an entirely new way to travel. You get to see the world through local residents, not hotel concierges or guidebooks. But what is most profound about the whole experience is the trust that naturally exists.

*TIME*



# SAFECAST platform (7)

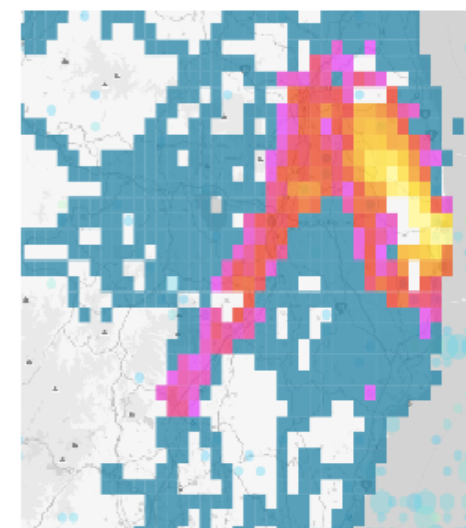
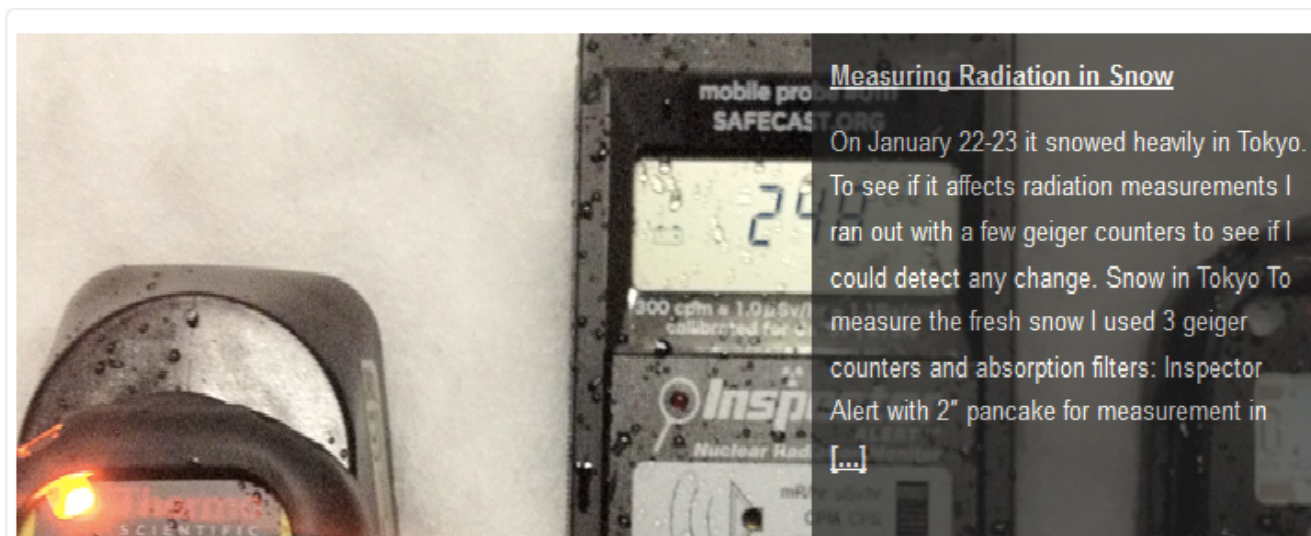
# SAFECAST



[ABOUT](#) [MAPS](#) [FAQ](#) [SUBMIT](#) [DOWNLOAD DATA](#)

[ENGLISH](#) [日本語](#)

Safecast is a global sensor network for collecting and sharing radiation measurements to empower people with data about their environments.



# EYE on EARTH (8)



Sharing is everything

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forum

## Explore our new mashup "Heat wave risk of European cities"



### FEATURED

Explore environmental maps and apps. Contribute your observations. Create and share.

OVERVIEW

AIR



WATER



NOISE



Click on a pin on the map and see the air quality information in the panel to the right.

