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## Conference Paper

# A Hitchiker 's guide to digital social innovation

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# **Title: A Hitchiker 's Guide to Digital Social Innovation**

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**Abstract:** Social innovation plays an important role in addressing societal challenges. We map Digital Social Innovation (DSI) in terms of the international research efforts and investments made in Europe over the last decade. DSI aims to promote innovation and social change based on the network effect: meaning internet connections, web collaborative tools, sharing of open data and a process of bottom-up peer-supported activities and applications). Examples are given on the novel use of information platforms, data from sensor networks and community use of mobile phones. The impact measurement of the DSI initiative at social, economic and environmental level is presented. Our data comes from the EU activities and R&D grants awarded up to 2014. We describe the concept, the context, and the type of investments made by the European Union in this field. The final part of the paper concerns DSI impact evaluation and proposes a methodological framework for assessing specific results in a qualitative and quantitative way.

## **Introduction**

Digital Social Innovation is hot topic, involving innovation agencies and other types of intermediary social NGOs as technology and innovation-driven communities of practice. These new communication technology development projects attract growing attention of governments and international funding bodies. Social innovation finds new ways of tackling pressing social needs and DSI uses information and communication networks to do so. The idea behind it is that web platforms and the new forms of interactions promote value generating collaborations and social progress, which changes individual behaviour for the better. DSI is organised as a public-private partnership based on an active role of citizens and the use of state-of-the-art information technology to engage citizens, to support stronger links (data exchange, visualization) and thus to multiply the potential effect of grass-root initiatives. The network effect can make local and global coincide on the net.

The European Commission is currently supporting the take-up and expansion of digital social innovation as part of its digital agenda policy. The investments made by the

European Commission since 1999 are indeed significant with the largest budgets coming from its Research Development and Innovation framework programme of activities. For example, for the net innovation unit, the public-private partnership on the Future Internet currently has a budget of 130 million for its phase three. Additionally there are a variety of innovation actions of smaller scale, such as the SME programme, prizes and funds supporting innovators and start-ups (13 million in 2014). The most targeted group of DSI projects is the Collective Awareness Platforms for Sustainability and Social Innovation (CAPS) whose budget is 22 million euro over 3 years. The next phase will have a bigger budget and will start in 2016. These resources are for internet platforms that are digital open source and open hardware environments supporting social innovation by empowering and facilitating citizens' participation. One of the projects is responsible for the impact analysis of Digital Social Innovation impacts. They developed a tailored, qualitative-quantitative methodology. The other projects participate in the self-assessment and in the 'metrics' activities in a collaborative manner. This participatory methodology considers the wider social, economic, environmental and political impacts of CAPS. One of the other projects (WebCosi) takes advantage of the research on intangibles and 'beyond GDP' indicators of progress and wellbeing.

The EU development strategy on social innovation is to connect research organisations, with innovation agencies and with other types of intermediary enterprises: social NGOs, public-private partnerships, communities of practice and local grass-root initiatives. Neither at the top State level nor at the lower level of an individual 'in need' these intermediary organizations or social enterprises are getting stronger. They attract growing attention, funding, and great expectations from citizens, from governments and from international funding bodies.

### **(Digital) Social Innovation**

As Borzaga and Bodini (2012) point out, social innovation is an appealing approach to the profound difficulties facing western welfare systems. Traditional development models concentrated essentially on two distinct actors: the market and the state (markets versus hierarchies). Today's funding for social innovation typically goes to public-private partnerships and civil society organizations including charities. Social innovation reflects the growing scale and diversified needs of advanced, complex, inter-connected information societies and the dissatisfaction or mistrust of top-down solutions. The argument is that social innovation is best carried out by those specialized intermediate organizations that are closer to the citizen and that citizen's direct engagement is a valid option when looking for new solutions to complex social issues. The analysis of the interplay between governments, NGOs, development agencies, industry and social enterprises is called multi-stakeholder analysis.