# Transition Network (9)



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Welcome



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How to do Transition -

[Starting out »](#)

[Deepening »](#)

[Connecting »](#)

[Building »](#)

[Daring to dream »](#)

[The Transition Companion](#)

Featured news story

[Growing Leaders - Training and support to set up community food growing spaces](#)

Capital Growth is launching a new initiative called 'Growing Leaders' to train and support people to set up and run a food growing...

[More...](#)

Find Transition Nearby



[Click on the map to find activities near you.](#)

Global Future Internet Week

Seoul, Korea, 10-14 September 2012



# CROWDMAP (10)



**CROWDMAP** BETA

Have an account? [Sign In](#)

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## Crowdmap allows you to...

- 1 Collect information from cell phones, news and the web.
- 2 Aggregate that information into a single platform.
- 3 Visualize it on a map and timeline.

Nothing to install,  
minimal configuration.

**Sign Up For Free**

## Search for Existing Maps

Search by keyword:

[Search](#)

[Want to make your map searchable?](#)

### [React!](#)



React! is an initiative against violence that happens to girls and women in the public spaces of the City of Skopje. With the help of the new technologies and the anonymity that this platform provides, we hope to collect a vast data about the harassment and violence that girls and women face in the public spaces of Skopje but are often left untold and unreported. The data will also be used to inform and alarm the competent authorities about the locations, the frequencies and the type of gender based harassment and violence that occurs, and with that we hope the data will contribute to increase of the safety of girls and women in the public spaces of Skopje.

Go to [React!](#)

### [FarmiTracker](#)



The perpetual genocide in South Africa.

[Expand Window](#)

## What Exactly Is Crowdmap?



allows you to set up your own map of Ushahidi without having to install it on your own web server.

Crowdmap is designed and built by the people behind Ushahidi, a platform that was originally built to crowdsource crisis information. As the platform has evolved, so have its uses. Crowdmap

## What Can I Do With Crowdmap?



### Monitor Elections

Use the power of the crowd to monitor and visualize what went right, and what went wrong, in an election.



### Curate Local Resources

Crowdsourcing isn't just for emergencies, you can use it for local knowledge and business too.



### Map Crisis Information

Whether it's a natural disaster, epidemic or political crisis, Crowdmap was built for it.

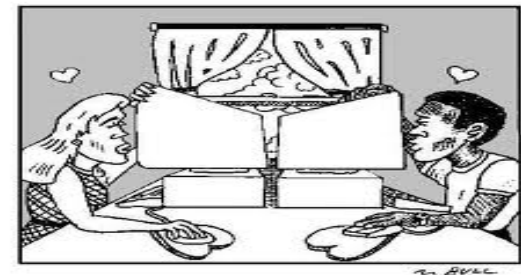


### Document A Zombie Invasion

How else will you survive the coming apocalypse?

# To think about...

- Has Internet changed the pure nature of interpersonal and group processes?
- the ease of electronic communication may lead to weaker social ties (Tyler 2002)
  - people have less reason to leave their homes and actually interact face to face with other people.
  - The Internet allows people to more easily work from their home, to form and sustain friendships and even romantic attachments from their home, to bank from their home, to vote and engage in political and social issue based discussions with others (from home).
- The psychological quality of Internet social interaction is lower than the psychological quality of traditional face-to-face interaction (McKenna 2000)
- Internet Dating, a \$2bn business already breaking cultural, social and geographic barriers
  - Many cases of online relationships resulted in long-term relationships and marriages



# To think about...

- Why Internet Dating is such a successful business?
  - The variety of options is almost limitless
  - No taboos and misconceptions for people in the Internet
  - No restrain factors in the meeting process
  - The initiative can be grasped easily
  - Ease of expression due to a certain degree of anonymity
  - Can act as an auxiliary remedy for those who have a tight schedule to cover their social needs
  - There is a filtering process to meet users' preferences
  - Cost-effective and emotionally saved solution



# To think about....

- Why all these techno-legal battles?

- Facebook vs Google
- Europe vs Facebook



- Personal data gathered in the Internet is the new marketing gold standard

- Facebook's recent attack on Google shows just how precious and coveted such social data is

- Facebook has information on over 600 million users, rolling in data wealth.