It would be incorrect to see social innovation as a new or isolated concept or as a disruptive innovation. The term social innovation emerged after the French revolution and was associated with radical socialism and with reformism (Godin, 2012). In time it acquired less radical connotations. Social innovation governs institutions and social experiments that are by now so familiar and even 'traditional' in western democracies, but that in hindsight represented important social revolutions and political changes with respect to the past. Among these social innovation reforms: free national health systems, public kindergartens, co-operatives, trade union movements and so forth.

With Digital Social Innovation (DSI) there is a new communication technology component, namely to set up Internet platforms and digital information processing tools to promote those value-generating collaborations and to extend or scale-up best practices and

transfer know-how cheaply and rapidly via the net. The goal is to find new ways of solving social issues, to gain in efficiency, in effectiveness, in sustainability or (in the long term) to address the problem of citizen engagement for good governance. At minimum DSI offers collective awareness as an alternative over previous solutions that haven't worked. As Deiglmeier and Miller (2008) point out, this gain is possible by engaging citizens and activating their competences. (Digital) Social innovation initiatives are not only intended to innovate a product or a service, but also to affect the social relationships that characterise a social group and a solid community structure (Murray, Caulier-Grice and Mulgan, 2010). To quote the social economy Strasbourg Declaration of 16 January 2014: 'Europe's social model needs to reinvent itself. We need growth that is fairer, greener, and anchored in local communities. A model that values social cohesion as a genuine source of collective wealth'.(SBI)

The success of this new approach to welfare will depend on an active role of citizens, and their capacity to exploit 'network effects' to scale-up or join forces and multiply the potential of grass-root initiatives across social networks. The term Digital Social Innovation includes, therefore, the role of ICT in social innovation process such that the people come first (empowerment) and the acquired technology skills create network effects impossible in a face-to-face environment. This interdisciplinary domain of activities recognise the need to go beyond technology engineering, to the social nature of progress, including reaction to disruptive changes. Related research areas are: crowdsourcing and crowdfunding, big data visualisation and analytics, P2P production and consumption, eDemocracy and eParticipation.

Crowdsourcing refers to a platform for on-line distributed problems and a network of coordinated human 'problem solvers'. Crowdsourcing can be an innovative and effective way to apply collective intelligence to solve some types of complex problems. Mechanical Turk was the first such crowdsourcing network in the USA and it contributed to scale up crowdsourcing worldwide. CAPS uses collective intelligence and contributes to develop an open source and decentralized infrastructure for connecting citizens and the internet in a decentralized open architecture.

Today's internet is more centralized than it once was: take Facebook, a centralized social network, take Google docs, a centralized group and document management system, take YouTube, a centralized media hosting facility. To counter the big commercial players, innovation activities and research projects built peer-to-peer and small scale local social media, building on small community networks. This is a bottom-up explore-as-you-go experimental approach. Some see it as an alternative form of industrial policy, opposed to competitiveness scenarios where only the fittest survive and become ubiquitous. Monopoly rent or profits are based primarily on maintenance or acquisition of dominant position in established markets. The user-centred digital end-to-end media challenges both traditional media and Big New Media regimes.

The diagram below helps to understand Digital Social Innovation in depth. It is based on Jeremy Heimans TedSalon Talk (2014) applied to the activities of European NGO organisations, national governments and other stakeholders active in the collective awareness projects and social innovation projects.

OLD POWER	NEW POWER
<ul style="list-style-type: none"> <li>- Currency control, profit motive</li> <li>- Held by the elite</li> <li>- Commands</li> <li>- Leader-driven</li> <li>- Downloads</li> <li>- Closed, formal</li> <li>- Top down</li> <li>- Perfectionism</li> </ul>	<ul style="list-style-type: none"> <li>- A current of transparency, social engagement</li> <li>- Made by the many for the many</li> <li>- Shares</li> <li>- Peer-driven</li> <li>- Uploads</li> <li>- Open, informal</li> <li>- Top down</li> <li>- bottom-up, collective awareness</li> <li>- Best effort, fit-for-purpose</li> </ul>

Tab. 1- The issue of power in DSI approached compared to traditional innovation paradigms. Adaptation from Jeremy Heimans TedSalon Talk (2014)

### The role of the European Union

In this policy context we document the investments made by the European Commission since 1999. After a workshop on social innovation in 2009, President Barroso asked the Bureau of Economic Policy Advisors to draft a report on social innovation as driver for social change, and to this day social innovation continues to have a legal basis.

EC activities include the Future Internet public private partnership, and other numerous such PPPs. The DG CNECT budget amounts to 1 Billion euros per year in R&D grants. DG Enterprise funds a social innovation platform (circa 5000 users) and organizes a competition in honour of social innovator Diogo Vasconcelos. Further activities from both DGs to support SME innovators and Startups. For example the Social Business Initiative is a related policy activity at the level of the enterprise (or firm) and market legislation: it is proposed to promote the social, cultural, and environmental sphere (Social Economy & Social Entrepreneurship, 2013).

The Innovation Union supports social innovation, and under FP7 has launched a specific research programme in social and public sector innovation. Projects such as BENISI and TRANSITION are delivering the first results. They were launched in 2013 as FP7 pilot actions whose aim is to scale up hundreds of social innovations across Europe. The aim is to support capacity building for scaling up social innovation. Horizon 2020 will continue to support these social innovation measures under the heading of hubs and incubators for the Innovation Union.

Finally there is the DG CNECT FP7 FIRE - Future Internet Research and Experiments funding a network of hubs that co-operate to interconnect the experimental test beds and Living Labs experiments.

Directly addressing DSI are a dozen R&D projects dedicated to Collective Awareness Platforms for Sustainability and Social innovation (CAPS). CAPS are digital environments enabling and supporting social innovation, smart applications empowering and facilitating citizens participation. As described in Arniani at al. (2014), "the core component of the CAPS world is made up of research projects for Grassroots Experiments and Pilots, which have a really strong application component. These projects tackle either specific social challenges:

- Removing barriers to inclusion: CAP4ACCESS expands p2p mobility for people with disabilities.
- Raising collective awareness about environmental challenges: DECARBONET is about lowering the carbon footprint.
- Enabling citizens to rate companies on corporate social responsibility: WIKIRATEO

Or provide tools to facilitate an online debate and social innovation:

- Collective intelligence and analytics platforms to improve community deliberation: CATALYST
- New tools for direct democracy, participation, and new economic models: D-CENT” (p.21).

Besides these projects, which are build around existing large-scale communities there are four support actions, one seed-funds initiative and more research-oriented projects.

The support actions are:

- CAPS2020: organising CAPS large events and networking opportunities
- IA4SI: providing CAPS with an impact self-assessment methodology and related online tools
- SCICAFE2.0: promoting new collaboration models and tools for the CAPS community and behind
- WEB-COSI: developing instruments for collectively-generated statistics and increasing trust for non-official statistics.

The CHEST project offers €3 million in seed funding for digital social innovation ideas and prototypes. It does so through its crowdfunding and crowdsourcing platform. It ran three open calls at European level, in this way spreading the DSI approach and supporting the emergence of new initiatives in the field.

Finally, a Digital Social Innovation in Europe study, also financed by the European Commission and managed by NESTA the UK National Endowment for Science, Technology and the Arts crowd-mapped and analysed European DSI actors and networks supporting the framing of this nascent phenomenon.

Three other EU funded collaborative projects, P2P Value, USEMP and FOCAL are studying various aspects of the DSI paradigm. These include the value propositions of P2P production and sharing, the legal rights-related issues of social network such as the management of personal data and the potential economic value of users activities on social networks and the engagement and security issues of CAPS.