# To think about...

## ■ Europe vs Facebook:

- Transparency is not only a question of fairness but it is also a principle of European data protection law. It is time that the biggest social network worldwide sticks to these legal principles.
- Every person in the EU has the right to access all the data that a company is holding about him/her.
- Users have to deal with vague and contradictory privacy policies and cannot fully estimate the consequences of using facebook.
- Initiative wants to make facebook more transparent and show every user which data facebook is holding about him/her.



# Network of Excellence in Internet Science

- A. Coordinate the investigation, from **a multi-disciplinary perspective**, of specific internet-related topics **at the intersection between humanistic and technological sciences**, such as privacy and identity, reputation, virtual communities, security and resilience,...

**JRA4: Governance,  
Regulation &  
Standards**



**JRA5: Internet Privacy,  
Identity, Trust & Reputation  
Mechanisms**



**JRA6: Virtual Communities**



**JRA7: Internet as Critical  
Infrastructure; Security, Resilience  
and Dependability Aspects**

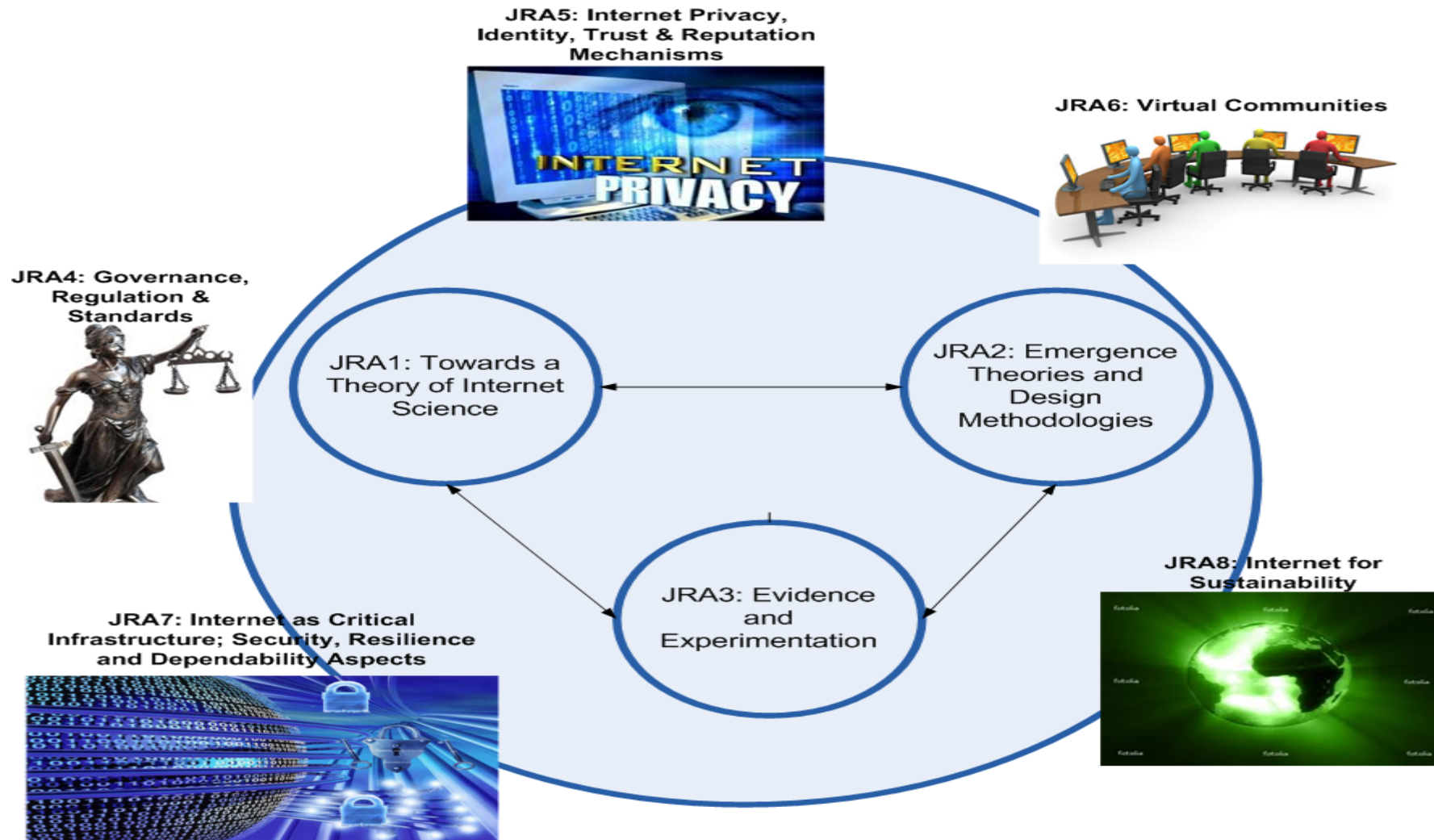


**JRA8: Internet for  
Sustainability**



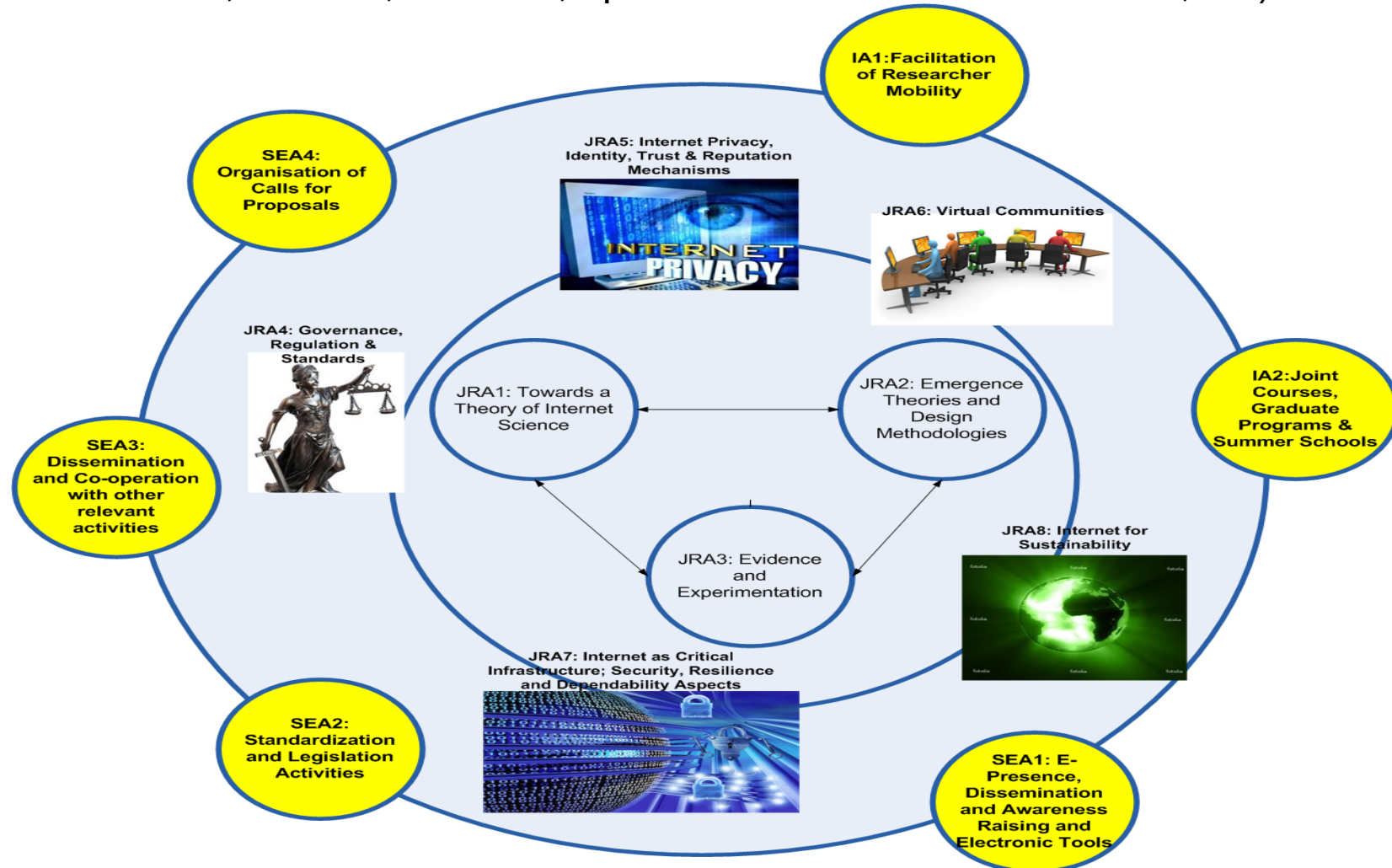
# Network of Excellence in Internet Science