Project Acronym	Project Full Title	Project Website
DECARBONET	A Decarbonisation Platform for Citizen Empowerment and Translating Collective Awareness into Behavioural Change	<a href="http://www.decarboneteu">http://www.decarboneteu</a>
CAP4ACCESS	Collective Awareness Platforms for Improving Accessibility in European Cities & Regions	<a href="http://myaccessible.eu">http://myaccessible.eu</a>
CATALYST	Collective Applied Intelligence and Analytics for Social Innovation	<a href="http://catalyst-fp7.eu">http://catalyst-fp7.eu</a>
WIKIRATE	Wikirate	<a href="http://wikirate.org">http://wikirate.org</a>
D-CENT	Decentralised Citizens Engagement Technologies for direct democracy and economic empowerment	<a href="http://dcentproject.eu">http://dcentproject.eu</a>
P2PVALUE	Techno-social platform for sustainable models and value generation in commons-based peer production in the Future Internet	<a href="http://www.p2pvalue.eu">http://www.p2pvalue.eu</a>
USEMP	User Empowerment for Enhanced Online Presence Management	<a href="http://www.usemp-project.eu">www.usemp-project.eu</a>
IA4SI	Impact Assessment for Social Innovation	<a href="http://ia4sieu">http://ia4sieu</a>
CHEST	Collective enhanced Environment for Social Tasks	<a href="http://www.chest-project.eu">http://www.chest-project.eu</a>
FOCAL	Foundation for Collective Awareness Platforms	
WEB-COSI	Web Communities for Statistics for Social Innovation	<a href="http://www.webcosi.eu">www.webcosi.eu</a>
CAPS2020	CAPS2020	<a href="http://caps2020.eu">http://caps2020.eu</a> <a href="http://caps-conference.eu">http://caps-conference.eu</a>
SCICAFE2.0	SciCafe 2.0	<a href="http://www.scicafe2-0.eu">www.scicafe2-0.eu</a>

**Tab. 2 - CAPS on-going project and related website**

The websites in the table above give details on the results obtained so far.

As the study Digital Social Innovation shows (Bria et al., 2014), CAPS are not alone in the DSI panorama but are, in fact, part of a larger and growing ecosystems of innovators. This study, in fact, mapped 590 organisations with 645 projects active in the field across Europe (data of August 2014). Actors and initiatives were crowd-mapped through the project platform [digitalsocial.eu](http://digitalsocial.eu) where data are updated constantly. Considering the typology of organisation engaged, 194 are social enterprises, charities or foundation, 183 are businesses, 160 are grassroots organisation or community networks, 122 come from the academia and 57 represent government and public sector. As the figure below shows they are active in all fields of society from education to finance, from health and wellbeing to energy and environment.

## Areas of Society

Total: 2136

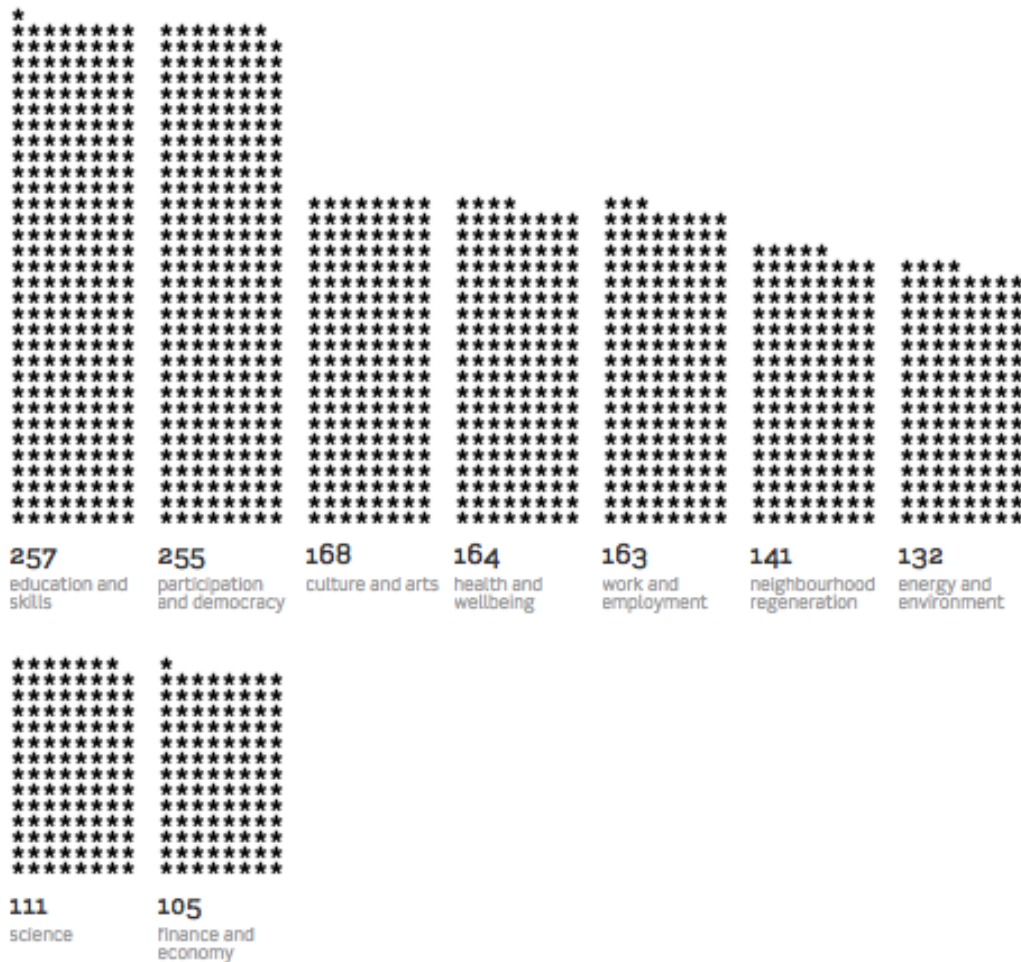


Fig. 1 - Fields of activities of DSI as mapped in digitalsocial.eu (last access on November the 9<sup>th</sup>)

### Assessing the impacts on Digital Social Innovation initiatives

According to the Naples 2.0 Report on social innovation, authors (Addario and Lane, 2014) there are two problems with evaluation and scalability comparisons:

“In the Innovation Society ideology, the success or failure of an innovation – that is, whether or not it will “scale”– depends on just one thing: the profit it will generate in the marketplace. From this point of view, the projects that the innovating entrepreneur undertakes and the ways he goes about implementing them, must be primarily driven by economic *value*. In contrast, the social innovator’s projects are primarily driven by social *values*, which take into account the different ways in which the projects affect the lives of the members of the population they seek to impact. [...]The Innovation Society’s model entrepreneur can carry out the evaluation phase of the all-important evaluate-correct feedback loop by examining figures on production costs and sales, and employing a host of marketing tools to explore possibilities for increasing his product’s market size. But how can the social innovator evaluate the impact of his project – with respect to *which* and *whose* values? And what must he do when different values point in different directions for changing the course along which the project is currently moving?. There is another



problem that social innovators have to solve in a different way from the innovating entrepreneur in the Innovation Society’s dominant narrative: the problem of “scaling.” In the Innovation Society’s narrative, innovation projects scale with the profits they generate, which can be used to produce and market more of the new product, or can be invested to start up new innovation projects. Scaling for social innovation projects is much more problematic. First, many social innovation projects are site-specific, geographically and socially: after all, most aspects of most people’s well-being, the quality of their personal lives and social interactions are determined in large part by factors specific to the environments in which they live” (pp. 11-12).

IA4SI project (Impact Assessment for Social Innovation) is a CAPS support action dealing exactly with these topics and proposing a solution to them. The IA4SI methodological framework is based on a quali-quantitative multi-stakeholders approach, which engages projects coordinators, their partners, project users and European citizens. It is based on previous research in the field and take advantage of well-tested methodological frameworks adapted to the peculiarities of the digital Social Innovation sector (Passani at al., 2014a and Passani et al., 2014b).