- B. Lay the foundations for an Internet Science, for codification and integration of applicable bodies of theory and evidence, applying to aspects of the Internet



# Network of Excellence in Internet Science

- C. **Provide concrete incentives** for academic institutions and individual researchers to **conduct studies across multiple disciplines** (online journals, conferences, workshops, PhD courses, schools, contests, open calls for innovative activities, etc)





# EINS Consortium

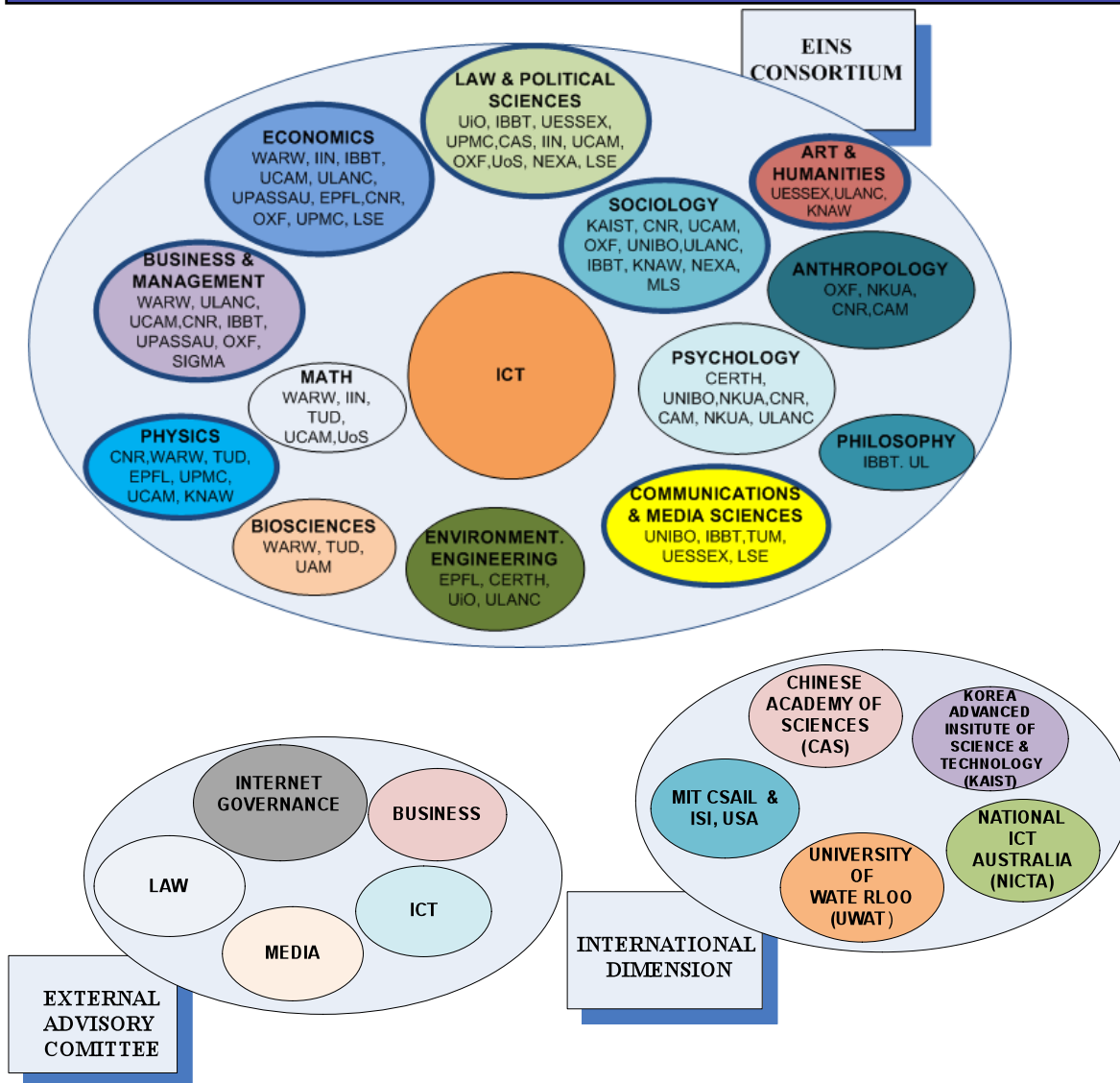
EINS unites a **wide team of renowned researchers** from:

- ICT, with track record on interdisciplinary research & cooperation with non-ICT
- non-ICT, with track record on Internet research
  - The right mix of skills and adequate experience is key to the endeavour success





# EINS Multi-disciplinarity



## Interdisciplinary Initiatives:

**FIRM-MediacityUK** (Creative Media Policies), **ESSEX EXCEL** (European Law Center), **Next Generation Infrastructure** (Governance, Policies), **Swiss Experiment** (sharing sensor data), **P2PNext** (P2P CDN), **Opensense** (air pollution sensing), WARW **"Mimetic Factors in Individual Behaviour: Health and Well-being"** (ESCR, BBSRC-funded), **"Complexity in healthcare systems"** (Medical-Business joint with BU), **EIFFEL** Think Tank on Future INET, **OpenLabs**, **CIP projects**, **EC Presidency Council** on telecoms (**network neutrality**), WARW **"Complex Networks & their dynamics"** (including opinions and markets), **Global INET Values** (online trust, privacy), **Privacy Values Networks** (EPSRC-funded), **SOCIALNETS** (Physics, Anthropology), **RECOGNITION** (Physics, Psychology, Biology)

# Impact

The impact of the Network of Excellence in Internet Science is multifaceted:

- **Feed-forward**: maximize Internet's benefits, steer Future Internet, Roadmap of the Internet Science to HORIZON 2020
- **Feed-back**: advances on contributing disciplines
- **European Value**: integration, Internet Scientist Curriculum, Center of Excellence

# Some Future Internet Initiatives

- **EU Future Internet Research and Experimentation Initiative (FIRE)**
- **NSF Future Internet Architectures Initiative**
- **Interdisciplinary Big Data R&D initiative in US**

# EU call 10 specific objectives

## ■ Objective ICT-2013.1.7b Future Internet Research Experimentation

- Support experimentally driven research
- Conduct **multidisciplinary investigation** of key techno-social issues (i.e. Internet Science),
- exploiting any relevant FIRE facilities, **considering also benefits for citizens, ethical and sustainability aspects** (e.g. network neutrality, privacy by design, identity management, security trade-offs, crowd-sourcing, reputation mechanisms, data ownership, data retrieval and openness, citizen involvement in content generation, new collective economic models for rewarding creators and talents, etc)
- **at least two participant** entities with a main focus of activity addressing **sociology, economy, law, content/culture, and/or perception/interfaces**.

# EU call 10 specific objectives

- **Objective ICT-2013.5.5 Collective Awareness Platforms for Sustainability and Social Innovation**
  - a) **Supporting grassroots experiments and prototypes enabling citizens and communities to create and engage in digital social innovation platforms.** (e. g. citizen empowerment, health, ageing and well being,, environment protection, direct democracy,etc.)
  - b) **Support bottom-up social innovation and education initiatives based on crowd-sourcing and network intelligence principles, carried out by web innovators, research teams, communities and entrepreneurs.**