The assessment uses eight synthetic indices: 4 of them are related to specific areas of impact and related sub categories and are visualised in the figure that follows. These indices can be called vertical indices: Social impact, Economic impact, Environmental impact and Political impact. Each vertical index is composed of other indices each corresponding to a specific subcategory; for example the synthetic index Social impact is composed of 6 indices, one for each subcategory such as Impact on “Community building and empowerment”, “Impact on information”, “Impact on way of thinking and behaviours”, etc.

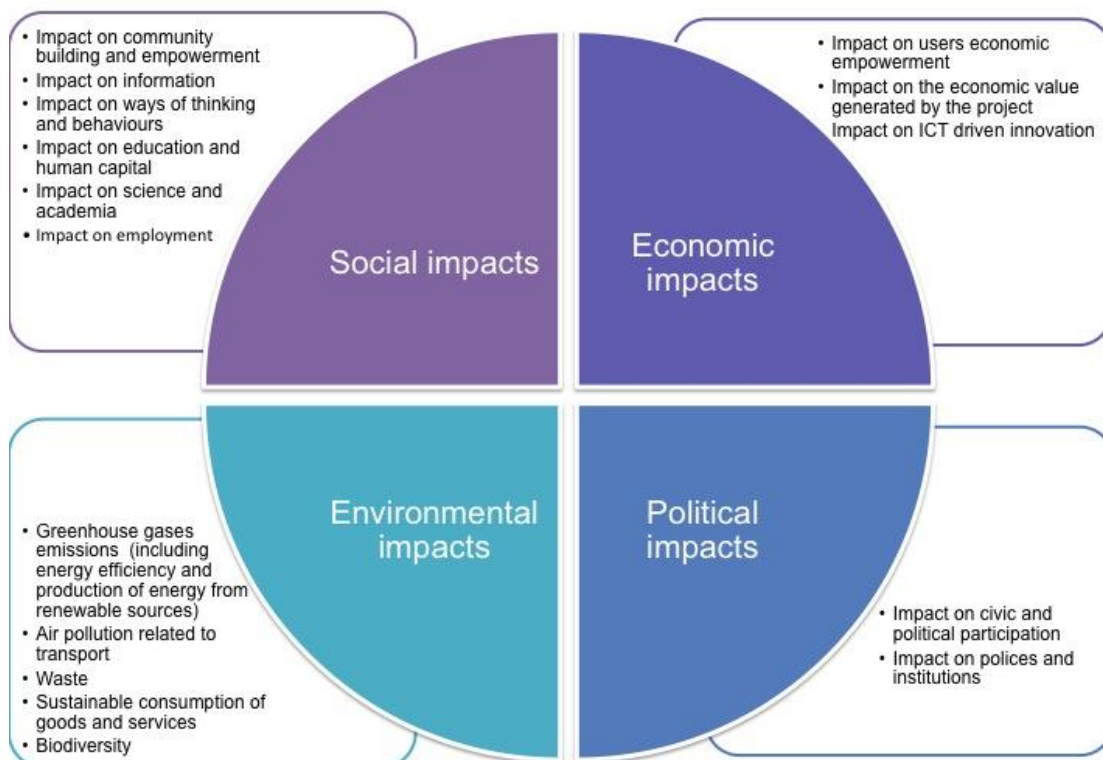


Fig. 2 -- IA4SI vertical indices (Source: Passani and others, 2014b)

Besides the four vertical indices, the IA4SI methodology includes 4 transversal indices that provide information about the process followed by the CAPS projects in determining their impacts. In other words, the transversal indices are related to the attributes of the innovation developed. The four indices are: efficiency, effectiveness, sustainability and fairness. These four indices are inspired by Philip, Deiglmeier and Miller, that describe social innovation as a solution which is meant to be: “*more effective, efficient, sustainable, or just than existing solutions*” (2008:36).

The IA4SI methodology is based on Cost-Benefit Analysis, on Multicriteria Analysis and on the Social Media ROI. To analyse any changes in CAPS users' attitudes and behaviours a Stated Preference methods and Revealed Preference methods will be used while for the environmental impact assessment the Ecological Footprint methodology and Global Reporting initiatives approach is used.

The analysis of CAPS projects impacts takes advantage of two online tools developed by the IA4SI project. These tools are: the “Self-assessment toolkit” (SAT) and the “User Data Gathering Interphase” (UDGI). The first one is dedicated to CAPS projects coordinators and partners and the second one to CAPS users. CAPS projects coordinators and partners, by entering information in the SAT will follow a six-step process which will lead them to the assessment results.

1. First of all, CAPS representatives will describe the inputs of their project including the budget, the human resources available at project level, the pre-existing technological and non-technological elements the projects builds on, etc.
2. Secondly, they will select their stakeholders and end-users in this way describing “who” will benefit from the project outputs
3. Thirdly, they will describe their outputs: technological and non-technological ones such as publications, licences, patents, etc.
4. Then they will select the impact dimensions that are more relevant for them. The IA4SI methodology is modular so that each project can personalise it. As an example, a project can select impact on employment and impact on information as relevant and exclude impact on education and human capital because its outputs and its activities are not leading to this kind of impacts.
5. At this point the SAT will show all the questions related to the impact dimensions selected by the project representatives.
6. The data inserted by CAPS representatives will be elaborated in real time by the SAT that will provide them an impact assessment report. In a graphic, easy-to-understand way, project representatives will be able to visualise their impacts by comparing their performance with a set of benchmarks (Passani et al, 2014a).

In parallel, CAPS users will be invited to fill in the UDGI, which looks like an online questionnaire and investigates the CAPS benefits from the point of view of their users. The information gathered by the UDGI will appear in the SAT: each CAPS project will be able to see the opinions of its users in an aggregated, anonymous way and it will be possible to compare the results of their self-assessment with the point of view of their users.

A third online tool, the Impact4you platform will present CAPS outputs to European citizens which will be invited to provide their opinions on those outputs by answering few questions. CAPS projects will be able to see citizens opinions and engage with them through a dedicated forum. IA4SI team believe that for CAPS project it will be important to have feedbacks from their direct users and from general European citizens and that this

information, together with the impact assessment will lead them to fine-tune their activities and maximise their positive impacts.

IA4SI team will use all the gathered data for developing two impact assessment reports: one will include the assessment of each CAPS project and one will analyse the data at aggregated, domain level. Besides this, a set of best practice will be identified and further analysed using a case-study approach.

The methodology has been developed following a participative approach so that CAPS representative have been involved in the methodology development. Analysis covers both qualitative-and quantitative evaluation (value assessment) taking advantage from the recent research on intangibles and 'beyond GDP' new statistical indicators developed at National level and at international level (Bund et al, 2013).

## **Conclusions**

The European Union supports the development and diffusion of social businesses and social innovation as a way to tackle pressing social needs. A credible evaluation method is required. There are many diverse rubrics under which social innovation schemes are being promoted. At present the first group of CAPS projects financed by the programme is entering their second year of activities and soon their results will be assessed by individual panels of individual experts (annual reviews). There will also be an impact assessment in January 2014, a report for the use of European stakeholders, including citizens. These actions will make possible to better evaluate the investments made so far; it will also be possible to better understand the replicability and transferability of these initiative at national and local level and in non-European countries.

This article attempted to map the state of the art in this field and the authors will continue following the project development in order to keep researchers, policy-makers and practitioners updated. To cite a leading practitioner: "Digital Social Innovation provides 'old and new methods for mobilising the ubiquitous intelligence that exists within any society (Mulgan and al., 2007).

We conclude by saying that social science methodologies and data science can be used to measure benefits of digital social innovation initiatives, that more diverse sources of data improves impact measurement, but that ultimately it is stakeholder engagement that makes the difference to sustainable social innovation.

Twenty-first century social science needs to have access to new data gathering resources to collect to sample to validate hypotheses and to analyse emerging patterns. The open data portal is experimenting with this distributed data resource. The findings can be reapplied to generate more collective intelligence. One successful example is the benchmarking of social progress indicators of wellbeing, happiness, or quality-of-life which is constantly improving and shaping European policies as well as OECD policies on 'the better life index'.

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